

TECHNICAL WRITING: AN OPEN EDUCATIONAL RESOURCE



Technical Writing: An Open Educational Resource

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Glossary

Licensing

A detailed breakdown of this resource's licensing can be found in [Back Matter/Detailed Licensing](#).

1: Introduction to Technical Writing

CHAPTER OBJECTIVES

- Define technical communication.
- Distinguish technical writing from academic writing.
- Explain the features of technical writing style.
- Introduce the concepts of audience, culture, and ethics as they apply to technical writing.

What is Technical Writing?

You are probably wondering what this "technical writing thing" is. Someone may have even told you, "It's this course where they make you write about rocket science and brain surgery." Well, not really, as you will see in a moment. The field of technical communication is essential in a wide range of fields and occupations. It is a fully professional field with degree programs, certifications, and—yes!—even theory. It is a good field with a lot of growth and income potential, and an introductory technical-writing course for which this book has been developed is a good way to start if you are interested in a career in this field.

Technical writing is designed for users in technical fields such as engineering, chemistry, computer information software and systems, medical professions, aeronautics, robotics, automotive, etc.

Technical writing is designed to:

- inform by anticipating and answering audience questions;
- instruct the audience to perform a task or follow a procedure, and
- persuade the audience via explanations, analysis, and solutions.

Technical writing is an audience-centered means of communication that provides a reader with clear and easy access to information. In the business world, time equates to profit, and profit is the force behind all professional interactions. The technical writer and reader have a vis-à-vis relationship. The writer recognizes, respects, and addresses the importance of time in effective and efficient communication by providing documents written in specific formats, using unambiguous language to send clearly accessible information. The reader in turn thoroughly understands the information in order to give a thoughtful response.

CHARACTERISTICS OF TECHNICAL WRITING

Technical communication is an audience-centered means of communication that provides the reader with clear, accurate, and ethically represented information. According to the Society for Technical Communication, technical writing includes the following characteristics:

- "Communicating about technical or specialized topics, such as computer applications, medical procedures, or environmental regulations."
- "Communicating by using technology, such as web pages, help files, or social media sites."
- "Providing instructions about how to do something, regardless of how technical the task is or even if the technology is used to create or distribute that communication."

The Meaning of "Technical"

Technical communication—or technical writing, as the course is often called—is not writing about a specific technical topic such as computers, but about any technical topic. The term "technical" refers to knowledge that is not widespread, that is more the territory of experts and specialists. Whatever your major is, you are developing an expertise—you are becoming a specialist in a particular technical area. And whenever you try to write or say anything about your field, you are engaged in technical communication.

Academic Writing Versus Technical Writing

Technical communication is distinct from the academic forms of writing you may be more familiar with. The academic writer's purpose may be to write an essay, a story, a research paper, etc. Such assignments are often designed so that students can "write to learn" and show mastery of information covered in class. Additionally, in academic writing context, student-writers join a conversation that is occurring on a particular topic.

Technical communication, however, is intended for another purpose. These documents convey information to audiences who may or may not have prior knowledge of the material discussed. Technical communicators must, therefore, determine the needs of their audience and design documents that convey information in an accessible and appropriate manner. Depending on the context of communication, it might also be necessary to convey information in a concise and efficient manner, succinctly presenting points and cutting extraneous or potentially distracting material.

Workplace Writing

However, the focus for technical writing courses is not necessarily a career as a technical writer but an introduction to the kinds of writing skills you need in practically any technically-oriented professional job. No matter what sort of professional work you do, you're likely to do lots of writing—and much of it technical in nature. The more you know about some basic technical-writing skills, which are covered in this guide and in technical-writing courses, the better job of writing you're likely to do. And that will be good for the projects you work on, for the organizations you work in, and—most of all—good for you and your career.

STRATEGIES TO ACHIEVE TECHNICAL WRITING TASKS

Professional technical writers rely on these strategies to ensure the technical accuracy of their work:

- Study of books, articles, reports, websites related to the product.
- Product specifications: what the product is supposed to do, how it is designed.
- Interviews with subject matter experts: the product specialists, developers, engineers.
- Product meetings during the development cycle.
- Live demonstrations of the product.
- Familiarization with similar, competing products.
- Experimenting with working models of the product.
- Most importantly, subject matter experts' review of technical writers' work for technical accuracy and completeness.

Considerations of Technical Documents

There are key components of what makes a document strong. Therefore, writers keep these items in mind while constructing technical documents.

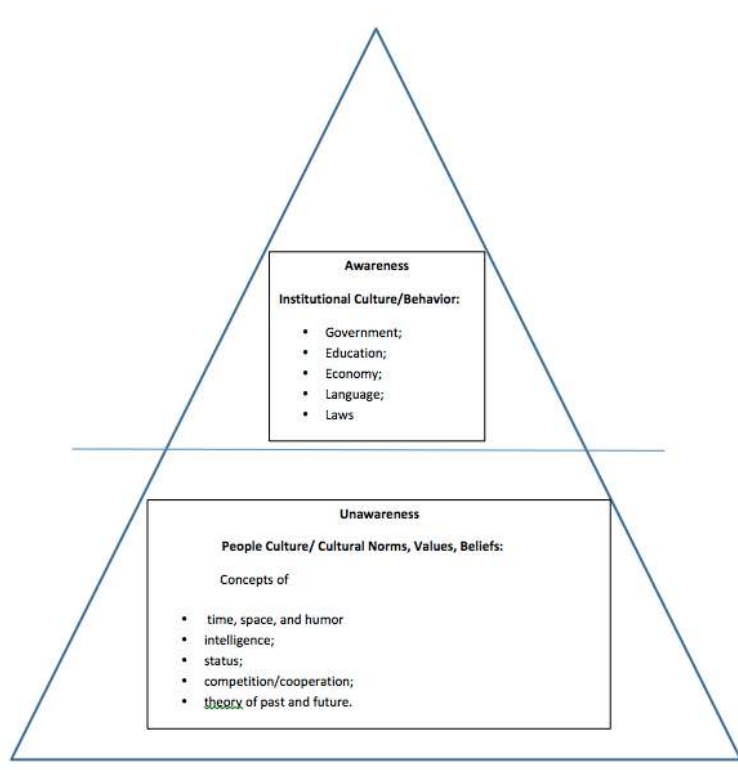
The Importance of Audience

Another key part of the definition of technical communication is the receiver of the information—the audience. Technical communication is the delivery of technical information to readers (or listeners or viewers) in a manner that is adapted to their needs, level of understanding, and background. In fact, this audience element is so important that it is one of the cornerstones of this course: you are challenged to write about highly technical subjects but in a way that a beginner—a nonspecialist—could understand. This ability to "translate" technical information to non-specialists is a key skill to any technical communicator. In a world of rapid technological development, people are constantly falling behind and becoming technological illiterates. Technology companies are constantly struggling to find effective ways to help customers or potential customers understand the advantages or the operation of their new products.

Cultural Communication

Technical writers need to be aware of the differences between the behavior and the norms, beliefs and values of specific cultural. According to Edward T. Hall and Mildred Reed Hall, In Understanding Cultural Differences, each culture operates according to its own rules (1990, pp. 3-4). Hall and Hall add that problems occur when members of one culture apply the rules to another culture (1990, pp. 3-4). To communicate effectively with other cultures, the technical writer needs to not only be aware of rules governing behaviors that can be observed but also of the not-so-obvious rules that govern the norms, beliefs, and values of the people of a culture. The invisible rules of a culture dramatically impact the acceptance of ideas, plans, and strategies. The Cultural Iceberg illustrates patterns of world communication, showing indicators of Institutional Culture (the obvious behavior of a culture), which can be clearly seen as the tip of the iceberg, and People Culture (the norms, beliefs and values of a culture), which cannot be seen and which are the barriers to successful communication.

Figure 1 The Cultural Iceberg



Ethics

Technical writers have a responsibility to their readers and to their employers to follow ethics when writing reports. Technical writers must use words that demonstrate valid appeals to reason, avoiding emotional words and phrases that appeal to basic emotion instead of justifiable reasoning. In addition, technical writers must use valid references to support ideas and strategies, avoiding referencing non experts to sway readers' support. Also, technical writers must use accurate numbers to report data, avoiding charts and tables that skew data. Using any type of fallacies in technical writing is unethical and could result in dire consequences.

Not only do technical writers have a responsibility to report accurate information, but they also have a responsibility to credit accurate sources of information. At no time is it acceptable to rearrange information in order to attempt to indicate that the writer is the source of someone else's idea or to indicate that the writer read a report that included information he/she cited, when the primary source of the information was cited in another report. All sources must be referenced accurately in the text and cited on a reference page.

Overview of the Technical Writing Style

Technical writing takes complicated ideas and organizes and explains those ideas in easy-to-understand language. The reader of technical documents does not read to engage in a discussion or be entertained. The audience of technical documents wants information. In short, technical writing provides information and seeks to solve problems and help the reader learn.

While some technical writing is composed for experts within the field, most technical writing is composed for the ordinary user - the consumer. While technical writing can organize information so it persuades the user, it must always present complete and accurate information. Technical writing does not use emotionally charged language, redundant adjectives, colloquialisms, or words or phrases that are open to interpretation. As the Society of Technical Writing explains, technical communicators employ a user-centered approach to provide "the right information, in the right way, at the right time to make someone's life easier and more productive."

Features of Technical Writing

Technical documents must be reader-centered. The information is explained and presented in a style that is easy to navigate and understand. Technical documents value the reader's time by using the following features:

- Accessible – Think about the users of your document. You understand the material and created the document based on that knowledge and understanding, but for your audience, this is new information. So the information must be explained and presented in a style that is easy to understand and follow.
- Collaborative - technical documents must consider multiple perspectives; therefore, they are frequently composed by a team of writers.
- Concise –To write concisely does not mean to use fewer words. Instead, it means to use *all* the words you need but *only* the words you need.
- Efficient page design: Use headings, numbered or bulleted lists, tables, easy-to-read fonts, white space, and other elements to help the reader navigate through the material.
- Logical organization: use chronological order and emphasize important information.
- Meaningful content: include all of the information needed but none of the information that is not needed.
- Supplemental material: Abstracts, footnotes, glossary, appendix, definitions, etc., provides readers with additional information when needed.
- Visual elements: Use charts, graphs, or images to clarify written concepts or relationships.

Formatting and Language

Formatting and appropriate language are the basic design elements of all technical documents. A format that shows a hierarchical structure and a coordinate structure of information leads the reader through the text. Readers should be able to identify a writer's organizational pattern very quickly when reading a technical document. This sometimes refers to a document being "reader-friendly." In addition, using appropriate language is significant in providing the reader with a thorough understanding of the purpose of the document, how the document relates to the reader's needs, and what action is expected of the reader.

A document may also have one audience (the primary reader) or multiple audiences (the secondary readers). A primary reader is the person who ordered the report to be written or the person for whom the report is intended. These readers will usually read the entire report. Secondary readers are those readers who will read only the sections of the report that relate to them, their jobs, their departments, responsibilities, etc. For example, if a report was sent that detailed funding for different departments, a piping superintendent may only want to read the section that relates to piping. This is where format, the use of headings, is significant in allowing the reader easy access to information. When the piping superintendent can scan through the document and clearly find the heading that identifies his department saves time.

The following table provides general specifications for many types of technical writing documents:

Document Formatting Rules	
MARGINS	Use 1" margins on all sides (use 2" when binding)
	Justify your left margin only; don't fully justify your paragraphs, as this can result in odd spacing
FONTS	Headings: <i>Sans serif</i> , such as Arial or Calibri
	Body text: <i>Serif</i> font, such as Times New Roman or Cambria
FONT SIZE	Headings: 12-20 point <i>sans serif</i> font
	Body text: 11-12
SPACING	Single-spacing is used for most letters, memos, and emails; 1.5 or double spacing to allow for comments.
LENGTH	Paragraphs tend to be no longer than 10 lines
	Sentences are usually 15-20 words

Table 3.1. Document Formatting

Readability in Publications

The way a text looks matters to a reader, so it should matter to a writer. Letters, reports, and websites are more than just words on a page or a screen. How ideas are arranged and delivered in physical form, whether electronically or on paper, can make reading seem intimidating, confusing, or downright unfriendly, even if the content itself is perfect. Your text is like a room for your ideas. Sometimes you want readers to get in and get out quickly, but often, you want them to sit down and make themselves comfortable, put their feet up and stay awhile. Whatever the case, you should be in control of the reader's experience.

To make a document more reader-friendly, many technical writers rely on visuals to achieve this goal. See [Chapter 15, "Visuals in Technical Documents"](#) for detailed information about using visuals.

Ways effective design enhances a document

Effective design makes a document accessible

- Good design helps readers understand your information.
- Good page design helps readers locate information quickly.
- Good design helps readers notice highly important content.

Effective design affects readers' attitudes, thereby increasing a communication's persuasiveness.

- Good design encourages readers to feel good about the communication itself.
- Good design encourages readers to feel good about the communication's subject matter.

Because page design can have such a significant impact on your communication's usability and persuasiveness, you should approach design in the same reader-centered manner that you use when drafting text and graphics. Think continuously about your readers, including who they are, what they want from your communication and the context in which they will be reading.

It helps to think about the building blocks of a page design in the way that professional graphic designers do. When they look at a page, they see six basic elements:

- **Text:** Paragraphs and sentences.
- **Headings and titles:** Labels for sections of your communication.
- **Graphics:** Drawings, tables, photographs, and so on — including their captions.
- **White space:** Blank areas.
- **Headers and footers:** The items, such as page numbers, that occur at the top or bottom of each page in a multi-page document.
- **Physical features:** These include paper, which may take many shapes and sizes, and bindings, which come in many forms.



Figure 3.1. Overview of design elements. Notice how your eye is drawn to the blue header and the boxed elements. In these spaces, you can highlight the important parts of your message:

Conclusion

Technical writing is designed to inform, instruct, or persuade an audience. It is informative and concise. Technical writers often collaborate with others in their organizations to develop documents that are formatted and designed to inform their audience in accessible ways. All forms of technical writing -- memos, letters, proposals, reports, and so on -- have different conventions for format and design. Technical writing differs from the academic writing to which many students are accustomed. As you continue exploring concepts of technical communication in this course, remember these introductory concepts to technical writing and work to apply them to the documents you create.

GENERAL TIPS ABOUT TECHNICAL WRITING

- Remember that technical writing is not just about computers or engineering. The term should be considered more broadly than that.
- Audience is crucial. Before creating any technical document, be certain you understand your audience's identity and needs.
- Format your technical documents differently than you might format an academic writing assignment.
- Consider cultural and ethical concerns and complications as you develop your documents.

References

Hall, E.T. & Hall, M.R. (1990). *Understanding Cultural Differences*. Intercultural Press.

Society for Technical Communication. (2021). *Defining Technical Communication*. <https://www.stc.org/about-stc/defini...communication/>.

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2: The Writing Process in Technical Writing

Chapter Objectives

- Define the elements of the writing process.
- Discuss the recursive nature of the writing process.
- Explain how the elements of the writing process pertain to technical writing.
- Apply the writing process to technical writing tasks.

Refining Your Unique Writing Process

Accepted "Writing Process"

Generally speaking, the accepted writing process includes:

PLANNING

The planning step of the writing process includes all tasks designed to help you draft a strong document. For instance, planning may include prewriting strategies such as outlining, brainstorming, mapping, and freewriting. It also includes time spent researching as strong research provides the raw materials necessary to "build" an effective written document. While planning usually occurs early in the writing process, writers return to these planning strategies many times throughout the writing process.

DRAFTING

The drafting step of the writing process includes time spent actively writing parts of the document. Drafting is often expected to be messy. It's the time when a writer gets the ideas on the page without immediate concern for the flawlessness of the ideas. It involves creating, grouping, and analyzing the raw materials (research, language, and ideas) of a written document. While drafting usually occurs as a middle step of the writing process, writers return to the drafting strategies any time a new idea or concept must be developed and included in the document.

REVISING

The revising step of the writing process includes adding, rearranging, removing, and replacing words, sentences, paragraphs, and ideas. Revision refers to large changes in a written document. It is the time when a writer looks at the messy draft to critically analyze changes that must be made to better serve the purpose and audience. Revision must be done courageously; it may be difficult to make large changes to a document that is seemingly "complete." However, strong revision is necessary to strengthen a written document to its best form. Decisions made in the revision step may send the writer back to the planning or drafting stage.

EDITING

The editing step of the writing process is the polishing stage. While the aforementioned steps are recursive, meaning you can move back and forth between them, the editing step should be kept to the end of the process to avoid writers spending too much time polishing a sentence or paragraph that may be removed in revision, for instance. Editing refers to the fine details of a document such as correcting spelling, punctuation, and grammar. Editing may also include changes to word choice and sentence structure.

Your Unique Writing Process

Although I just explained the generally accepted writing process, it is important for student-writers to realize that as they continue developing written documents, they are best served by **learning how they write best**, or in other words, their **unique writing process**.

As a young writer, I never understood the benefits of a formal outline with all of its letters - capital, lowercase, roman numeral. And if I had an A, did I have to have a B? And what did the A and B even mean in practical terms? In other words, a formal outline was not part of my process. I also soon learned that my beginnings rarely worked. Until I completed the whole of what I had to say, the beginning didn't entirely fit. Therefore, I knew at the end of my writing process, I would have to take time to go back and revise the beginning heavily until it fit the rest of the document.

That's what I mean about your unique writing process. What works for you? What does not? I'm open to your exploration of this as wildly as you'd like it to be with one caveat - I will not accept that waiting until the last minute and then turning out a work of brilliance is your unique writing process. The process must allow for some planning, some drafting, some revising, and some editing. How you piece together that particular "process" is up to you.

As you continue reading this chapter, be thinking about your unique writing process. Feel comfortable questioning the concepts in the chapter and whether they are relevant to your own process. Feel comfortable asking your instructor about their process and sharing your own thoughts and experiences as well.

GENERAL WRITING PROCESS TIPS

1. Allow your writing process to grow and change. Like your taste buds change over time, so too may your writing strengths and subsequently your writing process. For example, a new writer may rely heavily on outlining, but after outlining many writing tasks, structure may come more naturally to the writer, and a different strategy may serve that writer better.
2. Think about writing tasks you've completed recently. Once you read the assignment description, what did you do next? Explore his question with a freewriting exercise. Set a timer for three minutes, and don't stop writing. Walk yourself through all of the work you completed from the moment you read the assignment description to the moment you submitted the final document. After you do so, think critically about the work you completed in that writing assignment. What would you like to change about your writing process moving forward? What techniques would you like to experiment with to further understand and improve your unique writing process?
3. Talk to a friend, family member, colleague, or instructor about their writing process. What steps do they take? What has not worked for them? Consider speaking to multiple people, maybe 3-5. Ask them the same questions, and compare the differences in their responses. Are there any trends of strategies that work well? Trends of strategies that are not as successful? Are there any strategies you have not tried that you'd like to try in the future?

What is your rhetorical situation?

One of the most crucial steps early in the writing process is to first understand your rhetorical situation - or what it is you are setting out to do. It is important that writers identify the audience and the purpose of a piece of writing before they begin developing it. For instance, this text is for students of technical writing. What if we did not take that audience into consideration before we started writing? What if the text had instructions for completing science labs? What if it generally shared personal anecdotes about our lives that have nothing to do with teaching, learning, or technical writing?

Then, we would fail at identifying our rhetorical situation.

PURPOSE AND AUDIENCE

To identify the rhetorical situation, or in other words, the purpose and audience of a piece of writing, writers should ask the following questions:

- Why am I writing this document? (PURPOSE)
- To whom am I communicating? (AUDIENCE)

Students often say they are writing for whomever is grading their work at the end. However, technical writing is different. In technical writing, writers develop documents for their colleagues, clients, supervisors, the government, funding bodies, and so on. Technical writing is a form of professional writing, and students should keep that goal of writing professionally in mind as part of their purpose.

Likewise, the goal of writing professionally should help student-writers consider their audience. Technical documents should be flawless; the audience expects that. I know of hiring managers who reject job applicants based on a single error on their cover letter or resume. That may seem harsh, but keep in mind that the hiring manager is evaluating a candidate for a job that requires many

tasks. Attention to detail is likely to be expected, so if a candidate cannot offer a high attention to detail for two pages, then how successful will the candidate be at performing attention to detail every day in many tasks?

GENERAL RHETORICAL SITUATION TIPS

1. To begin identifying your rhetorical situation, ask yourself: What is my purpose? Is your purpose to inform? To persuade? Likewise, whom is your audience? Are you writing a report for your superiors? Are you sending an email to a colleague? Are you developing promotional materials for possible clients? Consider the concepts of purpose and audience together to better understand your rhetorical situation, so that you can move through the writing process in a way that serves the purpose and audience.
2. Think of a writing task you have to complete either for this class, for another course, or for your work or personal life. Set a timer for five minutes, and write down everything you can think of about your purpose and your audience. How might this information help you move forward with that writing task?
3. Reread your writing assignment description until you understand it. If you do not understand it, ask a classmate for clarification? If you still do not understand, ask your instructor for clarification. Until you fully understand what a writing assignment is asking you to achieve, you cannot understand your rhetorical situation. And without an understanding of your rhetorical situation, you will struggle through the writing process and in completing the task to a high quality.

Prewriting as Part of the Process

Prewriting is an essential activity for most writers. Through robust prewriting, writers generate ideas, explore directions, and find their way into their writing. When students attempt to write a document without developing their ideas, strategizing their desired structure, and focusing on precision with words and phrases, they can end up with a “premature draft”—one that is more writer-based than reader-based and, thus, might not be received by the audience in the way the writer intended.

In addition, a lack of prewriting can cause students to experience writer’s block. Writer’s block is the feeling of being stuck when faced with a writing task. It is often caused by fear, anxiety, or a tendency toward perfectionism, but it can be overcome through prewriting activities that allow writers to relax, catch their breath, gather ideas, and gain momentum.

GOALS OF PREWRITING

- Contemplating the many possible ideas worth writing about.
- Developing ideas through brainstorming, freewriting, and focused writing.
- Planning the structure of the document overall so as to have a solid introduction, meaningful body components, and a purposeful conclusion.

Prewriting Activities

Quick strategies for developing ideas include brainstorming, freewriting, and bubble mapping. These activities are done quickly, with a sense of freedom, while writers silence their inner critic. In her book *Wild Mind*, teacher and writer Natalie Goldberg describes this freedom as the “creator hand” freely allowing thoughts to flow onto the page while the “editor hand” remains silent. Sometimes, these techniques are done in a timed situation (usually two to ten minutes), which allows writers to get through the shallow thoughts and dive deeper to access the depths of the mind.

BRAINSTORMING

Brainstorming begins with writing down or typing a few words and then filling the page with words and ideas that are related or that seem important without allowing the inner critic to tell the writer if these ideas are acceptable or not. Writers do this quickly and without too much contemplation. Students will know when they are succeeding because the lists are made without stopping.

FREEWRITING

To freewrite, writers must silence the inner critic and the “editor hand” and allow the “creator hand” a specified amount of time (usually from 10 to 20 minutes) to write nonstop about whatever comes to mind (Elbow). The goal is to keep the hand moving, the mind contemplating, and the individual writing. If writers feel stuck, they just keep writing “I don’t know what to write”

until new ideas form and develop in the mind and flow onto the page. Focused freewriting entails writing freely—and without stopping, during a limited time—about a specific topic. Once writers are relaxed and exploring freely, they may be surprised about the ideas that emerge.

BUBBLE MAPPING

Bubble mapping begins with writing down the central idea or concept of your writing task then circling it. Draw a line from that word or concept to other concepts connected to it in some way. Circle those secondary concepts. Then, draw a line from the secondary concepts to additional concepts or ideas. Continue expanding the ideas and concepts until the page is full of mapped circles and ideas. You may then use the concepts and ideas to develop keyword searches in the research step of the process or to develop a general structure for the written document itself.

These are just a few prewriting activities student-writers might try to develop ideas for a writing task. Consider others by searching online or talking with friends and colleagues about their writing processes.

It should also be noted that a prewriting activity that is crucial is research, which will be discussed more in the next section. If you struggle with the prewriting activities, it may be because you have not done enough research to explore the concepts to an appropriate depth. Think of the prewriting exercises above as recursive with researching strategies.

If you struggle with prewriting activities, complete more research. If you struggle with research, complete more prewriting activities.

Structure Techniques

Before writing a first draft, writers find it helpful to begin organizing their ideas into chunks so that they (and readers) can efficiently follow the points as organized in an essay. There are many ways to plan an essay's overall structure, including mapping and outlining.

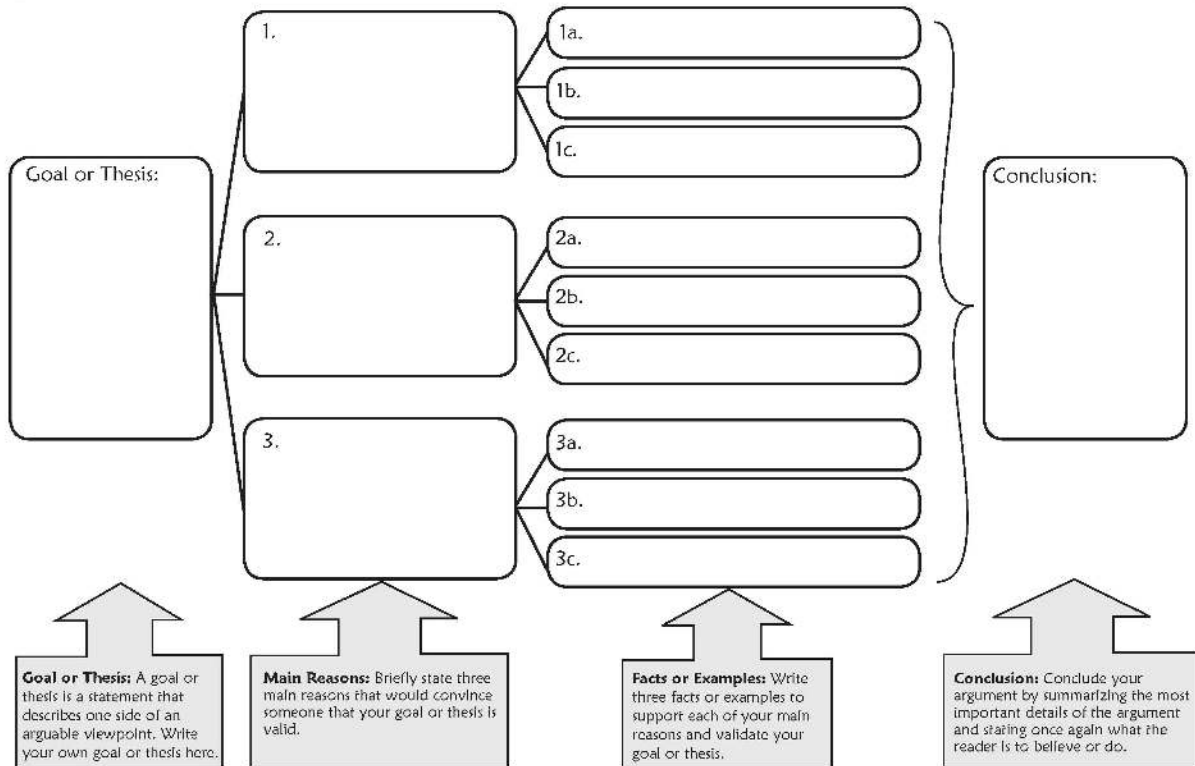
Mapping

Mapping (which sometimes includes using a graphic organizer) involves organizing the relationships between the topic and other ideas. The following is example (from ReadWriteThink.org, 2013) of a graphic organizer that could be used to write a basic, persuasive document such as a proposal or report:

Name: _____

Date: _____

Persuasion Map



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Outlining

Outlining is also an excellent way to plan how to organize a document. Formal outlines use levels of notes, with Roman numerals for the top level, followed by capital letters, Arabic numerals, and lowercase letters. Here's an example of an outline for a report that discusses the importance of technical writing for engineers.

1. Introduction

1. Background information about entry level positions, general engineering tasks, and a summary of the kinds of writing entry level engineers complete.
2. Thesis: While securing an entry level engineering position may be relatively simple, to advance within the career field, an engineer must possess strong writing skills particularly in writing reports, proposals, and internal communications.

2. Body Paragraphs

1. Main Point: Entry level engineers complete different writing tasks than senior engineers.
 1. Supporting Detail 1: Information from Source 1—Supporting Sentences
 1. Subpoint
 2. Subpoint
 2. Supporting Detail 2: Information from Source 2—Supporting Sentences
 1. Subpoint

2. Subpoint

2. Main Point: Senior engineers must write persuasive, complete reports and proposals.

1. Supporting Detail 1: Information from Source 3—Supporting Sentences

1. Subpoint

2. Subpoint

2. Supporting Detail 2: Information from Source 4—Supporting Sentences

1. Subpoint

2. Subpoint

3. Main Point: Senior engineers must communicate effectively within their organization, especially with subordinates and supervisors.

1. Supporting Detail 1: Information from Source 5—Supporting Sentences

1. Subpoint

2. Subpoint

2. Supporting Detail 2: Information from Source 6—Supporting Sentences

1. Subpoint

2. Subpoint

3. Conclusion (Revisit thesis).

Informal outlines can be created using lists with or without bullets. What is important is that main and sub-point ideas are linked and identified. An informal outline might look something like this:

Introduction - Background information about entry-level positions, general engineering tasks, and a summary of the kinds of writing entry-level engineers complete.

Thesis: While securing an entry-level engineering position may be relatively simple, to advance within the career field, an engineer must possess strong writing skills particularly in writing reports, proposals, and internal communications.

Main Point 1: Entry-level engineers complete different writing tasks than senior engineers. (Include a few supporting details).

Main Point 2: Senior engineers must write persuasive, complete reports and proposals. (Include a few supporting details).

Main Point 3: Senior engineers must communicate effectively within their organization, especially with subordinates and supervisors. (Include a few supporting details).

Conclusion (Revisit thesis).

GENERAL PREWRITING TIPS

1. Use 10 minutes to freewrite with the goal to “empty your cup”—writing about whatever is on your mind or blocking your attention on your classes, job, or family. This can be a great way to help you become centered, calm, or focused, especially when dealing with emotional challenges in your life.
2. Before each draft or revision of assignments, spend 10 minutes freewriting an introduction and a thesis statement that lists all the key points that supports the thesis statement. Use the key points to develop body paragraphs to support your thesis.
3. Create a metacognitive, self-reflective journal: Freewrite continuously (e.g., 5 times a week, for at least 10 minutes, at least half a page) about what you learned in class or during study time. Document how you used your study hours this week, how it felt to write in class and out of class, what you learned about writing and about yourself as a writer, how you saw yourself learning and evolving as a writer, what you learned about specific topics. What goals do you have for the next week?
4. For each of the writing tasks you have assigned to you in the next couple weeks, attempt each of the Prewriting Activities and Structure Techniques here. Which work best for you? Does the success of the strategy vary by the task's purpose and audience? How will the knowledge you've gained shape your unique writing process?

Researching as Part of the Process

Unlike quick prewriting activities, researching is best done slowly and methodically and, depending on the project, can take a considerable amount of time. Researching is exciting, as students activate their curiosity and learn about the topic, developing ideas

about the direction of their writing. The goal of researching is to gain background understanding on a topic and to check one's original ideas against those of experts. However, it is important for the writer to be aware that the process of conducting research can become a trap for procrastinators. Students often feel like researching a topic is the same as doing the assignment, but it's not.

RESEARCHING PITFALLS

The two aspects of researching that are often misunderstood are as follows:

1. Writers start the research process too late so the information they find never really becomes their own setting themselves up for way more quoting, paraphrasing, and summarizing the words of others than is appropriate for the 70% one's own words and 30% the words of others ratio necessary for college-level research-based writing.
2. Writers become so involved in the research process that they don't start the actual writing process soon enough so as to meet a due date with a well written, edited, and revised finished composition.

Being thoughtful about limiting one's research time—and using a planner of some sort to organize one's schedule—is a way to keep oneself on task with research. The value of research should not be underestimated in the writing process! Often, it's the students who take the time to research effectively that develop the most appropriate documents for their rhetorical situations.

I can't overstate this.

Student-writers who prioritize research usually produce the best documents.

I often also hear from student-writers that they visited the library in a former English course, and they know how to use the library. I have an advanced degree that required extensive research, and every time I have a research task, I still speak to a librarian. They are the experts! And they are available to you at no cost. I cannot urge you enough - **every writing task you have in your academic and professional life, ask a librarian for advice!**

GENERAL RESEARCHING TIPS

1. Schedule an appointment to discuss your writing assignment with a librarian. Appointments can be face-to-face, online, or over the phone. Or you can email a librarian (remember to develop an effective professional email as described in this text). Share the assignment description with the librarian, and be clear about what kinds of help you'd like. You might ask questions such as: What are the best databases for me to search? What electronic books or movies are available about my topic? What keywords will yield the best results? Be sure to thank the librarian for their time!
2. Consider unexpected forms of research. Student-writers often look to online searches for research, but what about other options? Some technical writing tasks in particular rely on research that cannot be found in databases or books. Let's say, for instance, your writing task is to develop a set of instructions. You could look to personal blogs from people in the career field you're researching. Perhaps they have written a blog post with a similar set of instructions. Or you could watch Youtube videos for examples of instructions. You can also interview people to ask for their insight. A word of caution though - when looking at how others have written documents, **take extra care not to model your document similarly.** Their work is copyrighted; you must honor copyright, or you could lose your job or worse. In the academic setting, academic dishonesty consequences might apply as well.
3. Cite your information as you research and write. Often, student-writers will wait until late in their writing process to figure out citations. That is a flawed approach though because you could miss a citation or several, also leading to issues and consequences of academic dishonesty. An annotated bibliography is a great way to keep track of the sources you research and why you think they might be valuable to your writing. However, you could develop a less formal note-taking strategy.

Drafting as Part of the Process

Once students have spent time and effort preparing to write by gathering ideas, researching concepts, and organizing content, they are ready to begin drafting.

Many instructors recommend a practice that is referred to as fast drafting, in which the student writes under the pressure of a time limit, much like freewriting. This allows students to create without their inner critic undermining their momentum. It empowers the “creator hand” to work with agency, while silencing the “editor hand.”

To do fast drafting, students first need to set up the conditions that will help in their success and is appropriate to their abilities to focus. The following are easy steps writers follow:

- Create a block of time in which there are no interruptions. This should be a realistic length, given a writer's ability to focus, from 10 minutes at a time to 75 minutes or longer.
- Decide on the goal: Write a paragraph in 10 minutes, 2 pages in 1 hour, or a complete document in 1 hour and 15 minutes.

For some, 75 minutes is a good length, but some students find that after 30 minutes they can no longer concentrate. If that is the case, they should plan on several shorter sessions of distraction-free time.

During this time, students should turn off their phones and social media, let the dog outside, and ensure that it's time for children to be asleep. **This needs to be quiet, concentrated time.**

Students need to let go of their worries about good and bad ideas. There will be time to rethink, rephrase, and rework during the revision process.

GENERAL DRAFTING TIPS

1. Following drafting, writers tend to revise and edit their work. The revision and editing processes are particularly critical in professional writing as communications are expected to be error-free. Because of the complexity and importance of revision and editing, this text features an entire chapter on those steps in the process. Please review that in detail when writing documents and then also as a resource when you revise and edit them.

Further Resources

Purdue University's Online Writing Lab (OWL) provides free writing resources and instructional material. Visit [The Purdue OWL](#) (Purdue U Writing Lab, 2019).

For further information on the steps of the writing process and tips for each of those steps, read "[The Writing Process](#)" by Ali Hal ([Daily Writing Tips](#) website, 2019).

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3: Strategies for Revising and Editing

Chapter Objective

- Demonstrate strategies for revising and editing technical documents.

Technical writing must be concise. That means all words and visuals included are necessary, and nothing that is necessary is omitted. Revising and editing technical writing for clarity and conciseness is a true skill that you should work to develop in this course and as you continue developing your writing abilities in the future. For that reason, this chapter explores revising and editing strategies in detail.

When you look at all the ways you can review (looking for potential problems) and then revise (fixing those problems), you may be put off by how tedious and time-consuming it is. But the process can become second nature rather quickly. If you spend time analyzing writing in the ways outlined here, the way you write and the way you review what you write will change. You'll start operating—and not even be fully aware of it—with these ideas in mind.

Revision as Part of the Process

Revision literally means to re-see or re-envision a piece of writing. Too often, student-writers may be so pleased to have completed an assignment that they skip revision and instead jump to editing. Or, student-writers may be too busy and overwhelmed with life to give revision the attention it deserves.

Trust this fact, though - *good writing is made in the revision part of the process.*

No writer gets it right the first time.

That is why revision is so crucial.

THE HOUSE ANALOGY

I once had a writing professor in college who described the revision and editing steps of the writing process similarly to beautifying your home. Editing is akin to straightening the pictures on the shelves, perfecting the setting of the table, and making sure things are just so. Revision is all the other stuff - knocking down walls, remodeling rooms, replacing or moving furniture, or sometimes deciding to pick up and move altogether.

To skip revision is like putting a beautiful wreath on the front door of a construction zone. It will not succeed in the having the desired effect on your audience.

When you revise, you may have to re-frame the focus of your message. You may have to delete entire sections or majorly rewrite them. You may have to decide your topic is not working, which is a brave decision to make once you have already begun. In fact, *revision is about courage*. Have you ever heard the saying, you must kill your darlings? Even if you love something you've written or a piece overall, if it does not fit the rhetorical situation - in other words, if it does not meet the expectations of your assignment's purpose and honor the needs and expectations of your audience - you are best to kill it in revision.

Earlier in the chapter, I asked you to use critical analysis while researching. Therefore, research relies on your ability to critically analyze someone else's information. *Revision relies on your ability to critically analyze your own information.*

Practical Tools for Revision

Revision may involve **adding, rearranging, removing, and replacing (ARRR)** words, sentences, paragraphs, and ideas. Since writing is recursive, revising may require revisiting the prewriting stage.

ADDING

What else does the reader need to know? If the essay doesn't meet the required word or page count, what areas can be expanded? Where would further explanation help key points to be

more clear? This is a good time to go back to the prewriting notes and look for ideas which weren't included in the draft.

REARRANGING

Even when writers carefully plan their writing, they may need to rearrange sections for their essays to flow better.

REMOVING

Some ideas just don't work or don't contribute enough to the overall goal of the essay. Often when writers delete excess words or paragraphs, the ideas become clearer.

REPLACING

Vivid details help bring writing to life. Writers need to look for strong examples and quotable passages from outside sources to support their arguments. If particular paragraphs aren't working well, writers need to try rewriting them.

Check Contents

One of the most important ways you can review a rough draft is to check the contents. All the good transitions, good organization, and clear sentence structure in the world can't help a report that doesn't have the right information. Information in a report can be "wrong" in several ways:

- It can be missing altogether: for example, imagine that somebody wrote a report on "virtual communities" but never bothered to define what that term means. It would be tough going from the start of that report.
- It's there but not enough of it: take the same example—imagine that the writer only made a few vague statements about virtual communities. What was needed was at least a paragraph on the subject, if not a full-blown 3- or 4-page section.
- It's there but at the wrong level for the audience: It's also possible to pitch information at the wrong level in terms of readers' knowledge, background, or needs. Imagine that the writer did include a 3-page section on data caching but written for the product developer (an "expert" audience) when the report was really intended for nonspecialists.

Check the structure of your content

There are two ways of looking at the organization of information in a document:

- one involves looking at organizing the sequence of chunks of information to see if they are in the right order.
- Another has to do with organizing the levels of information. You can look at the sentences or paragraphs in a rough draft and see that some sentences go to a deeper level of discussion on the topic than others. Other sentences act like the framework upon which those deeper-level sentences depend. By looking at the structure in this way, you not only check its organization but also get ideas about how to improve the content of the text.

Check organization

If you have the right information in a report, at least you've got all the "right stuff" available for readers. However, it may still not be adequately organized—like when you've just moved and everything is a mess or still in boxes. You need two essential skills for reviewing the organization of a rough draft:

- **Identifying the topic of chunks of information at various levels.** To assess the organization of a string of paragraphs, you start by thinking of a word or phrase to identify the topic of each paragraph—in other words, get a handle on each one. Then you stand back from those words or phrases, considering whether they are in the right sequence. However, that's only one level. You can also look *within* an individual paragraph for its organization. In this case, you identify the topic of each sentence and consider the sequencing of those sentences.
- **Choosing the best sequence for chunks of information.** Once you know the topic of each of the chunks of information (at whatever level you are investigating), then you can decide whether they are in the right sequence. This decision involves knowing the common sequencing patterns.

When the aim is informative, you arrange information to ensure that readers understand the basics before moving onto the complicated, technical portion. When the aim is persuasive, you arrange things to maximize the persuasive effect on the readers, for example, by putting the strongest information first. Below are just a few possibilities.

- **Simple, basic** → **complex**: Another way to arrange units of a discussion is to begin with the simple, basic, fundamental ones and then move on to the more complex and technical.
- **Thing-at-rest** → **thing-in-motion**: Another organization pattern involves first describing the thing (as if in a photograph), then discussing its operation or process (as if in a video). This approach might work well for a discussion of a fuel-injection system.
- **Spatial movement**: — If you are describing the physical details of something, you might want to use some pattern of physical movement, for example, top to bottom, left to right, or outside to inside.
- **Temporal movement**: — One of the most common patterns is based on movement through time; arrange the discussion of events in relation to the temporal sequence.
- **Concept** → **application of the concept, examples**: A common organizational pattern is to discuss a concept in general terms then discuss an application of it. For example, another chapter in this book discusses proposals first conceptually then discusses examples of proposals.
- **Data** → **conclusions**: Another means of organizing information is to present data (observations, experimental data, survey results) then move on to the conclusions that can be drawn from that data. (And this pattern is sometimes reversed: present the conclusion first, then the data that supports it.)
- **Problem, question** → **solution, answer**: You can also organize information by first discussing a problem or raising a question then moving on to the solution or answer.
- **Simplified version** → **detailed version**: A useful way to explain technical matters to nonspecialists is to begin by discussing a simplified version of the thing, establish a solid understanding of it, then go right back and explain it all again but this time laying on the technical detail thick and heavy!
- **Most important** → **least important**: A more "rhetorical" method of organization is to begin with the most important, the most eye-catching, the most dramatic information first then move on to information that is progressively less so. (And this pattern can be reversed: you can build up to a climax, rather than start with it.)
- **Most convincing** → **least convincing**: — Similarly, you can start with the most convincing argument for your position—to get everybody's attention—then move on to less and less convincing ones. (This pattern can also be reversed: you can build up to your most convincing arguments.)

Note: Avoid mixing these approaches—for example, throwing out some data, then stating a few conclusions, and then doing this back and forth in a haphazard way. Keep the apples separate from the oranges!

Other Useful Strategies for Revision

There are many tips and tricks to help you move into a critical mind frame, so you are able to analyze your own writing. Here are a few that might help you, but as a continued exploration of further understanding your unique writing process, never be afraid to turn to search engines to ask such questions as: what are the best ways to revise? What are revising tricks that work? You could also look to social media and ask friends and colleagues about their writing process and the tools that work best for them!

REVERSE OUTLINING

In reverse outlining, the student reads through the written text and notes, noting down the topic of each paragraph. This way, the student can review if each paragraph has a clear focus and if each paragraph fits the overall organization of the paper. More on reverse outlining is available at *The Purdue Online Writing Lab (OWL)*, "[Reverse Outlining: An Exercise for Taking Notes and Revising Your Work](#)."

READING ALOUD

The act of reading one's essay aloud allows the student to "hear it" in the way a reader will. This act permits the writer to slow down and pay attention to all words in the essay. They get a sense of what a reader experiences, where words are clear and effective, and where they are weak. Poorly structured sentences are hard to read out loud, indicating that this would be a good place to start revising. This technique is a great precursor for receiving feedback from others. It also helps writers take responsibility for their writing.

How to Incorporate Feedback in Revision

Feedback is a wonderful tool in the revision process. Some instructors require student-writers give each other feedback; this is often referred to as peer review. Other instructors may give every student-writer feedback on their projects directly. This may involve a list of general concepts to work on or in-line comments handwritten on a printed document or typed using the comments feature of an electronic document. Still, student-writers may seek their own feedback by sharing their work with friends and family or visiting the campus writing/tutoring center or using an online tutoring program.

There is value in receiving different kinds of feedback. If you participate in peer review, that does not mean you would not benefit from sharing with a tutor. Likewise, if your parent, sibling, or partner often reads your work, that does not mean feedback from your classmates will not help you. Writing is subjective. That means that you will likely receive varying bits of advice from everyone who reads your work. But when you have a vast array of feedback, you can consider the trends that cannot be ignored. Additionally, you may find that some feedback resonates with you while other feedback does not. Give careful consideration to the feedback you receive, but also be brave enough to accept or reject as you see fit. Remember, though, revision relies on your ability to think critically about your own work.

GENERAL REVISION TIPS

1. Look back at a writing assignment you've completed in the past. Either reverse outline it or read it aloud. After doing so, consider what changes you might make if you were to revisit the assignment again. To improve the document: What could be added? What could be rearranged? What could be removed? What could be replaced?
2. Find a partner or group of classmates who are willing to meet weekly either face-to-face or online. During your meetings, read your writing assignments aloud, and give each other feedback on the content and language of the work. This should be a group you are committed to working with throughout the semester with the goal of helping each other grow as writers.
3. Explore tutoring services at your institution. Ask your instructor what face-to-face and online options are available to you. Make a point to submit your first writing assignment for feedback through one of the tutoring options. Once you do, you will know whether and/or how the services would be useful for you as you continue with your other writing assignments in the course.

Editing as Part of the Process

The process of editing is an ongoing activity for all writers. From the time they come up with a possible topic, they begin editing their ideas and directions in which to go. Once they begin to write, however, the editing takes a new path. Writers edit their own work by reading with fresh eyes and deciding if words need to be moved around or changed. They look for misspellings and awkward wording, and they rework for the sake of clarity. They check their work for typos and unintentional repetition of words and phrases, and they check all the grammar, spelling, capitalization, and punctuation.

QUESTIONS TO ASK

- Is this saying what I think it does?
- Am I being as clear as possible?
- Is there a more concise or artful way that I can express this important idea?

However, it is extremely important not to focus on editing too early in the writing process. If a student writes one sentence or paragraph and immediately begins to edit it, they may find that they lose the flow of their ideas. Suddenly, while focusing on how to spell a word, the whole rest of the essay gets put on hold. The inner editor or critic can inhibit writers, causing them to lose flow and to experience perfectionism and writer's block. Most instructors recommend that writers ban their critics until they have completed their first drafts and revision has taken place. This saves writers the wasted effort that comes with closely editing material that doesn't make the final cut anyway.

At later points during the document's creation, an outside set of editorial eyes may be needed—those of a peer, instructor, colleague, or formal editor—to help move that piece of text toward excellence. In addition to the big-picture structural or information-based considerations, the need for a comma or better word may be the focus of editing efforts. Good editing allows the writer to submit the written creation with the confidence that it is the best it can be and stands as something to truly be proud of.

Strengthen topic sentences and overview

One of the best things you can do is go back through a rough draft and check to see if you can insert topic sentences and overviews at key points. When we write, we're not normally sure exactly where a paragraph or section is going in terms of its content and logic. Once it has "gotten there," it is often necessary to go back to the beginning and add some sort of overview or modify what's already there to make the overview clearer. Readers need to know where they are going in a report, what's coming up next, and for that matter where they've just been.

Having an overview in a report is like having a map when you're in a new city. Topic sentences and overviews offer a perspective on what's where: the topic, the subtopics, the purpose of the upcoming discussion, its relation to the previous section and to the document as a whole. (Now some of this involves transitions, which is the next element to review for.)

Strengthen coherence with transitions

You can have the right information in a report and have it organized properly, but something important can still go wrong. Readers can miss the "flow" of the ideas, have a hard time sensing how the chunks of information are related or connected to each other. What readers need is continuous guidance—which is what you the writer provide. And what you use to provide that guidance is called transitions—various devices that help readers along through a document. There is (or certainly should be) a logic that connects every sentence in a document and that dictates a certain sequence to those sentences.

Transitional words and phrases show how a preceding chunk of information is logically related to a current or upcoming chunk of information—they look backward and forward at the same time. For example:

It may be 3 a.m., but I'm not sleepy a bit.

In this example, the transitional word "but" sets up a contrast between the topic of the first chunk of information (the lateness of the time) and the second chunk (my lack of sleepiness). The logic is *contrastive* in this case, but there are other kinds of logic. For example:

My Peugeot has almost 112,000 miles on it. It still runs great!

In this example, the transitional word is "it," a simple pronoun. Here, the logic is *additive*: I'm simply adding one related thought onto another. These examples are obviously stupidly simplistic—but when you get into a complex technical topic and the chunks are whole paragraphs of information, transitions really begin to matter.

✓ Example: Adding transitions for clarity



Revising problems with transitions. The problem version reads like a series of disconnected statements floating in space. The revised version adds transitional devices to pull the statements together in a "coherent," flowing discussion.

It takes a surprising amount of brain power to construct a transition: you must know the topic of the preceding chunk of information, the topic of the current or upcoming one, the logic that connects them. Then, with that in mind, you must pick out the transitional device that you think will best guide the reader across that juncture between the two chunks of information. Scholars have identified a half-dozen or so kinds of transitional devices (but it seems like there ought to be more...):

Dynamic transitional words and phrases

Another category of transitional words and phrases words that are echoed from a preceding section or that forecast keywords in the next section.

- **Pronouns**—Pronouns like *it*, *this*, or *that*—occurring alone without a following noun—are the weakest of transitional devices. In the following examples, notice how effective they can be when combined with a clarifying noun.
- **Summary transitions**—At key points in writing, you'll see a phrase, sometimes accompanied by a pronoun, that summarizes the preceding discussion. In the same sentence, a statement will be made about that summary phrase—typically this phrase will kick off the upcoming discussion, and do so in a way that the reader sees the connection between what came before and what is coming next. In this example this mismatch summarizes the idea expressed in the preceding discussion:

✓ Example: Summary transitions



Summary transitions. Notice how the underlined summary transition pulls together the idea expressed in the preceding discussion.



Notice how the underlined summary transition pulls together the idea expressed in the preceding discussion.

- **Review-preview transitions**—The most powerful transitional device you can use is the type that summarizes the topic of the preceding chunk of information into a short phrase, does the same thing for the upcoming chunk of information, finds the appropriate transitional word, and then throws all these elements together into a sentence or two. You'd use this device at those major bridge points in reports, between large chunks of information—for example, between one 7-page section and a 9-page section that follows it.

✓ Example: Review-preview transitions



Notice how the topic of the preceding section Coring and core analysis techniques is echoed; then transitional material However, a much faster and less expensive... introduces the topic for this next section wire-line logging analysis. (From a report written in 1983.)

Check paragraph length

One last way to review your rough draft at the structure level is to check how you have defined the paragraph breaks. Paragraphs are odd creatures—some scholars of writing believe they don't exist and are just arbitrary breakpoints that writers toss in whenever and wherever they damn well please. Sorry—in technical writing, the paragraph is a key player in the battle for clarity and comprehension. Although not always possible, paragraphs should occur where there is some shift in topic or subtopic or some shift in the way a topic is being discussed.

On a single-spaced full page of writing, look for at least one to four paragraph breaks—there's nothing magical about that average so don't treat it as if it were law. Just take a second look at those long paragraphs, and check for the possibility of paragraph breaks.

Sentence-Level Editing

You have probably heard plenty of times that writing should be lean, mean, clear, direct, succinct, active, and so on. But what does that really mean, what do sentences look like that are not that way, what sorts of things are wrong with them, and how do you fix them?

Sentences do have ways of becoming flabby, redundant, wordy, unclear, indirect, passive, and just plain old hard to understand. Even so, they remain grammatically "correct"—all their subjects and verbs agree, the commas are in the right places, the words are spelled correctly. Still, these sentences are far more difficult to read than any sentence with just a comma problem.

The following sections can't pretend to cover all of the ways sentences can go bad at this higher level, but they do cover seven of the most common problems and show you ways of fixing them. And knowing these seven will probably enable you to spot all the others we have not trapped and labeled yet.

Edit week "be-verbs"

One of the big culprits that cause weak, indirect writing is the use of the *be* verb as the main verb. That's not to say that the *be* verb should never be used as the main verb, just that there are cases where doing so makes for weak writing. Look at the following examples of this problem—they are not that hard to spot. Then look at the revisions—notice how a noun (often one ending in *-ion*) has been converted into a verb. That's how to fix this problem—find a noun to convert into an active verb, and then rebuild the sentence upon it!

Problem:

Edit:

The contribution of Quality Circles is mostly to areas of training and motivating people to produce higher quality work.	Quality Circles contribute to the training and the motivating of people to produce high quality work.
Measurement of temperature is done in degrees of Fahrenheit or Celsius, and its indications are by colored marks on the outside of the thermometer.	Temperature is measured in degrees of Fahrenheit or Celsius and is indicated by colored marks on the outside of the thermometer.
The beginning of the clonic phase is when the sustained tonic spasm of the muscles gives way to sharp, short, interrupted jerks.	The clonic phase begins when the sustained tonic spasm of the muscle gives way to sharp, short, interrupted jerks.
During speech, the generation of sound is by vocal chords and the rushing of air from the lungs.	During speech, sound is generated by the vocal cords and rushing air from the lungs.
The response of the normal ear to sounds is in the audio-frequency between about 20-20,000 Hz.	The normal ear responds to sounds within the audio-frequency range of about 20-20,000 Hz.

Edit noun stacks

Another common sentence-style problem involves piling up nouns in a phrase. The effect is similar being hit in the head with a large blunt object. Again, take a look at the examples of this problem, which are also not hard to spot, and at the revisions. When you revise a "noun stack," you unpack or unstack the nouns into verbs, clauses, and phrases:

Problem:	Edit:
There is a growing awareness of organizational employee creative capacity .	Awareness of the creative capacity of employees in all organizations is growing.
Position acquisition requirements are any combination of high school graduation and years of increasingly responsible secretarial experience .	To qualify for the position, you'll need to be a high school graduate and have had increasingly responsible secretarial experience.
The Quality Circle participation roles and tasks and time/cost requirements of Quality Circle organizational implementation will be described.	The tasks of the participants in Quality Circles and the time and cost requirements involved in the implementation of Quality Circles will be discussed.
Proper integrated circuit packaging type identification and applications are crucial to electrical system design and repair.	Identifying the proper type of packaging for integrated circuits is crucial to the design and repair of electrical systems.
Cerebral-anoxia-associated neonatal period birth injuries can lead to epileptic convulsions.	Birth injuries associated with cerebral anoxia in the neonatal period can lead to epileptic convulsions.

Edit redundant phrasing

Redundancy in writing can come about from these three sources (but there are probably plenty more):

- **Wordy set phrases** (4- to 5-word phrases; these can be chopped to a 1- to 2-word phrases with no loss of meaning): for example, "in view of the fact that"—it can be reduced to "since" or "because."
- **Obvious qualifiers** (a word is implicit in the word it modifies): phrases like "anticipate in advance," "completely finish," or "important essentials" are examples of obvious qualifiers—we know that already!
- **Scattershot phrasing** (two or more synonyms are compounded): compounds like "thoughts and ideas" (what's the difference?) or "actions and behavior" (if there is a difference between these two, does the writer mean to use it?).

✓ Example: Editing wordy set-phrases

Wordy:

Edited:

in view of the fact that	since, because
at this point in time	then
it is recommended that	we recommend
as per your request	as you requested
in light of the fact that	since, because
being of the opinion that	I believe
in the near future	soon
during the time that	then
it would be advisable to	should, ought
due to the fact that	since, because
in this day and age	now, currently
for the reason that	since, because
in my own personal opinion	I believe, in my opinion
to the fullest extent possible	fully
in accordance with your request	as you requested
four in number	four
predicated upon the fact that	based on
inasmuch as	since, because
pursuant to your request	as you requested
in connection with	related to
take cognizance of the fact that	realize
it has come to my attention that	I have learned that
with reference to the fact that	concerning, about
with regard to	concerning, about
in close proximity to	near, close, about
to the extent that	as much as
in the neighborhood of	near, close, about
until such time as	until
has the ability to	can
that being the case	therefore

Edit weak expletives

If you were around for Watergate, the term "expletive" means something specific to you (in the tapes and transcripts of Nixon's staff, many expletives had to be "deleted"). In this context, however, the term expletive refers to variations of *there is* and *it is*. This is not to say that it is always wrong to use these phrases in sentences, but they can easily be misused or overused. Like redundant phrasing, they add more words than are needed, and more words blunt the meaning, creating a fog around the sense of a sentence.

✓ Example: Weak expletives & revisions

Problem:

When **there is** a very strong build-up at the front of the plane, **it is** what is known as a shock wave.

When **there is** decay of a radioactive substance, **there is** the emission of some form of a high-energy particle—an alpha particle, a beta particle, or a gamma ray.

Edit:

When a very strong build-up occurs at the front end of the plane, a shock wave occurs.

When a radioactive substance decays, some form of a high-energy particle—an alpha particle, a beta particle, or a gamma ray—is emitted.

It is the results of studies of the central region of the M87 galaxy that have shown that **there are** stars near the center that move around as though **there were** some huge mass at the center that was attracting them.

Recent studies of the central region of the M87 galaxy have shown stars near the center moving around as though some huge mass at the center were attracting them.

Edit weak passive-voice sentences

One of the all-time worst offenders for creating unclear, wordy, indirect writing is the passive-voice construction. It's easy enough to convert a sentence from active voice to passive voice, and back again:

Passive:	Active:
The report was written by the student.	The student wrote the report.

However, the passive voice can be a shifty operator—it can cover up its source, that is, who's doing the acting, as this example shows:

Passive:	Active:
The papers will be graded according to the criteria stated in the syllabus. (<i>Graded by whom though?</i>)	The teacher will grade the papers according to the criteria stated in the syllabus. (<i>Oh! that guy...</i>)

(It's this ability to cover the actor or agent of the sentence that makes the passive voice a favorite of people in authority—policemen, city officials, and, yes, teachers. But save that for some other course!) At any rate, you can see how the passive voice can cause wordiness, indirectness, and comprehension problems.

Passive:	Active:
Your figures have been reanalyzed in order to determine the coefficient of error. The results will be announced when the situation is judged appropriate. (<i>Who analyzes, and who will announce?</i>)	We have reanalyzed your figures in order to determine the range of error. We will announce the results when the time is right.
Almost all home mortgage loans nowadays are made for twenty-five years. With the price of housing at such inflated levels, those loans cannot be paid off in any shorter period of time. (<i>Who makes the loans, and who can't pay them off?</i>)	Almost all home mortgage loans nowadays are for twenty-five years. With the price of housing at such inflated levels, homeowners cannot pay off those loans in any shorter period of time.
After the arm of the hand-held stapler is pushed down, the blade from the magazine is raised by the top-leaf spring, and the magazine and base. (<i>Who pushes it down, and who or what raises it?</i>)	After you push down on the arm of the hand-held stapler, the top-leaf spring raises the blade from the magazine, and the magazine and base move apart.
However, market share is being lost by 5.25-inch diskettes as is shown in the graph in Figure 2. (<i>Who or what is losing market share, who or what shows it?</i>)	However, 5.25-inch diskettes are losing market share as the graph in Figure 2 shows.
For many years, federal regulations concerning the use of wire-tapping have been ignored . Only recently have tighter restrictions been imposed on the circumstances that warrant it. (<i>Who has ignored the regulations, and who is now imposing them?</i>)	For many years, government officials have ignored federal regulations concerning the use of wire-tapping. Only recently has the federal government imposed tighter restrictions on the circumstances that warrant it.

Don't get the idea that the passive voice is always wrong and should never be used. It is a good writing technique when we don't want to be bothered with an obvious or too-often-repeated subject and when we need to rearrange words in a sentence for emphasis. Notice that the passive voice is used correctly in some of the examples above.

Edit subject-verb mismatches

In dense, highly technical writing, it's easy to lose track of the real subject and pick a verb that just does not make sense. The result is a noun physically not able to do what the verb says it is doing, or some abstract thing performing something nitty-gritty real-world action. Here are some examples and their revision:

Problem:	Revision:
The causes of the disappearance of early electric automobiles were devastating to the future of energy conservation in the U.S.	The disappearance of early electric automobiles destroyed the future of energy conservation in the U.S.
Presently, electric vehicles are experimenting with two types of energy sources.	Presently, research on electric vehicles involves two types of energy sources.
Consequently, the body is more coordinated and is less likely to commit mental mistakes .	Consequently, workers will be more coordinated and commit fewer mental errors.

Edit sentence-length problems

When you are writing about highly technical subject matter, it is easy to construct long sentences that become hard to read. The military standard for many years has been 17 words per sentence. Other standards allow up to 25 words per sentence. It's not that sentences can't be significantly longer or shorter than these standards—it's just that the average ought to stay somewhere within the 17- to 25-word range. However, any sentence over 35 or 40 words probably needs to be broken up. And while an occasional short sentence (say, 5 to 10 words) can be very effective, lots of them can cause writing to be choppy and hard to follow.

Breaking up overly long sentences is fun—it's a lot like throwing things away or tearing something down (it appeals to our destructive urges). Take a look at these examples, before and after:

Problem:	Revision:
In order to understand how a solid, liquid or gas can be made to give off radiation in the form of a laser beam, one must understand some of the basic theory behind laser light.	A solid, liquid or gas can be made to give off radiation in the form of a laser beam. Understanding this process requires some knowledge about the basic theory behind laser light.
Laser beams, which have many properties that distinguish them from ordinary light, result from the emission of energy from atoms in the form of electromagnetic waves whose range in most laser beams is 10^{-3} to 10^{-7} meters.	Most laser beams are just beams of light but which have properties that distinguish them from ordinary light. Laser beams result from the emission of energy from atoms to form of electromagnetic waves. The range of electromagnetic waves found in most laser beams is 10^{-3} to 10^{-7} meters.

Precision of Words

Sometimes, in early drafting, writers fall back on words that are vague or boring. For example, consider sentences starting with “This” or “It.” Unless the previous sentence made it totally clear what the “This” or the “It” is, the reader will be confused. For example,

Instead of the following: “This is an exciting point in the movie.”

How about this?

“The surprise ending of the movie is exciting.”

The same thing goes for starting a sentence with the personal pronoun “It.” See the two sentences below.

Instead of this: “It caused the audience to break into applause.”

Define the “It” like this. “The final scene caused the audience to break into applause.”

To note, this kind of sentence structure is essentially using words as “filler” to take up space within a sentence and creates a sort of vagueness for the reader who will wonder what the subject of the sentence might be. Sometimes such sentence construction is fine, but writers use it too often.

In addition, many students believe that using one of the following words adds an element of description or accentuation to their phrases; however, these specific words are overused by writers and should be given special consideration:

- Really
- Very
- Just

Trick #1: If writers conduct a global search for each of the three words above, they can use them as “red flags” to alert themselves to the perfect place to try to find a better way of saying what they want to say. How does one improve vocabulary? Use a thesaurus and read more.

What’s a word for “very scary”? Frightening.

What’s another way of saying “really hungry”? Famished.

On another note: The phrase “a lot” has generally outrun its usage by the time one reaches college. Generalizations are better avoided, as they are vague and imprecise. Academics prefer statistics and specific, verifiable statements.

Repetition of Words and Phrases

The unintentional repetition of words and phrases is one of the most common oversights writers make. They all have their go-to words—ones that come naturally to them when they speak and write. The general advice is for writers to use a thesaurus to find a synonym for the overused word. However, what if there isn’t a synonym for the word? Look at the paragraph below:

This past summer, I had the opportunity to intern at Sea Life Park. Sea Life Park is known for being an exciting destination for locals and tourists to experience the wonders of sea life from throughout the Pacific. At the park, green sea turtles, or Honu, thrive and even continue to have babies. In addition, dolphins and the Hawaiian monk seals provide visitors with the ability to view these majestic creatures but also learn about their significance within the Pacific Ocean ecosystem and their importance within island culture.

This writer’s paragraph isn’t bad. However, “Sea Life Park” is repeated twice in the first two sentences. In addition, in sentence three, he begins with “At the park” followed by another “sea.” He defended his construction and word choice by stating, “But there isn’t another word for ‘Sea Life Park’.” Indeed, the “find a synonym” strategy would not work in this case just like there isn’t a synonym for “parking lot” or “ice cream sundae.” So another trick has to be used.

Trick #2: If a synonym doesn’t exist, remove the repetitive words and combine the sentences.

This past summer, I had the opportunity to intern at Sea Life Park, known for being an exciting destination for locals and tourists to experience the wonders of sea life from throughout the Pacific.

Replacing the repeated phrase with a comma before “known” does the trick. But wait. The phrase “sea life” appears again a little later in this same sentence. Now what?

Trick #3: Use your creativity to craft an original way of saying the same thing. Instead of “Sea Life Park,” call it “the world-renowned marine playground committed to protection, preservation, and education” and the writer has not only fixed the repetition issue but also introduced wonderfully original prose.

Trick #4: Writers should read everything out loud so the ear can catch what the eye might miss.

Voice, for writers, is something uniquely their own. It’s the way they put words together and involves their distinctive way of looking at the world. It makes one writer’s work stand out from that of others in its originality and authenticity. Key, though, is understanding that the development of one’s writing voice takes time and is ever changing. That’s what makes it so exciting.

Here are samples of sentences from two famous writers. Though both these writers lived in America at approximately the same time, their “voices” are very different. What are the elements that make these sentences so different?

It was very late and everyone had left the cafe except an old man who sat in the shadow the leaves of the tree made against the electric light. In the daytime the street was dusty, but at night the dew settled the dust and the old man liked to sit late because he was deaf and now at night it was quiet and he felt the difference. (Ernest Hemingway, “A Clean, Well-Lighted Place.”)

Alive, Miss Emily had been a tradition, a duty, and a care, a sort of hereditary obligation upon the town, dating from that day in 1894 when Colonel Sartoris, the mayor—he who fathered the edict that no woman should appear on the streets without an apron—remitted her taxes, the dispensation dating from the death of her father on into perpetuity. (William Faulkner, “A Rose for Emily.”)

Style: Style is much broader than voice. Some writers have a writing style that's complex and packed with personification, metaphor, and imagery. Other writers have a more straightforward style with more simplicity or directness.

Grammar: The Grand Dame

According to Merriam-Webster, grammar is a system of rules that defines the structure of a language. For most of the USA, that system is Standard American English (SAE). Grammar is the way people use language rules and how words are used in a certain order to form phrases and clauses that relay a meaning for readers. The term “syntax” (the art of sentence structure) goes hand-in-hand with this.

Writers and speakers of any given language are aware that the rules related to grammar and usage of that language are largely appropriated not by formal instruction and memorization but informally and even subconsciously as one grows up listening, speaking and reading. So it's important to note that, as those who use language every day, students already have internalized essential grammar rules. Most college writers struggle with only one or two main grammar blind-spots, like how to correctly use a comma or semicolon. Once they master these, they can confidently edit their own work. (See [Chapter 16 Grammar, Usage, and Punctuation](#).)

Language Usage

Writing is all about decision-making. Writers need to ask, “How should I craft this sentence, this paragraph? Given the effect of two possible punctuation marks, which one should I use? What is the effect of this word instead of that one, so similar in meaning but carrying a more negative connotation?” In this way, writing is about making endless choices. (See [Chapter 16 Grammar, Usage, and Punctuation](#).)

When it comes down to it, writers within the academic setting do best when they acknowledge that what they are trying to produce is reader-based prose—written content that informs the reader of the essential message the writer is wanting to convey and also does so in a manner that is engaging and well-received.

On this note, it is important that the reader is able to follow the path of words, images, and meaning that the writer is wanting to create. Readers can become distracted and disinterested by awkward word choices, unintentional repetition, and incorrect spelling, grammar, word usage, and punctuation.

Spelling

All writers have words that give them hassles, even if they have learned how to spell those words. Does the word “essence” end with a “ce” or “se”? Does the word “privilege” spend any time on the “ledge”?

By the time one reaches college, one knows if spelling words correctly comes easily or not. And everyone knows that spell-checkers won't pick up every mistake. Writers need to make time for careful editing and proofreading throughout the writing process with an extra special proofreading session before turning in any assignment. In addition, though, here is a trick that can actually help one become a better speller, even into adulthood.

Trick #5: Create a running list of all the words that you tend to misspell. If you find another word, add it to the list. Every time you sit down to write, scroll through your list. You'll find that the spelling will become less of an issue.

Punctuation and Mechanics

Punctuation refers to the “symbols” writers use to help readers understand and process the information they wish to convey through the sentences they write. Somewhat like the notes and rests within a piece of music help musicians move quickly or slowly through a composition, punctuation marks are used for effect. (See [Chapter 16 Grammar, Usage, and Punctuation](#).)

Mechanics are established rules within a language system, and sometimes include the individual decisions writers make regarding the use of capitalization, underlining, italicizing, numbers versus numerals, the placement of specific punctuation marks, and how this differs throughout English-speaking countries (e.g., “towards” in the UK is often “toward” in the US, and periods and commas always go inside quotation marks in the U.S. but not in Canada).

GENERAL EDITING TIPS

- Search your draft using the “find” tool for words like “it,” “this,” “really,” “very,” “just” or “you.” See if you can find ways to eliminate these words to make your language sharper, more precise.

- Read the sentences of your document in backward order, starting with the last sentence, and then the one above it, all the way up to the first sentence in the document. This is a great way to find fragments or to hear where the language is repetitive or unclear.
- Make an appointment with a tutor or your instructor. Ask for help doing a close editing of two paragraphs with an eye to learning how to identify typical errors in your work, and then apply your learning to the rest of your document.
- Technical documents must be concise. While editing, pretend that you have to pay a fee for every word on the page. If each word costs you \$1, would you keep every word you have, or would you find some that are not necessary and could be cut? What if the fee were \$5 per word? Would you find more to cut? Challenge yourself to trim away all unnecessary words to make the document as concise as possible.

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4: Ethical Considerations in Technical Writing

Chapter Objectives

- Define ethics.
- Explain what it means to be a professional of integrity.
- Demonstrate ethical writing responsibilities.
- Distinguish between ethical and legal responsibilities.
- Describe three approaches for examining the ethical nature of a decision.

The Importance of Ethical Responsibility

Safety, security, and confidentiality are foundational for establishing confidence with your audience. To build a relationship of trust, consumers rely on the reputation and identity an organization projects. When technical writers behave unethically, illegal, or immorally, all trust is lost. It is often difficult to regain it.

Ethical Considerations

Should we care about ethics in our lives, in our professions, and/or in our technical writing? Your goal is to understand why the answer to these questions is *yes*. When you write an ethical document, consider the following:

- Responsibility
- Integrity
- Trust
- Transparency
- Justice
- Equity
- Regulations
- Citations

Ethical Writing: Setting a Firm Ethical Tone

Ethics consists of the individual standards of behavior you exhibit in your personal and professional lives. It establishes the levels of honesty, empathy, trustworthiness, and other virtues that identify your personal behavior and your public reputation.

In your personal life, ethics sets norms for the ways in which you interact with family, friends, and colleagues. Ethical acts are generally considered voluntary and personal—often based on our perception or position on what is right or what is wrong. In industry, each employee has a choice in making an ethical or unethical decision. Whenever you think about the behavior you expect of yourself in your personal life and as a professional, you are engaging in a philosophical dialogue with yourself to establish the standards of behavior you choose to uphold. That is your ethical position.

Professional Ethics

Your success in a professional setting entails more than simply earning money and promotions. It may also mean treating stakeholders—employees, customers, clients—with honesty and respect. It may come from the sense of pride you feel about engaging in honest practices, not just because the law or policy demands it, but because you demand it of yourself. Thus, **professional ethics** guides the conduct by which technical writers abide by laws, regulations, and policies. Professional ethics means respecting the rights of stakeholders and the communities in which they live. Professional ethics centers on principles of good conduct through civil, social, economical, environmental, and lawful actions.

To see an example of a professional ethical code or mission statement, visit Johnson & Johnson and read "[Our Credo](#)" written by former chair Robert Wood Johnson. (Note: This link was viable at the time of publication; it may be inoperable now.)

Forbes provides [a list of companies recently deemed the most reputable companies for corporate responsibility in 2019](#) according to their standards and research. (Note: This link was viable at the time of publication; it may be inoperable now.)

In our professional lives, ethics guides our interactions. Professional ethics consist of businesses having a reputation of composing standards and displaying conduct that exemplifies civil and lawful actions that build trust, confidence, and goodwill.

Acting with Integrity

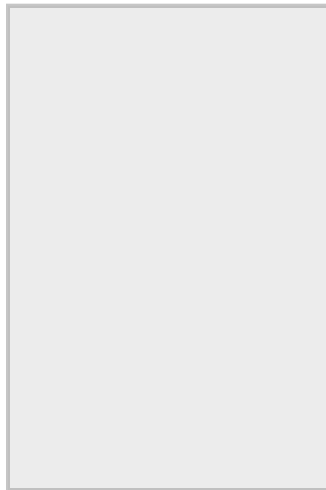
Integrity is unity between what we say and what we do. Being a professional of integrity means consistently striving to be the best person you can be in all your interactions with others. It means you practice what you do based upon reasoning, laws, morality, and justice.

Although ethics are an individual choice, in the professional world, ethical choices by employees often define the success of an organization. Some professions, such as engineering, journalism, and medicine have traditional codes of ethics. Essentially, a code of ethics is a commitment to treat with honesty and integrity customers, clients, employees, and others affiliated with a profession. The Hippocratic Oath, for example, is embraced by most professionals in health care today as an appropriate standard always owed to patients by physicians, nurses, and others in the field. This obligation traces its etymology to ancient Greece and the physician Hippocrates.

Social responsibility represents the interaction and collaboration with stakeholders to reflect the concerns of communities which an organization serves. Social responsibility includes:

- Practices that are inclusive and diverse
- Activities that help local communities and stakeholders

An example of an organization implementing social responsibility is Warby Parker. Executives at Warby Parker, an online prescription glasses retailer, displayed social responsibility by pledging \$1 million to organizations and initiatives that focused on combating systemic racism. This outreach demonstrates that executives understand the importance of addressing inclusion and diversity.



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Legal responsibility represents practices that are in compliance with local, state, federal, and industry regulations and laws.

Many people conflate legal and ethical compliance. They are, however, totally different and call for different standards of behavior. What is legal isn't always ethical. The purpose of a law is to establish and maintain a functioning society. Compliance with these legal standards is strictly mandatory: If we violate these standards, we are subject to punishment. Therefore, **compliance** in terms of professional ethics generally refers to the extent by which an organization conducts its operations in accordance with applicable regulations, statutes, and laws. Yet this represents only a baseline minimum. Organizations today need to be focused not only on complying with the letter of the law but also on going above and beyond that basic mandatory requirement to consider ethical practices for their stakeholders and do what is right.

Ethical Writing Considerations

Aristotle and the Concept of Phronesis, or Practical Wisdom

Phrónēsis (fro-NEE-sis) is a type of practical wisdom that enables us to act virtuously. In "The Big Idea: The Wise Leader," a *Harvard Business Review* article on leadership and ethical decision-making, Ikujiro Nonaka, a Japanese organizational theorist, and

Hirotaka Takeuchi (2011), a professor of Management Practice at Harvard Business School, discuss the gap between the theory and practice of ethics and the characteristics that make a wise leader. The authors conclude that chief executive officers (CEOs) must incorporate practical wisdom by leading with values and morals. The concept of practical wisdom dates back to Aristotle, who considered *phronesis*, which can also be defined as prudence, to be a key intellectual virtue. *Phronesis* enables people to make ethically sound judgments. From a business writing perspective, effective writers:

- Provide details and explanations
- Include information that is pertinent to the topic
- Analyze content to determine its efficacy
- Provide introductions, overviews, and transitions
- Analyze content to envision the consequences of possible actions or responses
- Include information that reflects the concerns and feedback of stakeholders
- Compose content that is easy to read and follow
- Create a shared sense of purpose among the document, readers, and stakeholders and inspire people to work together in pursuit of a common goal
- Engage as many people as possible in conversation and communicate using an audience-centered approach

Plagiarizing is misrepresenting the source or facts, most commonly when you claim the ideas you are writing about are yours. When you are researching professional documents, make sure you are using material with permission. If you are writing about what you researched, make sure you are citing the sources of your information and giving credit to all the necessary researchers.

Attribution refers to acknowledging and recognizing the source of information used in writing, ideas, concepts, and creations. Depending on the creation, the attribution is valid in various forms.

This rule also extends beyond writing to what is referred to as intellectual property. Intellectual property includes the following:

Patents and trademarks are company names (WalMart), logos (the Target bullseye), processes or slogans (*I'm lovin' it*) that belong to a person or company. None of these things can be used without proper recognition of or approval from the appropriate company or individual involved.

A company uses a TM to show something is trademarked or an ® for something registered with the U.S Patent and Trademark Office. An example would be NikeTM and their famous swoosh symbol.

The legal consequences are most notable when one considers writing in the professional world. While plagiarizing may give you a failing grade in a class, plagiarizing in the workplace can not only get you fired, but could result in a costly lawsuit or possibly even jail time. It is not only ethical to follow these rules, it is an enforced law. Make sure you properly document all sources so as not to mislead a reader.

Spend a few minutes viewing the following website for clarification on copyright, trademark, and registered trademark: [United States Patent and Trademark Office](https://www.uspto.gov/)

Copyright law includes items whose distribution is protected by law (books, movies, or software). The copyright symbol is shown with a ©. Copyright is different from plagiarism in that it is a legal issue. Only the copyright holder, the person/organization who owns the protected item, can copy it.

Any written document, once produced, is copyrighted by law. That means if you are borrowing a good idea from a friend at another company, you must cite them as a source. Also, it is a good idea to cite sources from inside your own company, as well. You wouldn't want someone else taking credit for your ideas. Why should you treat others any differently?

A Professional Document is a Legal Document

Most documents written by employees represent the position and commitments of the organization itself. There are always legal issues to consider when writing a professional document and they reflect in writing style and content. Professional documents can serve as evidence in disputes over contracts and in product liability lawsuits. A lawsuit is a civil action brought in court. Today, the average company is involved in 400 lawsuits at any given time. While most companies win their lawsuits, being caught in a lawsuit has many consequences. Lawsuits cost companies time and money. The money spent on lawyers and the time spent in court takes away resources a company could use for improving business and products, or hiring additional employees. Lawsuits also have ramifications for a business's reputation.

One of the main reasons a company gets involved in a lawsuit is because of unclear writing. When in a lawsuit, all documents may be subpoenaed. This means that any document from memos and emails to proposals and tweets can be subject to review by a court of law.

A Clear Writing Style

Ethical writing decisions include word selection, content, organization, and tone. There should be no clichés and idioms in documents because they may pose a problem with comprehension. A cliché is a worn-out or overused expression that tends to sound trite and often doesn't express what you truly mean to say. Examples include: *the bottom line is*, *head over heels*, or *take it or leave it*. Idioms, also known as jargon, are words or expressions that are specialized, usually industry-specific vocabulary. When it is necessary to use jargon, be sure to explain its meaning to increase understandability by various audiences. Opinions and jokes should also be avoided in business documents. Inform and persuade your readers through facts and data instead of opinions and beliefs. (See [Chapter 2 Technical Writing Style](#).)

Ethical Infractions in Professional Writing

You have learned what constitutes ethical behavior in professional writing. In addition to discussing what to do, it is also necessary to discuss ethical infractions to avoid to strengthen your ethical knowledge and writing.

An ethical infraction is a decision that results in an ethical and moral breach. In business, the following breaches pertain to business writing and communication.

Infraction	Definition
Defamation	Causing harm to one's reputation or character by communicating false and malicious information.
Libel	Causing harm to one's reputation or character by writing false and malicious information.
Slander	Causing harm to one's good name or character by speaking false and malicious information.
Fraud	Misrepresenting the truth for personal or professional gain.
Invasion of privacy	Intruding in the business records of employees or stakeholders.

Confidentiality does not mean that employees should not reveal a company's unethical behavior. Whistler Blower laws are in place to assist workers who report unethical business behavior.

Ethical Sins of Commission and Omission

Unethical actions are classified into two categories: Sins of commission and sins of omission.

Sins of commission refer to unethical actions that include manipulating or changing information to benefit a person or business a person represents. To avoid using misleading or manipulating words and phrases, it is important to be open to alternative viewpoints; conduct an audience analysis. In preparing any type of writing, you may come across conflicting viewpoints. Discussing several points of view and ideas on the subject will make you more persuasive and inclusive, resulting in the avoidance of sins of omission. In addition, be aware of biased language; make sure you have not included anything that may point to discriminatory assumptions or stereotypes.

Sins of omission refer to withholding or using inaccurate information in order to benefit a person or company a person represents. Do not use false or skewed facts or argue from such premises because you may deceive the reader(s) and cause them to make an uninformed decision.

Conclusion

Whatever hopes you have for your future, you almost certainly want to be successful in whatever career you choose. But what does success mean to you, and how will you know you have achieved it? Will you measure it in terms of wealth, status, power, or recognition?

Before blindly embarking on a quest to achieve these goals, which society considers important, stop and think about what a successful career means to you personally. Does it include a stellar reputation, colleagues whose good opinion you value, and the ability to think well of yourself? How might ethics guide your decision-making and contribute to your achievement of these goals? It is important to consider the answer to these questions before you are faced with a decision that you must make in the moment.

General Ethics Tips

When you are faced with an ethical dilemma, answer these questions to assist you with determining your next steps:

- What is the nature of the ethical dilemma?
- What are the specific aspects of this dilemma that make you uncomfortable?
- What are your competing obligations in this dilemma?
- What advice does a trusted supervisor or mentor offer?
- Does your organization's code of conduct address this issue?
- Does your professional association's code of conduct address this issue?
- What are you willing to do? What are you not willing to do?
- How will you explain or justify your decision?

"Ethical Decision Checklist:" by ENGL 145: Technical and Report Writing. Bay College. is licensed under the Creative Commons Attribution 4.0 International License. <https://www.oercommons.org/courses/b...t-writing/view>. Kinonen, Amber, et. al. Federal Trade Commission. (2020, January 2020). *Equifax Data Breach Settlement*. <https://www.ftc.gov/enforcement/case...ach-settlement> Ikujiro Nonaka and Hirotaka Takeuchi, "The Big Idea: The Wise Leader," *Harvard Business Review*, May 2011. <https://hbr.org/2011/05/the-big-idea-the-wise-leader>. This work "Ethical Considerations in Technical Writing" is derivative of "Business Ethics" by OpenStax, and "Ethical Considerations in Business Writing" by Valerie A. Gray, licensed under CC BY by Lise-Pauline Barnett, Tamara Girardi, and Mary Richards.

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5: Team Work and Cultural Intelligence

✓ Chapter Objectives

- Define a team.
- Provide guidelines to develop team cohesiveness.
- Explain factors that contribute to team effectiveness.
- Provide strategies to assess your team behavior.
- Demonstrate cultural intelligence and the benefits of team diversity.

Introduction

Being a part of many teams can help employees with job satisfaction and give them exposure to the leadership styles within your organization. It is important to understand the basic dynamics, such as those showcased within EA Engineering, Science, and Technology, Inc., (below) to best approach tasks and, in this case, the highly positive strategy of multiple team memberships.

✓ Example: Teamwork in the Workplace

EA Engineering, Science, and Technology, Inc.

In the modern workplace, it is more common that an employee is not assigned to just one team in their role. More currently, individuals are being tasked with multiple roles that allow them to work within many teams on many projects. Research done estimates that 81 to 95 percent of employees around the world serve on multiple teams simultaneously. In some cases, this alone can have a negative effect on the way that employees are able to focus on the impact on their stress levels. Leadership plays a big role in combating the negative effects of multiple team memberships, or MTM.

EA Engineering, Science, and Technology, Inc. employees the MTM structure on a daily basis, with its employees working on up to six different projects concurrently. The environmental consulting company based in Baltimore, MD, has to collaborate often and work in a team-based environment to balance stakeholder management and profits.

Juggling six different projects at one given time can be stressful to any employee but structuring the work within different teams gives employees a sense of autonomy so that they know specifically what piece of the project to focus on and contribute their skills to the overall group. Leaders naturally form within groups and take ownership of different tasks, which also is very helpful to both the overall success of the team and individual satisfaction of the employee. Research done with this group and others has shown that when leaders showcase empowering qualities to their employees, subsequently the employees are more proactive. Despite the fact that these individuals worked on many teams under a variety of leaders, the individuals often carried over the empowerment qualities of one leader to their other team even when the other leader was less empowering.

Group Think

Conformity and Deviance. Managers often wonder why employees comply with the norms and dictates of their workgroup even when they seemingly work against their best interests. This concern is particularly strong when workers intentionally withhold productivity that could lead to higher incomes. The answer to this question lies in the concept of conformity to group norms. Situations arise when the individual is swept along by the group and acts in ways that he would prefer not to.

To see how this works, consider the results of a classic study of individual conformity to group pressures that was carried out by Solomon Asch. Asch conducted a laboratory experiment in which a native subject was placed in a room with several confederates. Each person in the room was asked to match the length of a given line (*X*) with that of one of three unequal lines (*A*, *B*, and *C*). All the subjects who spoke first had been instructed prior to the experiment to identify line *C* as the line most like *X*, even though *A* was clearly the answer. The results were startling. In over one-third of the trials in the experiment, the naive subject denied the evidence of his own senses and agreed with the answers given by the unknown confederates. In other words, when confronted by a unanimous answer from others in the group, a large percentage of individuals chose to go along with the group rather than express a conflicting opinion, even though these individuals were confident their own answers were correct.



Figure 1. Classic footage from the Asch conformity study. This version includes definitions of normative and informational conformity and the powerful effect of having an ally (HeroicImaginationTV.)

What causes such conformity to group norms? And, under what conditions will an individual deviate from these norms? Conformity to group norms is believed to be caused by at least three factors. Personality, Initial Stimulus, and Group Characteristics.

✓ Conformity to Group Norms

Personality: Personality plays a major role. For instance, negative correlations have been found between conformity and intelligence, tolerance, and ego strength, whereas authoritarianism was found to be positively related. Essentially, people who have a strong self-identity are more likely to stick to their own norms and deviate from those of the group when a conflict between the two exists.

Initial Stimulus: The initial stimulus that evokes responses can influence conformity. The more ambiguous the stimulus (e.g., a new and confusing order from top management), the greater the propensity to conform to group norms (“I’m not sure what the new order from management really means, so I’ll just go along with what others think it means”). In this sense, conformity provides a sense of protection and security in a new and perhaps threatening situation.

Group Characteristics: Finally, group characteristics themselves can influence conformity to group norms. Factors such as the extent of pressure exerted on group members to conform, the extent to which a member identifies with the group, and the extent to which the group has been successful in achieving previous goals can influence conformity.

Deviation from Group Norms

When a group member deviates from the group norms, research indicates that members often respond by increasing the amount of communication directed toward the deviant member. This communication is aimed at bringing the deviant into the acceptable bounds set by the group. A good example of this process can be seen in Janis’s classic study of the group processes leading up to the abortive Bay of Pigs invasion in Cuba. At one meeting, Arthur Schlesinger, an adviser to President Kennedy, expressed opposition to the plan even though no one else expressed similar doubts. After listening to his opposition for a while, Robert Kennedy took Schlesinger aside and said, “You may be right or you may be wrong, but the President has his mind made up. Don’t push it any further. Now is the time for everyone to help him all they can.” Janis elaborated on this group decision-making process and termed it “**groupthink**.”

When a deviant member refuses to heed the message and persists in breaking group norms, group members often respond by rejecting or isolating the deviant. They tell the deviant, in essence, that they will no longer tolerate such behavior and prefer to reconstitute the group. If the deviant is not expelled, the group must continually confront behavior that conflicts with what it holds to be true. Rather than question or reexamine its beliefs, the group finds it simpler—and safer—to rid itself of dangerous influences.

Group Cohesiveness

A fourth characteristic of teams is group cohesiveness. We have all come in contact with teams whose members feel a high degree of camaraderie, group spirit, and unity. In these teams, individuals seem to be concerned about the welfare of other members as well as that of the team as a whole. There is a feeling of “us against them” that creates a closeness among them. This phenomenon is called group cohesiveness. More specifically, **group cohesiveness** may be defined as the extent to which individual members of a team are motivated to remain in the group. According to Shaw, “Members of highly cohesive groups are more energetic in group activities, they are less likely to be absent from group meetings, they are happy when the group succeeds and sad when it fails, etc., whereas members of less cohesive groups are less concerned about the group’s activities” (Shaw, M. 1991)

We shall consider two primary aspects of group cohesiveness. First, we look at the major causes of cohesiveness. Following this, we examine its consequences.

Determinants of Group Cohesiveness. Why do some teams develop a high degree of group cohesiveness while others do not? To answer this question, we have to examine both the composition of the group and several variables that play a role in determining the extent of cohesiveness. These include the following:

- *Group homogeneity.* The more homogeneous the group—that is, the more members share similar characteristics and backgrounds—the greater the cohesiveness.
- *Group maturity.* Groups tend to become more cohesive simply as a result of the passage of time. Continued interaction over long periods of time helps members develop a closeness born of shared experiences.
- *Group size.* Smaller groups have an easier time developing cohesiveness, possibly because of the less complex interpersonal interaction patterns.
- *Frequency of interaction.* Groups that have greater opportunities to interact on a regular or frequent basis tend to become more cohesive than groups that meet less frequently or whose members are more isolated.
- *Clear group goals.* Groups that know exactly what they are trying to accomplish develop greater cohesiveness, in part because of a shared sense of mission and the absence of conflict over mission.
- *Competition or external threat.* When groups sense external threat or hostility, they tend to band together more closely. There is, indeed, “safety in numbers.”
- *Success.* Group success on a previous task often facilitates increased cohesiveness and a sense of “we did it together.”

In other words, a wide variety of factors can influence group cohesiveness. The precise manner in which these processes occur is not known. Even so, managers must recognize the existence of certain forces of group cohesiveness if they are to understand the nature of group dynamics in organizations.

✓ Example: Maintaining Cohesiveness During Change

In the fast-moving innovative car industry, it is always important to be thinking about improving and staying ahead of the competition. For Ford and Chevrolet however, they have such popular vehicles—the F-150 and the hybrid Volt, respectively—that finding ways to improve them without taking away the qualities that make them popular is key.

With the F-150, Ford had one of the best-selling vehicles for more than 30 years, but improving upon their most popular vehicle came with its challenges. In 2015, the team wanted to introduce an economically six-cylinder EcoBoost engine, and an all-aluminum body. The team was worried about the marketplace and hoped that the customers would accept the change to their beloved truck.

The planning started 18 months before, working in parallel work teams on various parts of the project. Each team was responsible for a piece of the overall project, and they frequently came together to make sure that they were working cohesively to create a viable vehicle. The most successful piece of the dynamic for Ford was teams’ ability to share feedback. Pete Reyes expresses the teamwork mentality: “Everybody crosses boundaries, and they came back with all of the feedback that shaped what we are going to do.”

Having team cohesiveness was ultimately what brought Ford to the finish line. With over 1,000 members of the overall team, employees were able to accomplish a truly viable vehicle that weighed 700 pounds less, as well as countless other innovations that gave the truck 29 percent more fuel economy.

“We stuck to common goals . . . I don’t think I’ll ever work on a team that tight again,” stated Reyes about his team of developmental managers. As a result of their close teamwork, Ford announced third-quarter earnings of 1.9 billion, an increase of 1.1 billion from 2014.

Sources: J. Motivalli, “5 Inspiring Companies That Rely on Teamwork to Be Successful,” *Success*, February 16, 2016, <https://www.success.com/5-inspiring-...be-successful/>; “All-New 2015 F-150 Most Patented Truck in Ford History – New Innovations Bolster Next-Generation Light-Duty Pickup,” *Ford Media Center*, May 23, 2014, <https://media.ford.com/content/fordm...-new-inno.html>; P. Friedman, “Body of Work,” Ford Corporate Website, accessed, December 13, 2018, <https://corporate.ford.com/innovatio...y-of-work.html>.

What Is Work Group Effectiveness?

The first question to raise concerning workgroup effectiveness is what we mean by the concept itself. According to Hackman’s model, effectiveness is defined in terms of three criteria:

1. *Productive output*. The productive output of the group must meet or exceed the quantitative and qualitative standards defined by the organization.
2. *Personal need satisfaction*. Groups are effective if membership facilitates employee need satisfaction.
3. *Capacity for future cooperation*. Effective groups employ social processes that maintain or enhance the capacity of their members to work together on subsequent tasks. Destructive social processes are avoided so members can develop long-term cohesiveness and effectiveness.

What determines Work Group Effectiveness

Group effectiveness is largely determined by three factors that have been called *intermediate criteria*. These factors are as follows:

1. *Group effort*. The amount of effort group members exert toward task accomplishment.
2. *Group knowledge and skill*. The amount of knowledge and skills possessed by group members that are available for group effort and performance.
3. *Task performance strategies*. The extent to which the group’s strategies for task performance (that is, how it analyzes and attempts to solve problems) are appropriate.

Although the relative importance of each of these three intermediate factors may vary, all three are important. Without considerable group effort, appropriate skills and knowledge, and a clear strategy for task completion, groups are unlikely to be effective.

An important influence on the relative importance of these three variables is the nature of **work technology**. This includes the equipment and materials used in manufacture, the prescribed work procedures, and the physical layout of the work site. For example, if jobs are highly routinized, individual skills and knowledge may be somewhat less important than simple effort. On more complex tasks, however, such as research and development, effort alone will be of little help without concomitant skills and knowledge. Hence, although the relative importance of these three variables may vary with the job technology, all should be considered in any effort to understand determinants of work group effectiveness in a particular situation.

It must be recognized that these determinants of effectiveness are themselves influenced by three sets of factors. First, we must recognize a series of *environmental context* factors, such as the company’s reward system, training programs, job descriptions, and so forth. Second are several *design factors*, including group structure, member composition, and performance norms. Finally, the role of *interpersonal processes*—such as efforts among group members and management to reduce conflict, foster commitment, and share knowledge—must be recognized. These three sets of factors, then, are largely responsible for determining the so-called intermediate criteria that, in turn, combine with appropriate job technologies to determine workgroup effectiveness.

Team Function and Effectiveness

Teamwork has never been more important in organizations than it is today. Whether you work in a manufacturing environment and utilize self-directed work teams, or if you work in the “**knowledge economy**” and derive benefits from collaboration within a team structure, you are harnessing the power of a team.

In their *Harvard Business Review* (HBR) article “The Discipline of Teams,” Katzenbach & Smith (2005) define the five elements that make teams function effectively:

- Common commitment and purpose
- Specific performance goals
- Complementary skills
- Commitment to how the work gets done
- Mutual accountability

A team has a specific purpose that it delivers on, has shared leadership roles, and has both individual and mutual accountabilities. Teams discuss, make decisions, and perform real work together, and they measure their performance by assessing their collective work products.

Self-Assessment: How do you behave in a team?

Instructions: Think of a typical team situation in which you often find yourself (e.g., a club, study group, small team), and answer the following items as accurately as possible. Assign yourself points for each answer: Never = 1 pt.; Seldom = 2 pts.; Fairly Often = 3 pts.; Frequently = 4 pts.

In a team, how often do you:	Never	Seldom	Fairly Often	Frequently
Keep the team focused on the task at hand?				
Help the team clarify the issues?				
Pull various ideas together?				
Push the team to make a decision or complete a task?				
Support and encourage other team members?				
Try to reduce interpersonal conflicts?				
Help the team reach a compromise?				
Assist in maintaining team harmony?				
Seek personal recognition from other team members?				
Try to dominate team activities?				
Avoid unpleasant or undesirable team activities?				
Express your impatience or hostility with the team?				

Scoring the Team Behavior instrument: Add up your scores as follows for the three categories of behavior:

Task-oriented behavior: Add up items 1-4

Relations-oriented behavior: Add up items 5-6

Self-Oriented behavior: Add up items 9-12

Examine the resulting pattern in your answers. There are no correct or incorrect answers. Instead, this is an opportunity to view how you describe your own role-related activities in a team. What did you learn about yourself? How does your role in a team differ from those of other individuals?

Assessment: How Effective Is Your Team?

Instructions: Select a team to which you belong, and use this team to answer the following questions. Check “mostly yes” or “mostly no” to answer each question.

Team Effectiveness Assessment	Mostly Yes	Mostly No
1. The atmosphere is relaxed and comfortable.		
2. Group discussion is frequent, and it is usually pertinent to the task at hand.		
3. Team members understand what they are trying to accomplish.		
4. People listen to each other’s suggestions and ideas.		

Team Effectiveness Assessment	Mostly Yes	Mostly No
5. Disagreements are tolerated, and an attempt is made to resolve them.		
6. There is general agreement on most courses of action taken.		
7. The team welcomes frank criticism from inside and outside sources.		
8. When the team takes action, clear assignments are made and accepted.		
9. There is a well-established, relaxed working relationship among the members.		
10. There is a high degree of trust and confidence among the leader and subordinates.		
11. The team members strive hard to help the group achieve its goal.		
12. Suggestions and criticisms are offered and received with a helpful spirit.		
13. There is a cooperative rather than a competitive relationship among group members.		
14. The team goals are set high but not so high as to create anxieties or fear of failure.		
15. The leaders and members hold a high opinion of the team's capabilities.		
16. Creativity is stimulated within the team.		
17. There is ample communication within the team of topics relevant to getting the work accomplished.		
18. Team members feel confident in making decisions.		
19. People are kept busy but not overloaded.		
20. The leader of the team is well suited for the job.		

Source: Adapted from A. J. DuBrin from *The Human Side of Enterprise* (New York: McGraw-Hill, 1960).

Scoring the Team Effectiveness instrument: The Team Effectiveness instrument measures the relative effectiveness of a team to which you belong. Count the number of times you answered “mostly yes.” The larger the number, the more productive and satisfied the members should be. There are no norms for this exercise, so you might wish to create your own norms by comparing scores among others in your class who have completed this instrument for the teams they belong to. Look at the range of scores, and then describe the characteristics of each team. Are there any common characteristics that distinguish the teams with the highest scores? The lowest scores? Why do these differences occur?

You could also use this questionnaire to compare teams to which you belong. If you were the leader of one of these teams, what would you do to make the team more effective? Why hasn't this been done already?



Figure 2. **Finance Team** Smart managers understand that not all of a company's influential relationships appear as part of the organization chart. Consider a publishing company that might have a lead finance head for each team, such as adult fiction, nonfiction, young adult, and children's book divisions. A finance team working group would help spread best practices and lead to more cohesive operations for the entire organization. (Credit: Creator: FatCamera | Credit: Getty Images <https://images.app.goo.gl/MUBxZ6A48A8L7HB46>)

What makes a team truly effective?

According to Katzenbach and Smith's "Discipline of Teams," there are several practices that the authors have observed in successful teams: Establish urgency, demanding performance standards, and direction.

✓ Practices of Successful Teams

Establish urgency

Teams work best when they have a compelling reason for being, and it is thus more likely that the teams will be successful and live up to performance expectations. We've all seen the teams that are brought together to address an "important initiative" for the company, but without clear direction and a truly compelling reason to exist, the team will lose momentum and wither.

Demanding performance standards

Select the roles for members according to their skill and skill potential, not for their personality. This is not always as easy as it sounds for several reasons. First, most people would prefer to have those with good personalities and positive attitudes on their team in order to promote a pleasant work environment. This is fine, but make sure that those individuals have the skill sets needed (or the potential to acquire/learn) for their piece of the project. The second caveat here is that you don't always know what skills you need on a project until you really dig in and see what's going on. Spend some time up front thinking about the purpose of the project and the anticipated deliverables you will be producing and think through the specific types of skills you'll need on the team.

Pay particular attention to first meetings and actions. This is one way of saying that first impressions mean a lot—and it is just as important for teams as for individuals. Teams will interact with everyone from functional subject-matter experts all the way to senior leadership, and the team must look competent and be perceived as competent. Keeping an eye on your team's level of **emotional intelligence** is very important and will enhance your team's reputation and ability to navigate stakeholders within the organization.

Create a team charter. Many times the people in meetings and teams rush through "**ground rules**" because it felt like they were obvious—and everyone always comes up with the same list. It is so critical that the team takes the time upfront to capture their own rules in order to keep the team in check. Rules that address areas such as attendance, discussion, confidentiality, project approach, quality of work expectations, and conflict are key to keeping team members aligned and engaged appropriately. The following 1-minute video by project management specialist, [David Barrett](#) gives a quick overview of how to create a team charter. For more information about developing a team charter, read Barrett's article [Do You Kick Off Your Projects with a Team Charter? You Should.](#)



Figure 3. D. Barrett (2016) "Barrett on the Team Charter." (<https://youtu.be/3cGSo0OvzA>)

Direction

Set and seize upon a few immediate performance-oriented tasks and goals. What does this mean? Have some quick wins that make the team feel that they're really accomplishing something and working together well. This is very important to the team's confidence, as well as just getting into the practices of working as a team. Success in the larger tasks will come soon enough, as the larger tasks are really just a group of smaller tasks that fit together to produce a larger deliverable.

Challenge the group regularly with fresh facts and information. That is, continue to research and gather information to confirm or challenge what you know about your project. Don't assume that all the facts are static and that you received them at the beginning of the project. Often, you don't know what you don't know until you dig in. I think that the pace of change is so great in the world today that new information is always presenting itself and must be considered in the overall context of the project.

Spend lots of time together. Here's an obvious one that is often overlooked. People are so busy that they forget that an important part of the team process is to spend time together, think together, and bond. Time in person, time on the phone, time in meetings—all of it counts and helps to build camaraderie and trust.

Exploit the power of positive feedback, recognition, and reward. Positive reinforcement is a motivator that will help the members of the team feel more comfortable contributing. It will also reinforce the behaviors and expectations that you're driving within the team. Although there are many extrinsic rewards that can serve as motivators, a successful team begins to feel that its own success and performance is the most rewarding.

Collaboration is another key concept and method by which teams can work together very successfully. Bringing together a team of experts from across the business would seem to be a best practice in any situation. However, Gratton & Erickson, in their article "Eight Ways to Build Collaborative Teams," found that collaboration seems to decrease sharply when a team is working on complex project initiatives. In their study, they examined 55 larger teams and identified those with strong collaboration skills, despite the level of complexity. There were eight success factors for having strong collaboration skills:

- "Signature" relationship practices
- Role models of collaboration among executives
- Establishment of "gift" culture, in which managers mentor employees
- Training in relationship skills
- A sense of community
- Ambidextrous leaders—good at task and people leadership
- Good use of heritage relationships
- Role clarity and task ambiguity

Stages of Team Growth

If you have been a part of a team—as most of us have—then you intuitively have felt that there are different "stages" of team development. Teams and team members often start from a position of friendliness and excitement about a project or endeavor, but the mood can sour and the team dynamics can deteriorate very quickly once the real work begins. In 1965, educational psychologist

Bruce Tuckman at Ohio State University developed a four-stage model to explain the complexities of team development. The original model was called *Tuckman's Stages of Group Development*, and he added the fifth stage of "Adjourning" in 1977 to explain the disbanding of a team at the end of a project. The four development stages of the Tuckman model are: Forming, Storming, Norming, Performing.

✓ Tuckman's 4 Stages of Team Development

1. The **Forming** stage begins with the introduction of team members. This is known as the "polite stage" in which the team is mainly focused on similarities and the group looks to the leader for structure and direction. The team members at this point are enthusiastic, and issues are still being discussed on a global, ambiguous level. This is when the informal pecking order begins to develop, but the team is still friendly.
2. The **Storming** stage begins as team members begin vying for leadership and testing the group processes. This is known as the "win-lose" stage, as members clash for control of the group and people begin to choose sides. The attitude about the team and the project begins to shift to negative, and there is frustration around goals, tasks, and progress. As shown in Figure 4.3, the team begins to struggle and usually experiences a brief period of downward movement.
3. After what can be a very long and painful Storming process for the team, slowly the **Norming** stage may start to take root. During Norming, the team is starting to work well together, and buy-in to group goals occurs. The team is establishing and maintaining ground rules and boundaries, and there is a willingness to share responsibility and control. At this point in the team formation, members begin to value and respect each other and their contributions.
4. Finally, as the team builds momentum and starts to get results, it is entering the **Performing** stage. The team is completely self-directed and requires little management direction. The team has confidence, pride, and enthusiasm, and there is a congruence of vision, team, and self. As the team continues to perform, it may even succeed in becoming a high-performing team. High-performing teams have optimized both task and people relationships—they are maximizing performance and team effectiveness. Katzenberg and Smith, in their study of teams, have created a "team performance curve" that graphs the journey of a team from a working group to a high-performing team.

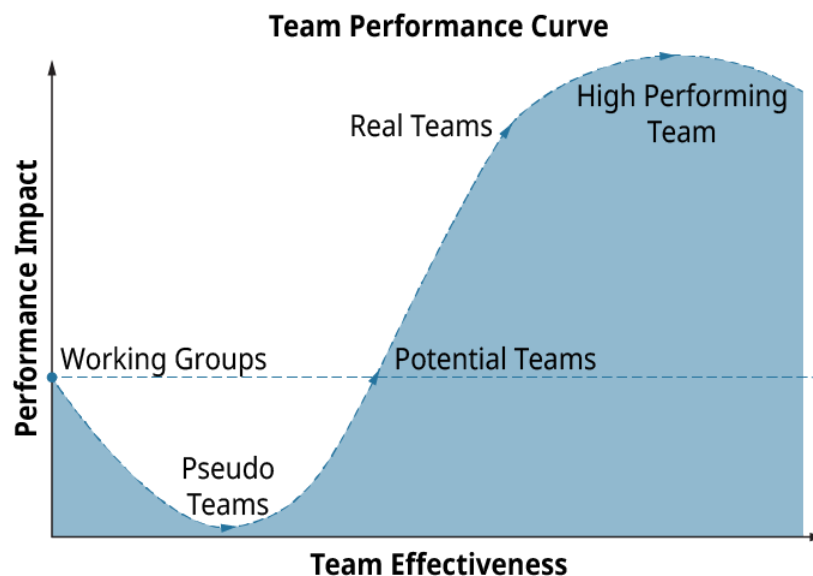


Figure 4. **Team Performance Curve** A graphical representation plots the performance curve of a team during their transition from a working group to a high-performing team. (Attribution: Copyright Rice University, OpenStax, under CC-BY 4.0 license)

The process of becoming a high-performing team is not linear. Similarly, the four stages of team development in the Tuckman Model are not linear, and there are factors that may cause the team to regress to an earlier stage of development. For example, if a team member is added to the group, it may change the dynamic and be disruptive enough to cause a backward slide to an earlier stage. Similarly, if a new project task is introduced that causes confusion or anxiety for the group, then this may also cause a backward slide to an earlier stage of development. Think of your own experiences with project teams and the backslide that the group may have taken when another team member was introduced. You may have personally found the same to be true when a leader or project sponsor changes the scope or adds a new project task. The team has to re-group and will likely re-Storm and re-Form before getting back to Performing as a team.

How team diversity enhances decision-making and problem-solving

Decision-making and problem-solving can be much more dynamic and successful when performed in a diverse team environment. The multiple diverse perspectives can enhance both the understanding of the problem and the quality of the solution. Team activities and projects that intentionally bring diverse individuals together create the best environments for problem-solving.

Diversity is a word that is very commonly used today, but the importance of diversity and building diverse teams can sometimes get lost in the normal processes of doing business. Let's discuss why we need to keep these principles front of mind.

In the *Harvard Business Review* article "Why Diverse Teams are Smarter" (Nov. 2016), David Rock and Heidi Grant support the idea that increasing workplace diversity is a good business decision. A 2015 McKinsey report on 366 public companies found that those in the top quartile for ethnic and racial diversity in management were 35% more likely to have financial returns above their industry mean, and those in the top quartile for gender diversity were 15% more likely to have returns above the industry mean. Similarly, in a global analysis conducted by Credit Suisse, organizations with at least one female board member yielded a higher return on equity and higher net income growth than those that did not have any women on the board.



Figure 5. The Benefits of Diversity for Teams. Teams made up of diverse members tend to perform better than teams of similar backgrounds. Here, the Women of Color in Technology work on a project. The tech industry has been criticized for the lack of diversity among its ranks, and groups like the Women of Color in Technology are looking to change that. (Credit: WOCin Tech Chat/ flickr/ Attribution 2.0 Generic (CC BY 2.0))

Additional research on diversity has shown that diverse teams are better at decision-making and problem-solving because they tend to focus more on facts, per the Rock and Grant (2016) article. A study published in the *Journal of Personality and Social Psychology* showed that people from diverse backgrounds “might actually alter the behavior of a group’s social majority in ways that lead to improved and more accurate group thinking.” It turned out that in the study, the diverse panels raised more facts related to the case than homogenous panels and made fewer factual errors while discussing available evidence. Another study noted in the article showed that diverse teams are “more likely to constantly reexamine facts and remain objective.” They may also encourage greater scrutiny of each member’s actions, keeping their joint cognitive resources sharp and vigilant.

Being a member of a diverse team can help you become more aware of your own potential biases—entrenched ways of thinking that can otherwise blind you to key information and even lead you to make errors in decision-making processes.” In other words, when people are among homogeneous and like-minded (nondiverse) teammates, the team is susceptible to groupthink and may be reticent to think about opposing viewpoints since all team members are in alignment. In a more diverse team with a variety of backgrounds and experiences, the opposing viewpoints are more likely to come out and the team members feel obligated to research and address the questions that have been raised. Again, this enables a richer discussion and a more in-depth fact-finding and exploration of opposing ideas and viewpoints in order to solve problems.

Diversity in teams also leads to greater innovation. A Boston Consulting Group (Lorenzo, R. Yoigt, N., Schetelig, K., Zawadzki, A., Welp, I., & Brosi, P., 2016) article entitled “The Mix that Matters: Innovation through Diversity” explains a study in which BCG and the Technical University of Munich conducted an empirical analysis to understand the relationship between diversity in managers (all management levels) and innovation. The key findings of this study show that:

- The positive relationship between management diversity and innovation is statistically significant—and thus companies with higher levels of diversity derive more revenue from new products and services.
- The innovation boost isn’t limited to a single type of diversity. The presence of managers who are either female or are from other countries, industries, or companies can cause an increase in innovation.
- Management diversity seems to have a particularly positive effect on innovation at complex companies—those that have multiple product lines or that operate in multiple industry segments.
- To reach its potential, gender diversity needs to go beyond tokenism. In the study, innovation performance only increased significantly when the workforce included more than 20% of women in management positions. Having a high percentage of female employees doesn’t increase innovation if only a small number of women are managers.
- At companies with diverse management teams, openness to contributions from lower-level workers and an environment in which employees feel free to speak their minds are crucial for fostering innovation.

When you consider the impact that diverse teams have on decision-making and problem-solving—through the discussion and incorporation of new perspectives, ideas, and data—it is no wonder that the BCG study shows greater innovation. Team leaders need to reflect upon these findings during the early stages of team selection so that they can reap the benefits of having diverse voices and backgrounds.

Best practices for working in a multicultural team

As globalization has increased over the last decades, workplaces have felt the impact of working within multicultural teams. The earlier section on team diversity outlined some of the highlights and benefits of working on diverse teams, and a multicultural group certainly qualifies as diverse. However, there are some key practices that are recommended to those who are leading multicultural teams so that they can parlay the diversity into an advantage and not be derailed by it.

People may assume that communication is the key factor that can derail multicultural teams, as participants may have different languages and communication styles. In the *Harvard Business Review* article “Managing Multicultural Teams,” the authors point out four key cultural differences that can cause destructive conflicts in a team (Brett, Behfar, Kern, 2007).

✓ Key Cultural Differences in a Team

Direct versus indirect communication. Some cultures are very direct and explicit in their communication, while others are more indirect and ask questions rather than pointing out problems. This difference can cause conflict because, at the extreme, the direct style may be considered offensive by some, while the indirect style may be perceived as unproductive and passive-aggressive in team interactions.

Accents and fluency. When team members don’t speak the same language, there may be one language that dominates the group interaction—and those who don’t speak it may feel left out. The speakers of the primary language may feel that those members don’t contribute as much or are less competent.

Differing attitudes toward hierarchy. Some cultures are very respectful of the hierarchy and will treat team members based on that hierarchy. Other cultures are more egalitarian and don’t observe hierarchical differences to the same degree. This may lead to clashes if some people feel that they are being disrespected and not treated according to their status.

Conflicting decision-making norms. Different cultures make decisions differently, and some will apply a great deal of analysis and preparation beforehand. Those cultures that make decisions more quickly (and need just enough information to make a decision) may be frustrated with the slow response and relatively longer thought process.

Developing Cultural Intelligence

Cultural differences can become points of contention for everyday team activities (decision-making, communication, interaction among team members) if there isn’t adequate understanding of everyone’s culture. It is important to remember that there is more than one correct way to do something. By working with those who have different communication styles, attitudes toward hierarchy, and decision-making practices we can develop our cultural intelligence and learn more effective ways to accomplish things.

Cultural intelligence is a competency and a skill that enables individuals to function effectively in cross-cultural environments. It develops as people become more aware of the influence of culture and more capable of adapting their behavior to the norms of other cultures. In the *IESE Insight* article entitled “Cultural Competence: Why It Matters and How You Can Acquire It” (Lee and Liao, 2015), the authors assert that “multicultural leaders may relate better to team members from different cultures and resolve conflicts more easily. Their multiple talents can also be put to good use in international negotiations.” Multicultural leaders don’t have a lot of “baggage” from any one culture, and so are sometimes perceived as being culturally neutral. They are very good at handling diversity, which gives them a great advantage in their relationships with teammates.

✓ Best Practices to Develop Cultural Intelligence

In order to help employees become better team members in a world that is increasingly multicultural, there are a few best practices that the authors recommend for honing cross-cultural skills.

- Broaden your mind. Expand your own cultural channels (travel, movies, books) and surround yourself with people from other cultures. This helps to raise your own awareness of the cultural differences and norms that you may encounter.
- Develop your cross-cultural skills through practice and experiential learning. You may have the opportunity to work or travel abroad—but if you don’t, then getting to know some of your company’s cross-cultural colleagues or foreign visitors will help you to practice your skills. Serving on a cross-cultural project team and taking the time to get to know and bond with your global colleagues is an excellent way to develop skills.

Understanding Our Global Colleagues

If you are a part of a global team, there are many challenges that confront you even before you talk about people dynamics and cultural differences. You first may have to juggle time zone differences to find an adequate meeting time that suits all team members. (One manager used to have a team call with Chinese colleagues at 8 p.m. her time, so she could catch them at 8 a.m. in China the next day!)

Language challenges can also pose a problem. In many countries, people are beginning to learn English as one of the main business languages. However, people don't always speak their language the same way that you might learn their language in a book. There are colloquialisms, terms, and abbreviations of words that you can't learn in a classroom—you need to experience how people speak in their native countries.

You also need to be open-minded and look at situations from the perspective of your colleagues' cultures, just as you hope they will be open-minded about yours. This is referred to as cultural intelligence. It is important to check yourself and your own culture every so often and to think about those elements that you take for granted (e.g., gigantic meat portions) and try to look at them from the eyes of another culture. It really makes us smarter and better partners to our global colleagues around the world.

In the *HBR* article "Getting Cross-Cultural Teamwork Right," (Neeley, 2014) the author states that three key factors—mutual learning, mutual understanding, and mutual teaching—build trust with cross-cultural colleagues as you try to bridge cultural gaps. With mutual learning, global colleagues learn from each other and absorb the new culture and behaviors through listening and observation. In mutual understanding, you try to understand the logic and cultural behaviors of the new culture to understand why people are doing what they do. This, of course, requires suspending judgment and trying to understand and embrace the differences. Finally, mutual teaching involves instructing and facilitating. This means trying to bridge the gap between the two cultures and helping yourself and others see where different cultures are coming from in order to resolve misunderstandings.

Understanding and finding common ground with your global colleagues isn't easy, and it takes patience and continuous improvement. In the end, however, you will find it one of the most rewarding and enlightening things you can do. The more we work to close the multicultural "gap" and make it a multicultural advantage, the better off we will be as professionals and as people.

Once you have a sense of the different cultures and have started to work on developing your cross-cultural skills, another good practice is to "boost your cultural metacognition" and monitor your own behavior in multicultural situations. In a situation where you are interacting with multicultural individuals, you should test yourself and be aware of how you act and feel. Observe both your positive and negative interactions with people and learn from them. Developing "**cognitive complexity**" is the final best practice for boosting multicultural skills. This is the most advanced, and it requires being able to view situations from more than one cultural framework. In order to see things from another perspective, you need to have a strong sense of emotional intelligence, empathy, and sympathy, and be willing to engage in honest communications.

In the *Harvard Business Review* article "Cultural Intelligence," (Earley, P. & E. Mosokawski, E., 2004) the authors describe three sources of cultural intelligence that teams should consider if they are serious about becoming more adept in their cross-cultural skills and understanding. These sources, very simply, are **head**, **body**, and **heart**. One first learns about the beliefs, customs, and taboos of foreign cultures via the **head**. Training programs are based on providing this type of overview information—which is helpful, but obviously isn't experiential. This is the cognitive component of cultural intelligence. The second source, the **body**, involves more commitment and experimentation with the new culture. It is this physical component (demeanor, eye contact, posture, accent) that shows a deeper level of understanding of the new culture and its physical manifestations. The final source, the **heart**, deals with a person's own confidence in their ability to adapt to and deal well with cultures outside of their own. Heart really speaks to one's own level of emotional commitment and motivation to understand the new culture.

Use the following quick assessment to diagnose cultural intelligence, based on these cognitive, physical, and emotional/motivational measures (i.e., head, body, heart).

Assessing Your Cultural Intelligence

Score your responses using a 1 to 5 scale. 1 = strongly disagree and 5 = strongly agree

Before I interact with people from a new culture, I wonder to myself what I hope to achieve.

Assessing Your Cultural Intelligence

	If I encounter something unexpected while working in a new culture, I use that experience to build new ways to approach other cultures in the future.
	I plan on how I am going to relate to people from a different culture before I meet with them.
	When I come into a new cultural situation, I can immediately sense whether things are going well or if things are going wrong.
	Add your total from the four questions above.
	Divide the total by 4. This is your Cognitive Cultural Quotient .
	It is easy for me to change my body language (posture or facial expression) to suit people from a different culture.
	I can alter my expressions when a cultural encounter requires it.
	I can modify my speech style by changing my accent or pitch of voice to suit people from different cultures.
	I can easily change the way I act when a cross-cultural encounter seems to require it.
	Add your total from the four questions above.
	Divide the total by 4. This is your Cognitive Physical Quotient .
	I have confidence in my ability to deal well with people from different cultures than mine.
	I am certain that I can befriend people of different cultural backgrounds than mine.
	I can adapt to the lifestyle of a different culture with relative ease.
	I am confident in my ability to deal with an unfamiliar cultural situation or encounter.
	Divide the total by 4. This is your Emotional/Motivational Cognitive Quotient .

Adapted from “Cultural Intelligence,” Earley and Mosakowski, *Harvard Business Review*, October 2004

Scoring the Cultural Intelligence instrument: Add your total from the four questions above. Divide the total by 4. Generally, scoring below 3 in any one of the three measures signals an area requiring improvement. Averaging over 4 displays strength in cultural intelligence.

Cultural intelligence is an extension of emotional intelligence. An individual must have a level of awareness and understanding of the new culture so that he can adapt to the style, pace, language, nonverbal communication, etc. and work together successfully with the new culture. A multicultural team can only find success if its members take the time to understand each other and ensure that everyone feels included. Multiculturalism and cultural intelligence are traits that are taking on increasing importance in the business world today.¹⁴ By following best practices and avoiding the challenges and pitfalls that can derail a multicultural team, a team can find great success and personal fulfillment well beyond the boundaries of the project or work engagement.

✓ GENERAL TIPS

- Teams function effectively when they share these traits: common commitment and purpose, specific performance goals, complementary skills, commitment to the work, and mutual accountability.
- Storming is a normal stage of team development.

- Meeting frequently, having a team contract with measurable criteria, and frequent performance assessments are tools to creating a high-functioning team.
- Diversity in teams leads to greater innovation
- Homogeneous and like-minded (nondiverse) teammates are susceptible to groupthink because all team members are in alignment.
- Members of a diverse team are more aware of their personal biases.
- Assessing your cultural intelligence and overcoming any biases can lead to success in school and on the job.
- Successful teams are aware of how their cultural differences might affect communication.

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6: Conflict Resolution

✓ Chapter Objectives

- Define and explain the benefits of conflict.
- Explain the differences between constructive and destructive conflict.
- Identify and explain the conflict process model.
- Provide guidelines to resolve conflict.

Conflict

Introduction

This section begins with a discussion of the conflict process, followed by a look at negotiations both within and between organizations.

By any standard of comparison, conflict in organizations represents an important topic for managers. Just how important it is can be seen in the results of a study of how managers spend their time. It was found that approximately 20 percent of top and middle managers' time was spent dealing with some form of conflict (K. Thomas & W. Schmidt, 1976). Another study found that managerial skill in handling conflict was a major predictor of managerial success and effectiveness (J. Graves, 1983).

There are many ways to determine conflict as it relates to the workplace. For our purposes here, we will define **conflict** as the process by which individuals or groups react to other entities that have frustrated, or are about to frustrate, their plans, goals, beliefs, or activities. In other words, conflict involves situations in which the expectations or actual goal-directed behaviors of one person or group are blocked—or about to be blocked—by another person or group. Hence, if a sales representative cannot secure enough funds to mount what she considers to be an effective sales campaign, conflict can ensue. Similarly, if A gets promoted and B doesn't, conflict can emerge. Finally, if a company finds it necessary to lay off valued employees because of difficult financial conditions, conflict can occur. Many such examples can be identified; in each, a situation emerges in which someone or some group cannot do what it wants to do (for whatever reason) and responds by experiencing an inner frustration.

? Example: Exploring Conflict in the Workplace

Over the past two years at Google, 48 people have been terminated for sexual harassment. There is a firm policy at Google pertaining to this type of misconduct, but when the effects of these types of events cause an uproar based on reports that a former top executive was paid millions of dollars after leaving Google despite misconduct and harassment allegations, it's important to get to the point of conflict and face it head-on.

That's exactly why Chief Executive Officer Sundar Pichai did just that. In an attempt to get ahead of the storm, Pichai wrote an email explaining that none of the individuals that were asked to leave were given severance packages. Despite this, employees are still feeling upset over such claims.

"The culture of stigmatization and silence *enables* the abuse by making it harder to speak up and harder to be believed," Liz Fong-Jones, who is quoted in the *Times*'s story, wrote on Twitter. "It's the abuse of power relationships in situations where there was no consent or consent was impossible."

After the article came out in the *New York Times* reporting that Google gave Andy Rubin, former Android chief, a \$90 million exit package, it was not just employees that were upset; there was external conflict between the company and Rubin. The media was heavily involved, including Bloomberg, and Rubin used social channels as well, making it even more complicated to counteract the negative comments or come to a resolution. Since the reports of Rubin's actions as well as additional reports regarding Google's permissive culture became public, Google has taken actions to update its policy on relationship disclosure.

This stance from the Google executive team is just one step in the right direction to address a culture that suggests a high level of conflict due to the protection of executives over the safety and well-being of the employees, who may be less likely to report incidents of abuse of power.

Sources: A. Barr, "Google CEO Tries to Calm Staff After Executive Misconduct Report," *Bloomberg*, October 25, 2018, <https://www.bloomberg.com/news/artic...conduct-report>; D. Wakabayashi and K. Benner, "How Google Protected Andy Rubin, the 'Father of Android'," *New York Times*, October 25, 2018, <https://www.nytimes.com/2018/10/25/t...ndy-rubin.html>; A.

In all organizations, including Google, some conflict is inevitable. Simply making a decision to do *A* instead of *B* often alienates the supporters of *B*, despite the soundness of the reasons behind the decision. Moreover, the consequences of conflict (and failed negotiations) can be costly to an organization, whether the conflict is between labor and management, groups, individuals, or nations. In an era of increasing business competition both from abroad and at home, reducing conflict is important. For these reasons, contemporary managers need a firm grasp of the dynamics of conflict and negotiation processes.

Benefits of Team Conflict

There are many sources of **conflict** for a team, whether it is due to a communication breakdown, competing views or goals, power struggles, or conflicts between different personalities. The perception is that conflict is generally bad for a team and that it will inevitably bring the team down and cause them to spiral out of control and off track. Conflict does have some potential costs. If handled poorly, it can create distrust within a group, it can be disruptive to group progress and morale, and it could be detrimental to building lasting relationships. It is generally seen as a negative, even though constructive conflicts and constructive responses to conflicts can be an important developmental milestone for a team. Some potential benefits of conflict are that it encourages a greater diversity of ideas and perspectives and helps people to better understand opposing points of view. It can also enhance a team's problem-solving capability and can highlight critical points of discussion and contention that need to be given more thought.

Another key benefit or outcome of conflict is that a team that trusts each other—its members and members' intentions—will arise from conflict being a stronger and higher-performing team. Patrick Lencioni, in his bestselling book *The Five Dysfunctions of a Team* (2002, p. 188), writes:

"The first dysfunction is an absence of trust among team members. Essentially, this stems from their unwillingness to be vulnerable within the group. Team members who are not genuinely open with one another about their mistakes and weaknesses make it impossible to build a foundation for trust. This failure to build trust is damaging because it sets the tone for the second dysfunction: fear of conflict. Teams that lack trust are incapable of engaging in unfiltered and passionate debate of ideas. Instead, they resort to veiled discussions and guarded comments."

Lencioni also asserts that if a team doesn't work through its conflict and air its opinions through debate, team members will never really be able to buy in and commit to decisions. (This lack of commitment is Lencioni's third dysfunction.) Teams often have a fear of conflict so as not to hurt any team members' feelings. The downside of this avoidance is that conflicts still exist under the surface and may resurface in more insidious and back-channel ways that can derail a team. How can a team overcome its fear of conflict and move the team forward?



Figure 4.7 The Five Dysfunctions of Team is a team development model that explores the fundamental causes of organizational politics and team failure. Initially applied in business and corporate settings, it is now increasingly popular in the context of Sport

(Hansen Bay <https://youtu.be/GCxt4CR-To>)

Lencioni names a few strategies that teams can use to make conflict more common and productive. **Mining** is a technique that can be used in teams that tend to avoid conflict. This technique requires that one team member “assume the role of a ‘miner of conflict’—someone who extracts buried disagreements within the team and sheds the light of day on them. They must have the courage and confidence to call out sensitive issues and force team members to work through them.” **Real-time permission** is another technique to “recognize when the people engaged in conflict are becoming uncomfortable with the level of discord, and then interrupt to remind them that what they are doing is necessary.” This technique can help the group to focus on the points of conflict by coaching the team not to sweep things under the rug.

The team leader plays a very important role in the team’s ability to address and navigate successfully through conflicts. Sometimes a leader will have the attitude that conflict is a de-railer and will try to stymie it at any cost. This ultimately leads to a team culture in which conflict is avoided and the underlying feelings are allowed to accumulate below the surface of the discussion. The leader should, by contrast, model the appropriate behavior by constructively addressing conflict and bringing issues to the surface to be addressed and resolved by the team. This is key to building a successful and effective team.

In summary, conflict is never easy for an individual or a team to navigate through, but it can and should be done. Illuminating the team about areas of conflict and differing perspectives can have a very positive impact on the growth and future performance of the team, and it should be managed constructively.

Types of Conflict

If we are to try to understand the roots of conflict, we need to know what type of conflict is present. At least four *types of conflict* can be identified:

1. **Goal conflict** occurs when one person or group desires a different outcome than others do. This is simply a clash over whose goals are going to be pursued.
2. **Cognitive conflict** results when one person or group holds ideas or opinions that are inconsistent with those of others. This type of conflict is evident in political debates.
3. **Affective conflict** emerges when one person’s or group’s feelings or emotions (attitudes) are incompatible with those of others. **Affective conflict** is seen in situations where two individuals simply don’t get along with each other.
4. **Behavioral conflict** exists when one person or group does something (i.e., behaves in a certain way) that is unacceptable to others. Dressing for work in a way that “offends” others and using profane language are examples of behavioral conflict.

Each of these types of conflict is usually triggered by different factors, and each can lead to very different responses by the individual or group.

Levels of Conflict

In addition to different types of conflict, there exist several different *levels* of conflict. *Level* refers to the number of individuals involved in the conflict. That is, is the conflict within just one person, between two people, or between two or more groups. Both the causes of a conflict and the most effective means to resolve it can be affected by level.

1. **Intrapersonal conflict** is conflict within one person. We often hear about someone who has an approach-avoidance conflict; that is, she is both attracted to and repelled by the same object. Similarly, a person can be attracted to two equally appealing alternatives, such as two good job offers (approach-approach conflict) or repelled by two equally unpleasant alternatives, such as the threat of being fired if one fails to identify a coworker guilty of breaking plant rules (avoidance-avoidance conflict). In any case, the conflict is within the individual.
2. **Interpersonal conflict.** Conflict can also take form in an interpersonal conflict, where two individuals disagree on some matter. For example, you can have an argument with a coworker over an issue of mutual concern. Such conflicts often tend to get highly personal because only two parties are involved and each person embodies the opposing position in the conflict. Hence, it is sometimes difficult to distinguish between the opponent’s position and her person.
3. **Intergroup conflict** usually involves disagreements between two opposing forces over goals or the sharing of resources. For example, we often see conflict between the marketing and production units within a corporation as each vies for more resources to accomplish its subgoals. Intergroup conflict is typically the most complicated form of conflict because of the number of individuals involved. Coalitions form within and between groups, and an “us-against-them” mentality develops. Here, too, is an opportunity for groupthink to develop and thrive.

The Positive and Negative Sides of Conflict

People often assume that all conflict is necessarily bad and should be eliminated. On the contrary, there are some circumstances in which a moderate amount of conflict can be helpful. For instance, conflict can lead to the search for new ideas and new mechanisms as solutions to organizational problems. Conflict can stimulate innovation and change. It can also facilitate employee motivation in cases where employees feel a need to excel and, as a result, push themselves in order to meet performance objectives.

Conflict can at times help individuals and group members grow and develop self-identities. As noted by Coser (1956):

Conflict, which aims at a resolution of tension between antagonists, is likely to have stabilizing and integrative functions for the relationship. By permitting immediate and direct expression of rival claims, such social systems are able to readjust their structures by eliminating their sources of dissatisfaction. The multiple conflicts which they experience may serve to eliminate the causes for dissociation and to reestablish unity. These systems avail themselves, through the toleration and institutionalization of conflict, of an important stabilizing mechanism.

Conflict, on the other hand, can have negative consequences for both individuals and organizations when people divert energies away from performance and goal attainment and direct them toward resolving the conflict. Continued conflict can take a heavy toll in terms of psychological well-being. As we will see in the next chapter, conflict has a major influence on stress and the psychophysical consequences of stress. Finally, continued conflict can also affect the social climate of the group and inhibit group cohesiveness.

Thus, conflict can be either functional or dysfunctional in work situations depending upon the nature of the conflict, its intensity, and its duration. Indeed, both too much and too little conflict can lead to a variety of negative outcomes, as discussed above. In such circumstances, a moderate amount of conflict may be the best course of action. The issue for management, therefore, is not how to eliminate conflict but rather how to manage and resolve it when it occurs.

Causes of Conflict

A number of factors are known to facilitate organizational conflict under certain circumstances. In summarizing the literature, Robert Miles (1980) points to several specific examples. These are as follows:

Task Interdependencies. In essence, the greater the extent of task interdependence among individuals or groups (that is, the more they have to work together or collaborate to accomplish a goal), the greater the likelihood of conflict if different expectations or goals exist among entities, in part because the interdependence makes avoiding the conflict more difficult. This occurs in part because high task interdependency heightens the intensity of relationships. Hence, a small disagreement can very quickly get blown up into a major issue.

Status Inconsistencies. For example, managers in many organizations have the prerogative to take personal time off during workdays to run errands, and so forth, whereas nonmanagerial personnel do not. Consider the effects this can have on the nonmanagers' view of organizational policies and fairness. Likewise, a student team in a course may have one member who uses their job or other course work as a reason to miss deadlines or meetings. By not respecting that their teammates also have other responsibilities, this member creates a higher status for themselves and rightly so, this often leads to conflict among the teammates who are left to do more than their share of the work.

Jurisdictional Ambiguities are situations where it is unclear exactly where responsibility for something lies. For example, many organizations use an employee selection procedure in which applicants are evaluated both by the personnel department and by the department in which the applicant would actually work. Because both departments are involved in the hiring process, what happens when one department wants to hire an individual, but the other department does not?

Communication Problems. When one person misunderstands a message or when information is withheld, the person often responds with frustration and anger.

Dependence on Common Resource Pool. Whenever several departments must compete for scarce resources, conflict is almost inevitable. When resources are limited, a zero-sum game exists in which someone wins and, invariably, someone loses.

Lack of Common Performance Standards. Differences in performance criteria and reward systems provide more potential for organizational conflict. This often occurs because of a *lack of common performance standards* among different groups within the same organization. For example, production personnel are often rewarded for their efficiency, and this efficiency is facilitated by the long-term production of a few products. Sales departments, on the other hand, are rewarded for their short-term response to

market changes—often at the expense of long-term production efficiency. In such situations, conflict arises as each unit attempts to meet its own performance criteria.

Individual Differences. Finally, a variety of *individual differences*, such as personal abilities, traits, and skills, can influence in no small way the nature of interpersonal relations. Individual dominance, aggressiveness, authoritarianism, and tolerance for ambiguity all seem to influence how an individual deals with potential conflict. Indeed, such characteristics may determine whether or not conflict is created at all.

Responses to Conflict

There are a variety of individual responses to conflict that you may see as a team member. Some people take the constructive and thoughtful path when conflicts arise, while others may jump immediately to destructive behaviors. In *Managing Conflict Dynamics: A Practical Approach*, Capobianco, Davis, and Kraus (2005) recognized that there are both constructive and destructive responses to conflict, as well as active and passive responses that we need to recognize. They believe that in the event of team conflict, the goal is to have a constructive response in order to encourage dialogue, learning, and resolution. Responses such as perspective-taking, creating solutions, expressing emotions, and reaching out are considered active and constructive responses to conflict. Reflective thinking, delay responding, and adapting are considered passive and constructive responses to conflict. See the chart below for a visual of the constructive responses, as well as the destructive responses, to conflict.

	Constructive	Destructive
Active	• Perspective taking • Creating solutions • Expressing emotions • Reaching out	• Winning • Displaying anger • Demeaning others • Retaliating
Passive	• Reflective thinking • Delay responding • Adapting	• Avoiding • Yielding • Hiding emotions • Self-criticizing

Figure 4.8. **Responses to Conflict** (Attribution: Copyright Rice University, OpenStax, under CC-BY 4.0 license)

A Model of the Conflict Process

Having examined specific factors that are known to facilitate conflict, we can ask how conflict comes about in organizations. The most commonly accepted model of the conflict process was developed by Kenneth Thomas (1967). This model consists of four stages: (1) frustration, (2) conceptualization, (3) behavior, and (4) outcome.

Stage 1: Frustration. As we have seen, conflict situations originate when an individual or group feels **frustration** in the pursuit of important goals. This frustration may be caused by a wide variety of factors, including disagreement over performance goals, failure to get a promotion or pay raise, a fight over scarce economic resources, new rules or policies, and so forth. In fact, conflict can be traced to frustration over almost anything a group or individual cares about.

Stage 2: Conceptualization. In stage 2, the conceptualization stage of the model, parties to the conflict attempt to understand the nature of the problem, what they themselves want as a resolution, what they think their opponents want as a resolution, and various strategies they feel each side may employ in resolving the conflict. This stage is really the problem-solving and strategy phase. For instance, when management and union negotiate a labor contract, both sides attempt to decide what is most important and what can be bargained away in exchange for these priority needs.

Stage 3: Behavior. The third stage in Thomas's model is actual *behavior*. As a result of the conceptualization process, parties to a conflict attempt to implement their resolution mode by competing or accommodating in the hope of resolving problems. A major task here is determining how best to proceed strategically. That is, what tactics will the party use to attempt to resolve the conflict? Thomas has identified five modes for conflict resolution. These are (1) competing, (2) collaborating, (3) compromising, (4) avoiding, and (5) accommodating.

The choice of an appropriate conflict resolution mode depends to a great extent on the situation and the goals of the party. Each party must decide the extent to which it is interested in satisfying its own concerns—called **assertiveness**—and the extent to which

it is interested in helping satisfy the opponent's concerns—called **cooperativeness**. Assertiveness can range from assertive to unassertive on one continuum, and cooperativeness can range from uncooperative to cooperative on the other continuum.

Once the parties have determined their desired balance between the two competing concerns—either consciously or unconsciously—the resolution strategy emerges. For example, if a union negotiator feels confident she can win on an issue that is of primary concern to union members (e.g., wages), a direct competition mode may be chosen. On the other hand, when the union is indifferent to an issue or when it actually supports management's concerns (e.g., plant safety), we would expect an accommodating or collaborating mode (on the right-hand side of the exhibit).

Stage 4: Outcome. Finally, as a result of efforts to resolve the conflict, both sides determine the extent to which a satisfactory resolution or outcome has been achieved. Where one party to the conflict does not feel satisfied or feels only partially satisfied, the seeds of discontent are sown for a later conflict. One unresolved conflict episode can easily set the stage for a second episode. Managerial action aimed at achieving quick and satisfactory resolution is vital; failure to initiate such action leaves the possibility (more accurately, the probability) that new conflicts will soon emerge.

Five Modes of Resolving Conflict

Modes	Situation
Competing	1. When quick, decisive action is vital—e.g., emergencies 2. On important issues where unpopular actions need implementing—e.g., cost-cutting, enforcing unpopular rules, discipline 3. On issues vital to company welfare when you know you're right 4. Against people who take advantage of noncompetitive behavior
Collaborating	1. When trying to find an integrative solution when both sets of concerns are too important to be compromised 2. When your objective is to learn 3. When merging insights from people with different perspectives 4. When gaining commitment by incorporating concerns into a consensus 5. When working through feelings that have interfered with a relationship
Compromising	1. When goals are important but not worth the effort or potential disruption of more assertive modes 2. When opponents with equal power are committed to mutually exclusive goals 3. When attempting to achieve temporary settlements to complex issues 4. When arriving at expedient solutions under time pressure 5. As a backup when collaboration or competition is unsuccessful
Avoiding	1. When an issue is trivial, or when more important issues are pressing 2. When you perceive no chance of satisfying your concerns 3. When potential disruption outweighs the benefits of resolution 4. When letting people cool down and regain perspective 5. When gathering information supersedes immediate decision 6. When others can resolve the conflict more effectively 7. When issues seem tangential or symptomatic of other issues

Accommodating

1. When you find you are wrong—to allow a better position to be heard, to learn, and to show your reasonableness
2. When issues are more important to others than yourself—to satisfy others and maintain cooperation
3. When building social credits for later issues
4. When minimizing loss when you are outmatched and losing
5. When harmony and stability are especially important.
6. When allowing subordinates to develop by learning from mistakes.

Table 4.2 Adapted from K. W. Thomas, “Toward Multidimensional Values in Teaching: The Example of Conflict Behaviors,” *Academy of Management Review* 2 (1977), Table 1, p. 487

Conflict Negotiation: How to achieve a mutually advantageous agreement

We have discovered that conflict is pervasive throughout organizations and some conflict can be good for organizations. People often grow and learn from conflict, as long as the conflict is not dysfunctional. The challenge for managers is to select a resolution strategy appropriate to the situation and individuals involved. A review of past management practice in this regard reveals that managers often make poor strategy choices. As often as not, managers select repressive or ineffective conflict resolution strategies.

Common Strategies that Seldom Work

At least five conflict resolution techniques commonly found in organizations prove to be ineffective fairly consistently.⁸ In fact, not only do such techniques seldom work—in many cases, they actually serve to increase the problem. Nonetheless, they are found with alarming frequency in a wide array of business and public organizations. These five ineffective strategies are often associated with an avoidance approach and are described below.

Nonaction. Perhaps the most common managerial response when conflict emerges is *nonaction*—doing nothing and ignoring the problem. It may be felt that if the problem is ignored, it will go away. Unfortunately, that is not often the case. In fact, ignoring the problem may serve only to increase the frustration and anger of the parties involved.

Administrative Orbiting. In some cases, managers will acknowledge that a problem exists but then take little serious action. Instead, they continually report that a problem is “under study” or that “more information is needed.” Telling a person who is experiencing a serious conflict that “these things take time” hardly relieves anyone’s anxiety or solves any problems. This ineffective strategy for resolving conflict is aptly named **administrative orbiting**.

Due Process Nonaction. A third ineffective approach to resolving conflict is to set up a recognized procedure for redressing grievances but at the same time to ensure that the procedure is long, complicated, costly, and perhaps even risky. The **due process nonaction** strategy is to wear down the dissatisfied employee while at the same time claiming that resolution procedures are open and available. This technique has been used repeatedly in conflicts involving race and sex discrimination.

Secrecy. Oftentimes, managers will attempt to reduce conflict through *secrecy*. Some feel that by taking secretive actions, controversial decisions can be carried out with a minimum of resistance. One argument for pay secrecy (keeping employee salaries secret) is that such a policy makes it more difficult for employees to feel inequitably treated. Essentially, this is a “what they don’t know won’t hurt them” strategy. A major problem of this approach is that it leads to distrust of management. When managerial credibility is needed for other issues, it may be found lacking.

Character Assassination. The final ineffective resolution technique to be discussed here is **character assassination**. The person with a conflict, perhaps a woman claiming sex discrimination, is labeled a “troublemaker.” Attempts are made to discredit her and distance her from the others in the group. The implicit strategy here is that if the person can be isolated and stigmatized, she will either be silenced by negative group pressures or she will leave. In either case, the problem is “solved.”

Preventing Negative Conflict

On the more positive side, there are many things managers can do to reduce or actually solve dysfunctional conflict when it occurs. These fall into two categories: actions directed at conflict *prevention* and actions directed at conflict *reduction*. We shall start by examining conflict prevention techniques, because preventing conflict is often easier than reducing it once it begins. These include:

1. *Emphasizing organization-wide goals and effectiveness.* Focusing on organization-wide goals and objectives should prevent goal conflict. If larger goals are emphasized, employees are more likely to see the big picture and work together to achieve corporate goals.
2. *Providing stable, well-structured tasks.* When work activities are clearly defined, understood, and accepted by employees, conflict should be less likely to occur. Conflict is most likely to occur when task uncertainty is high; specifying or structuring jobs minimizes ambiguity.
3. *Facilitating intergroup communication.* Misperception of the abilities, goals, and motivations of others often leads to conflict, so efforts to increase the dialogue among groups and to share information should help eliminate conflict. As groups come to know more about one another, suspicions often diminish, and greater intergroup teamwork becomes possible.
4. *Avoiding win-lose situations.* If win-lose situations are avoided, less potential for conflict exists. When resources are scarce, management can seek some form of resource sharing to achieve organizational effectiveness. Moreover, rewards can be given for contributions to overall corporate objectives; this will foster a climate in which groups seek solutions acceptable to all.

These points bear a close resemblance to descriptions of the so-called Japanese management style. In Japanese firms, considerable effort is invested in preventing conflict. In this way, more energy is available for constructive efforts toward task accomplishment and competition in the marketplace.

✓ Exercise: Constructive Conflict

Sustainability and Responsible Management: Constructive Conflict that Leads to Championships

Dealing with conflict lies at the heart of managing any business. Confrontation—facing issues about which there is disagreement—is avoided only at a manager’s peril. Many issues can be postponed, allowed to fester, or smoothed over; eventually, they must be solved. They are not going to disappear. This philosophy not only applies to business but to sports dynamics as well.

Take two NBA all-stars, Kobe Bryant and Shaquille O’Neal. Although they are world-renowned athletes now, when they first started in the NBA, there was plenty of conflict that could have caused their careers to take a much different path.

In 1992, O’Neal was the first play taken in by the NBA draft, he dominated the court with his size and leadership from day one. Four years later, Kobe Bryant, the youngest player to start in the NBA was brought onto the same team: the Los Angeles Lakers. The two were not fast friends, and the trash talk started as Bryant publicly criticized his teammate—and continued for years.

Ultimately in 1999, Phil Jackson was brought in to coach the LA Lakers, and his creative approach to their conflict changed everything. Instead of seeing this tension and ignoring it, or chastising the players for their feud, he used their skills to develop a new way of playing the game. O’Neal brought power and strength to the court, while Bryant was fast and a great shooter. Jackson developed a way of playing that highlighted both of these talents, and he built a supporting cast around them that brought out the best in everyone. The outcome: three NBA championships in a row.

While many may have just ignored or tried to separate the two superstars, Jackson was innovative in his approach, saw the opportunity in using the conflict to create a new energy, and was able to build a very successful program.

What do you think?

1. What was the key to the success for Phil Jackson and his team?
2. How would you have approached the two players (or employees) that were in conflict and causing tension on your team?
3. What strategies would have been important to employ with these two individuals to resolve the conflict?

Sources: J. DeGraff, “3 Legendary Creative Conflicts That Sparked Revolutionary Innovation,” *Huffington Post*, September 26, 2017, <https://www.huffingtonpost.com/entry...b08d66155043d6>; K. Soong, “‘I owe you an apology’: Shaquille O’Neal explains why he loves Kobe Bryant years after feud,” *Washington Post*, February 17, 2017, <https://www.washingtonpost.com/news/...=.b9cca63b5761>; M. Chiari, “Kobe Bryant Discusses Getting into Fist Fight with Shaquille O’Neal,” *Bleacher Report*, March 9, 2018, <https://bleacherreport.com/articles/...shaquille-oneal>.

Remedies for Negative Conflict

Where dysfunctional conflict already exists, something must be done, and managers may pursue one of at least two general approaches: they can try to change employee *attitudes*, or they can try to change employee *behaviors*. If they change behavior,

open conflict is often reduced, but team members may still dislike one another; the conflict simply becomes less visible. Changing attitudes, on the other hand, often leads to fundamental changes in the ways that team members get along. However, it also takes considerably longer to accomplish than behavior change because it requires a fundamental change in social perceptions.

1. **Physical separation.** The quickest and easiest solution to conflict is physical separation. Separation is useful when conflicting team members are not working on a joint task or do not need a high degree of interaction. Though this approach does not encourage members to change their attitudes, it does provide time to seek a better accommodation.
2. **Use of rules and regulations.** Conflict can also be reduced through the increasing specification of rules, regulations, and procedures. This approach, also known as the bureaucratic method, imposes solutions on teams from above. Again, however, basic attitudes are not modified.
3. **Confrontation and negotiation.** In this approach, competing parties are brought together face-to-face to discuss their basic areas of disagreement. The hope is that through open discussion and **negotiation**, means can be found to work out problems. Contract negotiations between union and management represent one such example. If a “win-win” solution can be identified through these negotiations, the chances of an acceptable resolution of the conflict increase.
4. **Third-party consultation.** In some cases, it is helpful to bring in outside consultants for **third-party consultation** who understand human behavior and can facilitate a resolution. A third-party consultant not only serves as a go-between but can speak more directly to the issues, because she is not a member of either group.
5. **Rotation of members.** By rotating from one group to another, individuals come to understand the frames of reference, values, and attitudes of other members; communication is thus increased. When those rotated are accepted by the receiving groups, change in attitudes as well as behavior becomes possible. This is clearly a long-term technique, as it takes time to develop good interpersonal relations and understanding among group members.
6. **Use of training.** The final technique on the continuum is team training. Training experts are retained on a long-term basis to help teams develop relatively permanent mechanisms for working together. Structured workshops and training programs can help forge more favorable attitudes and, as a result, more constructive behavior.

Negotiation and bargaining strategies

We have seen the central role conflict plays in organizational processes. Clearly, there are some areas where managers would prefer to solve a problem between two parties before it results in high levels of conflict. This is usually accomplished through negotiation. **Negotiation** is the process by which individuals or groups attempt to realize their goals by bargaining with another party who has at least some control over goal attainment. Throughout the negotiation process, considerable skill in communication, decision-making, and the use of power and politics is required in order to succeed.

We will consider several aspects of negotiation, including stages of negotiation, types of negotiation behavior, and the negotiation process itself. We begin with the reasons why people engage in negotiation and bargaining in the first place.

Stages of Negotiation

In general, negotiation and bargaining are likely to have four stages. Although the length or importance of each stage can vary from situation to situation or from one culture to another, the presence and sequence of these stages are quite common across situations and cultures.

1. **Non-task time.** During the first stage, the participants focus on getting to know and become comfortable with each other and do not focus directly on the task or issue of the negotiation. In cultures such as ours, this stage is often filled with small talk. However, it is usually not very long and is not seen as important as other stages. North Americans use phrases such as “Let’s get down to business,” “I know you’re busy, so let’s get right to it,” and “Let’s not beat around the bush.” However, in other cultures such as Mexico or South Korea, the non-task stage is often longer and of more importance, because it is during this stage the relationship is established. In these cultures, it is the relationship more than the contract that determines the extent to which each party can trust the other to fulfill its obligations.
2. **Information exchange.** The second stage of negotiations involves the exchange of background and general information. During this stage, participants may, for example, provide overviews of their company and its history. In Japan, this is an important stage because specific proposals or agreements must be considered and decided in the larger context. The information exchanged during the second stage provides this larger context.
3. **Influence and persuasion.** The third stage involves efforts to influence and persuade the other side. Generally, these efforts are designed to get the other party to reduce its demands or desires and to increase its acceptance of your demands or desires. There are a wide variety of influence tactics, including promises, threats, questions, and so on. The use of these tactics as well as their

effectiveness is a function of several factors. First, the perceived or real power of one party relative to another is an important factor. For example, if one party is the only available supplier of a critical component, then threatening to go to a new supplier of that component unless the price is reduced is unlikely to be an effective influence tactic. Second, the effectiveness of a particular influence tactic is also a function of accepted industry and cultural norms. For example, if threats are an unacceptable form of influence, then their use could lead to consequences opposite from what is desired by the initiator of such tactics.

4. **Closing.** The final stage of any negotiation is the closing. The closing may result in an acceptable agreement between the parties involved or it may result in failure to reach an agreement. The symbols that represent the close of a negotiation vary across cultures. For example, in the United States, a signed contract is the symbol of a closed negotiation. At that point, “a deal is a deal” and failure to abide by the contents of the document is considered a breach of contract. In China, however, there is not the strong legal history or perspective that exists in the United States, and a signed document is not necessarily a symbol of the close of the negotiations. In fact, to some extent it symbolizes the beginning of the final points of negotiation. The signed document identifies the key issues that still need to be negotiated despite the fact that it may contain specific obligations for the involved parties concerning these issues. Quite simply, even though the document may obligate one party to deliver a product on a certain day and obligate the other party to pay a certain price for delivery, the document itself does not symbolize that the negotiation concerning these specifics is closed.

Each of these four stages and the sequence described above are common across most situations and cultures. However, the length of time devoted to each stage, the importance of each stage, and the specific behaviors associated with each stage can vary by situation and certainly do vary by culture.

Bargaining Strategies

Within the context of these four stages, both parties must select an appropriate strategy that they believe will assist them in the attainment of their objectives. In general, two rather distinct approaches to negotiation can be identified. These are **distributive bargaining** and **integrative bargaining**.

Distributive Bargaining. In essence, distributive bargaining is “win-lose” bargaining. That is, the goals of one party are in fundamental and direct conflict with those of the other party. Resources are fixed and limited, and each party wants to maximize her share of these resources. Finally, in most cases, this situation represents a short-term relationship between the two parties. In fact, such parties may not see each other ever again.

A good example of this can be seen in the relationship between the buyer and seller of a house. If the buyer gets the house for less money (that is, she “wins”), the seller also gets less (that is, she “loses”). This win-lose situation can also be seen in classes where the professor insists on grading on a specified curve. If your friends get an A, there are fewer As to go around, and your chances are diminished.

Integrative Bargaining. Integrative bargaining is often described as the “win-win” approach. That is, with this technique, both parties try to reach a settlement that benefits both parties. Such an approach is often predicated on the belief that if people mutually try to solve the problem, they can identify some creative solutions that help everyone. A good example can be seen in bilateral trade negotiations between two nations. In such negotiations, participants usually agree that a trade war would hurt both sides; therefore, both sides attempt to achieve a balance of outcomes that are preferable to a trade war for both sides. In doing so, however, the trick is to give away as little as possible to achieve the balance.¹⁰

This approach is characterized by the existence of variable resources to be divided, efforts to maximize joint outcomes, and the desire to establish or maintain a long-term relationship. The interests of the two parties may be convergent (noncompetitive, such as preventing a trade war between two countries) or congruent (mutually supportive, as when two countries reach a mutual defense pact).

In both cases, bargaining tactics are quite different from those typically found in distributive bargaining. Here, both sides must be able and willing to understand the viewpoints of the other party. Otherwise, they will not know where possible consensus lies. Moreover, the free flow of information is required. Obviously, some degree of trust is required here too. In discussions, emphasis is placed on identifying commonalities between the two parties; the differences are played down. And, finally, the search for a solution focuses on selecting those courses of action that meet the goals and objectives of both sides. This approach requires considerably more time and energy than distributive bargaining, yet, under certain circumstances, it has the potential to lead to far more creative and long-lasting solutions.

The Negotiation Process

The negotiation process consists of identifying one's desired goals—that is, what you are trying to get out of the exchange—and then developing suitable strategies aimed at reaching those goals. A key feature of one's strategy is knowing one's relative position in the bargaining process. That is, depending upon your relative position or strength, you may want to negotiate seriously or you may want to tell your opponent to “take it or leave it.” The dynamics of bargaining power can be extrapolated directly from power and indicate several conditions affecting this choice. For example, you may wish to negotiate when you value the exchange, when you value the relationship, and when commitment to the issue is high. In the opposite situation, you may be indifferent to serious bargaining.

Once goals and objectives have been clearly established and the bargaining strategy is set, time is required to develop a suitable plan of action. Research indicates that planning ahead and following such procedures does, in fact, lead to more successful bargaining. Planning for negotiation requires a clear assessment of your own strengths and weaknesses as well as those of your opponents. Roy Lewicki and Joseph Litterer have suggested a format for preparation for negotiation.¹¹ According to this format, planning for negotiation should proceed through the following phases:

1. Understand the basic nature of the conflict. What are the primary areas of agreement and disagreement?
2. What exactly do you want out of this negotiation? What are your goals?
3. How will you manage the negotiation process? Here, several issues should be recognized:
 1. Identify the primary issues to negotiate.
 2. Prioritize these issues.
 3. Develop a desirable package including these important issues.
 4. Establish an agenda.
4. Do you understand your opponent?
 1. What are your opponent's current resources and needs?
 2. What is the history of your opponent's bargaining behavior? What patterns can you see that can help you predict her moves?

? Exercise: Salary Negotiation

Janice just graduated college, she's ready to head out on her own and get that first job, and she's through her first interviews. She receives an offer of a \$28,000 salary, including benefits from COLLEGE CORP, from an entry-level marketing position that seems like a perfect fit. She is thrown off by the salary they are offering and knows that it is lower than what she was hoping for. Instead of panicking, she takes the advice of her mentor and does a little research to know what the market range for the salary is for her area. She feels better after doing this, knowing that she was correct and the offer is low compared to the market rate. After understanding more about the offer and the rates, she goes back to the HR representative and asks for her preferred rate of \$32,500, knowing the minimum that she would accept is \$30,000. Instead of going in for her lowest amount, she started higher to be open to negotiations with the company. She also sent a note regarding her expertise that warranted why she asked for that salary. To her happy surprise, the company counter-offered at \$31,000—and she accepted.

What do you think?

1. What key points of Janice's negotiation led to her success?
2. What could have Janice done better to get a better outcome for her salary?

Sources: “Good & Bad Salary Negotiations,” *Salary.com*, April 19, 2018, <https://www.salary.com/articles/good...-negotiations/>; M. Herner, “5 Things HR Wishes You Knew About Salary Negotiation,” *Payscale.com*, accessed October 21, 2018, <https://www.payscale.com/salary-nego...n-tips-from-hr>.

✓ GENERAL TIPS FOR CONFLICT RESolution

- Constructive conflict encourages a diversity of ideas and perspectives and helps team members understand opposing views.
- Positive responses to conflict include taking perspective, creating solutions, and reaching out to the other person.
- Destructive responses to conflict include displaying anger, demeaning others, and retaliating.
- Dysfunctional or negative conflict diverts energies away from performance and goal attainment.
- Understanding cultural differences is imperative to resolving negative conflict.

- Negative conflict can be prevented by emphasizing common goals, providing structured tasks, and facilitating communication.
- Negative conflict can be resolved through negotiation and bargaining.
- Managerial skill in handling conflict is a major predictor of managerial success and effectiveness.

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7: Memos

Chapter Objectives

- Describe the purpose of a memo.
- Identify the proper format of a memo.
- Explain how to effectively organize a memo's content.

Once the dominant form of communication in the workplace, memos typically serve as internal communication within organization. Memos can update policies and procedures, announce meetings or organizational changes, or inform the internal audience as needed. The truth is, there are lots of different occasions to write memos. We use memos to distribute progress reports, meeting minutes, incident reports, instructions, progress updates, new policies, and more.

Memos are an accepted method of communication within a specific business, company, or institution. They are often (but not always) written from a one-to-all perspective, broadcasting a message to an audience, rather than a one-on-one, interpersonal communication. Memos may be used to update a team on activities for a given project or to inform a specific group within a company of an event, action, or observance.

The fact that memos are only used internally makes them different from letters, emails, and texting, which can be used inside and outside of the workplace. The successful operation of a company depends on memos for communication between the employees of the company. They are often (but not always) written from a one-to-all perspective, broadcasting a message to an audience, rather than a one-on-one, interpersonal communication. Memos may be used to update a team on activities for a given project or to inform a specific group within a company of an event, action, or observance.

Memo Purpose

Technical writing centers on effective communication of detailed information. The purpose of a memo aligns with that intention. A memo's purpose is often to inform, but it may occasionally include an element of persuasion or a call-to-action. For instance, a memo may spell out clearly for all team members what is going on with a particular issue. No matter your purpose, be clear on what it is before you begin writing. Include a subject line as discussed below making that purpose clear, and develop your memo with concise writing that all serves that central purpose.

Memo Format

Memos are typically brief, concise, organized for readability, and addressed to targeted audiences with specific subject lines. A memo's format provides the audience with clear and easy access to information. The message is direct. For ease of reading, a memo follows a specific format. Usually, we start by typing the word Memo or Memorandum under the letterhead. (Note that there are memo templates available to you in Microsoft Word.) If there is no letterhead, start by typing up the name of the company on top of the page before you write the word Memo or Memorandum. Then, follow with a heading block.

Organization of a Heading Block Information

To:		Date:
From:	OR	To:
Date:		From:
Subject:		Subject:

The recipient can be a single person or a group of people. If you are writing the memo to one person, use the person's name and job title. If you are writing to a group of people, use the name of the group rather than a list of specific names. For example, we can address a memo to The Engineering Team. The sender should always include their name and their job title. The subject line is very important and should be used responsibly. It must be brief and concise while specifically indicating the main purpose of the memo. Note that every major word in a subject should start with a capital letter (prepositions and articles are not capitalized in subject lines and titles in general). Some companies prefer that the subject line is also in bold. (As a general rule, if your organization

follows a specific structure for memos, even if that structure contradicts what you've learned here, honor that structure as that company is your audience!).

Example of a Heading Block

To: Student Support Services
From: Greg Brown, User Support Technician
Date: December 1, 2020
Subject: Server Outage on Friday, December 4

You will fill in the information, and then you will begin your memo. If it is a longer memo (longer than a few paragraphs), you may also wish to use section headers. Remember that we do not start the memo with "Dear Ms.. Connor," or any other type of salutation. Also note that the order of the parts of the memo heading block and location of specific parts of the block varies according to different organizations' expectations.

Unlike emails and letters, memos do not have a closing and signature. Instead, in the past, the writer would indicate that they really wrote the memo by initialing by their name in the paper heading using blue or black ink. Or, if a memo was typed up by another person, it would be taken back to a supervisor for approval, and the person who typed the memo would initial at the bottom of the memo like this, for example: /jc. However, since today people write their own messages on their own computers, this is rarely done anymore.

Finally, in the days of paper, memos also indicated attachments. If a memo arrived on a desk with the notation "Enclosure" it meant that there was supposed to be something paper clipped to the memo with additional information. And if the recipient saw nothing paper clipped, it was immediately clear that something was missing. It is for this reason that you often see in an email a paper clip icon for the attachment button or notification.

Memo Content

In a standard writing format, we might expect to see an introduction, a body, and a conclusion. All these are present in a memo, and each part has a purpose. The introduction in the opening uses a declarative sentence to announce the main topic. If there are any effective dates or due dates that need to be presented, they should be presented in the first paragraph to ensure that they are not overlooked.

The body elaborates or lists major points associated with the topic, and the conclusion serves as a summary. It is quite common at the end of the memo to encourage readers to follow up with questions or comments and to provide contact information for their convenience. Throughout the memo, we need to pay attention to the tone to maintain goodwill.

Example of Memo Format and Content

To: All Employees
From: Maya James, President, Blue Lake Community College
Date: September 21, 2020
Subject: Future Expenditure Guidelines

After careful deliberation, I have determined it is necessary to begin the initial steps of a financial stewardship program that carries Blue Lake Community College through what appears to be a two-year cycle of a severe shortfall in revenue and subsequent necessary legislative budget reductions.

Beginning October 1, 2020, the following actions are being implemented for the General Fund, Auxiliary Fund, and Capital Fund in order to address the projected reductions in funding for the remainder of this year, 2020/2021, and for the next year, 2021/2022:

- Only purchases needed to operate the university should be made so that we can begin saving to reduce the impact of the 2021/2022 budget reductions.
- Requests for out-of-state travel will require approval from the Executive Committee to ensure that only necessary institutional travel occurs.
- Purchase, including in-state travel and budget transfers, will require the appropriate vice president's approval.

Please understand that we are taking these prudent steps to create savings that will allow BLCC to reduce the impact of projected cuts in expected 2021/2022 legislative reductions. Thank you for your cooperation. Please direct any questions to my office at (530) 218-3976 or email at officeofpresident@blcc.edu.

✓ General Memo Tips

- Always consider the audience and their needs when preparing a memo. An acronym or abbreviation that is known to a team may not be known by all the members of the organization, so if the memo is to be posted and distributed within the organization, your goal should be clear and concise communication at all levels with no ambiguity.
- Memos are often announcements, and the person sending the memo speaks for a part or all of the organization. While it may contain a request for feedback, the announcement itself is linear, from the organization to the employees. The memo may have legal standing, as it often reflects policies and procedures.
- The subject is normally declared in the subject line and should be clear and concise. If the memo is announcing the observance of a holiday, for example, the specific holiday should be named in the subject line--for example, use "Thanksgiving Weekend Schedule" rather than "Holiday Observance."
- Memos are always direct, meaning they get to the point quickly and the purpose is clearly announced.
- Memos should contain just facts and should have an objective tone without personal bias, preference, or interest on display. Avoid subjectivity.

This work "Writing Effective Memos" is a derivative of "[ENGL145: Technical and Report Writing](#)" by Amber Kinonen, "[Open Technical Communication](#)" by Tiffani Reardon, Tamara Powell, Jonathan Arnett, Monique Logan, and Cassandra Race, "[Professional Communications](#)" by JR Dingwall, Chuck Labrie, TK McLennon, Laura Underwood, and "Writing Effective Memos" by Iva Balic used under a CC BY license. "Memos" is licensed under [CC BY 4.0](#) by Tamara Girardi.

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8: Professional Emails

Chapter Objectives

- Identify content appropriate for professional emails.
- Demonstrate how audience influences email content.
- Exemplify the important components of professional emails.
- Explain ethical dilemmas posed by electronic communication.

Writing Effective Professional Emails

Technical writers send emails for internal and external communication purposes. Emails can be brief or lengthy and are quite malleable. Emails are useful tools for messages that are longer than a memo and to conduct business outside the organization. Many businesses send automated emails for regular communication, such to disseminate monthly reports. Many companies have synchronous chat networks so colleagues can exchange information quickly and easily, especially among small groups and teams.

E-mail often serves to exchange information within organizations. Although e-mail may have an informal feel, remember that when used for business, it needs to convey professionalism and respect. As a general rule, writers should never write or send anything they wouldn't want read in public or in front of the company president.

IS YOUR EMAIL APPROPRIATE?

Ask the following questions to determine if an email is appropriate:

- Is your message long, emotionally-charged, or does it contain highly-confidential information? If so, it may be more appropriate to communicate via a letter, a phone call, or a face-to-face meeting.
- How many emails does the recipient receive each day and what will make them read (or delete) your message?
- Will your recipient deem your email message important, an annoyance, or a waste of time?
- Does the formality and style of your writing fit the expectations of your audience?
- How will your message appear when it reaches the receiver? Is it easy-to-read? Have you used correct grammar and punctuation?
- Did you divide your thoughts into discrete paragraphs and highlight important items, such as due dates, in the text?
- Did you provide enough context for your audience to easily understand and follow the thread of your message?
- Did you identify yourself and make it easy for the reader to respond appropriately?
- Will the receiver be able to open and read any attachments?

Deciding whether it is appropriate to send an email requires you to consider your rhetorical situation. If you recall from earlier in the text, your rhetorical situation refers to your purpose for writing a document and the audience who will receive the message. The questions above offer practical strategies for analyzing your rhetorical situation.

Keep in mind that technical writing is a general term to refer to many different types of documents. As you continue working through this text, remind yourself of the conventions for each type of document. How does a memo differ from an email? When should each be used? What about a letter? Why choose an email rather than a letter? Or vice versa? Again, understanding your rhetorical situation will help you make appropriate decisions about the types of documents to choose. Here are some additional thoughts to help you.

WHEN IS AN EMAIL AN APPROPRIATE FORM OF COMMUNICATION?

- You need to get in touch with a person who is hard to reach via telephone, does not come to campus regularly, or is not located in the same part of the country or world (for instance, someone who lives in a different time zone).
- The information you want to share is not time-sensitive. The act of sending an e-mail is instantaneous, but that does not mean the writer can expect an instantaneous response. For many people, keeping up with their e-mail correspondence is a part of their job, and they only do it during regular business hours. Unless your reader has promised otherwise, assume that it may take a few days for him/her to respond to your message.
- You need to send someone an electronic file, such as a document for a course, a spreadsheet full of data, or a rough draft of your paper.

- You need to distribute information to a large number of people quickly (for example, a memo that needs to be sent to the entire office staff).
- You need a written record of the communication. Saving important e-mails can be helpful if you need to refer back to what someone said in an earlier message, provide some kind of proof (for example, proof that you have paid for a service or product), or review the content of an important meeting, deadline, memo.

WHEN IS AN EMAIL NOT AN APPROPRIATE FORM OF COMMUNICATION?

- Your message is long and complicated or requires additional discussion that would best be accomplished face-to-face. For example, if you want feedback from your supervisor on your work or if you are asking your professor a question that requires more than a yes/no answer or simple explanation, you should schedule a meeting instead.
- Information is highly confidential. E-mail is NEVER private! Keep in mind that your message could be forwarded on to other people without your knowledge. A backup copy of your e-mail is always stored on a server where it can be easily retrieved by interested parties, even when you have deleted the message and think it is gone forever.
- Your message is emotionally charged or the tone of the message could be easily misconstrued. If you would hesitate to say something to someone's face, do not write it in an e-mail.

As you can see from the complexity noted above, although email is a valuable communication tool, its widespread use in academic and business settings has introduced some new challenges for writers.

Because it is a relatively new form of communication, basic social conventions for writing and responding to e-mail are still being worked out. Miscommunication can easily occur when people have different expectations about the emails that they send and receive. In addition, e-mail is used for many different purposes, including contacting friends, communicating with professors and supervisors, requesting information, and applying for jobs, internships, and scholarships. Depending on your purposes, the messages you send will differ in their formality, intended audience, and desired outcome. Finally, the use of e-mail for advertising purposes has clogged communication channels, preventing some e-mails from reaching their intended audience. Writers are challenged to make their e-mail stand apart from “spam” and to grab and hold the attention of their audience.

So—how do you know when sending an e-mail is the most effective way of getting your message across? When is a brief message o.k., and when it is more appropriate to send a longer, more professional-sounding e-mail? How should a writer decide what style of writing is appropriate for each task? How can you prevent your e-mail from ending up in the junk pile? Keep reading for answers to these questions!

Rhetorical Situation: Who is your audience?

People have different opinions about the form and content of emails, so it is always helpful to be aware of the expectations of your audience. For example, some people regard email as a rapid and informal form of communication—a way to say “hello” or to ask a quick question. However, others view email as simply a more convenient way to transmit a formal letter. Such people may consider an informal e-mail rude or unprofessional.

EMAIL TO A FRIEND

A message like this one might be acceptable to send your friend, but not to your professor:

Hey Joan,

Do you know what the assignment is about? Can U help me?

~M

Although it may be obvious to you that you should not send such an email to your professor, let us carefully examine what assumptions this message makes about the reader and his/her expectations.

The tone of this message is very casual; it assumes that the reader knows who the sender is and has a close personal relationship with the sender. Because it contains an ambiguous reference to “the assignment,” this message also assumes that the reader is familiar with the subject matter at hand (for instance, it assumes the reader will know which course and which particular assignment the sender is referring to). In this message, the writer also makes an implicit assumption about the reader's familiarity with the slang that is often used when sending an instant message or text message. If the reader is not familiar with this type of

slang, the “U” in “Can U help me?” might be confusing, or it might even be taken as a sign that the writer is too lazy to type out the word “you.”

AVOIDING MISINTERPRETATION

Making assumptions about your audience’s expectations increases the risk that your message or its tone will be misinterpreted. To ensure that your message has its intended effect, use the following questions to help you think about your audience and their needs:

- Who is your audience? How often does your audience use e-mail to communicate? How comfortable is your audience with using electronic communication—for example, when in their lifetime did they begin using e-mail (childhood or adulthood)?
- What is your audience’s relationship to you—for example, is the reader your teacher? Your boss? A friend? A stranger? How well do you know him/her? How would you talk to him/her in a social situation?
- What do you want your audience to think or assume about you? What kind of impression do you want to make?

Important Components of an Effective E-mail:

Subject Lines

E-mail subject lines are like newspaper headlines. They should convey the main point of your e-mail or the idea that you want the reader to take away from your e-mail. Therefore, be as specific as possible. One word subjects such as “Hi,” “Question,” or “FYI” are not informative and don’t give the reader an idea of how important your message is. If your message is time-sensitive, you might want to include a date in your subject line, for example, “Meeting on Thurs, Dec 2.”

Greetings and Sign-offs

Use some kind of greeting and some kind of sign-off. Don’t just start with your text, and don’t stop at the end without a polite signature. If you don’t know the person well, you may be confused about how to address him/her (“What do I call my TA/professor?”) or how to sign off (From? Sincerely?). Nonetheless, it is always better to make some kind of effort. When in doubt, address someone more formally to avoid offending them. Some common ways to address your reader are:

Dear Professor Smith,

Hello Ms. McMahon,

Hi Mary Jane,

If you don’t know the name of the person you are addressing, or if the e-mail addresses a diverse group, try something generic, yet polite:

Dear Members of the Selection Committee,

Hello everyone,

Your ending is extremely important because it lets the reader know who is contacting them. Always sign off with your name at the end of your e-mail. If you don’t know the reader well, you might also consider including your title and the organization you belong to; for example:

Mary Watkins

Senior Research Associate

Bain and Company

Joseph Smith

UNC-CH, Class of 2009

For your closing, something brief but friendly, or perhaps just your name, will do for most correspondence:

Thank you,

Best wishes,

See you tomorrow,

Regards,

For a very formal message, such as a job application, use the kind of closing that you might see in a business letter:

Sincerely,

Respectfully yours,

Cc: and Bcc: ('carbon copy' and 'blind carbon copy')

Copying individuals on an e-mail is a good way to send your message to the main recipient while also sending someone else a copy at the same time. This can be useful if you want to convey the same exact message to more than one person. In professional settings, copying someone else on an e-mail can help get things done, especially if the person receiving the copy is in a supervisory role. For example, copying your boss on an email to a non-responsive co-worker might prompt the co-worker to respond. Be aware, however, that when you send a message to more than one address using the Cc: field, both the original recipient and all the recipients of the carbon copies can see all the e-mail addresses in the To: and Cc: fields. Each person who receives the message will be able to see the addresses of everyone else who received it.

Blind copying e-mails to a group of people can be useful when you don't want everyone on the list to have each other's email addresses. The only recipient address that will be visible to all recipients is the one in the To: field. If you don't want any of the recipients to see the e-mail addresses in the list, you can put your own address in the To: field and use Bcc: exclusively to address your message to others. However, do not assume that blind copying will always keep recipients from knowing who else was copied—someone who is blind copied may hit “reply all” and send a reply to everyone, revealing that he/she was included in the original message.

Additional tips for writing effective emails:

Think about your message before you write it. Don't send emails in haste. First, decide on the purpose of your e-mail and what outcome you expect from your communication. Then think about your message's audience and what he/she/they may need in order for your message to have the intended result. You will also improve the clarity of your message if you organize your thoughts before you start writing. Jot down some notes about what information you need to convey, what questions you have, etc., then organize your thoughts in a logical sequence. You can try brainstorming techniques like mapping, listing, or outlining to help you organize your thoughts.

Reflect on the tone of your message. When you are communicating via e-mail, your words are not supported by gestures, voice inflections, or other cues, so it may be easier for someone to misread your tone. For example, sarcasm and jokes are often misinterpreted in e-mails and may offend your audience. Similarly, be careful about how you address your reader. For instance, beginning an e-mail to your professor or TA with “Hey!” might be perceived as being rude or presumptuous (as in, “Hey you!”). If you're unsure about how your e-mail might be received, you might try reading it out loud to a friend to test its tone.

Strive for clarity and brevity in your writing. Have you ever sent an email that caused confusion and took at least one more communication to straighten out? Miscommunication can occur if an e-mail is unclear, disorganized, or just too long and complex for readers to easily follow.

A NOTE ON CLARITY

Here are some steps you can take to ensure that your message is understood:

1. Briefly state your purpose for writing the email in the very beginning of your message.
2. Be sure to provide the reader with a context for your message. If you're asking a question, cut and paste any relevant text (for example, computer error messages, assignment prompts you don't understand, part of a previous e-mail message, etc.) into the e-mail so that the reader has some frame of reference for your question. When replying to someone else's e-mail, it can often be helpful to either include or restate the sender's message.
3. Use paragraphs to separate thoughts (or consider writing separate e-mails if you have many unrelated points or questions).
4. Finally, state the desired outcome at the end of your message. If you're requesting a response, let the reader know what type of response you require (for example, an e-mail reply, possible times for a meeting, a recommendation letter, etc.) If you're requesting something that has a due date, be sure to highlight that due date in a prominent position in your e-mail. Ending your e-mail with the next step can be really useful, especially in work settings (for example, you might write “I will follow

this e-mail up with a phone call to you in the next day or so” or “Let’s plan to further discuss this at the meeting on Wednesday”).

Format your message so that it is easy to read. Use white space to visually separate paragraphs into separate blocks of text. Bullet important details so that they are easy to pick out. Use boldface type or capital letters to highlight critical information, such as due dates. (But do not type your entire message in capital letters or boldface—your reader may perceive this as “shouting” and won’t be able to tell which parts of the message are especially important.)

Re-read messages before you send them. Use proper grammar, spelling, capitalization, and punctuation. If your email program supports it, use spelling and grammar checkers. Try reading your message out loud to help you catch any grammar mistakes or awkward phrasing that you might otherwise miss.

Sample emails:

Use what you’ve just learned to explain why Student 2’s e-mail to Professor Jones is more effective than the e-mail written by Student 1. How does the tone of the messages differ? What makes Student 2’s e-mail look and sound more appropriate? What are the elements that contribute its clarity? If you were Professor Jones and you received both emails, how would you respond to each one?

EMAIL FROM STUDENT 1

hey,
i need help on my paper can i come by your office tomorrow
thx

EMAIL FROM STUDENT 2

Hi Dr. Jones,

I am in your ENGL 101 class on Thursdays, and I have a question about the paper that is due next Tuesday. I’m not sure that I understand what is meant by the following sentence in the prompt: “Write a 10 page paper arguing for or against requiring ENGL 101 for all UNC freshmen and provide adequate support for your point of view.”

I am not sure what you would consider “adequate” support. Would using 3 sources be o.k.?

Can I come by your office tomorrow at 2:00 pm to talk to you about my question? Please let me know if that fits your schedule. If not, I could also come by on Friday after 1:00.

Thank you,
Tim Smith

Here are two versions of an e-mail from a supervisor, Jane Doe, to a group of her employees. Which version do you think is most effective? Why?

VERSION 1

Subject: tomorrow

As you know, tomorrow afternoon we’ll be meeting to discuss the status of all of our current projects. Donuts will be provided. Be sure to arrive on time and bring along the materials you have been working on this week—bring enough copies for everyone. Some of these materials might include your calendars, reports, and any important emails you have sent. Also, I wanted to remind you that your parking permit requests are due later this week; you should turn those in to Ms. Jones, and if she is not at her desk when you stop by, you can email them to her.

📌 VERSION 2

Subject: Materials for Wed. Staff Meeting

Hi, everyone—

For tomorrow's 3 p.m. staff meeting in the conference room, please bring 15 copies of the following materials:

- Your project calendar
- A one-page report describing your progress so far
- A list of goals for the next month
- Copies of any progress report messages you have sent to clients this past month

See you tomorrow—

Jane

Ethical dilemmas posed by electronic communication

Since emails can contain a lot of personal data, you should take steps to protect your privacy and that of your email recipients. For example, you might use encryption software, or an email server that encrypts your email between your computer and the server, to prevent your personal data from being distributed to the general public. However, the server (and government agencies) can access your data without your knowledge via the server's encryption key. To combat this, Andy Yen recommends you create your own encryption keys, so you own the data and access to the content.

Your employer may require you to sign a confidentiality agreement, in addition to following their code of conduct or ethics. Confidentiality is a safeguard that protects you and your employer from betraying the trust of your readers, clients, colleagues, and supervisors. For example, confidential messages could include proprietary knowledge your organization owns, the financial data of a client, or your own medical or personnel records.

You are ethically and contractually obligated to protect this data when you create internal reports and external promotional materials. For ethical reasons, during written and oral presentations, you should relay all information (positive and negative) to present an accurate picture of the subject. You should never intentionally mislead your audience, even if the purpose is to persuade them to buy a product, or support a policy or procedure change.

Keeping accurate records will help protect you and your organization against questions about confidentiality and other ethical breaches. The rules and regulations vary by industry and individual company policies. For example, many private and public offices have certain legal requirements for electronic record keeping. This "paper trail" can protect your interests and document customer service issues.

📌 GENERAL EMAILING TIPS

- Proper salutations should demonstrate respect and avoid mix-ups in case a message is accidentally sent to the wrong recipient. For example, use a salutation like "Dear Ms. X" (external) or "Hi Barry" (internal).
- Subject lines should be clear, brief, and specific. This helps the recipient understand the essence of the message. For example, "Proposal attached" or "Your question of 10/25."
- Close with a signature. Identify yourself by creating a signature block that automatically contains your name and business contact information.
- Avoid abbreviations. An e-mail is not a text message, and the audience may not find your wit cause to ROTFLOL (roll on the floor laughing out loud).
- Be brief. Omit unnecessary words.
- Use a good format. Include line breaks between sentences or divide your message into brief paragraphs for ease of reading. A good e-mail should get to the point and conclude in three small paragraphs or less.
- Reread, revise, and review. Catch and correct spelling and grammar mistakes before you press "send." It will take more time and effort to undo the problems caused by a hasty, poorly written e-mail than to get it right the first time.
- Reply promptly. Watch out for an emotional response—never reply in anger—but make a habit of replying to all emails within twenty-four hours, even if only to say that you will provide the requested information in forty-eight or seventy-two hours.

- Use “Reply All” sparingly. Do not send your reply to everyone who received the initial e-mail unless your message absolutely needs to be read by the entire group.
- Avoid using all caps. Capital letters are used on the Internet to communicate emotion or yelling and are considered rude.
- Test links. If you include a link, test it to make sure it is complete.
- E-mail ahead of time if you are going to attach large files (audio and visual files are often quite large) to prevent exceeding the recipient’s mailbox limit or triggering the spam filter.
- Give feedback or follow up. If you don’t get a response in twenty-four hours, e-mail or call. Spam filters may have intercepted your message, so your recipient may never have received it.

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9: Definitions

Chapter Objectives

- Explain a technical definition.
- Differentiate sentence definitions and extended definitions.
- Clarify various sources that can enhance a technical definition.

An important part of technical and report writing is the use of definitions, descriptions, and instructions. They often work together to clarify the purpose and information in a technical document for an audience. This series of three chapters look at these three elements: definitions, descriptions, and instructions, more closely, so that you understand how to incorporate them into your technical documents to achieve clarity and conciseness. For that reason, you will find this introduction at the beginning of each chapter to remind you of their interconnectedness.

Definitions

We grow up reading these from the time we are in elementary school. They are one of the more common patterns of organization used. Definitions can be simple short insertions in a sentence to clarify a term, or they can be an entire document known as an extended definition.

Descriptions

These are similar to a definition but can be longer, more detailed, and have a visual representation to further explain a concept. More than likely, you have read these as well. Descriptions explain objects, mechanisms, and processes – and they do so in a way that whatever is being described is easily understood. If a description of the greenhouse effect was created for specialists in the field, it might be more complex. If this same idea was written for a general audience, the language would be simplified.

Instructions

Instructions provide step-by-step explanations of how to do things: assemble something, operate something, repair something, or explain a personal process (enrolling in college, for example) so that readers may better understand it and possibly use it themselves.

What is a Technical Definition?

An important writing tool you'll need, particularly if you are writing for non-specialists, is the definition—or more specifically, extended definition. An extended definition is one or more paragraphs that attempt to explain a complex term. Some terms may be important in your report, there may be much confusion about them, or they may be difficult to understand that an extended discussion is vital for the success of your report.

When you write reports, you may often discover that you need to explain certain basics before you can discuss the main subject matter. For example:

- In a report on new treatments for sickle cell anemia, you'd need a section defining the disease.
- In a report on the benefits of drip irrigation, you'd need to write an extended definition of drip irrigation, explaining how it works and what equipment is used.
- In a report showing small businesses how to weather economic recessions, an extended definition of the term “economic recession” would be needed first.

WHEN TO USE DEFINITIONS

- When your writing contains a term that may be key to audience understanding and that term could likely be unfamiliar to them
 - "Stellar Wobble is a measurable variation of speed wherein a star's velocity is shifted by the gravitational pull of a foreign body."
- When a commonly used word or phrase has layers of subjectivity or evaluation in the way you choose to define it
 - "Throughout this essay, the term classic gaming will refer specifically to playing video games produced for the Atari, the original Nintendo Entertainment System, and any systems in-between."

- Note: not everyone may define "classic gaming" within this same time span; therefore, it is important to define your terms
- When the etymology (origin and history) of a common word might prove interesting or will help expand upon a point
 - "Pagan can be traced back to Roman military slang for an incompetent soldier. In this sense, Christians who consider themselves soldiers of Christ are using the term not only to suggest a person's secular status but also their lack of bravery."

Writing Formal Sentence Definitions

One of the first things to do when you write an extended definition is to compose the formal sentence definition of the term you are writing about. Place it toward the beginning of the extended definition. This formal definition establishes the focus for the rest of the discussion. It is "formal" because it uses a certain form. Here are several examples:

Term defined (bold)	Class to which the term belongs (blue)
An algorithm is a finite description of a finite number of steps required to accomplish some well-defined task.	
Carbohydrates are a food group including sugars, starches, and cellulose.	
Computer memory is one of three basic components of a computer which stores information for future use—both the data that will be operated on as well as the programs that direct the operations to be performed.	
Reservoir rock is that type of rock that has sufficient porosity and permeability to allow gas and oil to accumulate and be produced in commercial quantities.	
Influenza is an acute highly contagious infection of the respiratory tract, which occurs sporadically or in epidemics and that lasts up to a month.	
Characteristics: details about the term that distinguish it from other members of the class (red)	

Figure 3.1.13.1.1: Formal Sentence Definitions

The components of formal sentence definitions include: the term being defined, the class it belongs to, and its distinguishing characteristics.

Take particular care when you write the reference to the class to which the term belongs; it sets up a larger frame of reference or context. It gives readers something familiar to associate the term with. The term may belong to a class of tools, diseases, geological processes, electronic components; it may be a term from the field of medicine, computer science, agriculture, reprographics, or finance. Avoid vague references to the class the term belongs to; for example, instead of calling a concussion an "injury" or botulism a "medical problem," call them something more specific like "a serious head injury" and "a severe form of food poisoning," respectively.

Similarly, provide plenty of specific detail in the characteristics component of the formal sentence definition. Readers need these details to begin forming their own understanding of the term you are defining.

Be aware, however, that your formal sentence definition will likely contain additional potentially unfamiliar terms. Somewhere in your extended definition, you'll need to explain them as well, possibly by using short definitions (explained later in this section). A formal sentence definition used in an extended definition is below:

*Formal sentence definition
begins this extended
definition.*

*Supplementary definition
used within this extended
definition.*

Stress is a measure of the internal reaction between elementary particles of a material in resisting separation, compacting, or sliding that tend to be induced by external forces. Total internal resisting forces result from continuously distributed normal and tangential forces that vary in magnitude and direction and act on elementary areas throughout the material. These forces may be distributed uniformly or nonuniformly. Stresses can be categorized as tensile, compressive, or shearing, according to the straining action. Strain is a measure of deformation such as:

- a. linear strain, the length per unit of linear dimensions
 - b. shear strain, the angular skew in a radians of an element undergoing change of shape by tangential forces
 - c. volumetric strain, the change of volume per unit of volume.
- The strains associated with stress are characteristic of the material.

Figure 3.1.23.1.2: Extended Definition I

Choosing the Sources of Definition

When you write an extended definition, you literally grab at any of the writing resources or tools that will help you explain the term to your readers. This means considering all of the various sources of information that can help define the term adequately (for example, description, process narration, causal discussion, and classification).

The key to writing a good extended definition is to choose the sources of definition to help readers understand the term being defined. Use this checklist to select the kinds of discussion to include in your extended definitions:

Sources of Extended Definition

Description	Does anything related to the term being defined need to be described?
Process narration	Is there some process (natural, social) associated with the term that should be discussed?
Additional definitions	Do unfamiliar terms occurring in the definition also need definition?
Historical background	Is there some history, some key individuals related to term being defined? Would that discussion contribute to the definition of the term?
Cause, causes	Does the reader need to know about causes related to the term being defined?
Effects, results, consequences	Does the reader need to know about effects related to the term being defined?
Problems, solutions	Does the term being defined represent a problem or a solution?
Statistics	Should you discuss numerical data related to the term defined—percentages, amounts, etc.?
Uses, applications	Would it help to discuss uses or applications related to the term?
Similarities, differences, analogies	Is the term similar to or different from something else? Would an analogy help define the term?
Classes, types, categories	Are there categories that the term can be divided into? Does it belong to a certain category?
Examples	Would examples contribute to the definition of the term?
Future developments, implications	Would an understanding of the roots, the etymology, of the word help define it?
Word origins	Should future developments related to the term be discussed? Does it have implications—good, bad, both?
Negatives	Would explaining what the term is <i>not</i> , what it does <i>not</i> refer to help?
Advantages, disadvantages	Are there advantages and disadvantages related to the term that can be discussed?

Figure 3.1.33.1.3: Sources of Extended Definitions

Below is an outline of a report that uses an extended definition. This view shows how different sources of definition can be used to write an extended definition.

- I. Introduction
- II. Alzheimer's Disease: Overview of Current Knowledge
 - A. Two Main Types of Alzheimer's Disease
 - 1. Alzheimer's disease (pre-65)
 - 2. Senile dementia of the Alzheimer's type (post-65)
 - B. Demography of Alzheimer's Disease
 - 1. Age distribution
 - 2. Gender distribution
 - 3. Other demographics
 - C. Process and Characteristics of Alzheimer's Disease
 - 1. Forgetfulness
 - 2. Speech disorders
 - 3. Difficulty calculating
 - 4. Visual disorientation
 - 5. Abnormal judgment and social behavior
 - D. Brain Pathology of Alzheimer's Disease Victims
 - 1. Reduced brain size
 - 2. Neurofibrillary tangles
 - 3. Neuritic plaques
 - 4. Loss of specific populations of nerve cells
 - E. Etiology of Alzheimer's Disease
 - 1. Aging
 - 2. Inheritance
 - 3. Infectious agents and toxins
- III. Current Alzheimer's Disease Treatment

Classification: the disease is defined according to its main two types.

Description: demographic statistics are used in this definition.

Process: the stages of the disease are identified along with the effects of the disease at each stage.

Effects: clinical effects of the disease.

Causes: various possible causes of the disease.

Figure 3.1.43.1.4: Extended Definition Outline

Below is another extended definition. This one uses additional definitions, descriptions (demographics), and process.

Formal sentence definition begins this extended definition.

Quick parenthetical definition of a potentially unfamiliar term.

Supplementary definitions used within this extended definition.

Demographics (statistics) used to further define the term.

Process of the disease

(Should "intercurrent" be defined for nonspecialist readers?)

First described in 1907 by Alos Alzheimer, a German physician, Alzheimer's disease is an adult-onset neurological disorder of unknown etiology (cause) manifested by loss of memory, impaired thought processes, and abnormal behavior. When the illness begins before the age of 65, it is termed *Alzheimer's disease*; when onset is after 65, it is referred to as *senile dementia of the Alzheimer's type*.

Approximately 5% of the U.S. population over 65 have severe dementia; an additional 10% have a mild-to-moderate impairment in memory and cognition. Of these demented individuals, approximately 40-50% have Alzheimer's disease, making this disorder the most common cause of dementia in middle and later life.

Affected individuals are, at first, forgetful. As the memory disorder gradually worsens, the individuals, although able to recall occurrences in the distant past, are unable to remember recent events. Subsequently, speech, the ability to calculate, visual orientation, judgment, and social behavior become progressively abnormal. Eventually, the individuals become profoundly demented and frequently die of intercurrent infection.

Figure 3.1.53.1.5: Extended Definition II

Adding Short Definitions

You'll find that in writing an extended definition, you must define other terms as well. Typically, short definitions—a sentence, clause, or phrase in length—will suffice. Notice how many are added to the "after" version in the following.

Before Translation

Measles is an acute, highly infectious disease, with cough, fever, and maculopapular rash. It has worldwide endemicity. The infective particle is an RNA virus about 100-150 nm in diameter, measured by ultrafiltration, but the active core is only about 65 nm as measured by inactivation after electron irradiation. Negative staining in the electron microscope shows the virus to have the helical structure of a paramyxovirus with the helix being 18 nm in diameter.

Measles virus will infect monkeys easily and chick embryos with difficulty. In tissue cultures, the virus may produce giant multinucleated cells and nuclear acidophilic inclusion bodies. The virus has not been shown to have the receptor-destroying enzyme associated with other paramyxoviruses. Measles, canine distemper, and bovine rinderpest viruses are antigenetically related.

After Translation

Measles is an acute, highly infectious disease caused by a virus. The illness is characterized by a cough, fever, and **maculopapular (raised red)** rash. It has **worldwide endemicity—that is, people throughout the world are vulnerable to the disease**. The **infective particle (organism causing the disease)** is a virus about 100-150 **nm (a nanometer being 10⁻⁹ meter)** in diameter and contains **RNA (ribonucleic acid)** as its genetic material rather than **DNA (deoxyribonucleic acid)**. The size of the measles virus as measured by **ultrafiltration, in which filters with extremely small pore are used**. The **active core, or actual genetic material (RNA)**, is only 65 nm, as measured by electron irradiation which inactivates the core. **Negative staining, a shadowing technique used with an electron microscope**, shows the virus to have a specific helical structure common to a group of viruses known as paramyxoviruses. The **helix, a spiral around a core (similar to a winding staircase)** is 18 nm in diameter.

Measles virus will infect monkeys easily and chick embryos with difficulty. In **tissue cultures (those involving living cells or tissues from other living organisms)**, the measles virus may produce giant cells containing many nuclei and **acidophilic inclusion bodies (red-stained areas in the nucleus which are a laboratory sign for certain viral infections)**. The virus has not been shown to have the **receptor-destroying enzyme, a protein capable of destroying or inactivating a cell-surface molecule**, usually associated with other viruses in the paramyxovirus group. Measles, **canine distemper (a flu-like disease affecting dogs)**, and **bovine rinderpest (a virus affecting cows)** are antigenetically related—that is, they possess similar **antigens (molecules that stimulate production of an antibody on their surfaces)**.

Figure 3.1.63.1.6: Adding Short Definitions Before & After

This process of supplying short definitions "on the fly" is critical in good technical writing for non-specialists. Notice how many quick definitions occur just in the first two sentences of the preceding illustration. "Maculopapular" is defined in parentheses as "(raised red)." "Endemicity" is defined by restating the idea in other words: "that is, people throughout the world are capable of contracting measles." And "infective particle" is quickly defined by providing an alternative: "or organism causing the illness." Obviously, the passage is almost tripled in length—but that's the price for thorough explanation and clarity.

Format for Extended Definition

Extended definitions don't call out for any special format; just use headings, lists, notices, and graphics as you would in any other technical document.

Below is a schematic view of an extended definition. Remember that this is just a typical or common model for the contents and organization—many others are possible.

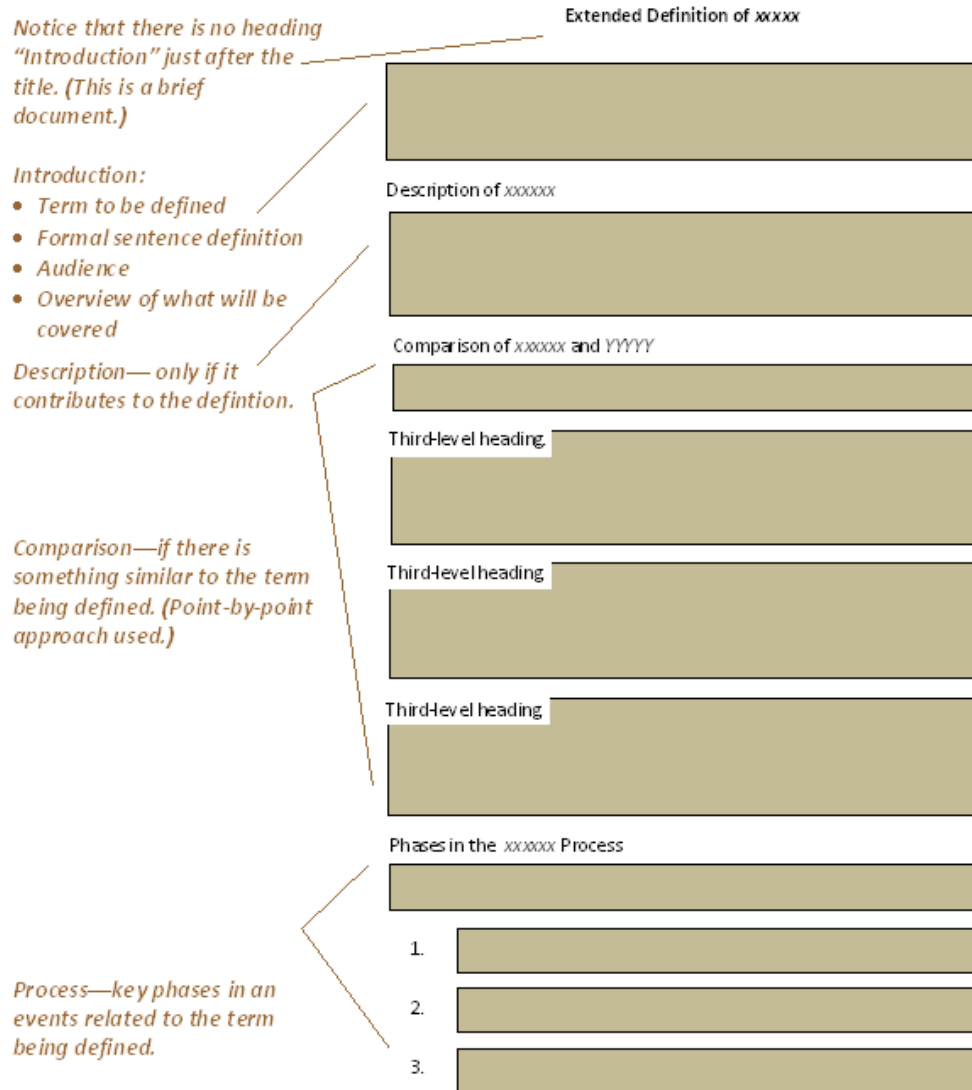


Figure 3.1.73.1.7: Format for Extended Definition

Complete Example of an Extended Definition

Below is an example of an extended definition paper on Sickle Cell Anemia. Note: A technical writing students at the University of Texas at Austin wrote this definition in the 1980s. Technical accuracy cannot be guaranteed.

SICKLE CELL ANEMIA

Sickle cell anemia is congenital hemolytic anemia that occurs primarily but not exclusively in African-Americans. The condition results from a defective hemoglobin molecule (hemoglobin S) which causes red blood cells (RBCs) to roughen and become sickle-shaped. Such cells impair circulation, resulting in chronic ill-health (fatigue, dyspnea on exertion, and swollen joints), periodic crises, long-term complications, and premature death. At present, only symptomatic treatment is available. Half of such patients die by their early 20s; few live to middle age.

CAUSES AND INCIDENCE

Sickle cell anemia results from homozygous inheritance of the hemoglobin S-producing gene, which causes substitution of the amino acid valine for glutamic acid in the B hemoglobin chain. Heterozygous inheritance of this gene results in sickle cell trait, generally an asymptomatic condition. Sickle cell anemia is most common in tropical Africans and in persons of African descent. About 1 in 10 African-Americans carries the abnormal gene. If two such carriers have offspring, there is a 1 in 4 chance that each child will have the disease. Overall, 1 in every 400 to 600 African-American children has sickle cell anemia. This disease also

occurs in Puerto Rico, Turkey, India, the Middle East, and the Mediterranean area. Possibly, the defective hemoglobin S-producing gene has persisted because, in areas where malaria is endemic, the heterozygous sickle cell trait provides resistance to malaria and is actually beneficial.

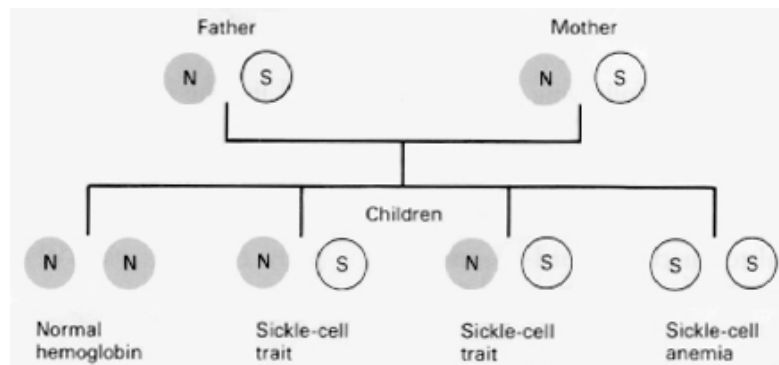


Figure 3.1.83.1.8: Inheritance of Sickle Cell

The abnormal hemoglobin S found in such patients' RBCs becomes insoluble whenever hypoxia occurs. As a result, these RBCs become rigid, rough, and elongated, forming a crescent or sickle shape. Such sickling can produce hemolysis (cell destruction). In addition, these altered cells tend to pile up in capillaries and smaller blood vessels, making the blood more viscous. Normal circulation is impaired, causing pain, tissue infarctions, and swelling. Such blockage causes anoxic changes that lead to further sickling and obstruction.

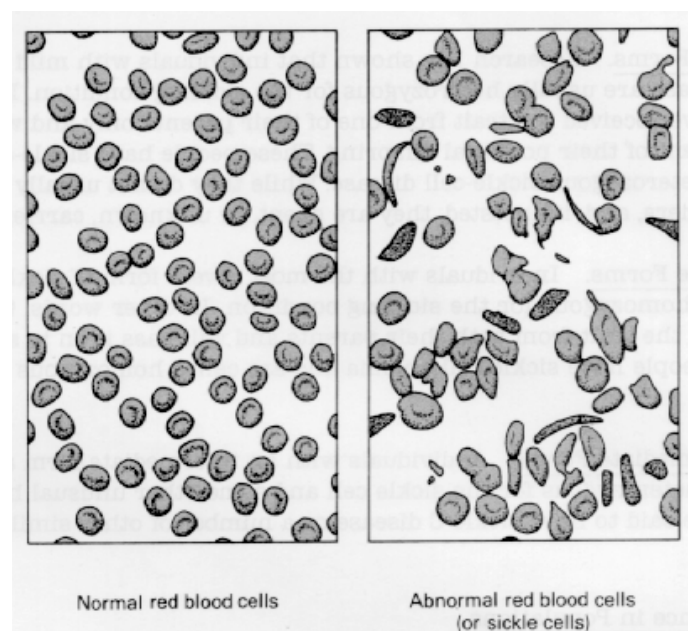


Figure 3.1.93.1.9: Normal Red Blood Cell vs. Sickle Cells

SYMPTOMS AND TYPES OF SICKLE CELL ANEMIA

A number of symptoms are associated with sickle cell anemia and in particular several types of crises.

Symptoms. Characteristically, sickle cell anemia produces tachycardia, cardiomegaly, systolic and diastolic murmurs, pulmonary infarctions (which may result in cor pulmonale), chronic fatigue, unexplained dyspnea or dyspnea on exertion, hepatomegaly, jaundice, pallor, joint swelling, aching bones, chest pains, ischemic leg ulcers (especially around the ankles), and increased susceptibility to infection. Such symptoms usually don't develop until after 6 months of age, since large amounts of fetal hemoglobin protect infants for the first few months after birth. Low socioeconomic status and related problems, such as poor nutrition and low educational levels, may delay diagnosis and supportive treatment.

Periodic crises. Infection, stress, dehydration, and conditions that provoke hypoxia—strenuous exercise, high altitude, unpressurized aircraft, cold, and vasoconstrictive drugs—may all provoke periodic crisis. Painful crisis. A painful crisis (vaso-occlusive crisis, infarctive crisis), the most common crisis and the hallmark of this disease, usually doesn't appear until age 5 but

recurs periodically thereafter. It results from blood vessel obstruction by rigid, tangled sickle cells, which causes tissue anoxia and possibly necrosis. It is characterized by severe abdominal, thoracic, muscular, or bone pain and possibly increased jaundice, dark urine, or a low-grade fever. Autosplenectomy, in which splenic damage and scarring is so extensive that the spleen shrinks and becomes impalpable, occurs in patients with long-term disease. Such autosplenectomy can lead to increased susceptibility to *Diplococcus pneumoniae* sepsis, which can be fatal without prompt treatment. After the symptoms of crisis subside (in 4 days or several weeks), infection may develop, often indicated by lethargy, sleepiness, fever, or apathy.

Anaplastic crisis. Associated with infection is the anaplastic crisis (megaloblastic crisis) which results from bone marrow depression and is associated with infection, usually viral. It is characterized by pallor, lethargy, sleepiness, dyspnea, possible coma, markedly decreased bone marrow activity, and RBC hemolysis.

Acute sequestration crisis. In infants between 8 months and 2 years old, an acute sequestration crisis may cause sudden massive entrapment of red cells in the spleen and liver. This rare crisis causes lethargy and pallor, and if untreated, can progress hypovolemic shock and death. In fact, it's the most common cause of death in sickle cell children under 1 year.

Hemolytic crisis. Hemolytic crises are quite rare and usually occur in patients who have glucose-6-phosphate dehydrogenase (G-6-PD) deficiency with sickle cell anemia. It probably results from complications of sickle cell anemia, such as infection, rather than from the disorder itself. The hemolytic crisis causes liver congestion and hepatomegaly as a result of degenerative changes. It worsens chronic jaundice although increased jaundice doesn't always point to a hemolytic crisis.

Any of these crises are possible in sickle cell anemia patients with pale lips, tongue, palms, or nail beds; lethargy; listlessness; sleepiness, with difficulty awakening; irritability; severe pain; temperature over 104° F (40° C) or a fever of 100° F (38° C) that persists for 2 days.

Long-term complications. Sickle cell anemia also causes a number of long-term complications. Typically, children with sickle cell anemia are small for the age, and puberty is delayed. (However, fertility is not impaired.) If they reach adulthood, their bodies tend to be spiderlike—narrow shoulders and hips, long extremities, curved spine, barrel chest, and elongated skull. An adult usually has complications stemming from infarction of various organs, such as retinopathy and nephropathy. Premature death usually results from infection or repeated occlusion of small blood vessels and consequent infarction or necrosis of major organs. For example, cerebral blood vessel occlusion causes a cerebrovascular accident.

DIAGNOSIS

A positive family history and typical clinical features suggest sickle cell anemia; a stained blood smear showing sickle cells, and hemoglobin electrophoresis showing hemoglobin S confirm it. Ideally, electrophoresis should be done on umbilical cord blood samples at birth, especially if the parents are known to carry the sickle cell trait. Additional lab studies show low RBC, elevated WBC and platelet count, decreased erythrocyte sedimentation rate (ESR), increased serum iron, decreased RBC survival, and reticulocytosis. Hemoglobin may be low or normal. During early childhood, palpation may reveal splenomegaly, but as the child grows older, the spleen shrinks and splenic function is impaired.

TREATMENT

Treatment is primarily symptomatic and can usually take place at home. If the patient's hemoglobin drops suddenly, as in an anaplastic crisis, or if his condition deteriorates rapidly, hospitalization is needed for transfusion of packed red cells. In a sequestration crisis, treatment may include blood transfusion, oxygen administration, and large amounts of oral or IV fluids. So far, research to find an effective antisickling agent hasn't been successful.

GENERAL DEFINITION TIPS

- Avoid defining with "X is when" and "X is where" statements. These introductory adverb phrases should be avoided. Define or describe a noun with a noun, a verb with a verb, and so forth.
- Do not define a word by mere repetition or merely restating the word.
"Rhyming poetry consists of lines that contain end rhymes."
Better:
"Rhyming poetry is an art form consisting of lines whose final words consistently contain identical, final stressed vowel sounds."
- Define a word in simple and familiar terms. Your definition of an unfamiliar word should not lead your audience towards looking up more words in order to understand your definition.

- Keep the class portion of your definition small but adequate. It should be large enough to include all members of the term you are defining but no larger. Avoid adding personal details to definitions. Although you may think the story about your Grandfather will perfectly encapsulate the concept of stinginess, your audience may fail to relate. Offering personal definitions may only increase the likeliness of misinterpretation that you are trying to avoid.

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10: Descriptions

Learning Objectives

- Explain a technical description.
- Exemplify sample definitions and descriptions.

An important part of technical and report writing is the use of definitions, descriptions, and instructions. They often work together to clarify the purpose and information in a technical document for an audience. This series of three chapters look at these three elements: definitions, descriptions, and instructions, more closely, so that you understand how to incorporate them into your technical documents to achieve clarity and conciseness. For that reason, you will find this introduction at the beginning of each chapter to remind you of their interconnectedness.

Definitions

We grow up reading these from the time we are in elementary school. They are one of the more common patterns of organization used. Definitions can be simple short insertions in a sentence to clarify a term, or they can be an entire document known as an extended definition.

Descriptions

These are similar to a definition but can be longer, more detailed, and have a visual representation to further explain a concept. More than likely, you have read these as well. Descriptions explain objects, mechanisms, and processes – and they do so in a way that whatever is being described is easily understood. If a description of the greenhouse effect was created for specialists in the field, it might be more complex. If this same idea was written for a general audience, the language would be simplified.

Instructions

Instructions provide step-by-step explanations of how to do things: assemble something, operate something, repair something, or explain a personal process (enrolling in college, for example) so that readers may better understand it and possibly use it themselves.

What are Technical Descriptions?

Descriptions and definitions are closely connected. Often, a technical writer will include description in an extended definition or include definition while writing a description. We all use the word description loosely to refer to practically any discussion or explanation. But in a technical writing context, description means the detailed discussion of the physical aspects of a thing. That means discussing things like color, shape, size, weight, height, width, thickness, texture, density, contents, materials of construction, and so on.

Definition vs. Description

The following sentence is not a description; it explains the function or purpose but provides little or no physical detail. It is a definition.

A computer diskette is a device used for storing electronic data.

However, this sentence is definitely description:

The common computer diskette is 3.5 inches by 3.5 inches and approximately 1/8 inch thick.

Contexts for Description

Descriptions are a common element in technical writing. Certain types of technical writing feature description:

- Accident reports requiring plenty of description.

- Product specifications—documents that describe the design and features of a new or changed product—have plenty of description.
- Instructions often require description to help readers visualize what they are doing and what they are working with.

Contents and Organization of Descriptions

Below is a review of the sections you will commonly find in descriptions:

✓ Elements of Descriptions

Introduction. Plan the introduction to your description carefully. Make sure it does all of the following things (but not necessarily in this order) that apply to your particular description:

- Indicate the specific object about to be described.
- Indicate what the audience needs in terms of knowledge and background to understand the description.
- Provide a general description of the object.
- Include an overview of the contents of the description.

Background. If what you are describing is not likely to be familiar to most of your readers, add some background before you plunge into the description. If you are about to describe an SGO/3 density gauge to non-specialists, you should first discuss what it is, what it does, and where it is used.

Visual. The easiest way for someone to understand something is to see it. Visuals help with this. In addition, the parts of the object or process are often labeled (See Chapter ____ on Document Design) so the reader can better understand how each part works in conjunction with the entire item.

Discussion of the parts or characteristics. The main part of your description is the discussion of each part or characteristic. You must divide the item you are describing into parts, or characteristics, or both.

Parts are easy: for example, a wooden pencil has lead, a wooden barrel, an eraser, and a metal clip. Characteristics are describable aspects of a thing but are not parts: for example, the pencil has a certain weight, length, width, and so on.

If you were a budding real-estate tycoon and had to describe a vacant lot for company files, you'd probably describe it by its characteristics: its location, square footage, terrain, vegetation, access to utilities, and so on. (Check out the description of the [Primitive Stone Scraper](#) - part of it is arranged by characteristics and part by parts!) If the parts section follows a visual, it is often organized to match the visual. For example, it might list the parts in clockwise order or from top to bottom of how they are labeled on the visual. In addition, the descriptors labeled on the visual match what is listed in this section exactly. *Consistency is key.*

Once you've divided the item you are describing into parts, characteristics, or both, your next job is to describe each one. For mechanical items, it works well to start by defining the part, by explaining its function. After that, you describe the part from general to specific, using any of the sources of description that are appropriate.

Discussion of the related operation or process. At some point in a description, often at the end, it is useful to summarize the operation or process associated with the object you're describing. For example, if you've just described a mechanical pencil, you could briefly explain how it is used. If you've just described a snowflake, you could discuss the process by which it formed.

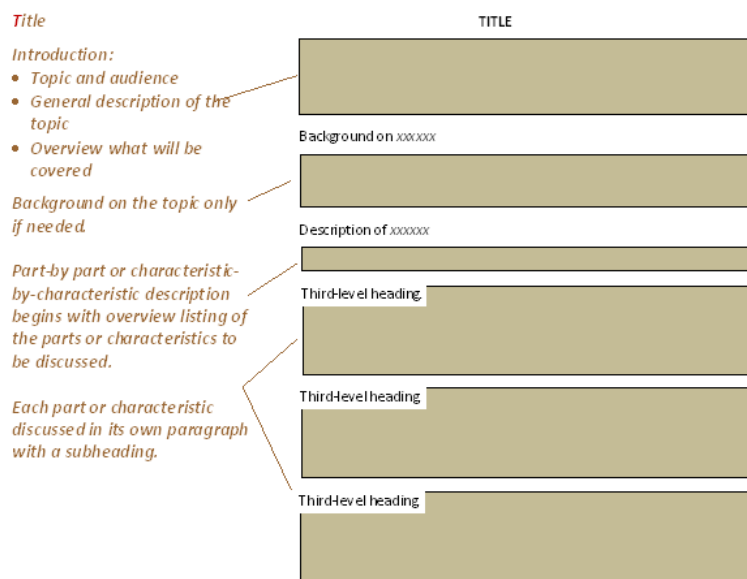
Note: In description, you can mix other types of writing. You'll find yourself explaining functions, defining terms, and discussing a bit of process as you describe. That's not a problem as long as the primary focus and the majority of the content is truly description.

Sources of Description

When you write a description, you need to think about the kinds of descriptive detail you can provide. Sometimes, descriptions are rather weak in this area. Use the following list to plan your description or to review a description you have written. Think of the categories of descriptive detail you could provide, or use the following list to identify categories you have not used:

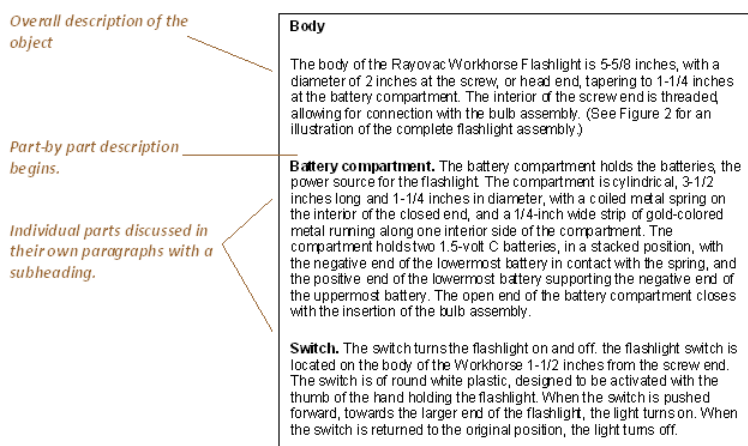
color	materials	depth	subparts
height	texture	amount	length
width	width	pattern, design	finish
shape	location	ingredients	temperature
weight	methods of attachment	age	moisture content
			smell

✓ Example: Model of Descriptions



Note: This is a typical or common model for the contents and organization—many others are possible.

Anatomy of a descriptive paragraph. Typically, it starts with some statement about the purpose or function of the part, with the descriptive detail following. Descriptive detail draws upon the "sources" of description—such things as color, shape, width, and height.



Graphics and Format in Descriptions

Visuals: In most descriptions, you'll need at least one illustration of the thing you are describing, with a **caption**, **labels** pointing to the parts, and **callouts** to highlight important information. See the chapter on Document Design Basics for more on **captions**, **labels**, and **callouts**

Headings. In descriptions, you'll want to use headings and subheadings to mark off the discussion of the individual parts or characteristics. Remember that, ideally, you want to describe each part in a separate paragraph or section—and flag that discussion with a heading. If you have a background section, use a heading for it too. See the chapter on Document Design Basics for the specific requirements of **headings**.

Lists. Lists are not nearly so important in descriptions as they are in instructions. However, if you itemize parts or subparts or list specifications, these are good situations for lists. See the Chapter on Document Design Basics for the specific requirements of **lists**.

Special notices. In descriptions, there is no role for special notices as there is in instructions. In a description, readers will not be following a procedure and therefore, will not be running any risks of damaging equipment, wasting supplies, or injuring themselves or others. **However, you may find the *Note* special notice to be useful to emphasize important points or exceptions.** See the Chapter on Document Design Basics for a complete discussion of the proper use of these special notices as well as their format and placement within instructions.

GENERAL DESCRIPTION TIPS

- Descriptions are more detailed than definitions and typically include a visual representation.
- Technical descriptions discuss things like color, shape, size, weight, height, width, thickness, texture, density, contents, materials of construction, and so on.
- Descriptions should include an introduction, background, visual elements, and discussion of the parts and process.
- Description format should be accessible and include elements such as callouts, captions, labels, headings, lists, and special notices.

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17: Grammar, Usage, and Punctuation

✓ Chapter Objectives

- Serve as a reference for grammar, usage, and punctuation.

Why is it important to know about grammar, usage, and punctuation?

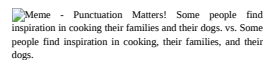
Being correct goes beyond the basic grammar that language needs in order to function. Being correct means knowing the rules that a given culture has established to judge the language of individuals. Think about it: many years ago, ain't was not considered incorrect. How might you react to someone using that word today? We speak of this as usage. There are far more usage rules than grammar rules, and they are far more difficult to master. Many of them you just have to learn, and after you learn them, you have to use them over and over and over in order to incorporate them into your language.

It is important to remember that correctness is relative to a particular situation and the "rules" for usage will always be changing. Sometimes, it can be tough to keep up with all that change!

This is why a native speaker of English will find the following pages in Grammar Essentials helpful. And, if you are not a native speaker of English, learning or reviewing things like parts of speech, punctuation, and common errors can be helpful in your efforts to learn and feel comfortable with the English language.

By using a little humor, we hope this introduction into grammar and punctuation (using zombies, memes, and funny stories) will be a little less painful than when you were in junior high and had to do things like memorize prepositions or diagram sentences.

Punctuation



Maybe you have heard the story about how punctuation saves lives. Clearly, there is a difference between

Correct: Let's eat, Grandma!

and

Incorrect: Let's eat Grandma!

In addition to saving lives, using punctuation properly will help your writing be clean and clear and help you build your credibility as a writer. The following pages will provide you with an overview of the basic rules regarding punctuation and will give you a chance to practice using the information you have learned.

Source: Excelsior College OWL

Apostrophes

When you send a text message, you probably do not bother with apostrophes right? It makes sense that we might not worry about properly punctuating possessives and contractions in a text message, but it's very important to remember that we do need to use apostrophes correctly in other writing situations.

Academics frequently debate about whether or not text messaging is going to kill the poor apostrophe. In his essay "Dear Apostrophe: C Ya," Rob Jenkins (2012) writes, "[O]ne of my professors, talking about the way language evolves over time, predicted that the next evolutionary stage would involve common punctuation marks. Specifically, he said, the apostrophe would eventually cease to exist" (para. 1).

This may be true, but the apostrophe is not dead yet!

So if you have been text messaging so long that you forgot what the apostrophe is for, the following pages should be helpful.

Using Apostrophes to Make Words Possessive

Beginning writers sometimes mistakenly add apostrophes to make words plural, but this is not how the apostrophe is used.

Rule: The apostrophe is used to show possession or ownership.

✓ Example: Possessives

Sam's game plan
my friend's DVD
Beth's zombie

Note: If you just mean to make a word plural, you should not add an apostrophe. For example,

Incorrect: The student's planned to buy their books but played Xbox instead.

Here, you would not use an apostrophe because no ownership is being established. You can double-check this example and see that this use of the apostrophe would not pass the "of" test.

The planned of the students just does not make sense.

The red sentence above would not pass the test and instead should read as follows:

Correct: The students planned to buy their books but played Xbox instead.

For those times when you are determining whether an apostrophe is needed, use this test - we call it the "of" test. In other words, can you reword the sentence and substitute the apostrophe with "of"?

? The "of" Test

Using an apostrophe	
my friend's DVD	the DVD of my friend
Beth's zombie plan	the zombie plan of Beth
James's canned goods*	the canned goods of James

Plural Possessives

Making plural words possessive can be confusing at times because we so often add an s to a noun to make it plural. All of those s's can be a little overwhelming. But the rules are pretty clear on this issue:

Rule: To make plural nouns that do not end in s possessive, add 's. To make plural nouns that end in s possessive, add just the '.

✓ Example: Possessive Plural Pronoun

my cats' treasures
our zombie fortresses' weaknesses

Using Apostrophes to Create Contractions

To those who care about punctuation, a sentence such as 'Thank God it's Friday' (without the apostrophe) causes feelings not only of despair but of violence. The confusion of the possessive 'its' (no apostrophe) with the contractive 'it's' (with apostrophe) is an unequivocal signal of illiteracy and sets off a Pavlovian 'kill' response in the average stickler." —Lynne Truss, author of *Eats, Shoots & Leaves*

Rule: Apostrophes are also used in contractions where the apostrophe takes the place of letters that are omitted when you join two words. Here are some examples:

✓ Example: Contractions

I am = I'm
you are = you're
it is = it's

did not = didn't

Source: Excelsior College OWL

Omitted Numbers

Rule: You can also use an apostrophe to stand in for omitted numbers.

✓ Example: Use an apostrophe for omitted numbers

I was born in '75, and I'm feeling old.

Note: Although there are plenty of writing situations where contractions are appropriate, contractions are too informal for most of the formal papers you write for college and should be avoided in those situations.

Tips from the Professor

While most of the rules regarding apostrophes are pretty straightforward, there are following situations related to apostrophes seem to give people trouble:

1. **It's** is a contraction for **it is**. If you need to make **it** possessive, as in **its creepy eyes**, you shouldn't use an apostrophe. Because of the contraction for it is, the possessive **its** goes against the normal rules.
2. Sometimes, you'll see writers use an apostrophe when referring to decades like **the 1980's**. However, it's standard to write **the 1980s** without the apostrophe.
3. To make a compound word such as **mother-in-law** possessive, just add an **'s** to the last word. For example: My **mother-in-law's** weekly phone calls make me really nervous.
4. If you need to show joint possession, only the last word should be made possessive, as illustrated in this example: **Alex and Megan's** zombie-proof fence is an admirable example of joint possession.

Brackets

You may not use brackets often, but they can become helpful punctuation in academic writing as you integrate quotes into your essays. Brackets let your readers know you have made changes to the quote in some way.

Rule: You should use brackets when you have to alter text within a quote to make something clear for your readers. The material inside the brackets is your addition. Be careful though! You may not change the meaning of the quote.

To understand how to use brackets, let's start with the original quote:

Original Quotation: "More than a decade ago, losses were already mounting to five billion dollars annually."

The examples below demonstrate the three ways to use brackets in a quotation:

✓ Three Ways to Use Brackets

Clarify the meaning

Legal scholar Jay Kesan notes that "a decade ago, losses [from employees' computer crimes] were already mounting to five billion dollars annually" (2010).

Since your audience did not read the article, they won't understand which losses Jay Kesan is referring to in this quote. Therefore, you should use brackets to help your audience understand the context of the quotation.

Signal misspelling within the quote

Legal scholar Jay Kesan notes that "a decad [sic] ago, losses were already mounting to five billion dollars annually" (2010).

As tempting as it may be, you may not change anything within a quotation. Because you do not want your audience to think you made a mistake in spelling, you should use the term [sic] after a misspelled word within a quotation.

Emphasize a point that was not emphasized in the original quotation

Legal scholar Jay Kesan notes that "a decade ago, losses were already mounting to *five billion dollars* annually" [emphasis mine] (2010).

Colons

Many writers think the colon is such a confusing piece of punctuation that they simply avoid it altogether, but it can be fun to use a colon every now and then. Plus, the colon can add some important variety to your writing. So why not review this list of uses for the colon and give it a try?

In most cases, essentially, a colon signals "anticipation"—the reader knows that what follows the colon will define, illustrate, or explain what preceded it. This is certainly the case in the colon's first three uses, as described below:

✓ Example: Using a Colon

Rule: Use a colon to separate two **independent clauses** (complete thoughts) when you want to emphasize the second independent clause.

Example: Road construction in New York City might pose a problem if there is a zombie attack: It is best to know which streets are closed, as you do not want to end up lost during a dire situation

Rule: Use a colon to separate an independent clause from a **list** that follows the independent clause.

Example: I have collected a wide variety of important items in case there is a zombie attack: canned food, bottled water, and wood for boarding my windows.

TIP! You shouldn't use a colon when the introductory portion of the sentence is a **dependent clause** (incomplete thought). The first part of the sentence must be an independent clause or a complete sentence. So the following would NOT work:

Incorrect: I have collected: canned food, bottled water, and wood for boarding my windows

Rule: Use a colon to separate an independent clause from an **appositive** (a noun or noun phrase that renames or identifies a noun or noun phrase right next to it) that follows the independent clause.

Example: I have the perfect solution to your problems with bullies at work: Chuck Norris

Rule: You should also use a colon at the end of a formal, business letter greeting.

Example: Dear Ms. Smith:

Rule: And, of course, you should use a colon to separate the hour from the minutes when writing numerical time.

Example: 3:00 a.m.

Commas



The Comma: Tricky, Mysterious, and Subjective?

People often think commas are tricky and mysterious, and while they may be tricky if we aren't familiar with the rules, they are not mysterious at all. They are not subjective, and no matter what your third-grade teacher told you, it's probably not a good idea to place a comma wherever you feel the need to take a breath. What happens if you have a stuffy nose from a cold? Your essay might be littered with **unnecessary commas**.

There are actually some pretty clear-cut rules regarding commas, and while some rules seem to be clearer than others, at least in terms of how much most people understand, there are some basic comma rules that can help you know when and when not to use a comma.

Source: Excelsior College OWL

With Coordinating Conjunctions

Rule: Use a comma with a coordinating conjunction when combining two independent clauses.

An **independent clause** is a term for a complete thought or sentence with both a subject and a verb. A **coordinating conjunction** is a conjunction that combines two equal elements and can combine two complete sentences. We have seven coordinating conjunctions in American English:

For	Or
And	Yet
Nor	So
But	

✓ Example: A Comma with Coordinating Conjunctions

Rule: Coordinating conjunctions can connect all kinds of words and phrases, but when they are used to connect independent clauses, we must place a comma before the coordinating conjunction, as illustrated in the following example:

Example: I am preparing for a zombie invasion, **and** I am building a strong zombie fort around my home.

Rule: If the coordinating conjunction does not connect two independent clauses, do not place a comma before the coordinating conjunction, as illustrated in the following example:

Example: I am preparing for a zombie invasion **and** am building a strong zombie fort around my home.

Items in a Series

Rule: Use a comma to separate items in a series (three or more things).

You should even place a comma between the last two, although some writing style guidelines now omit this comma. In academic culture, we still use the serial or "Oxford" comma, so even punctuation rules have a rhetorical context.

✓ Example: Serial Comma

In some situations, you may not use the serial comma, but in academic writing you should, as illustrated in these examples:

She stayed up all night watching scary movies and ate **popcorn, peanuts, and chocolate**.

She **ran into the house, shut the door, and locked all of the locks** because she thought a werewolf was behind her.

With Introductory Phrases

Rule: Use commas after introductory words or phrases.

Subordinating conjunctions are words that connect, but unlike **coordinating conjunctions**, which connect equal parts, subordinating conjunctions connect dependent clauses (incomplete thoughts) to independent clauses.

✓ Example: A Comma with Subordinate Introductory Phrase

When you see a subordinating conjunction at the beginning of a sentence, this signals an introductory phrase, and you know a comma is coming at the end of that subordinate phrase, as illustrated in these examples:

Because his favorite team lost the Super Bowl, he would not speak to anyone about the game for two years.

Although they have stored a lot of food in their basement, I am not sure if they have enough for a zombie apocalypse.

Some of the most common subordinating conjunctions include the following:

because	although	after
while	since	Tip

When these same phrases appear at the end of a sentence, they are not set off by commas, except in cases of strong contrast—for instance, in the case of the word **although**.

He would not speak to anyone about the game for two years **because his favorite team lost the Super Bowl**.

I am not sure if they have enough for a zombie apocalypse, **although they have stored a lot of food in their basement**.

You should also place a comma after introductory words, as illustrated in this example:

However, video games make great presents for a teenager.

With Essential & Nonessential Information

Rule: Use commas in the middle of a sentence to set off words or phrases that are **not essential** to the meaning of the sentence.

✓ Examples: A Comma with Non-essential information

The New York Yankees, **who happen to be my favorite team**, have won more World Series than any other team in baseball.
The Boston Red Sox, **however**, won the World Series only seven times.

This rule can be a little tricky because of some misinformation we may have received at some point in elementary school. Were you ever taught that the trick to determining whether or not you need commas around information in the middle of a sentence was to pull out that information and see if the sentence was still complete? If the sentence was still complete, then you would know you needed a comma around that extra information.

Well, that doesn't always work so well.

The best tip is to think about how meaning would be affected if you pulled out the word or phrase. If the meaning is not really affected, the word or phrase is not essential and should be placed inside a set of commas.

✓ Rule and Example: Don't use a comma for essential words or phrases

Rule: Conversely, it's important to remember that **essential** words or phrases should not be set off with commas.

Example: Her copy of Skyrim **that I borrowed last week** was the best game I have ever played and probably the best video game in the history of the world.

With Adjectives

Rule: Use a comma to separate coordinate **adjectives** describing the same **noun**.

✓ Example: Commas to Separate Coordinate Adjectives

An **adjective** is a word that describes a noun, and when we have two coordinate or "equal" adjectives describing the same noun, we need to place a comma between those adjectives, as illustrated in this example:

It was a **stressful, sleepless** night because I stayed up too late playing Dead Space.

If the adjectives aren't coordinate, or "equal," you should not separate them with a comma, as illustrated in this example:

Everyone knows the **white frame** house on Third Street is haunted.

A good trick to help you determine whether or not adjectives are coordinate is to try reading the sentence with the adjectives in reverse order or to add the word **and** between them. If the sentence would still make sense to you, the adjectives are coordinate, and you would need to separate them with a comma if they are describing a single noun.

With Shifts at the End

Rule: Use a comma to separate coordinate elements at the end of a sentence or to indicate a distinct shift at the end of a sentence.

✓ Example: Commas to Indicate a Shift at the End of a Sentence

This comma rule is pretty straightforward. If you have a distinct shift at the end in content or a shift at the end for emphasis, you should set off that shift at the end with a comma.

You want me to fight Chuck Norris for you? I am brave, **not crazy**.

You are going to stand in line for the new Halo 4, **aren't you?**

With Quotes

Rule: Use a comma between the main discourse and a quote.

✓ Example: Comma Before a Quote

Whether you are writing dialog or setting up a quote from a source in your research essay, you should use a comma to separate the main discourse from your quote.

As Bilbo Baggins said, **"I like half of you half as well as I should like, and like less than half of you half as well as you deserve!"**

My favorite line in Shakespeare's *Macbeth* is when the witches say, **"Double, double, toil and trouble; fire, burn; and cauldron, bubble."**

With Places & Dates

Rule: Use commas to set apart geographical names and to separate items in dates, except for between the month and the day.

✓ Example: Comma between geographical names and items in dates

Geographical names: When I heard zombies had been located in **New York, New York**, I knew it was time to move to **Los Angeles, California**.

It is a good thing that letter made it to **4 Privet Drive, Little Whinging, Surrey, England**.

Items in dates: I know the Mayan calendar indicates the end of the world on **December 21, 2012**, but I am going to stick with Nostradamus because he gave us until 3797.

Comma Abuse

Finally, don't abuse the poor comma. It hasn't done anything to you. Well, it may have caused you some stress from time to time, but you should not abuse it. You should *definitely* not use a comma in the following instances:

✓ Don't use a comma:

1. To separate a subject from a verb.

Incorrect: My zombie **plan, involves** the complete and utter failure of your zombie plan.

2. Between two verbs or verb phrases in a compound predicate.

Incorrect: Do those vampires really sparkle in the **sunlight, and** drink only animal blood?

3. Between two nouns or noun phrases in a compound subject.

Incorrect: Aggressive **newbies, and campers** are ruining the gaming experiences for me.

4. To set off a dependent clause at the end of a sentence, except in cases of strong contrast.

Incorrect: My gaming confidence is at an all-time **low**, **because** I got pawned ten times by a second-grader.

Tip!

Students often struggle with commas when it comes to using them correctly with the coordinating conjunctions—**and**, **but**, **or**, **for**, **nor**, **so**, and **yet**.

The important thing to remember is that you have to keep in mind what else is around that conjunction. You can't assume that every time you use **and** you'll need a comma. Sometimes, you will, and, sometimes, you won't.

Dashes

The dash is kind of like the superhero of punctuation. Not only does it have a cool, sleek name, it's often referred to as the "super comma." But you can't just go around using dashes because you want super commas. There are some rules you should follow, and you don't want to overuse any one type of punctuation.

✓ Rules and Examples: Using a Dash

The following two rules should help you make good decisions regarding that dashing dash:

Rule: You use dashes to set apart or emphasize the content that is within the dashes or after a dash. The content within the dashes or after the dash gets more emphasis than it would if you just used commas or parentheses.

Examples: His ideas regarding an evacuation in case of a zombie attack are certainly controversial—even radical.

I think the reason those books became so popular—so much so that they became a cultural phenomenon—is that the world was ready for a little bit of magic.

Rule: You can also use dashes to set apart an **appositive phrase** or extra information that contains commas.

Example: The changes that came with the arrival of the eleventh doctor—the screwdriver, the TARDIS, and all of the side characters—certainly surprised many fans.

Of course, while the rules related to using dashes are relatively simple, there seems to be great confusion over how the dash is actually created in word processing programs.

To be sure, the dash is no **hyphen**. The hyphen is smaller and comes between words like mother-in-law. The dash is longer and is created by placing two hyphens in a row. When you space after the word after the dash, most word processing programs will turn those two little hyphens — into a dash—like so.

Ellipses

Many people use an ellipsis to show a pause or hint at the future in informal writing. Ellipses appear this way frequently in Facebook messages and emails. Interestingly, although this use of an ellipsis was technically incorrect at one time, it's becoming "more" correct over time with some style manuals suggesting you can use an ellipsis in this manner if you use it sparingly.

Still, in formal writing, it's not a good idea to use an ellipsis to show a pause or to create anticipation of some kind. Academic style guides recommend using an ellipsis to show that you have omitted words in quotes.

✓ Example: Ellipses

Here is an example of how to use ellipses in a formal, academic writing situation.

Quote: "Often, a school is your best bet—perhaps not for education but certainly for protection from an undead attack."
—Max Brooks, *The Zombie Survival Guide*

Example: "Often, a school is your best bet . . . for protection from an undead attack."

Of course, now that you know when to use an ellipsis you may be wondering how to make one. An ellipsis is three periods or dots, and most style guides call for a space between each dot. So, you would type period, space, period, space, and period. You also need a space before and after the ellipsis. One tip is to make sure your ellipsis does not stretch to the next line. It must be all on one line. If you are ending a sentence with an ellipsis, it may look like you have a four-dot ellipsis, but there is really no such thing. The first dot is your period. Then, you have your ellipsis. In this situation, you will also put a space between each period.

Example: According to Jones (2012), "*The Walking Dead* series added to the popularity of zombies. . . . However, several movies are responsible for the initial interest" (p. 31).

The key is that you shouldn't change the meaning of the quote. The second quote here isn't nearly so witty, but the basic idea hasn't been changed. When you have long quotes and you need to eliminate some unnecessary information from those quotes, an ellipsis can be very helpful.

Exclamation Marks

You won't use many exclamation marks in academic writing. The exclamation mark is kind of the equivalent of yelling, and most academic writing situations don't call for much yelling, though you may feel like yelling about some of your assignments.

However, exclamation marks do serve an important function by adding emphasis to commands or other phrases, and you may find yourself needing the exclamation mark when you write dialog for certain narrative assignments. In most cases, you should be careful with exclamation marks and make sure the situation calls for them.

✓ Examples

You can certainly see the difference between a sentence punctuated with a period and one punctuated with an exclamation mark.

Watch out.

Watch out!

Zombies are coming.

Zombies are coming!

Hyphens

Hyphenating Words

"The basic rule of hyphens . . . is that they're used to form compound modifiers, that is, to link two or more words that are acting as adjectives or sometimes adverbs." (Casagrande, 2006, p. 62)

✓ Rules and Examples: Using a Hyphen

Rule: When you have two or more words that modify or describe a noun that follows, you should hyphenate those words. But a word of caution: you shouldn't hyphenate the same words if they come after the noun.

Examples: I thought we were in a **long-term** relationship.

Everyone knew that relationship was not long term.

I really need a **fuel-efficient** car to save money for more video games.
 To save money for video games, I bought a car with better fuel efficiency.
 I have a **three-year-old** son who mimics every word you say.
 I have a son who mimics every word you say; he is three years old.

Hyphens have other uses including acting with prefixes, suffixes, nouns, letters, and numbers and clarifying the meaning of words.

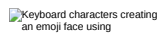
Rule: Hyphenate words that begin with **self**, **all**, **ex**, and words that begin with a capital letter or number.

Examples:	ex-husband	all-inclusive	self-help	the A-team
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Of course, we should also hyphenate compound numbers like **twenty-five** or **thirty-seven**

Finally, it's important to note that hyphen "rules" are more like the **Pirate Code** in that they are really more like guidelines. Even the "experts" will disagree about whether or not some words or groups of words should be hyphenated. It's definitely a good idea to double-check with the style manual you are using, such as the **APA** or **MLA** manuals, and for tricky words, you can consult a good dictionary.

Parentheses



Parentheses: More Than Helpful Emoticon Tools

Interestingly, parentheses can do more than make smiley faces :) and sad faces :(like these. Although they are quite handy for these important emoticons, they serve an important function in formal writing, as well.

Rule: Parentheses are used to set off information in a sentence that is important but not really a part of the main message. It's important to remember that your sentence should make sense if you eliminate the parentheses and all that is contained between them.

Source: Excelsior College OWL

✓ Example: Using Parenthesis

The Headless Horseman (as the old legend goes) eliminated the disruption Ichabod Crane brought to Sleepy Hollow.

You'll probably use parentheses most often in your research papers because both APA and MLA formatting require in-text citations using parentheses. So right after a quote or any other borrowed information, you should include an in-text citation in parentheses, as illustrated in these examples:

APA (Jones, 2011, p.131).

MLA (Jones 131).

TIP: The period comes after the parenthesis in both APA and MLA format. The exception to this rule is with block quotes. When using block quotes, in both APA and MLA format, the period comes before the in-text citation.

Periods

The period seems pretty straightforward. After all, for most of us, this was the first punctuation we learned when we were learning to read. **See Jane run. To our first-grader selves, that meant, See Jane run, stop, take a break, keep going. You can do this thing.**

Periods are certainly important punctuation because they are what we most often use to separate complete thoughts or independent clauses. Periods are how we end our sentences most of the time.

Rule: However, periods do serve another important function in the world of punctuation: You should use a period with abbreviations.

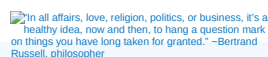
✓ Examples: Using a period in an abbreviation

Dr.	Mrs.	Mr.
Ms.	a.m. (or A.M.)	p.m. (or P.M.)

Then, of course, there is the question about how many spaces should come after a period. If you learned to type on those things called typewriters, you learned to double space after all periods at the ends of sentences. However, this isn't always the case anymore. We just single space after all periods, though you should consult the style guide you are using. **APA** style now requires a single space after a period at the end of a sentence, after requiring a double space in the sixth edition.

The lesson here is clear. The "rules" change all the time and are dependent upon your style guide. It's important to stay up to date.

Question Marks



✓ Rules and Examples: Using a Question Mark

Rule: You should use a question mark at the end of a question - like this:

Example: When did our professor say that essay was due?

However, there is one situation involving question marks that seems to give people a lot of trouble. What about when you have a sentence that is part statement and part question? What do you do then? You have a couple of options, depending upon the situation. You might have a sentence like this:

Rule: In the following case, the statement before the question isn't complete, so you can simply use a comma to separate the statement from the question.

Example: The question I have is, how are we going to get out of here?

Rule: If the sentence is awkward, change it so the first part, the statement part, is a complete sentence. In this situation, you might have a sentence like the following:

Example: One question remains: How are we going to get out of here?

Quotation Marks

Quotation marks are how we tell our readers we are including words that aren't our own. Whether we're using dialog or quote material from our research, quotation marks are important punctuation. The reality is that punctuation marks can really make a difference in whether or not you are breaking the law. After all, if you use someone's words and don't let your readers know you are using someone else's words, that constitutes plagiarism, which is most certainly illegal.

So, if you have doubts about this whole quotation thing, the following pages will be extremely helpful. This super-cool video can help as well.



Source: TheGrammarheads. (2012, September 22). *Quotation marks song - educational music video*. [Video]. YouTube. <https://www.youtube.com/watch?v=OLB1IUNdoSE>

Quotation Marks with Dialog

You may not find yourself needing to use dialog very often in academic writing, but you may be asked to write narrative essays in some classes, which often contain dialog.

Rule: When you use dialog, it's important to use quotation marks to set apart the speech from the rest of your text. Otherwise, separating the dialog from the rest of the writing can be very confusing for readers.

✓ Example: Using Quotation Marks with Dialog

"This time," my basketball coach said, "I know you can do it." It turned out he did not really know what he was talking about.

Quotation Marks with Quoted Material

Rule: You should use quotation marks any time you use words directly from another source. Sometimes, students think putting a citation or reference at the end "covers it," but you must use quotation marks to indicate borrowed words.

✓ Example: Using Quotation Marks to indicate quoted material

"Quotation marks serve primarily to tell the reader the exact words someone used" (Hope, 2010, p. 21).

If you **paraphrase** a source, this means you have put the information in your own words, and you don't need to use quotation marks. You should still cite with an **in-text citation**, but you shouldn't use quotation marks.

The key to borrowing information from sources is to remember that any words appearing inside quotation marks belong to someone else. Words that do not appear inside quotation marks are assumed to be yours.

Single Quotes

Now that you know what quotation marks are used for, you may wonder about the single quotation marks—the one that look like **'this.'**

Single quotation marks are used for quotes within quotes, as illustrated in the following example:

✓ Example: Using Single Quotation Marks

The article read, "When the quarterback for the Green Bay Packers was interviewed, he said he was 'upset' about the call that affected the game."

You may encounter situations where you'll close single quotation marks and double quotation marks at the same time, leaving you with **"something like 'this.'"** Don't worry if this happens. It is correct. It just means the quote within the quote ended at the same time the main quote ended.

Jane asked, "Did you know that Bob said 'I love you?'"

Semicolons

It's true. The semicolon is used for more things than just winking in text. ;)

One of the main uses of a semicolon is to separate two independent clauses. The semicolon isn't like a **comma**; it's really more like a **period**. Using a semicolon like a comma can definitely create some trouble.

First, let's take a step back and explain the difference between an independent clause and a dependent clause. An **independent clause** expresses a complete thought. An independent clause is usually called a sentence. Conversely, a **dependent clause** is a group of words that may contain a subject and verb but does not express a complete thought.

Independent clause:

I ran quickly to escape the zombie I encountered on Main Street.

Dependent clause:

Although I ran quickly to escape the zombie I encountered on Main Street,

Can you see the difference? The first example is a complete sentence, and the second example isn't. (Of course, we also know the first one ends well, and we aren't so sure about the second one.)

So now that you understand what an independent clause is and that a semicolon connects two independent clauses, we can begin to look at how the semicolon can be used.

Semicolons to Join Clauses

Rule: You should use a semicolon when you're joining two independent clauses without a connecting word. The semicolon functions, structurally, just like a period. The difference is that the semicolon between the two independent clauses shows they are connected, as illustrated in the following examples:

✓ Example: Using Semicolons

If you want me to vote for you, you are going to need to tell me what I want to hear; if you are lying, I guess I will worry about that later.

I am so tired of spending so much money on canned food for my zombie apocalypse hoard; I am pretty sure the grocery store clerks are laughing at me behind my back.

Using Semicolons in Lists

So right after telling you that semicolons shouldn't be used like commas, we should discuss one situation where the semicolon does function more like a comma. However, this is a very particular situation, so you'll want to pay close attention.

Rule: You should use semicolons when you are separating **items in a list that contains commas**. Here is an example:

✓ Example: Semicolons in Lists

At the Comicon conference, I met Jeanne, from Dallas, Texas; James, from Bend, Oregon; and Stacey, from Bangor, Maine.

Because the items in the series contain commas themselves, it would be confusing to add more commas to the situation. In this particular instance, the semicolon separates the items in a series.

Tips!

Semicolons can feel a little confusing because sometimes they're used to separate items in a series, as mentioned on the previous page, but they are really nothing like a comma. In terms of sentence structure, they can separate independent clauses, just like a period.

If you have the habit of using a semicolon like a comma, it's important to work to break that habit. When you edit your writing, it's a good idea to circle all of the semicolons you have used. Then, ask yourself why each semicolon is there. If you're using it like a strong comma, you'll need to revise.

Time to Write

Now that you have a stronger understanding of the punctuation rules, it's time to think about how these rules might apply to your own writing. One key strategy is to think about areas in which you struggle. If you don't have problems with apostrophes, then you shouldn't worry too much about apostrophes.

However, it's important to keep punctuation in general in mind when you edit. Edit your writing in several passes; you can't catch every issue in one sweeping edit. So, with that in mind, it's a good idea to devote one edit to simply looking for punctuation issues. It's most helpful to review the rules right before you edit, especially the rules for the types of punctuation you have had struggles with, perhaps commas or semicolons.

Parts of Speech



You're probably quite familiar with the "grammar police"—those people who find it necessary to correct any grammar mistake you make. In fact, you might be a member of the "grammar police" squad yourself, but if you're not, you probably get a little tired of the corrections. After all, this person understood what you were saying. Why is it necessary to correct?

Usually, members of the "grammar police" squad aren't necessary. When we speak in informal conversations, as long as we are being understood, the particulars of correctness are not an issue.

However, there are times when correctness is really important, and when you write for an academic audience or a professional audience, correctness is a pretty big deal. The fact is that people judge us based on our writing, and correctness is a part of that. With that in mind, the following pages, which cover grammar and proper usage of the major parts of speech, will be helpful.

Source: Excelsior College OWL

Nouns

A **noun** is a person, place, object, idea, or event. "The word *noun*, in fact, comes from *nomen*, the Latin word for *name*" (Kolln, 1994, p. 276). Nouns are the first words you learned as a child, and you probably have a really strong sense of what a noun is. After all, how could we possibly talk about anything if we're unable to give it a name?

So you may be wondering why in the world we have to complicate something as simple as nouns by discussing so many different types of nouns. The answer is that it's important to learn about the different types of nouns as you work to ensure proper structures and agreements in your sentences.

Proper Nouns

A **proper noun** refers to a specific person, place, organization, etc. Proper nouns are capitalized because they are specific nouns.

Some examples of proper nouns are **Steven**, **Apple** (the company), **New York**, and the **Seattle Seahawks**.

Common Nouns

A **common noun** refers to a general group or class of people, places, objects, etc. One way to identify a common noun is called the "**the**" test. If you can use the noun with the article **the** (or another article like **a** or **an**) in front of it, the word is likely a common noun.

Some examples are **the game**, **the movie**, and **the ghost**.

Of course, it's important to remember that the "**the**" test does not work all the time. It's just a good guideline. Some exceptions to the "**the**" test would be with proper nouns (discussed on the previous page) like the **Dallas Cowboys** and the **Boston Red Sox**. Even though they would pass the "**the**" test, they are proper nouns, not common nouns.

Collective Nouns

Nouns can get a little tricky when it comes to a discussion of collective nouns. Collective nouns are nouns such as **family**, **team**, and **majority**. The tricky part comes when we have to make a decision about whether these nouns are singular or plural because we have to choose verbs that will agree with these nouns.

And, now, here's the really tricky part: There are no hard and fast rules. The verb you choose to agree with the collective noun actually depends upon how you want your readers to perceive the noun. Is it a single unit or a group of individuals? Even then, it depends upon context. Take the collective noun **family**, for example.

✓ Examples: Using the correct verb tense with a collective noun

In the example below each member went his or her separate way, so you would see the collective noun **family** as a group of individuals; therefore, you should use a plural verb instead of a singular verb.

Example: The **family** **have** all gone their separate ways since Grandma died.

But let's look at the example below where the family is seen as a single unit; here you would need a singular verb to agree with the collective noun.

Example: The whole **family** **is** coming to my house for Thanksgiving this year. I had better learn to cook a turkey.

In her book, *Rhetorical Grammar*, Martha Kolln (1991) says "[collective nouns] can be treated as either singular or plural, depending on context and meaning" (p. 47). So, it really does depend on the situation.

You may be wondering how this information is helpful. The key is to think about how you might perceive the collective noun and then, of course, to consider how it's used in the sentence.

And, after all, there are only about 200 collective nouns in the English language, so you really only have to worry about 200 of these. Okay, that's a lot. But this is a great example of how, very often, there are no hard and fast rules for grammar.

Verbal Nouns

A verbal noun is a type of noun that is derived from a verb. It looks like a verb but actually functions in a sentence like a noun. Here are some examples:

✓ Examples: Verbal Nouns

Running from zombies is hard work

Jogging is a good exercise that will help you prepare, but you have to do it every day.

We had a **meeting** to compare our zombie action plans.

Verbal nouns and something called **gerunds** (a form of a verb or verb phrase that functions as a noun phrase and subject in a sentence) are very similar. In fact, the first two examples above are examples of verbal nouns that are also gerunds. But, a verbal noun can be more than a gerund. In the last example, the word **meeting**, is functioning like a noun but isn't a noun phrase that's the subject of a sentence.

It can certainly get a little confusing, and even the grammar experts disagree sometimes about the differences between verbal nouns and gerunds. The key thing for you to remember is that, when we are talking about nouns, verbs can sometimes function in your sentences like nouns.

Compound Nouns

A compound noun is a noun made up of two or more words. Sometimes, compound nouns are hyphenated, but there are plenty of examples of compound nouns that are not hyphenated. There are also compound nouns that are written as one word. Here are some examples:

✓ Examples: Compound Nouns

mother-in-law
waste-paper basket
full moon
blackboard

Some compound nouns that used to be hyphenated are no longer hyphenated, and some compound nouns that used to be two words became one word. The "rules" change based upon common usage.

Paper-clip is now just **paperclip**. And **healthcare** is now generally considered just one word, but some people still say it should be two words, **health care**.

"Rules" of correctness change constantly, and rules related to compound nouns change rather quickly. If you're in doubt about how to write a compound noun, be sure to check a good online dictionary.

Pronouns

Pronouns are actually just another type of noun, but because they're such an important noun type and so commonly used, they're usually classified as a separate part of speech. A **pronoun** is a noun that takes the place of a noun or groups of nouns, and because pronouns are "standing in" for nouns, you have to be sure that the pronoun you choose to "stand in" agrees in number, person, and gender.

Personal (Definite) Pronouns

Personal pronouns are pronouns that take the place of common and proper nouns and refer to people and things. Essentially, they "stand in" for people and things when you want to make sure you are not repeating yourself by having to rename people and things all the time. Let's look at an example.

✓ Examples: Personal (Definite) Pronouns

In this example, the author doesn't have to repeat **my brother**, thanks to the personal pronoun **he**.

Example: My brother is staying up late to watch a "Walking Dead" marathon. **He** is going to have nightmares!

Personal pronouns can be singular and plural, and there are first, second, and third person personal pronouns.

Personal (Definite) Pronouns

	Singular	Plural
First Person	I, me	we, us
Second Person	you	you
Third Person	she, her, he, him, it	they, them

Indefinite Pronouns

What is the difference between definite and indefinite pronouns? A definite pronoun would be a pronoun that refers to something specific, so a **personal** pronoun would also be a definite pronoun. (Refer back to the **Personal Pronouns** for examples.)

Indefinite pronouns do not refer to anything specific, so words like **someone** and **everybody** are indefinite pronouns. Indefinite pronouns can also be **singular or plural**.

While any pronoun that refers to a specific person or thing would be a definite pronoun, it can be helpful to refer to a list of indefinite pronouns if you need to use pronouns that refer to people or things in general and do not refer to anyone or anything specific. The list below can help.

✓ Examples: Indefinite Pronoun

Singular	Plural	Singular or Plural
anybody, anyone, anything, each, either, everybody, everyone, everything, neither, nobody, no one, nothing, one, somebody, someone, something	both, few, many, several	all, any, most, none, some

Singular & Plural Pronouns

Singular pronouns are simply pronouns that refer to singular nouns. But it can get a little tricky when you think about the fact that singular pronouns can be **personal** pronouns, which, as you have learned, refer to a person or thing. They will also be **definite** or **indefinite**, which means they can refer to someone or something specific (definite) or not (indefinite).

Plural pronouns are simply pronouns that refer to plural nouns. But, like singular pronouns, plural pronouns can also be personal and definite or indefinite, and they refer to plural nouns or groups of nouns.

✓ Examples: Singular and Personal Pronoun

Singular pronouns: Words like **he** and **she** are singular, personal, definite pronouns, and words like **anybody** and **anyone** are singular, indefinite pronouns.

Plural pronouns: Word such as **they** and **we** are plural, personal, definite pronouns, and words like **many** and **both** are plural, indefinite pronouns.

Tip! Don't worry if you feel a little confused about the fact that singular and plural pronouns can also be personal pronouns. They are definite or indefinite as well. However, most likely, you won't find yourself in situations where you have to label pronoun types. What you do need to know is that, when you choose a singular or plural pronoun, you have to make sure it agrees with the noun you're replacing. So, if you're replacing a singular noun, be sure to use a singular pronoun.

Possessive Pronouns

Possessive pronouns are pronouns that show ownership. Some possessive pronouns can be used before nouns and function as adjectives (words that describe nouns).

✓ Examples: Possessive Pronoun

Pronouns such as **my**, **her**, or **his** are **possessive** because you would say things like **my books**, **her computer**, and **his zombie plan**.

Other possessive pronouns stand alone. These are pronouns such as **mine**, **yours**, **hers**, and **his**. An example would be **That book is hers**.

Relative & Demonstrative Pronouns

Relative pronouns relate **subordinate clauses** (clauses that cannot stand alone) to the rest of a sentence. Words like **that**, **which**, **who**, and **whom** are examples of relative pronouns.

Demonstrative pronouns stand in for a thing or things, and we choose these words based on how close these things are to us. For things that are nearby, we use the pronouns **this** and **these**. For things that are far away, we use the pronouns **that** and **those**.

Reflexive Pronouns

Reflexive pronouns end in **self** or **selves**, and they're used when a pronoun is both the subject and the object of a sentence.

✓ Examples: Reflexive Pronoun

She is going to can all of those beans for her zombie storage room **herself**.

I am going to treat **myself** to a little vacation from all of this worry about a zombie apocalypse and spend the day playing Halo on my Xbox.

Reflexive pronouns can also be used to show emphasis in a sentence, as illustrated in this example:

I myself had to go through all of those web pages to find the one that would be the most helpful for our escape plan.

Subjective & Objective Pronouns

Subjective and objective pronouns are simply pronouns that occur in either the subject or the object of the sentence. Subjective pronouns tell us who or what the sentence is about. Objective pronouns receive the action in the sentence.

There are some pronouns that are always subjective and others that are always objective.

	Singular	Plural
Subjective	I, you, he, she, it	we, you, they
Objective	me, you, her, him, it	us, you, them

Sometimes, determining which pronoun we should use in a sentence can be a little confusing, especially when it comes to **I** and **me**. You might want to write:

Incorrect: My mother bought my brother and I new clothes for the first day of school, even though we insisted we did not want to go.

The pronoun **I** in this sentence is actually incorrect because it appears in the object of the sentence. The sentence should read something like this:

Correct! My mother bought my brother and me new clothes for the first day of school, even though we insisted we did not want to go.

The trick is to take out the other person in the sentence to see if you would use **I** or **me**. For example:

Incorrect: "My mother bought **I** new clothes for school."

Correct! "My mother bought **me** new clothes for school."

Pronoun Agreement & Reference

Issues with pronoun agreement and pronoun references are common struggles for many beginning writers, but these problems are easy to correct once you realize the issue and just pay close attention to the pronouns you're using in your writing.

Pronoun Agreement Errors

Pronoun agreement errors occur when the pronoun you are using to "stand in" for a noun does not agree with that noun in number, place, or gender.

Correct! Clara needs to pick up **her** book.

Using the singular pronoun **her** does agree with Clara. It does not feel natural for a native speaker to say the following:

Incorrect: Clara needs to pick up **their** book.

In the above sentence, **Clara** is the noun and **her** is the pronoun that agrees with Clara.

A **common pronoun agreement error** occurs when a writer uses a singular noun like **student** to represent students in general. Then, later, the writer may use **they** as a pronoun to replace **student** because the writer means students in general. This often occurs when people try to avoid that structure and use cumbersome word choices such as he/she, he or she, or (wo)men as there is no gender-neutral singular pronoun in the English language. Using these variations is not preferred, and rewriting the sentence is a better option.

How to rewrite the sentence will depend on which style guide you are using. Both the MLA 8th edition and the APA 7th edition support using the singular they. On the other hand, The Chicago Manual of Style (CMOS) 17th edition does not support using the singular they in formal writing unless the person being discussed prefers they. CMOS recommends rewriting the sentence so that the noun and pronoun both agree.

✓ Examples: Pronoun Agreement

For example, you may see something like this:

If **a student** really thinks about how much **they** are paying for college, **they** are likely to be more focused in class.

According to the most recent MLA and APA style guidelines, this is correct. However, according to CMOS, the sentence should be rewritten.

You could rewrite it like this:

Correct: If **students** really think about how much **they** are paying for college, **they** likely to be more focused in class.

Here is another example.

Incorrect: When **a chef** adds a recipe to **his or her** Facebook page, **he or she** will often get many likes seemingly instantaneously.

Rewritten with the singular they:

Correct: When **a chef** adds a recipe to **their** Facebook page, **they** will often get many likes seemingly instantaneously.

Rewritten with a plural subject and plural pronoun:

Correct: When **chefs** add a recipe to **their** individual Facebook page, **they** will often get many likes seemingly instantaneously.

Rewritten without pronouns:

Correct: When **a chef** add a recipe to Facebook, likes appear seemingly instantaneously.

When in doubt, it is always safe to choose a plural subject so that the pronoun **they** flows more smoothly (and will be correct in number according to all style guides).

Pronoun Reference Errors

Pronoun reference errors can also be problems for beginning writers because it's so easy to get in a hurry when you write and forget that you need to think about how clear your writing will be for your audience.

A **common pronoun reference error** occurs when students write about several different people or things and then use a pronoun later like **she** or **it**, but the audience has no idea what **she** or **it** refers to.

Here is a simple example to give you an idea about what a pronoun reference error looks like:

Incorrect: My mother and my aunt told me I should consider going to college, and she was right.

Here, the audience wouldn't be sure which person the writer is referring to. Is it the mother or the aunt?

You want to be careful with your writing and make sure you're clear and correct with your pronouns. Most of the time, slowing yourself down and working on some careful editing will reveal problems like these which can be easily corrected.

Tips from the Professor

Most beginning writers have a pretty good sense of correct pronoun usage, but a good editing strategy will help you make sure you have not missed any issues with pronoun agreement or pronoun reference.

One strategy is to edit your writing one time, just looking at pronouns, in addition to other editing passes. If you have had trouble with pronouns in the past, you should circle all of your pronouns and ask yourself questions about their purpose and what they refer to.

Note

Most academics now agree that the singular **they** is correct. Please always refer to your style guide, as some style guides still recommend not using the singular **they**.

Verbs

Verbs are the parts of speech that show action or indicate a state of being. We put them with nouns, and we create complete sentences. Like nouns, verbs are foundational in our vocabulary, and we learned verbs as children shortly after we learned nouns. The following pages will help you learn more about verbs, as there really is a lot to consider when it comes to verbs, such as making our subjects and verbs agree, using active versus passive voice, and keeping our verbs in the same tenses.

We'll explain the types of verbs first, to give you context and help you establish some "verb vocabulary," but most writers will want to pay close attention to issues of **tense**, **subject-verb agreement**, and **active versus passive voice** in the pages that follow.

Auxiliary Verbs

Auxiliary verbs are sometimes called the **helping** verbs because they work with the main verb in a sentence and "help it out". Together, the auxiliary verb and the main verb form a unit.

✓ Examples: Auxiliary Verbs

Steven **is leaving** and taking his football with him. How are we going to play now?

Her favorite team **has finished** at the top of the conference, so she **is going** to buy a team jersey. I hope she buys me one, too.

Common Auxiliary Verbs

am	did	is
are	do	was
be	does	were
can	had	will
could	have	would

Linking Verbs

Linking verbs join or "link" the subject of a sentence with the rest of the sentence. They make a statement by linking things, as opposed to showing any kind of action.

Common linking verbs are any of the **to be** verbs: **am**, **is**, **are**, **was**, **were**, **be**, **been**, and **being**. However, **become** and **seem** are also common, and other verbs have the potential to be linking verbs. It really depends upon the sentence.

✓ Examples: Linking Verbs

Here is an example of a common linking verb used in a sentence:

My environmental biology class **is** interesting because our teacher thinks Bigfoot might exist.

Here are some examples of how other verbs can become linking verbs:

That house **looks** haunted.
Those old shoes **smell** funny.

Tip! Because linking verbs and auxiliary verbs are often the same words, you may wonder how you can tell the difference between a linking verb and an auxiliary verb. The key is that linking verbs join the subject and the predicate of a sentence, and in some ways, allow the predicate to rename the subject; auxiliary verbs will be used with other verbs.

Action Verbs



Action verbs are the verbs you can probably identify as verbs quickly and easily. These are the words that show action, words like **jump**, **run**, and **eat**.

There are two main classes of action verbs: **transitive** and **intransitive**, and there aren't separate lists for each class. Action verbs can be both transitive and intransitive because it all depends on the structure of the sentence.

A transitive verb expresses action toward a person or thing named in the sentence. An intransitive verb expresses action without making any reference to an object.

Source: Excelsior College OWL

✓ Examples: Transitive and Intransitive Verbs

Transitive	The college freshman ate Ramen noodles.	Sophia speaks French.
Intransitive	The college freshman complained loudly.	Sophia speaks fluently.

Tenses

Verbs can be in the present tense, present progressive tense, past tense, past progressive, present perfect, or past perfect. According to Martha Kolln, author of *Rhetorical Grammar*, there are two grammatical features of verbs that are especially useful: tense and agency, which will be discussed later in the pages on [passive voice](#).

It's important to understand tense because you want to be consistent with your verb tenses in your writing. It's a common mistake to [shift tenses](#) without realizing it. This discussion of tenses can increase your "tense awareness," which will lead to fewer errors.

Let's take the verb **to eat** as an example and see how it looks in the different tenses with the subject **I**.

Tense	Example
present tense (present point in time)	I eat dinner.
present progressive (present action of limited duration)	I am eating dinner.
past tense (specific point in the past)	I ate dinner yesterday.
past progressive (past action of limited duration)	I was eating .
present perfect (completed action from a point in the past ending at or near present)	I have eaten dinner.
past perfect (past action completed before another action also in the past)	I had just eaten dinner when the phone rang.

When it comes to verb tenses, it's important to be consistent and to be aware of any shifts. If you shift, there needs to be a reason for the shift. Also, APA will often require past tense in your essays, while MLA requires present tense, even if the words have been written in the past. For example, to set up a quote in APA, you might write something like this:

✓ APA vs. MLA Verb Tense Examples

APA: Smith (2009) wrote, "This verb stuff is confusing" (p. 10)

MLA: Smith writes, "This verb stuff is confusing" (10).

For a more in-depth explanation of APA recommendations for verb tense usage in literature reviews and research papers, go to: [Verb Tense Shift](#)

Subject-Verb Agreement

"The basic rule of sentence agreement is simple: A subject must agree with its verb in number. Number means singular or plural." (Rozakis, 2003, p. 62) The subject may be either singular or plural, and the verb selection should match the subject. The task sounds simple, but it's not always easy to make the subject and verb match without some thought. Subject-verb agreement errors are common errors many beginning writers make, and they are highly-stigmatized errors, which means people will judge you for them.

✓ Rules and Examples: Subject-Verb Agreement

Here are some tips to help you avoid subject-verb agreement errors.

Rule: When the subject of a sentence is composed of two or more nouns or pronouns connected by **and**, use a plural verb.

Example: Suzy **and** her friend **are** missing the best movie ever!

Rule: When the subject of a sentence is composed of two or more nouns or pronouns connected by **or**, use a singular verb.

Example: The pen **or** the pencil **is** in the drawer, my purse, my book bag, or perhaps, my pencil pouch.

Rule: Do not be confused by a phrase that comes between your subject and your verb.

Example: Russell Wilson, as well as the rest of the Seattle Seahawks, **is** ready for the game against the Green Bay Packers.

Collective nouns can be tricky. Sometimes, they take a singular verb, and sometimes they take a plural verb. It depends upon how they are being used. Be sure to refer to the [Collective Nouns](#) page for more information and examples.

Rule: Fractions should be treated as singular or plural, depending upon the noun they are referring to.

Examples: Two-thirds of the zombies in "The Walking Dead" **move** slowly. The rest can apparently sprint

Two-thirds of your cake **was** eaten before you got home.

Active Versus Passive Verbs

As mentioned earlier, grammarian Martha Kolln mentions agency as one of the most important aspects of verbs you should know about. Agency involves understanding the relationship between the subject and the verb in a sentence and whether or not the subject is the agent in the sentence.

✓ Examples: Active and Passive Verbs

Take a moment to read the following two sentences.

Amy **grabbed** the zombie survival guide.

The zombie survival guide **was grabbed** by Amy.

Can you see how these sentences are different? In the first sentence, the verb **grabbed** is active because its subject, **Amy** is the doer or agent. Amy did the grabbing.

In the second sentence, **was grabbed** is passive because it describes an action done to its subject, **guide**. The doer of the action, Amy, is now the object of the preposition **by**.

Use active verbs whenever possible as they allow you to express yourself clearly, succinctly, and strongly. Active verbs imply that you're confident with what you are saying; you believe in your words. Looking back at the two sentences, you can see that the first one uses fewer words and makes no mistake as to who did the action. The latter sentence is wordy and does not directly address Amy.

TIP! You can use a little strategy to see if you're using passive voice by checking to see if you can add **by zombies** after the verb. If you can, then you likely have passive voice and should restructure your sentence. In the example above, you can write, **was grabbed by zombies**, so you know this is passive voice. Since technical writing and APA Style require that you use active voice whenever possible, you should restructure your sentences so they use active voice.

Purposeful Passive Voice

There are occasions when you might want to use passive verbs, such as when you don't want to mention the doer, the result of the action is more important than the doer, or the doer is unknown. Let's take the following scenario and apply it to all three reasons for using a passive verb.

✓ Examples: Purposeful Passive Voice

Tom and Mark, two brothers, are preparing their home for the zombie apocalypse. Tom is throwing canned goods across the room to Mark, who is stacking them on a shelf. They continue to throw canned goods across the room, despite knowing that it's against their mother's wishes. Tom throws a can of creamy corn to Mark and accidentally hits a vase. The vase breaks into pieces. Their mother asks what happened.

The responses could go as follows:

Tom **threw** the creamy corn and **broke** the vase.

OR

The vase **was broken** when the creamy corn **was thrown** at it.

The first sentence uses the active verbs **threw** and **broke**. It simply tells what happened and squarely blames Tom.

The second sentence uses the passive verbs **was broken** and **was thrown**. It doesn't mention who threw the can of corn, keeping the doer unknown. Also, it might be reasonable to believe that Tom thinks letting his mother know that the vase is broken is more important than identifying who broke the vase.

TIP! There are some situations when passive voice can be useful, so it's not the case that passive voice is "wrong." It's just that, in technical writing, you should use active voice because it makes for lively, more engaging writing. A good way to spot passive voice is to look for **to be verbs**. You should limit those as well.

Adjectives

An **adjective** modifies (describes / distinguishes) **nouns** and **pronouns**. In other words, adjectives change nouns or pronouns in some way. So **movie** is a noun, and a **scary movie** has been changed by the adjective **scary**.

It's important to remember, too, adjectives, as in the case of a **scary movie**, give you a way to inject your point of view into your writing. You might also describe a **loveable book**, a **beautiful dress**, or an **ominous sky**. There's a certain amount of subjectivity, of course, in all of these words, so you'll want to work to keep your audience in mind when choosing your adjectives and do your best to make sure your adjectives (or descriptors) are specific, concrete, and will make sense to both you and your audience.

Tip! You should avoid imprecise adjectives in technical writing. Technical writing requires precision. For example, you should use **five** in place of "many," and **avoid generalized descriptors** such as a lot, great, some, and all other words that are open to interpretation.

Order of Adjectives

Adjectives need to be placed in a particular order. What information do you post first? If you're a native English speaker, you can probably figure out the order without any thought. That's because you understand English grammar—even if it's only because you know what "sounds" right. And, if you're a non-native English speaker, you've probably been schooled in the order.

✓ Rule and Example: Order of Adjectives

Think about it. Why would we automatically write four gorgeous, long-stemmed, red, silk roses rather than four silk, long-stemmed, gorgeous, red roses? What drives the order in our description. The first example leads us down a logical path; the second example doesn't let us know which details are most important.

Rule: Here is the specific order for English language adjectives—

1. Intensifier
2. Quality
3. Size
4. Age, color.

Look at the two sentences again:

Four gorgeous provides the intensifier and quality;

long-stemmed provides the size;

red, provides the color;

and **silk** provides an additional detail.

Now look at the order of the adjectives in one of your own sentences and see if it makes sense to you. Below, you'll find a table illustrating the royal order of adjectives.

The Royal Order of Adjectives

Determiner	Observation	Physical Description				Origin	Material	Qualifier	Noun
		Size	Shape	Age	Color				
a	beautiful			old		Italian		touring	car
an	expensive			antique			silver		mirror

four	gorgeous		stemmed		red		silk		roses
her			short		black				hair
our		big		old		English			sheepdog
those			square				wooden	hat	boxes
that	dilapidated	little						hunting	cabin
several		giant		young		American		basketball	players
some	delicious					Chinese			food

Adapted from Adjectives. (n.d.) Capital Community College Foundation. Retrieved from grammar.ccc.commnet.edu

Types of Adjectives

Comparatives and **superlatives** are types of adjectives, but one (comparatives) provides a relative distinction while the other (superlatives) signifies the most extreme.

Comparative adjectives often end in **er**, and superlative adjectives often end in **est**.

✓ Examples: Comparative Adjectives

My World of Warcraft mage is **tougher** than your character.

Superlative:

My World of Warcraft mage is the **toughest** character ever.

Irregular Adjectives

There are also some adjectives that are irregular when you turn them into the comparative and superlative, and some, usually adjectives with two syllables, require that you simply add **more** or **most** in front of them.

The following examples are of some regular and some irregular adjectives.

✓ Examples: Irregular Adjectives

Adjective	Comparative	Superlative
kind	kinder	kindest
strong	stronger	strongest
good	better	best
bad	worse	worst
careful	more careful	most careful
awesome	more awesome	most awesome (as in This is the most awesome textbook ever!)

Adverbs

Adverbs are words that modify or describe a **verb**, **adjective**, or another adverb. Just as an adjective changes a noun, an adverb changes a verb, adjective, or adverb. Adverbs are easily identified because they often end in **ly**, but this is certainly not always the case.

Descriptions make our writing rich and specific, so we shouldn't be afraid of using adjectives and adverbs in our sentences.

✓ Example: Adverbs in a Sentence

Look at these three sentences. As you can see, the last sentence is the most descriptive and informative. The use of adverbs and adjectives helps our writing come alive.

Jon walked to the store to get canned goods for his zombie stash.

Jon walked to the large store to get canned goods for his zombie stash.

Jon walked **urgently** to the **massively** large store to get canned goods for his zombie stash.

Order of Adverbs

Adverbs most commonly describe how, but below is a more comprehensive list of the most common types of adverbs.

Type of Adverb	Example
Adverbs of manner (or how)	Christine sang the song atrociously . No more karaoke for her!
Adverbs of time	Michelle did her homework yesterday , but she did the wrong assignment.
Adverbs of place	I met my friend at the coffee shop , and that's where we saw the first signs of the outbreak.
Adverbs of degree	It's too quiet in here.
Adverbs of frequency	Michael Jordan rarely misses a free throw, but Shaq frequently does.
Adverbs of purpose	I clean the litter box every day to keep the house from smelling .

The Royal Order of Adverbs

And like adjectives, adverbs have a "royal order." While you may already have an innate sense of this order, it can be helpful to review the rules.

Verb	Manner	Place	Frequency	Time	Purpose
Beth swims	enthusiastically	in the pool	every evening	before dusk	to keep in shape.
Dad walks	impatiently	into town	every morning	before work	to get a newspaper.

Joe naps	in his room	every afternoon	after lunch.
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Adapted from Adverbs. (n.d.) Capital Community College Foundation. Retrieved from grammar.ccc.commnet.edu

Prepositions

Prepositions are little words with a big purpose: they show relationships of time, place, and space. We might call them “glue” words because they bring other words together in ways that create meaning. Look at something you’ve read recently and take out the prepositions. Here is an example of a sentence written with and without prepositions:

✓ Example: Using Prepositions in a Sentence

Correct: **With prepositions:** As soon **as** I closed the door, the turkeys that had been waiting **at** the wood line ran **to** eat the corn I had just put out **for** the squirrels.

Incorrect: **Without prepositions:** As soon I closed the door, the turkeys that had been waiting the wood line ran eat the corn I had just put out the squirrels.

They may be generally small in letters, but prepositions are important words that give great meaning for time and place relationships among actions, objects, and ideas. It’s important to distinguish if you are throwing a ball **to** someone or **at** someone. Did you want your sandwich **with** or **without** onions? Do you need that zombie fort built **at** the end of summer or **before** the end of summer?

Even though they are small words, prepositions can be difficult—particularly for someone learning English—because their use isn’t always logical. As an example, most mid-Westerners speak of standing **in line**, but many on the East coast speak of standing **on line**.

Common Prepositions

aboard	at	despite	like	than
about	before	down	near	though
above	behind	during	of	to
across	below	except	off	toward
after	beneath	excluding	on	under
against	beside	following	onto	underneath
along	between	for	outside	until
amid	beyond	from	over	up
among	but	in	past	upon
around	by	inside	regarding	verses
as	considering	into	since	with

✓ Rules and Examples: Prepositions

As you work to make good decisions about your preposition choices, you should consider the following preposition tips:

1. It’s actually acceptable to end a sentence with a preposition. Contemporary scholars and writing style guides acknowledge the acceptability of ending a sentence with a preposition (Casagrande, 2006). It’s natural and conversational to write short sentences that end with prepositions.

PURPLE *Did you find what you were looking **for**?

However, you should be aware that some professors prefer that you don’t end a sentence with a preposition. See how correctness is relative?

2. You should avoid unnecessary prepositions because using prepositions unnecessarily can make your writing wordy and even confusing.

PURPLE *I am not [for] sure I have the answer.

Frank apparently fell off [of] his horse while doing a stunt for a YouTube video.

3. The difference between **beside** and **besides** can be confusing. Beside means next to. Besides means in addition to.

4. The difference between **between** and **among** can also be confusing. You should use between when referring to two people or things, and you should use among when referring to more than two people or things.

Articles

Articles are similar to **adjectives** in that they modify **nouns**, but unlike adjectives, they don’t really describe a noun; they just identify a noun.

We have three articles in the English language: **a**, **an** and **the**.

1. **The** is the **definite article**, which means it refers to a **specific** noun in a group.

2. **A** is an **indefinite article**, which means it refers to **any** member of a group. You would use the indefinite article when you aren’t trying to distinguish a particular noun and use if the noun begins with a consonant.

3. **An** also is an indefinite article because it refers to any member of a group. In general, you would use **an** if the noun begins with a vowel.

✓ Examples: When to use A or An

Use the article **a** when the noun begins with a consonant:

a game

Use the article **an** when the noun begins with a vowel

an opportunity

Then, as always in English grammar, there are a few tricky exceptions. If a noun begins with **h**, you should think about the sound it makes.

Because the pronunciation of **hour** uses a silent h, you should use the article **an**

an hour

But since the pronunciation of **horse** includes the “h” sound, the article is **a**

a horse

And if a noun starts with a vowel, but it makes a **y** sound, you should use **a** instead of **an**.

a university

a user

Conjunctions

If words are the building blocks for our writing, then good transitions are the cement that holds them together. To make these transitions in our writing we need to turn to conjunctions. A conjunction is a word or words used to show the connection between ideas.

The following sections will provide you with details about what conjunctions are and what they do. But, this classic Conjunction Junction from 1973 will provide you with a fun overview before you learn more.

Coordinating Conjunctions

Coordinating conjunctions coordinate or join two equal parts. They are particularly important because, when **used with a comma**, they can actually connect complete sentences. Of course, they don't always have to connect complete sentences. Coordinating conjunctions can also connect smaller, equal parts of a sentence.

The key to using coordinating conjunctions is to think about what they are coordinating. This will help you make decisions about which one to use and how to punctuate. First, however, we should look at the list of coordinating conjunctions. There are only seven, and you may have heard of them as the FANBOYS.

For	But
And	Or
Nor	Yet
	So

Refer to the section on **Commas** to learn when you should and should not use a comma with a coordinating conjunction.

Subordinating Conjunctions

Subordinating conjunctions connect parts that aren't equal. In fact, you can tell by their name that they make a phrase subordinate to the main phrase or clause.

Rule: A subordinating conjunction sets off a phrase, so there should always be words with it.

Common Subordinating Conjunctions

after	though
although	since
because	though
before	when
even	

✓ Rules and Examples: Subordinating Conjunction

Rule: When a subordinating conjunction appears at the beginning of a sentence, the subordinating phrase is always set off with a comma. When a subordinating conjunction appears at the end of a sentence, the subordinating phrase is not usually set off with commas.

Examples:

Because my alarm clock did not go off, I missed the full moon and will now have to wait until next month to go out and play.

I missed the full moon and will now have to wait until next month to go out and play **because my alarm clock did not go off**.

Exceptions to the Rule: When you use words like **although** or **even though** at the end of a sentence. Because these set-off phrases show contrast, they still get a comma, even when they are used at the end of the sentence.

Examples:

Although I tried, I could not outrun the werewolf.

I could not outrun the werewolf, **although I tried**.

You will notice the comma with the **although** phrase, no matter where it appears in the sentence, but the **because** phrase follows the standard "rule."

It's also important to note that **although** cannot stand alone like a conjunctive adverb:

Incorrect: Although, I tried to outrun the werewolf.

Note: The above example is a common, incorrect usage of **although** and actually makes a sentence fragment, which is a serious grammatical error.

Conjunctive Adverbs

The conjunctions that are not exactly conjunctions are conjunctive adverbs. "Conjunctive adverbs are used to connect other words. Therefore, conjunctive adverbs act like conjunctions even though they are not technically considered to be conjunctions. Conjunctive adverbs are also called transitions because they link ideas." (Rozarkis, 1997, p. 55)

Conjunctive adverbs are words like **however**, **moreover**, **therefore**, and **furthermore**. They provide important transitions between ideas and are commonly used to help create a nice, flowing work.

✓ Examples: Using Conjunctive Adverbs

Often, you'll see a conjunctive adverb used after a semicolon to start a new independent clause, as illustrated in this example:

Example: I have several back-up zombie plans in place; **however**, I am sure my first plan is the best plan.

However, it's also important to note that you don't have to use a conjunctive adverb every time you use a **semicolon** and you don't have to use a **semicolon** to use a conjunctive adverb. Conjunctive adverbs work well after periods, too.

Note: You don't have to use a conjunctive adverb every time you use a **semicolon** and you don't have to use a **semicolon** to use a conjunctive adverb. Conjunctive adverbs work well after periods, too.

Interjections

"Interjections are short exclamations like **Oh!**, **Um** or **Ah!** They have no real grammatical value but we use them quite often, usually more in speaking than in writing" (Interjections, 2001, para. 1).

While interjections are very short, they communicate a great deal because they are typically used to express emotion. "While any word that shows strong feelings can be an interjection, look for the usual suspects: Wow!, Zap!, Pop!, and the rest of the family" (Rozakis, 1997, p. 59).

✓ Examples: Interjection

"Ouch! That hurts!" I said to the vampire.

Whoops! Did I forget to include you in the zombie plan?

Because interjections communicate strong emotions, they should not be over-used. “With interjections, a little goes a long way. Use these marks of punctuation as you would hot pepper or hysterics, because they are strong and edgy” (Rozakis, 1997, p. 59).

Sentence Structure

This section is a quick review of the fundamentals of the sentence. If you encounter unfamiliar terminology in this book or in your class, refer to this section for help. For more on sentence grammar, refer to your copy of Rules for Writers by Diana Hacker (Bedford/St. Martin's Press) for a thorough discussion of sentence grammar, along with exercises.

Basic Sentence Pattern

✓ Subject + verb

The simplest of sentence patterns is composed of a **subject** and **verb** without a direct object or subject complement. It uses an **intransitive verb**, that is, a verb requiring no direct object:

Control **rods remain** inside the fuel assembly of the reactor.

The **development** of wind power practically **ceased** until the early 1970s.

All amplitude-modulation (AM) **receivers work** in the same way.

The **cross-member** exposed to abnormal stress eventually **broke**.

Only two **types** of charge **exist** in nature.

? Subject + linking verb + subject complement

Another simple pattern uses the **linking verb**, any form of the to be verb without an action verb:

The chain **reaction is** the basis of nuclear power.

The **debate** over nuclear power **has** often **been** bitter.

Folding and **faulting** of the earth's surface **are** important geologic processes.

Windspeed seems to be highest during the middle of the day.

The silicon solar **cell can be** difficult and expensive to manufacture.

✓ Subject + verb + direct object

Another common sentence pattern uses the **direct object**:

Silicon conducts **electricity** in an unusual way.

The anti-reflective coating on the the silicon cell reduces **reflection** from 32 to 22 percent.

Prestressing of the concrete increases the load-carrying **capacity** of the members.

Subject + verb + indirect object + direct object

The sentence pattern with the **indirect object** and **direct object** is similar to the preceding pattern:

We are sending **you** the **balance** of the payment in this letter.

I am writing **her** about a number of problems that I have had with my Execucomp wordprocessor.

The supervisor mailed the **applicant** a **description** of the job.

I am writing **you** about a number of problems...

Austin, Texas, has recently built its **citizens** a **system** of bikelanes.

✓ Subject + verb + direct object + object complement

The sentence pattern using the [direct object] and **object complement** is not common but worth knowing:

The walls are usually painted **black**.

The plant shutdown left the entire **area** an economic **disaster**.

The committee declared the new **design** a **breakthrough** in energy efficiency.

The low cost of the new computer made **competition** much too **difficult** for some of the other companies.

✓ Passive voice pattern

The passive voice is not ordinarily considered a "pattern," but it is an important and often controversial construction. It reverses the subject and object and, in some cases, deletes the subject. (See the section on problems with the [weak use of the passive](#).) Compare these example active and passive voice sentences:

Passive voice

Active voice

Saccharin is now permitted as an additive in food.	The FDA now permits saccharin as an additive in food.
This report is divided into three main sections.	I have divided this report into three main sections.
Windmills are classified as either lift or drag types.	Engineers classify windmills as either lift or drag types.
The valves used in engine start are controlled by a computer.	A computer usually controls the valves used in an engine start.
The remains of Troy were destroyed by later builders on the site.	Later builders on the site of Troy destroyed the remains of citadel.
Some restaurant locations can be leased.	You can lease some restaurant locations.

✓ Simple Sentence

A simple sentence is one that contains **subject** and a **verb** and no other independent or dependent clause.

One of the tubes **is attached** to the manometer part of the instrument indicating the pressure of the air within the cuff.

To measure blood pressure, a **device** known as a sphygmomanometer and a **stethoscope are needed**. (*compound subject*)

There **are** basically two **types** of stethoscopes. (*inverted subject and verb*)

The **sphygmomanometer** **is** usually **covered** with cloth and **has** two rubber tubes attached to it. (*compound verb*)

✓ Compound sentences

A compound sentence is made up of two or more independent clauses joined by a **coordinating conjunction** (*and, or, nor, but, yet, for*) and a comma, an adverbial conjunction and a semicolon, or a semicolon.

In sphygmomanometers, too narrow a cuff can result in erroneously high readings, and too wide a cuff can result in erroneously low readings.

Some cuffs hook together; others wrap or snap into place.

✓ Compound predicates

A **predicate** is everything in the verb part of the sentence *after* the subject (unless the sentence uses inverted word order). A **compound predicate** is two or more predicates joined by a **coordinating conjunction**. Traditionally, the conjunction in a sentence consisting of just two compound predicates is not punctuated.

Another library media specialist **has been using** Accelerated Reader for ten years **and has seen** great results.

This cell phone app **lets users share pictures instantly with followers and categorize photos with hashtags**.

Basic Parts of the Sentence

✓ Subject

The subject of a sentence is that noun, pronoun, or phrase or clause about which the sentence makes a statement.

Einstein's general **theory** of relativity has been subjected to many tests of validity over the years.

Although a majority of caffeine drinkers think of it as a stimulant, heavy **users** of caffeine say the substance relaxes them.

Surrounding the secure landfill on all sides are impermeable barrier **walls**.
(*inverted sentence pattern*)

In a secure landfill, the **soil** on top and the **cover** block storm water intrusion into the landfill.
(*compound subject*)

✓ Verb phrase

The main verb, or verb phrase, of a sentence is a word or words that express an action, event, or a state of existence. It sets up a relationship between the subject and the rest of the sentence.

The first high-level language to be widely accepted, FORTRAN, **was implemented** on an IBM 704 computer.

Instruction in the source program **must be translated** into machine language. (*passive construction*)

The operating system **controls** the translation of the source program and **carries** out supervisory functions. (*compound verb*)

✓ Predicate

The predicate is the rest of the sentence coming after the subject. It can include the main verb, subject complement, direct object, indirect object, and object complement.

The pressure in a pressurized water reactor **varies from system to system**.

The pressure **is maintained at about 2250 pounds per square inch to prevent steam from forming**.

The pressure **is then lowered to form steam at about 600 pounds per square inch**.

In contrast, a boiling water reactor **operates at constant pressure**.

✓ Subject complement

The subject complement is that noun, pronoun, adjective, phrase, or clause that comes after a linking verb (some form of the *be* verb):

The maximum allowable concentration is ten **parts** H₂S per million parts breathable air.

The deadening of the sense of smell caused by H₂S is the **result** of the effects of H₂S on the olfactory nerves of the brain.

Continuous exposure to toxic concentrations of H₂S can be **fatal**.

✓ Direct Object

A direct object—a noun, pronoun, phrase, or clause acting as a noun—takes the action of the main verb. A direct object can be identified by putting *what?*, *which?*, or *whom?* in its place.

The housing assembly of a mechanical pencil contains the mechanical **workings** of the pencil.

Lavoisier used curved glass **discs** fastened together at their rims, with wine filling the space between, to focus the sun's rays to attain temperatures of 3000° F.

The dust and smoke lofted into the air by nuclear explosions might cool the earth's **atmosphere** some number of degrees.

A 20 percent fluctuation in average global temperature could reduce biological **activity**, shift weather **patterns**, and ruin **agriculture**.
(compound direct object)

The cooler temperatures brought about by nuclear war might end all **life** on earth.

On Mariners 6 and 7, the two-axis scan platforms provided much more **capability** and **flexibility** for the scientific payload than those of Mariner 4.
(compound direct object)

✓ Indirect object

An indirect object—a noun, pronoun, phrase, or clause acting as a noun—receives the action expressed in the sentence. It can be identified by inserting *to* or *for*.

In the application letter, tell *[to]* the potential **employer** that a resume accompanies the letter.

The company is designing *[for]* senior **citizens** a new walkway to the park area.

Do not send *[to]* the personnel **office** a resume unless someone there specifically requests it.

✓ Object complement

An object complement—a noun or adjective coming after a direct object—adds detail to the direct object. To identify object complements, insert *[to be]* between the **direct object** and **object complement**.

The supervisor found the **program** *[to be]* **faulty**.

The company considers the new **computer** *[to be]* a major **breakthrough**.

Most people think the space **shuttle** *[to be]* a major **step** in space exploration.

Problem Modifiers

A **modifier** is any element—a word, phrase, or clause—that adds information to a noun or pronoun in a sentence. Modifier problems occur when the word or phrase that a modifier is supposed to modify is unclear or absent, or when the modifier is located in the wrong place within the sentence. Modifier problems are usually divided into two groups: **misplaced modifiers** and **dangling modifiers**:

✓ Examples: Correcting Misplaced Modifiers

Sentence	Problem	Corrective Revision
They found out that the walkways had collapsed <u>on the late evening news</u> .	<i>Did the walkways collapse on the late evening news?</i>	On the late evening news, we heard that the walkways had collapsed.
The committee <u>nearly spent</u> a hundred hours investigating the accident.	<i>So how much time did the committee spend? A minute? An hour?</i>	The committee spent nearly a hundred hours investigating the accident.
The supervisor said <u>after the initial planning</u> the in-depth study would begin.	<i>Did the supervisor say it after the initial planning? And when will the study begin?</i>	The supervisor said that the in-depth study would begin after the initial planning

✓ Examples: Correcting Dangling Modifiers

Sentence	Problem	Corrective Revision
<u>Having damaged the previous one</u> , a new fuse was installed in the car.	<i>Who damaged that fuse?</i>	Because the previous fuse had been damaged, a new one had to be installed. or Having damaged the previous one, I had to install a new fuse in my car.
After receiving the new dumb waiter, household chores became so much easier in the old mansion.	<i>Who received the dumb waiter?</i>	After we received the dumb waiter, it was immediately installed. or After receiving the dumb waiter, we immediately installed it.

Using a grant from the Urban Mass Transportation Administration, a contraflow lane was designed for I-45 North.	Who used that money?	When the Urban Mass Transportation Administration granted funds to the city, planners began designing a contraflow lane for I-45 North. or Using a grant from the Urban Mass Transportation Administration, city planners designed a contraflow lane for I-45 North.
Pointing out the productivity and health problems plaguing US workers, aerobic fitness programs may become much more common in American industry, according to the spokeswoman.	Who pointed that out?	Because of the productivity and health problems plaguing US workers, aerobic fitness programs may become much more common in American industry, according to the spokeswoman. or Pointing out the productivity and health problems plaguing US workers, the spokeswoman said that aerobic fitness programs may become much more common in American industry.

Tip! To correct misplaced modifier problems, you can usually relocate the misplaced modifier (the word or phrase). To correct dangling modifiers, you can rephrase the dangling modifier, or rephrase the rest of the sentence that it modifies.

Note: One particularly effective way to correct dangling modifiers is to create a summary appositive, that is, a noun or pronoun summarizing what was just said followed by an adjective clause:

Dangling modifier problems	Summary appositive revisions
Stars that were formed relatively recently should have higher concentrations of heavy elements than do the older stars, which is confirmed by observation.	Stars that were formed relatively recently should have higher concentrations of heavy elements, a prediction that is confirmed by observation.
Most astronomers now believe that the energy of quasars comes from giant black holes in the cores of the quasars, which fits the growing belief that black holes are present in the cores of many galaxies, our own included.	Most astronomers now believe that the energy of quasars comes from giant black holes in the cores of the quasars, a belief that fits the growing belief that black holes are present in the cores of many galaxies, our own included.

Parallelism

Parallelism refers to the way that items in a series are worded. You want to use the same style of wording in a series of items—it makes it easier on the reader. Widely varied wording is distracting and potentially confusing to readers. Here are some examples, with revisions and some comments:

✓ Examples: Creating Parallelism

Problem: The report discusses **how telescopes work, what types are available, mounts, accessories, and techniques** for beginning star gazers. (*The "how" and the "why" clauses are not parallel to the "mounts," "accessories," and "techniques" phrases.*)

Revision: The report discusses how telescopes work; what types of telescopes, mounts, and accessories are available; and how to begin your hobby as a star gazer.

Problem: The report discusses **how telescopes work, what types are available, mounts, accessories, and techniques** for beginning star gazers. (*The "how" and the "why" clauses are not parallel to the "mounts," "accessories," and "techniques" phrases.*)

Revision: The report discusses how telescopes work; what types of telescopes, mounts, and accessories are available; and how to begin your hobby as a star gazer.

Problem: While the dialysis solution remains in the peritoneal cavity, the dialysis is achieved, a process that includes **the removal of nitrogenous wastes and correcting electrolyte imbalances and fluid overloads**. (*The "removal" phrase and the "correcting" phrase are not parallel to each other.*)

Revision: While the dialysis solution remains in the peritoneal cavity, the dialysis is achieved, a process that includes the removal of nitrogenous wastes and the correction of electrolyte imbalances and fluid overloads.

Problem: This report is intended for people **with some electronics background but have little or no knowledge of geophysical prospecting**. (*The "with" phrase is not parallel with the "have little" clause—this one is not even grammatical.*)

Revision: This report is intended for people with some electronics background but with little or no knowledge of geophysical prospecting.

Parallelism problems occur when different types of phrasing are used in the same areas of a document: such as for list items in a vertical list, or for all headings at a certain level within a specific part of a document. At times, working on parallelism of phrasing is pedantic and unnecessary. However, in many instances, parallel phrasing can give readers important cues about how to interpret information. A jumble of dissimilar styles of phrasing for similar elements can be confusing. Shown below are those different styles—don't mix 'em!

✓ Examples: Parallelism Styles

Questions	Noun Phrasing
How are groundwater samples collected?	Method of groundwater sample collection
How should soil samples be handled?	Soil sample handling
Must monitor wells be used to collect groundwater for laboratory analysis?	Purpose of monitor wells in groundwater collection for laboratory analysis
What should the samples be analyzed for?	Purpose of soil sample analysis
Gerund Phrasing	Sentences
Collecting groundwater samples	Groundwater samples must be collected properly.
Handling soil samples	Soil samples must be handled using the specified method.
Using monitor wells in groundwater collection for laboratory analysis	Monitor wells must be used to collect groundwater for laboratory analysis.
Analyzing samples	Samples must be analyzed for specific elements.
Infinitives	Imperatives
To collect groundwater samples	Collect groundwater samples.
To handle soil samples	Handle soil samples properly.
To use monitor wells in groundwater collection for laboratory analysis	Use monitor wells in groundwater collection for laboratory analysis.
To analyze samples	Analyze samples.

Numbers vs. Words

The main hurdle to overcome is to learn that in technical contexts, we use numerals in text—even ones below 10—if they are critical values. In other words, we break the rules that are taught in regular writing courses and that are used in normal publishing and copyediting practice. That's because in the technical and scientific context, we are vitally interested in numbers, statistical data, even if it's a 2 or 5 or—yes—even a 0.

The difficulty is in defining the rules.

✓ Rules: Number vs Words

Rule: You should use numerals, not words, when the number is a key value, an exact measurement value, or both.

Example: In the sentence "Our computer backup system uses 4 mm tape" the numeral is a key element, just as it is in a recipe: "This recipe calls for 4 cups of unbleached flour." But consider this one: "There are four key elements that define a desktop publishing system." A word, not a numeral, is preferable here because—well, how to explain it? The number of elements is exact all right, but it's just no big deal. Four, five—who cares?

To summarize the rules that we normally apply:

- Don't start sentences with numerals—write the number out or, better yet, rephrase the sentence so that it doesn't begin the sentence.
- For decimal values less than 1, add a 0 before the decimal point: for example, .08 should be 0.08.
- Make a firm decision on how to handle 0 and 1 when they refer to key, exact values and stick with it. (Style varies wildly in technical writing on these two villains.) Some technical styles choose to use words for these; they resign themselves to the slight inconsistency but better readability.
- Use numerals for important, exact values, even when those values are below 10.
- Use words for numerical values that are unimportant, such as in the sentence "There are six data types in the C programming language."
- When you must use fractions, avoid the symbols that may be available in the character set used by your software. Construct the fraction like this: 5-1/4. Be sure and put the hyphen between the whole number and the fraction.
- It would be nice if all fractions could be reset as decimals, but such is not the case when you have things like 1/8 floating around. Stay consistent with either decimals or fractions in these situations.
- Don't make numerical values look more exact than they are. For example, don't add ".00" to a dollar amount if the the amount is rounded or estimated.
- For large amounts, you can write things like 36 million or 45 billion, but, for some reason, *not* 23 thousand.
- Apply these rules in specific technical, scientific contexts only. Be sensitive to what the standard practices are in the context in which you are writing.
- As for percentages, Microsoft style says spell out "percent," and to avoid use of the symbol except, for example, to save space in tables. Use the word "percent" and insert a space between it and the numeral. Always use a numeral with percent, no matter how small the numeral. Use "percentage" as a stand-alone noun. For example, Over 15 *percent* of my income goes to pet food and A big *percentage* of my income goes to pet food.

✓ Examples: Numbers vs. Words

Here are some examples where these rules are applied:

Some 19 million tons of sulphur dioxide are discharged from US sources alone each year, and another 14 million tons from Canada. *(Using the number "19" and the word "million" indicates an approximate amount. "19,000,000" might make some readers think it was an exact amount.)*

It was not until after December 1952, when 4000 people died in London from air pollution in just a few days, that real gains in pollution-control legislation were made.

The US Army's standard airborne Doppler navigator weighs 28 lb (12.7 kg), requires 89 W of power, and operates at 13.325-GHz frequency.

All vitrain of the European classification, if more than 14 micrometers thick, has been regarded as anthraxylon.

In 1971, 11 countries accounted for about 91 percent of world production of coal.

The Department of the Interior has just published a report that reviews 65 different coal gasification processes.

Combustion turbines total about 8% of the total installed capability of US utility systems and supply less than 3% of the total energy generated.

Internal combustion engines in small power plants account for about 1% of the total power-system generating capability of the US.

The water-cement ratio will generally range from 4 gal of water per sack of cement to about 9 gal per sack. *(These are exact values here; in technical writing, use the numeral even if it is below 10.)*

The problem is located in piston number 6. *(When there are enumerated items or parts, technical writing uses the number; as in this example. But notice that no "#" or "No." is used.)*

The signal occurs in 6-second intervals.

The order is for 6-, 8-, and 12-foot two-by-fours.

Use Code 3 if a system shutdown occurs.

Mined coals commonly contain between 5 and 15 percent mineral matter.

The above illustration shows a 20-unit coaxial cable with 9 working coaxial pairs and 2 standby coaxials, which automatically switch in if the electronics of the regular circuits fail.

There are 59 different species of the coffee shrub, but only 4 are of commercial importance.

Most grinds of coffee contain particles ranging in size from 0.023 to 0.055 inches in diameter.

Using carrier frequencies between 0.535 MHz and 1.605 MHz in the US, AM broadcasting stations sprang up all over the country beginning in the 1910s.

As a base from which to work, 2-1/2 to 3 gal of water are needed for each sack of cement for complete hydration and maximum strength. *(These are exact values; therefore, in the technical-writing context, we use numerals. Notice how fractional values are handled: put a hyphen between the whole number and the fraction to prevent misreading.)*

The order for twelve 30-foot beams was placed yesterday.

The order was for 30 fifteen-gallon tubs.

They used six 8-pound sacks of nails.

The microprocessors of the 70s and 80s operated under the control of clocks running at 1 to 5 MHz, that is, 1 to 5 million counts per second.

Your eye has a bandwidth of 370 trillion Hz, the visible spectrum.

Transmission rates on ETHERNET range from 1 to 10 megabits per second (0.125 to 1.25 million bytes per second).

In 1978, the satellite carriers' revenues were about \$88 million, and by 1986, they are expected to reach \$800 million.

Most communications satellites are in geostationary orbit: at an altitude of 22,300 miles over the surface of the earth and at a distance of 26,260 miles from the center of the earth (the earth's radius being 3960 miles).

Aggregates constitute about 70 percent of a concrete mix.

Uniform compaction of 95% or better of standard AASHTO densities is recommended.

In this book, Chapter 7 discusses the different audiences of technical prose and translation techniques for communicating effectively with the less specialized ones.

The wheels of the four-wheel tractor give it increased speed over the Crawler, but because of the weight distribution over four wheels rather than over two wheels or tracks, this vehicle has less traction.

Hundreds of thousands of people will have purchased microcomputers by the end of 1980. Tens of millions of them will bought them by the end of the century.

There are two telephones in service today for every three people in the US.

In 1965, Dr. Gordon Moore announced his "law" that the complexity of a chip would double every year for ten years. *(Use the word "ten" here because it is not an exact amount.)*

The typical stand-alone microcomputer system consists of seven physical components. *(Use the word "seven" here because, even though it seems like an exact amount, it is not a key value. It doesn't have the same significance as the "7" would have in "7 quarts of oil.")*

If you are using page-zero addressing, use a RAM for memory page zero.

Primary fuel cells are those through which reactants are passed only one time.

Before recharging, a zinc-carbon battery must have a working voltage not less than one volt. *(Even in technical-writing contexts, rules for one and zero vary. Just pick a style and stay with it. Using the word "one" is the standard in this example.)*

Japan has roughly one-third of the US production of dry batteries. *(In running text, always write out fraction like this, and hyphenate them. However, you'd still write "5-1/2 inches.")*

The radial fractures are so extensive that they are the dominant structural element over half of Mars's surface. *(And just to be sure, "half" by itself in running text is always a word.)*

A nanosecond is one-billionth of a second.

Inside the UP are three 16-bit registers. *(When you have two separate numerical values side by side, one has to be a word, and the other a numeral. Styles vary here, but make the numeral the higher number. Contrast with the next example.)*

Data from the frequency counter take the form of 16 seven-bit ASCII words.

Sales of batteries have increased from \$510 million on the average during 1957-1959 to \$867 million in 1966 and are projected to exceed \$1.8 billion in 1980.

The speed of light is roughly 300 million meters per second.

Fifty-three representatives of different software development companies showed up at the meeting. *(Never start a sentence with a numeral in any writing context. With this example, some rewriting might be a wise idea to get the numerical out of the beginning of the sentence, as in the following rewrite.)*

At the meeting, 53 representatives of different software development companies showed up.

Symbols and Abbreviations

In technical-writing contexts, you may often have to decide whether to use  or  for inches or feet or whether to use , , or .

Symbols and abbreviations are distracting to readers; they are different from the normal flow of words. However, there are plenty of cases where the written-out version is more distracting than the symbol or abbreviation. Also, the context (specifically, technical or nontechnical) has a lot to do with which to use.

Imagine a technical document that has only one or two references to numerical measurements in inches. There is no reason to use symbols or abbreviations here—just write the thing out. But imagine a technical document with numerous feet and inch references: using symbols or abbreviations in this case is better, more readable, more efficient for both reader and writer.

But which? Imagine the amount of foot and inch references there would be in a carpentry project (for example, a dog house). In this case, the symbols,  and  would be preferable. However, this would be an extreme case; otherwise, use the abbreviations.

When you use symbols, especially for feet, inches, and some math symbols, use a symbols-type font. Avoid the "smart" quotes for feet and inches. Use the multiplication symbol for measurement contexts.

Which are the standard symbols and abbreviations to use? Go with the standards in the field in which you are writing, or with those found in a standard reference book such as a dictionary. Don't make them up yourself (for example, "mtrs" for meters)!

What about plurals? Very few abbreviations take an s to indicate plural: for example 5 in. means 5 inches. For the few that you think might take the s, check a dictionary.

What about obscure abbreviations and symbols? If you are concerned that readers might not recognize the abbreviation or symbol, write its full name in regular text and then put the abbreviation and symbol in parentheses just after the first occurrence of that full name.

✓ Examples: Abbreviations and Symbols in Text

High resolution displays use larger video bandwidths, up to 30 MHz or more.

Most touch-sensitive displays use a matrix of either LED/photodiodes or transparent capacitor arrays to detect a physical touch.

The part of the memory that is easily alterable by the operator consists of RAM chips.

A satellite in geostationary orbit looks at the earth with a cone angle of 17.30 corresponding to an arc of 18,080 km along the equator.

The arc from 530 W to 1390 W will cover 48 states (excluding Alaska and Hawaii) and is said to provide conus coverage.

Fairchild Industries, Inc., was an early participant in commercial satellites.

The voice was compressed from the usual 64-kb/s pulse code modulation (PCM) to 32 kb/s per channel by near-instantaneous companding (a modified PCM technique).

Terrestrial microwave radio communications require repeaters spaced every 20 to 40 mi from each other.

Over a period of several days the spacecraft is tracked from the ground and positioned on station (i.e., in the preassigned orbital spot) in order to commence operations.

A velocity increment of approximately 155 ft/s per year is required to correct drift problems in satellites.

The ancient battery-like objects made by the Parthians in 250 BC were thin sheets of copper soldered into a cylinder 1.125 cm long and 2.6 cm in diameter.

The standard electrodes are the normal and the 0.1 normal (N) calomel electrodes in which the system is Hg/KCl solution saturated with HgCl.

Such batteries contain 4400 cc of water in which NaOH is dissolved.

Water pressure in the heat recovery loop can be as much as 25 psig.

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11: Instructions

✓ Chapter Objectives

- Identify the three types of instructions.
- Explain the main components of instructions.
- Exemplify an effective set of instructions.

An important part of technical and report writing is the use of definitions, descriptions, and instructions. They often work together to clarify the purpose and information in a technical document for an audience. This series of three chapters look at these three elements: definitions, descriptions, and instructions, more closely, so that you understand how to incorporate them into your technical documents to achieve clarity and conciseness. For that reason, you will find this introduction at the beginning of each chapter to remind you of their interconnectedness.

Definitions

We grow up reading these from the time we are in elementary school. They are one of the more common patterns of organization used. Definitions can be simple short insertions in a sentence to clarify a term, or they can be an entire document known as an extended definition.

Descriptions

These are similar to a definition but can be longer, more detailed, and have a visual representation to further explain a concept. More than likely, you have read these as well. Descriptions explain objects, mechanisms, and processes – and they do so in a way that whatever is being described is easily understood. If a description of the greenhouse effect was created for specialists in the field, it might be more complex. If this same idea was written for a general audience, the language would be simplified.

Instructions

Instructions provide step-by-step explanations of how to do things: assemble something, operate something, repair something, or explain a personal process (enrolling in college, for example) so that readers may better understand it and possibly use it themselves.

What are Instructions?

Process texts are common in school and professions. In school, instructors frequently assign process assignments. For example, humanities professors may ask for a description of how an artistic or literary period evolved; history professors might ask for the contributions of a culture's leaders over time; social science professors - the chronology of inventions; engineering professors will ask for explanations of how sound is changed into electrical signals, and business professors might want an explanation of how the Federal Reserve works or how to sell a product.

On a daily basis, we read descriptive processes, including recipes, user manuals for new software, or advice columns on how to lose weight or how to succeed in school or a profession. These texts focus on answering one of the following questions:

- “How is this done?”
- “How can I do this?”

While the topics of a process report or a set of instructions may vary, they share several similarities:

1. They are written to explain how something works
2. They are structured in chronological order using numbered steps
3. Most include visuals. In writing instructions for learning a new software program, for example, writers might use screenshots and/or screen videos to walk users through the tutorial.

✓ Types of Instructions

There are **three main types** of process texts:

- **Descriptive processes:** these answer the question, “How is this done?” These texts describe how a process occurs so that readers can understand it better. For example, writing a descriptive process about how you registered for a course online rather than in person might be useful to someone who has never done online registration.
- **Prescriptive processes:** these are explanatory in nature; they prescribe how something is done (or should be done) so that readers can do it themselves. These are the most common type of instructional documents. For example, you might write a prescriptive process guide for users explaining how to perform basic maintenance on their cars, such as changing their own oil, checking spark plugs, or replacing brake pads. *The samples listed below are examples of prescriptive processes.
- **Blended descriptive and prescriptive processes** make the main thrust of the document a descriptive process while having a few sections summarizing how the readers can perform the process. In other words, writers may address both “How can I do this?” and “How is this done?” in different parts of one text. Alternatively, they might develop different versions of the same document for two audiences—an audience of users and an audience of interested parties.

Content of Instructions

Be sure to read the chapter on [Visuals in Technical Documents](#) before creating your instructions. Generally speaking, writers of instructions should strive to do the following:

- Use **clear, simple writing** whenever possible.
- Have a **thorough understanding of the process** in all its technical detail.
- **Put yourself in the place of your audience** who will be using your instructions.
- **Use direct address, active voice, and imperative mood.** Write instructions in the second person as direct address to emphasize the role of the audience. Begin all steps with action verbs. For example, “Place the panel on the floor,” instead of “The panel should be placed on the floor” or “You should place the panel on the floor.”

✓ Instructions should include the following items:

Introduction: In carefully planning your instructions’ introduction, be sure to:

- Indicate the specific task or procedure to be explained.
- Indicate what the audience needs in terms of knowledge and background to understand the instructions.
- Give a general idea of the procedure and what it accomplishes.
- Indicate the conditions when these instructions should (or should not) be used.
- Give an overview of the contents of the instructions.

Headings: Headings help orient the user by organizing information, helping the reader understand what is contained in each section, and allowing them to quickly find information.

General warning, caution, danger notices: Instructions must also alert readers to the possibility of ruining their equipment, screwing up the procedure, and/or hurting themselves. Also, instructions must emphasize key points or exceptions. For these situations, you should use **special notices**, such as **Note**, **Warning**, **Caution**, and/or **Danger** (see [Chapter on Document Design Basics for detailed instructions](#).)

Technical background or theory: At the beginning of some instructions (usually after the introduction), you may need a discussion of background related to the procedure. For certain instructions, this background is critical—otherwise, the steps in the procedure make no sense. In some cases, writers of instructions may need to spend significant time explaining things to readers before moving on to the actual steps involved in the process.

Equipment and supplies: Most instructions include a list of the things you need to gather before you start the procedure. This includes **equipment**, the tools you use in the procedure (such as mixing bowls, spoons, bread pans, hammers, drills, and saws) and **supplies**, the things that are consumed in the procedure (such as wood, paint, oil, flour, and nails). In instructions, these are typically listed either in a simple vertical list or in a two-column list at the start of the instructions. Use the two-column list if you need to add specifications to some or all of the items—for example, brand names, sizes, amounts, types, model numbers, and so on.

General warning, caution, danger notices: Instructions must also alert readers to the possibility of ruining their equipment, screwing up the procedure, and/or hurting themselves. Also, instructions must emphasize key points or exceptions. For these situations, you should use **special notices**, such as **Note**, **Warning**, **Caution**, and/or **Danger** (see [Chapter on Document Design Basics for detailed instructions](#).)

Order of steps: When you get to the actual writing of the steps be certain to carefully consider the structure and format of those steps, and any supplementary information that might be needed. The steps should be listed in chronological order with warnings, cautions, and troubleshooting included where needed.

Visuals: Good instructions have both text *and* visuals since your audience is likely comprised of people with different learning styles. However, the use of visuals can vary depending on your audience and the intended use of the instructions. Visuals help to clarify a concept that is difficult to explain using only words. Graphics may be used to show how something looks, how something should look once the step has been completed, how something is done or constructed, show trends or relationships, or help to organize information. Graphics are useful since almost everyone (including children and others of a different language) can understand visual instructions and see exactly what they need to complete. (See Chapter 15 Visuals in Technical Documents.)

Note: While visuals are useful, accessible instructions do not rely solely on visuals and instead, include text that repeats the information given in the visuals.

Audience and Characteristics

At the beginning of an instruction-writing project, it is important to consider your **audience** and determine the **characteristics** (the number of tasks and steps) of the particular procedure you intend to write about.

Audience: Early in the process, define the audience and situation of your instructions. Remember that defining an audience means defining its level of knowledge and familiarity with the topic. It is helpful to describe your audience to yourself first, and then use that to assess your message to ensure it is appropriate for your audience.

Characteristics: An important consideration is how many tasks there are in the procedure for which you are writing instructions. The term **procedure** can be used to refer to the complete set of activities your instructions discuss, while the **task** can be used to define a semi-independent group of actions within the procedure.

✓ Understand Task vs Procedure

Setting up your modem is one *task* in the overall *procedure* of connecting a computer to the internet. Whereas a simple procedure like changing a car's oil contains only one task; there are no semi-independent groupings of other activities.

A more complex procedure, like using a microwave oven, contains plenty of semi-independent tasks, such as setting the clock, setting the power level, using the timer, cleaning and maintaining the microwave, and more.

Use Phases to organize: Some instructions have only a single task but have many steps within that single task. For example, imagine the multiple tasks required to assemble a children's swing set. One effective approach would be to group similar and related steps into **phases**, and then renumber the steps at each new phase. A **phase** is a group of similar steps within a single-task procedure. In the swing set example, setting up the frame would be one phase; anchoring the thing in the ground would be another, and assembling the box swing would be still another. The "How to Operate the Minolta Freedom 3 Camera" instructions below (Example Instructions) uses **phases** for each set of tasks.

Identifying Tasks

When you write instructions, procedures, or user-guide information, you must use a task approach. That means providing steps and explanations for all the major tasks that users may need to perform. Of course, some instructions involve only one task—for example, changing the oil in a car. But we are concerned here with more complex procedures. While this chapter uses computer software as an example, these techniques can apply to any multi-task procedure—for example, operating a microwave oven.

To write in a task-oriented manner, you first have to do some **task analysis**. That means studying how users use the product or do the task, interviewing them, and watching them. It can also mean interviewing marketing and product developers. If you can get your hands on the kinds of questions that help-desk people receive, that helps too.

But sometimes, you may not be in a position to do a thorough task analysis. Typically, product developers don't think about documentation until rather late. In these circumstances, it's often difficult to get marketing, development, engineering, and programming people to spend enough time with you to explain the product thoroughly. And so you end up doing a certain amount of educated guesswork. The developer is more likely to review your draft and let you know if your guesswork is right.

✓ Example: Conducting a Task Analysis

To develop a task analysis, you can study the user interface (buttons, menus, options, etc.) of the product. This goes for both hardware and software. Consider the interface for the icon editing tool shown to the right:

From just this snippet of the interface, you can identify several obvious tasks:

- Start a new icon project
- Open an existing icon project for editing
- Rename an icon project (Save As)
- Exit AZ Icon Edit

Check out [the Usability.gov website for a full explanation of "user interface."](https://www.usability.gov/what-and-why/user-interface/)



Interface for AZ Icon Edit

Now, look at the menu options for the next parts of the menu. You can see that when people are using this icon editor, they'll also most likely be doing these tasks:

- Undo a mistake
- Capture an image or some part of it
- Cut something out of an icon project
- Copy something out of an icon project
- Paste something into an icon project
- Flip the entire image horizontally or vertically
- Rotate the image left
- Clear the project, which probably means start over
- Restore, which you'll have to ask around, experiment with, or dig into the programming spec to find out about
- Draw with a thick, medium, or thin line.



But now look at the interface without the menu options hanging down. What additional tasks can you see?

As with a lot of graphical user interfaces, some of the icons duplicate the menu options. For example, the bulleted-list icon enables you to select a thin, medium, or thick line the same way clicking on Options does. However, there are some new tools here, not available elsewhere in the interface:

- Draw straight lines (you'll have to experiment to see the difference between the two pencil icons)
- Draw freehand lines (the wavy-line icon)
- Draw unfilled rectangles (sharp edges) and unfilled rectangles (rounded edges)
- Draw unfilled ovals and filled ovals
- Fill with color (the hypodermic needle)
- Select portions of the image to move, cut, or rotate (the dotted-line icon)
- Capture images—or parts of images— (the net, but how does it work?)
- Draw filled rectangles (sharp edges) and filled rectangles (rounded edges)
- Select background color (the Screen button)
- Select line or fill color (the double-box icon)



There's a lot you still don't know about this software, but you've already done a lot of guesswork toward defining the major tasks. You would want to group and consolidate things into **phases**, perhaps like the following:

- Creating, editing, renaming, and saving icons
- Selecting foreground and background color
- Drawing lines, rectangles, and ovals
- Cutting, pasting, and copying objects
- Moving, flipping, and rotating objects

You can see that in this rough task list, there is no trace of tasks such as filling an object with color, capturing images, clearing the workspace, undoing a mistake, or restoring. But as you work, these details will begin to find their place in your scheme. Now, stand back from the details of the interface and put yourself in the place of an icon software user. What questions is that individual likely to ask? "How do I change the color of the background?" We've got that covered. "How do I change the thickness of the lines I draw?" Got that one covered too. "How do I make the background transparent?" Hmmm . . . that will be an issue for the color section, but it will take some research.

Formatting Numbers

Technical writing breaks some of those rules you worked so hard to learn in past writing classes. In the technical writing context, we are often vitally concerned about numbers and want them to stand out. (For number formatting rules, see [Chapter 15 Visuals in Technical Documents](#)).

Rule: You should **use numerals in running text when the number indicates an exact, measured or measurable amount, or when it represents a critical value.**

✓ Example: Numbers in Instructions

In the following sentences, it matters that the numbers are exact:

The cup is 3 inches in diameter.

Use 4 tacks to fasten the poster to the wall.

However, this does not mean using numerals for indifferent values. For example, in this sentence, there is nothing heart-stopping about how many sections the report has:

The report contains four major sections.

See the section on "Numbers vs. Words" and "Symbols" in APA resources for further details.

Designing Instructions

- **Provide a title that clearly tells your audience what to expect.** For example, "Instructions for Using XYZ Design Software" is clear and limiting. Your audience knows what the document will include (How to use the software) and what it won't include (How to design a brochure).
- **Provide an introduction for your audience** that states the purpose of the instructions. For example, "These instructions will guide you through each step of using XYZ Design Software" to create a variety of documents."
- **Use headings** that tell the reader what to expect and emphasizes what is most important. A heading that states "Drawing Rectangles and Ovals" is more informative than "Rectangles and Ovals."
- **Use bold, italics, and font size** to highlight or emphasize headings, or other important information. Use these elements consistently throughout the document. For example, if you use underlining for emphasis in a step, be sure you use underlining each time you emphasize something in a step. If you use bold for a parts name, be sure to use bold for every parts name.
- **Use an easy-to-read font style.** Use standard fonts such as Arial or Times New Roman. Do not use more than two font families throughout the document, and use them consistently. For example, if you use Arial for headings and Times New Roman for the text, use that same format throughout the document.
- **Provide a list of parts, when necessary.** Label each part and use that same identification in your instructions. For example, don't label the part "Icon" and then use the term "Picture" in your instructions.
- **Use visuals to illustrate steps that are complicated.** You can use software to draw the image or use photographs of completed step to show your audience how the completed task looks.
- **Arrange the steps in a numbered list** to help readers keep track of their progress. Include only one step per sentence. Use sub-steps for instructions that are divided by phases or where steps are more complicated (For list formatting rules, see [Chapter 15 Visuals in Technical Documents](#).)
- **Include the appropriate level of detail and technicality.** Consider your instructions from the perspective of a non-technical audience and give the necessary details to explain what to do. For example, instead of "Open the dropdown list for the image," explain how your audience should complete that task: "Using the mouse, move the cursor over the image and right-click on the mouse to open the dropdown list."
- **Explain the purpose of the instruction by providing background information.** For example, "You should open the dropdown list for each image to see all the editing options that are available," or "Save your document often throughout the design process to prevent the loss of your work."
- **Leave white space** between steps to separate the steps visually.
- **Keep the steps close to the visual information.** Use the same placement for each written step and visual so your audience knows where to find each step. Do not vary the placement of steps and visuals. (i.e., All steps are above each visual, or all steps are alongside each visual, etc.)
- **Visual and verbal information must be redundant.** The visual should restate or reinforce the verbal information, not replace it.
- **Provide warnings, cautions, or troubleshooting advice.** To protect the safety of the user and the liability of your company, you must anticipate those tasks where the user could injure themselves or damage the product, and provide suitable warnings. If the step is tricky, be sure to include troubleshooting advice to help the user figure out how to resolve a problem.

Evaluating the Usability of Instructions

To ensure your instructions meet the needs of your audience, you must conduct a usability study of your completed document. In a usable document, the audience can easily find the information they need, understand the information, and use it to safely and effectively complete the task. Remember, the end goal for any document is that the audience is able to use it; nowhere is this more important than in instructions and procedures where safety and liability concerns can cost lives and money.

Conducting a usability test can help you find the areas where steps are unclear or there is missing information. Put yourself in the position of your audience when you conduct the usability test. If possible, ask someone else to use your instructions and have them make notes on the areas they thought were unclear or confusing.

• GENERAL INSTRUCTION TIPS

- Is the title clear and limiting? Does it tell the user what to expect?
- Does the introduction provide a summary that tells the readers the purpose of the instructions?
- Are Warning, Caution, and Danger notices formatted so they convey the urgency/importance of the notice? Are the notices clearly visible to the user? Are the notices placed before or with the corresponding step?
- Are steps appropriately numbered to help guide the user? Are letters used to indicate any sub-steps of the numbered step?
- Are the steps in logical (chronological) order?
- Does each sentence provide only one step of the instructions?
- Do the instructions include an appropriate level of detail and technicality? Do they assume technical knowledge of the user or are the necessary details provided?
- Are the steps easy to understand? Does each step clearly explain what the reader should do? Does the writing use direct address, active voice, and imperative mood?
- Is each step visually separated so it is easy to locate?
- Are visuals used to help clarify the tasks?
- Is each visual and corresponding written step close together? Can the user easily understand which written step belongs to which image?
- Does the written instruction repeat what is shown in the visual so that the instructions do not rely on the visual image?
- Is bold or italics used to highlight or emphasize information? Are headings and sub-headings differentiated by font size? Are these elements used consistently throughout the document?
- Are the fonts easy to read? (No more than two font families are used and fonts are used consistently throughout the document.)

✓ Example Instructions

[How to Change Front-Disk Brake Pads](#)

[How to Operate the Minolta Freedom 3 Camera](#)

[Standard Operating Procedures: Pouring Dental Impressions](#)

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12: Visuals in Technical Documents

Chapter Objectives

- Explain the various types of visuals in technical documents and their uses.
- Identify and apply best practices when selecting and creating tables, charts, graphs, lists, callouts, and images for use in business documents.
- Describe the appropriate format and use of visuals in technical documents.

Introduction

One of the nice things about technical writing courses is that many of the assignments have graphics in them—or at least they should. Professional writing often contains graphics—drawings, diagrams, photographs, illustrations, tables, pie charts, bar charts, line graphs, flow charts, and so on. Graphics are an important feature of technical communication.

We learn more from a document when graphics are included (Gatlin, 1988). In fact, people learn about 1/3 more from a document with graphics than without (Levie and Lentz, 1982). A recent study found that readers learn faster and are better able to use the information they learn when the text includes graphics (Große, Jungmann, and Drechsler, 2015). That does not, of course, mean that one should place graphics willy-nilly into every spot possible, nor should they be treated as mere decoration. On the contrary, graphics should be used carefully and correctly. The information below will help you make informed decisions regarding graphic creation and placement in order to improve the readability of your documents.

Overview

Before getting into details on creating, formatting, and incorporating graphics, consider the types and their functions. You can use graphics to represent the following elements in your writing:

- **Objects**—If you're describing a fuel-injection system, you'll probably need a drawing or diagram of the component parts. If you are explaining how to graft a fruit tree, you'll need some illustrations of how that task is done. Photographs, drawings, diagrams, and schematics are the types of graphics that show objects.
- **Numbers**—If you're discussing the rising cost of housing in Austin, you could use a table with the columns marking off five-year periods since 1970; the rows could be for different types of housing. You could show the same data in the form of bar charts, pie charts, or line graphs. Tables, bar charts, pie charts, and line graphs are some of the principal ways to show numerical data.
- **Concepts**—If you want to show how your company is organized, the relationships of the different departments and officials, you could set up an organization chart—boxes and circles connected with lines that show how everything is hierarchically arranged and related. A concept graphic shows nonphysical, conceptual things and their relationships. In the figure below, see how Apple Computer illustrated the difference between 32-bit processors and 64-bit processors in an infographic.
- **Words**—Finally, graphics can be used to depict words. You've probably noticed how textbooks put key definitions in a box, maybe with a different color. The same can be done draw attention to key points or extended examples.

Figure 15.1. Graphic of the difference between 32-bit processors and 64-bit processors from Apple Computer.

Tables

Tables are rows and columns of numbers and words, mostly numbers. They permit rapid access to and relatively easy comparison of information. If the data is arranged chronologically (for example, sales figures over a ten-year period), the table can show trends—patterns of rising or falling activity. Of course, tables are not necessarily the most vivid or dramatic means of showing such trends or relationships between data—that's why we have charts and graphs (discussed in the next section).

Uses for Tables

The most common use of tables is to share numerical data. Imagine that you are comparing different models of laser printers in terms of physical characteristics, such as height, depth, length, weight, and so on. This type of information is perfect for a table.

However, don't get locked into the notion that tables are strictly for numbers. Whenever you have situations where you discuss several things about which you provide the same categories of detail, you've got the possibility to use a table. Again, imagine that you are comparing several models of a laser printer, but you want to know more detailed information about things like its cost,

print speed, supply costs, and warranty terms. This is an ideal opportunity to use a table, and it would be mostly words rather than numbers (and in this case, you would probably want to leave the textual discussion where it is and "re-present" the information in table form).

Formatting Requirements

In its simplest form, a table is a group of rows and columns of data. At the top of each column is a column heading, which defines or identifies the contents of that column (and indicates the unit of measurement when applicable). On the left edge of the table may be row headings, which define or identify the contents of that row. Things get tricky when rows or columns must be grouped or subdivided. In such cases, you have to create row or column subheadings. This situation is illustrated in the table below:

Figure 15.2. Format for tables with grouped or subdivided rows and columns. Notice that the table title goes above the table.

Traditionally, the title of a table is placed on top of the table or is the first row of the table. If the contents of the table are obvious and there is no need to cross-reference the table from anywhere else in the report, you can omit the title.

When formatting tables for a business document, keep the following guidelines in mind:

- Refer to the table in the text just preceding the table. Explain the general significance of the data in the table; don't expect readers to figure it out entirely for themselves.
- Don't overwhelm readers with an enormous 11-column, 30-row tables. Simplify the table data down to just that amount of data that illustrates your point while making sure that this does not distort or misrepresent the data.
- Don't put the word or abbreviation for the unit of measurement in every cell of a column. For example, in a column of measurements all in millimeters, don't put "mm" after every number. Put the abbreviation in parentheses in the column or row heading.
- Right- or decimal-align numbers in the columns. If the numbers 123 and 4 were in the same column, the 4 should appear right below the 3, not the 1.
- Normally, words in columns are left-justified (although you will occasionally see columns of words all centered).
- When there is some special point you need to make about one or more of the items in the table, use a footnote instead of clogging up the table with the information.

Producing Tables

When conducting research, you may find data in a table that you wish to incorporate into your own work. If it's a simple table without too many rows and columns, you can retype it yourself into your own document (but remember to document where the data came from in the figure title). However, if it is a large table with lots of data, you're justified in scanning, screen-capturing, or photocopying it and bringing it into your report that way.

Occasionally, in report drafts, information is presented in regular running-text form that could be better presented in table (or tabular) form. Be sure and look back over your rough drafts for material that can transform into tables.

Figure 15.3. Example of information included in text that would be better represented in a table.

Charts and Graphs

Charts and graphs are another way of presenting the same numeric data that is presented in tables, although a more dramatic and visually interesting one. At the same time, however, you get less detail and precision in a chart or graph than you do in a table. Imagine the difference between a table of sales figures for a ten-year period and a line graph for that same data. You can convey a better sense of the overall sales trend by using a graph, but it may be harder to decipher a single, precise dollar amount than it would be in a table.

Formatting Requirements

When you create charts and graphs, keep these formatting tools in mind:

- **Axis labels.** In bar charts and line graphs, don't forget to indicate what the x and y axes represent. One axis might indicate millions of dollars; the other, five-year segments from 1960 to the present.
- **Keys (legends).** Bar charts, line graphs, and pie charts often use special color, shading, or line style (solid or dashed). Be sure to indicate what these mean; translate them in a key in some unused place in the chart or graph.

Figure 14.4. Example of a line graph.

- **Figure titles.** Charts and graphs must include a title. In many cases, this will be a numbered figure, as seen throughout this chapter. Readers need some way of knowing what they are looking at.
- **Cross-references.** Whenever you use a chart or graph, put a cross-reference to it from the related text. With that cross-reference, provide some explanation of what is going on in the graphic, how to interpret it, what its basic trends are, and so on.

Figure 15.5. Example of a chart. Notice that text above and below the chart calls attention to the chart and briefly indicates its significance.

- **Documentation.** When you borrow information to create a graphic, use the APA format to indicate the source. It does not matter how you import the graphic into your report—it is all borrowed information, which some brave and noble soul worked hard to develop and who deserves credit for that effort.

Producing Charts and Graphs

As with tables, you can screen-capture, scan, or photocopy charts and graphs that you find to use in your work. You can also generate your own graphics with many types of software. Familiarize yourself with the table-generating tools in your word processing program since they will be able to draw the lines and create other formatting details automatically. Free charting and graphing tools are also available online if you want even more design control. Some helpful resources for creating your own charts and graphs include:

[Online Chart Tool](#)

[Helpful downloads to jumpstart your graph creation](#)

[More information on creating charts in MS Word](#)

Drawings, Diagrams, and Photos

To depict objects, places, people, and relationships between them, you can use photos, drawings, and diagrams.

Uses of Illustrations and Photos

In the realm of illustrations and photographs, examples used in business documents can run from minimal detail to maximal. A simple line drawing of how to graft a fruit tree reduces the detail to simple lines representing the hands, the tools, the graft stock, and graft. Diagrams are a more abstract, schematic view of things; for example, a wiring diagram of a clock radio hardly resembles the actual physical thing at all. Photographs provide the most detail of all. These graphics, supplying gradations of detail as they do, have varying uses. Here are some examples:

- In instructions, simple drawings (often called line drawings) are the most common. They simplify the situation and the objects so that the reader can focus on the key details. In the examples below, you can see a fully detailed photograph of a microprocessor alongside a simplified, labeled diagram of one. In this circumstance, the diagram has less visual distraction, making it more helpful to the person carrying out the task.

Figure 7: Simplified, labeled diagram.

- In descriptions, you want to use drawings, but in this case drawings with more detail that show shading and depth perspectives, or employ techniques that display key features, as in a map, a floor plan, a cross-section, or an exploded view.
- Photographs are often used in feasibility, recommendation, and evaluation reports. Since photographs are a precise representation of the object depicted, they are useful tools when accuracy is important. For example, if you are recommending a photocopier, you might want to include photos of the leading contenders.

Formatting Requirements

When you use an illustration in a report, there are several design considerations to keep in mind, a number of which can be seen in the illustration below:

Figure 15.7. Formatting requirements.

- **Labels.** Just about every illustration should contain labels—words and phrases with pointers to the parts of the objects being depicted.
- **Keys.** If the illustration has certain shadings, colors, line styles, or other such details that have a special meaning in the illustration, these should be indicated in a key—an area in an unused corner of the illustration that deciphers their meaning.

- **Titles.** Illustrations should have specific titles that briefly describe the image, and these titles should be numbered (Figure 1, Figure 2, and so on). If there is only one graphic element in the document, the title may be omitted.
- **Cross-references.** Illustrations should be referred to at the relevant point in the discussion. Identify the figure by its number, and discuss the illustration a bit—focus readers' attention on the key details of the illustration.
- **Location within the report.** Ideally, illustrations should be placed just after the point where they are needed. However, sometimes because of the pagination (the way the text falls on the pages) and the size of the illustrations, this close placement is not possible. When this happens, just put the illustration at the top of the next page.
- **Size of illustrations.** Illustrations should be between one-half to one-quarter of the vertical size of the page, and should fit on the page with other text. In fact, that's what you really want—to intersperse text and graphics in a report. Avoid appending the illustration to the back of the report; if your reader has to go searching for it, the image will not be as useful.
- **Placement within margins.** Make sure that your illustrations fit neatly and comfortably within standard margins. You don't want the illustration spilling over into the right or left margins. Allow the equivalent of at least one blank line above and below each illustration.
- **Level of technical detail.** Illustrations should be at the appropriate technical level for your readers. Remember to be mindful of your audience when creating and selecting images.

Producing Illustrations

Technology has made capturing and manipulating images easier than ever, and most computers and smartphones come equipped with basic photo editing tools. Digital clip art and stock photography are also readily available on from a number of websites. Even if you are not taking and editing your own pictures or using existing digital images, there are still several options available: scanning, using computer graphics software, and hand-drawing. No matter which method you choose, don't forget that you must indicate the source of any borrowed graphics.

- Scanning is the best way to pull graphics from printed materials into your document files. Universities and colleges usually make scanners available to students and faculty. Print shops will allow you to scan for a fee. Save your graphics as graphic-format files (such as .jpg or .png) then copy them into your document files.
Note: When you scan a graphic, trim off the title (caption) and other material from the original. Replace this material with words of your own.
- Using computer graphics software has become more user-friendly in recent years. With a little practice, you can create graphics like the ones shown in the figure below in OpenOffice Writer or Microsoft Word (and of course GIMP and Illustrator). With a computer-graphics drawing like the keylock mechanism in Figure 9, you are at the very edge of what OpenOffice Writer or Microsoft Word can do.
- Drawing images by hand is also an option. You can trace shapes to get rough images to start, then sketch over this lightly with a soft-leaded pencil. Keep working until you have the drawing the way you like, then use a black marker to ink in the lines that you want, erasing any stray pencil markings. Once the drawing is complete, just scan the image following the method described above.

Figure 15.9. Illustrated graphic.

Indicating Sources

It's perfectly legal to borrow graphics—to trace, photocopy, scan, or extract subsets of data from them. But you're obligated to cite your sources for graphics just as you are for the words you borrow. Normally, this is done in the figure title of the graphics, but an instructor may want images credited on your references page as well, so always check the assignment for any such requirements.

Review: General Guidelines for Using Tables, Charts, and Graphics

- Intersperse graphics and text on the same page. Place graphics as near to the point in the text where they are relevant as is reasonable. However, if a graphic does not fit properly on one page, put it at the top of the next, and continue with regular text on the preceding page. Don't leave half a page blank just to keep a graphic near the text it is associated with.
- Watch out for areas in your text where you discuss lots of numeric data in relation to two or more things—that's ideal for tables, charts, or graphs.
- Watch out for areas in your text where you define a series of terms—that's ideal for tables.
- Always discuss visuals in the preceding text. Don't just place a table, chart, graph, or image in your document without explanation. Orient readers to it and explain its significance.

- Make sure your visuals are appropriate to your audience, subject matter, and purpose—don't overwhelm beginners with massive, highly technical constructions they can't understand.
- Label all visuals with appropriate identifying information: column and row headings, keys, axis labels, and so on.
- Use a title unless the table, chart, or graph is very informal. Remember that the title goes just above the table; for charts and graphs, below.
- Indicate the source of all visuals you have borrowed whether in part or in whole. This can be done in the figure title or in a footnote.

Labels and Callouts

To identify specific elements or features, place labels and captions directly on or close to the graphic. Although the terms are used interchangeably, labels are text identifiers that are self-explanatory in an image, while callouts are labels that require further information outside the image to explain what they are identifying" (Lannon & Gurak, 2019). They supplement the visual information. But use them selectively; use them only if readers need them (Rude & Eaton, 2010).

The advantage of labels is that the reader gains a basic understanding of elements in the graphic without referring to supplementary explanations. But, too many labels obscure the image. In this case, callouts are the better option. Use numbers or letters to identify each element and the supplementary explanations.

✓ Guidelines for Creating Labels and Callouts

1. Determine the number of items to identify in the image (Lannon & Gurak, 2019).
2. Estimate how much explanation each item requires to determine if labels or callouts are more appropriate (Lannon & Gurak, 2019).
3. When writing labels and callouts,
 - create a consistent visual style (Lannon & Gurak, 2019)
 - use the same terms on the label or callout as in the text (Rude & Eaton, 2010)
 - in general, all parts mentioned in the text should have a label or callout, and all parts with a label or callout should be mentioned in the text. (Rude & Eaton, 2010)
 - Layout the labels or callouts next to the elements in the graphic they identify, using a line to connect the two, if necessary.
 - Use a standard font and size for readability (Rude & Eaton, 2010)
 - Align the labels and callouts for a neater appearance (Rude & Eaton, 2010)
 - If callouts are used, place the explanatory text in a key next to the graphic.

Labels

Labels can take different forms (Lannon & Gurak, 2019):

- They may be placed directly on the graphic (whereby they become part of the graphic).
- They may be placed around the graphic and use lines to point to the relevant element in the graphic.
- Online, labels can be links or hotspots whereby more information about the element is displayed on mouse rollover.

✓ Example: Labels

1. This map of Central Park, New York is an example of labels placed directly on the graphic.

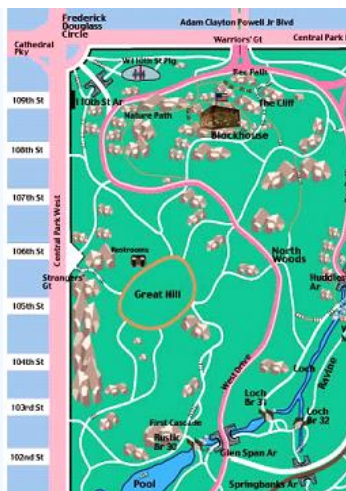


Figure 15.10. Map of the West Side Central Park, NYC between 102nd and 110th Streets.

2. In the following example, the labels are placed around the graphic.

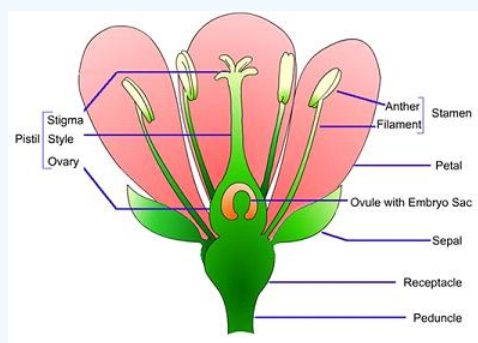


Figure 15.11. Parts of a flower.

3. In the following example, *Anatomy of a Steam Locomotive*, when the mouse is rolled over the 'Firebox' label, the text will read: "Literally a box containing the fire. It is surrounded by water on the top and all sides. The bottom is a grate with an ash pan below that."

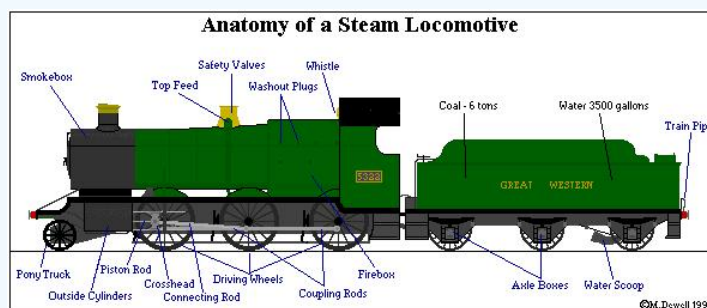


Figure 15.12. Labels as hotspots.

Callouts

Callouts are best used when many parts of the image need to be labeled and each part requires a longer explanation. In fact, the label sequence may be in alphabetical or numerical (as in Figure 15.36) order. Ensure that the explanation is near the graphic

✓ Example 12.1

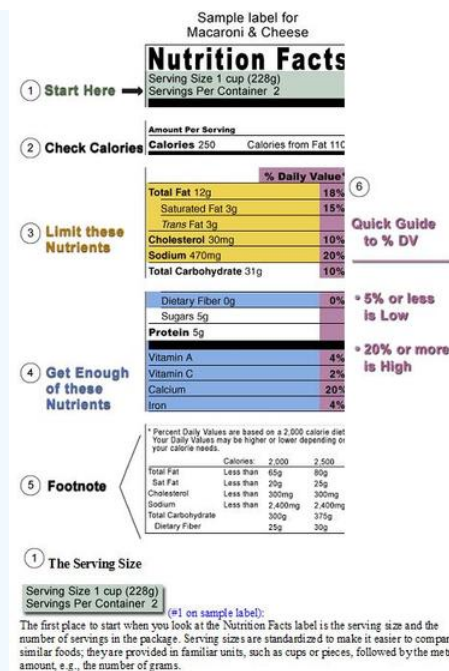


Figure 15.13. How to understand and use the Nutrition Facts Label.

Note: Coded callouts are in numerical sequence; the explanation for each number appears below the graphic. The example above shows part of the explanation of Number 1 explanation only.

Captions

Captions, tables, and graphics titles must clearly identify information to the reader. Interpretive captions usually require one or more sentences. Captions should be informational, without becoming too lengthy. Captions that are merely a title for a graphic are not very helpful (Covey, 2012).

Writing Style for Captions

1. Captions for graphics include the title and any explanatory material, immediately under the graphic.
2. Words such as Figure, Illustration, and Table should be in bold type.
3. The caption should be italicized.
4. Treat tables and figures the same.

Good captions are what guide readers not only to see but also to understand. Captions label graphics with titles and explain to readers what they are seeing, and how to interpret the information captured in the visual. The Franklin Covey Style Guide for Business and Technical Communication provides an excellent source for writing captions (Covey, 2012).

✓ Five Specific Style Rules for Captions

- **Use interpretive captions** whenever possible. Interpretive captions provide both a title and explanatory information, usually expressed in a complete sentence, to help readers understand the central point(s) that the writer wants to convey. A graphic and its caption should be clear and understandable without requiring readers to search for clarifying information in the text:

Examples:

Figure 4. Cabin-Temperature Control System. Constant cabin temperature control is maintained by the system's modulated cabin sensor.

This interpretive caption gives the title and then tells the reader the principal message - that the check valve provides near-zero risk. And, it states how the check valve provides near-zero risk (Covey, 2012).

Figure 23. Check Valve. The risk of bad air entering the changer is near zero because the check valve permits airflow in one direction only.

This interpretive caption gives the title of the figure and emphasizes that the cabin has a constant temperature - a benefit provided by the feature described in the figure. The caption states clearly what the writer wants the reader to learn from the drawing (Covey, 2012).

- **Avoid using short, often ambiguous, titles** to replace interpretive captions. In the past, styles for technical and scientific documents used only short, simple title captions for visuals. These were often superfluous, providing no real information other than the obvious to the reader, i.e. - A Horse. Titles that are so short and cryptic that they sound telegraphic are not useful. Such captions are only useful when the graphics are self-explanatory and require no interpretation (Covey, 2012).
- **Number figures and tables sequentially** throughout the document, and place the number before the caption. If an important figure or table is presented twice, treat it as two separate visuals and number each. Figure and table numbers should be whole numbers (Covey, 2012).
- **Use periods** following interpretive captions but no punctuation following short captions that are not sentences. Interpretive captions are usually complete sentences and should therefore end with a period. Short captions, like titles and headings, are not usually complete sentences, so they require no punctuation (Covey, 2012).
- Captions may appear below or above a visual, but consistency throughout a document is critical. Arguments support both options; choose one, warrant your choice, and be consistent.
- **Put the caption above the visual** for better visibility when captions are used with slides and other project visual aids. Captions placed at the bottom may be blocked by the heads of those seated in front (Covey, 2012). Captions may appear below or above a visual, but consistency throughout a document is critical. Arguments support both options; choose one, warrant your choice, and be consistent.

Note: Notes or footnotes are categorized as either explanatory or source notes. Explanatory footnotes are identified by a superscript number or letter. The order in which notes appear is important; explanatory footnotes are placed above source notes. And both are placed above the caption if the caption is placed at the bottom of the illustration, as show in the following example:

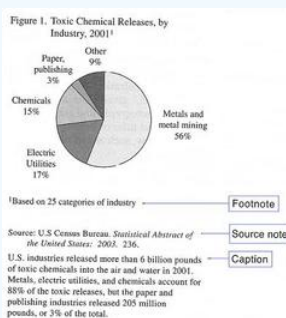


Figure 15.14. Placement of footnote, source note, and caption (Rude & Eaton, 2010, modified).

Lists

Lists are useful because they emphasize selected information in regular text. When you see a list of three or four items strung out vertically on the page rather than in normal paragraph format, you naturally notice it more and are likely to pay more attention to it. Certain types of lists also make for easier reading. For example, in instructions, it is a big help for each step to be numbered and separate from the preceding and following steps. Lists also create more white space and spread out the text so that pages don't seem like solid walls of words.

Like headings, the various types of lists are an important feature of professional technical writing: they help readers understand, remember, and review key points; they help readers follow a sequence of actions or events; and they break up long stretches of straight text.

Your task for this chapter is to learn about the different types and uses of lists and to learn their specific format and style.

General Guidelines

In professional technical-writing contexts, you must use a specific style of lists, like the one presented here.

Lists emphasize important points and help readers follow a sequence.

- Use lists to highlight or emphasize text or to enumerate sequential items.

- Use exactly the spacing, indentation, punctuation, and caps style shown in the following discussion and illustrations.
- Make list items parallel in phrasing.
- Make sure that each item in the list reads grammatically with the lead-in.
- Use a lead-in to introduce the list items and to indicate the meaning or purpose of the list (and punctuate it with a colon).
- When two items are alternatives, use a bulleted list (with or between). Do not use numbered lists for items connected by *or*. Booleans would call these ORed items. Indicate this OR relationship in the list lead-in.
- When a separate notice or explanatory paragraph follows an item, indent that separate material to the *text* of the parent list item.

Example: Indented material



Figure 15.15. Indented material that elaborates on the parent list item.

- Avoid using headings as lead-ins for lists.
- Avoid overusing lists; using too many lists destroys their effectiveness.
- Use similar types of lists consistently in similar text in the same document. For example, if you have two areas of text that present steps for doing a task, *both* should use the same list format—in this case, numbered lists.
- Use the "hanging indent" format for list items two or more lines long. This format is illustrated in the section on [hanging indents](#).
- Use the "styles" function in your software to create vertical lists rather than constructing them manually. See this brief tutorial on using [styles for lists](#).

Note: In-sentence lists could be called "horizontal" lists. All the other list types presented here are "vertical" lists in that they format the items vertically rather than in paragraph format.

Specific Types of Lists Guidelines

It's difficult to state guidelines on choosing between the various kinds of lists, but here's a stab at it:

- Most importantly, use *numbered* lists for items that are in a required order (such as step-by-step instructions) or for items that must be referred to by item number. Use *bulleted* lists for items that are in no required order.
- With in-sentence lists, there are no conventions when to use letters (a), (b), and so on, as opposed to numbers (1), (2), and so on. If you are in a numbered list and need a sublist, use lowercase letters, to contrast with the numbers. Otherwise, there seem to be no widely agreed-upon guidelines—just be consistent!
- Use vertical lists as opposed to in-sentence lists when you want the emphasis provided by the vertical presentation. In-sentence lists provide only minimal emphasis; vertical lists provide much more.
- Within an individual report, use in-sentence lists and vertical lists consistently for similar situations. For example, if you have topic overviews for each section of a report, use in-sentence or vertical lists for the overview—but don't mix them for that particular use.

Common Problems with Lists

Problems with lists usually include the following:

- Mix-up between numbered and bulleted lists
- Lack of parallel phrasing in the list items
- Use of single parentheses on the list-item number or letter (in other words, 1) or (1)
- Run-over lines not aligned with the text of list items
- Lack of a strong lead-in sentence introducing list items, and lack of a colon to punctuate lead-ins
- Inconsistent caps style in list items
- Unnecessary punctuation of list items
- Inconsistent use of lists in similar text
- Lists that have too many items and need to be subdivided or consolidated

Format for Lists

Use the following for specific details on the capitalization, typography (bold, underlining, different fonts, different types sizes), and spacing for each type of list.

In-sentence lists

Use these guidelines for in-sentence lists:

1. Use a colon to introduce the list items *only* if a complete sentence precedes the list. In this problem version, the colon breaks right into the middle of a sentence (how dare it!):

Problem: For this project, you need: tape, scissors, and white-out.
Revision: For this project, you need tape, scissors, and white-out.
2. Use both opening and closing parentheses on the list item numbers or letters: (a) item, (b) item, etc.
3. Use either regular Arabic numbers or lowercase letters within the parentheses, but use them consistently. (Do not punctuate either with periods.) Use lowercase for the text of in-sentence lists items, except when regular capitalization rules require caps.
4. Punctuate the in-sentence list items with commas if they are not complete sentences; with semi-colons if they are complete sentences.
5. Use the same spacing for in-sentence lists as in regular non-list text.
6. Make the in-sentence list occur at the *end* of the sentence. *Never* place an in-sentence list introduced by a colon anywhere but at the end of the sentence, as in this example:

Problem: The following items: tape, scissors, and white-out are needed for this project.

Revision: You need the following items for this project: tape, scissors, and white-out

✓ Example: In-sentence List



Figure 15.17. In-sentence lists such as this provide annotated explanations to increase clarity.

Simple vertical lists

Use these guidelines for simple vertical lists:

1. Introduce the list with a lead-in phrase or clause (the lead-in need not be a complete sentence; the list items can complete the grammar started by the lead-in). Punctuate the lead-in with a colon.
2. Use simple vertical lists when the list items do not need to be emphasized and are listed vertically merely for ease of reading.
3. Use sentence-style capitalization on list items.
4. Begin run-over lines under the text of the list item, not the regular left margin. This format is called the *hanging-indent* style.
5. Use the equivalent of a blank line above and below vertical lists.
6. Either start list items flush left or indent them no more than half an inch.
7. Use "compact" list format if you have just a few list items only a single line each. In the compact format, there is no vertical space between list items. Use a "loose" format—vertical space between list items—if the list items are multiple lines long.
8. Punctuate list items only if they are complete sentences or clauses or phrases that complete the sentence begun by the lead-in (and use periods in these two cases).
9. Watch out for lists with more than 6 or 8 list items; for long lists, look for ways to subdivide or consolidate.
10. When possible, omit articles (*a*, *an*, *the*) from the beginning of non-sentence list items.

✓ Example : Simple vertical list



Figure 15.18. Example of a simple vertical list. No numbers or bullets.

Bulleted Lists

Use these guidelines for bulleted lists (also referred to as *unordered* lists):

1. Introduce the list with a lead-in phrase or clause (the lead-in need not be a complete sentence; the list items can complete the grammar started by the lead-in). Punctuate the lead-in with a colon.
2. Use bulleted lists when the list items are in no necessary order but you want to emphasize the items in the list.

3. Use asterisks or hyphens if you have no access to an actual bullet. Use your software's list styles for these vertical lists.
4. Use sentence-style capitalization on list items.
5. Begin run-over lines under the text of the list item, not the bullet. This format is called the *hanging-indent* style.
6. Use 0.25 inches for the hanging indent (between the bullet and the text of the list item).
7. Use the equivalent of a blank line above and below vertical lists.
8. Either start list items flush left or indent them no more than half an inch.
9. Use "compact" list format if you have just a few list items only a single line each. In the compact format, there is no vertical space between list items. Use a "loose" format—vertical space between list items—if the list items are multiple lines long.
10. If you have sub-list items in a bulleted list, use a less prominent symbol for a bullet (such as a dash or clear disc), and indent the sublist items to the *text* of the higher-level list items. (It is certainly possible to have sub-numbered items within a bulleted list, in which case indent them the same as sub-bulleted items.)
11. Punctuate bulleted list items only if they are complete sentences or verb phrases that complete the sentence begun by the lead-in (and use periods in these two cases).
12. Watch out for bulleted lists with more than 6 or 8 list items; for long bulleted lists, look for ways to subdivide or consolidate.
13. Avoid single-item lists. It's just like traditional outlines: if you have a 1 or an a, you need a 2 or a b.
14. When possible, omit articles (*a*, *an*, *the*) from the beginning of list items.

✓ Example: Bulleted list



Figure 15.19. Example of a bulleted list. Items not in any required order.

ORed Lists

Computer developers like to use the Boolean OR as a verb. If two elements are logically joined by "or," they are said to be "ORed." An ORed list is simply a bulleted list with an "or" between the list items for emphasis. True, you can end the first item with with "or," but ORed advocates think that is not visually emphatic enough.

✓ Example: ORed list

Figure 15.20. Example of an ORed list. The *or* between adds emphasis.

Numbered Lists

Use these guidelines for numbered lists (also referred to as *ordered* lists):

1. Introduce the list with a lead-in phrase or clause (the lead-in need not be a complete sentence; the list items can complete the grammar started by the lead-in). Punctuate the lead-in with a colon.
2. Use numbered lists when the list items are in a required order (for example, chronological) or must be referenced from somewhere else in the text.
3. Type the number followed by a period; do not use parentheses on the number. Use your software's list styles for these vertical lists.
4. Use sentence-style capitalization on list items.
5. Use "compact" list format if you have just a few list items only a single line each. In the compact format, there is no vertical space between list items. Use a "loose" format—vertical space between list items—if the list items are multiple lines long.
6. Begin run-over lines under the text of the list item, not the number. This format is called the *hanging-indent* style.
7. Use 0.25 inches for the hanging indent (between the number and the text of the list item).
8. Use the equivalent of a blank line above and below vertical lists.
9. Either start list items flush left or indent them no more than half an inch.
10. If you have sub-list items in a numbered list, use lowercase letters, and indent the sub-list items to the *text* of the higher-level list items. (It is certainly possible to have sub-bullet items within a numbered list, in which case indent them the same as sub-numbered items.)
11. If you have sub-list items, use a less prominent symbol for a bullet (such as a dash or clear disc) or a lowercase letter for sub-numbered items, and indent the sub-list items to the *text* of the higher-level list items.
12. Punctuate numbered list items only if they are complete sentences or verb phrases that complete the sentence begun by the lead-in (and use periods in these two cases).

13. Watch out for numbered lists with more than 8 or 10 list items; for long numbered lists, look for ways to subdivide or consolidate.
14. Avoid single-item lists. If you have a 1 or an a, you need a 2 or a b.
15. When possible, omit articles (*a*, *an*, *the*) from the beginning of list items.

✓ Example: Numbered vertical list



Figure 15.19. Example of a numbered vertical list. Items are in a required order

Two-column Lists

Use two-column lists when you have a series of paired items, for example, terms and definitions.

Two-column list Guidelines

1. Introduce the list with a lead-in sentence that is a complete sentence. Punctuate the lead-in sentence with a colon.
2. Column headings are optional; if used, align them to the left margin of the text of the columns.
3. Either start list items flush left or indent them no more than half an inch.
4. Use "compact" list format if you have just a few list items only a single line each. In the compact format, there is no vertical space between list items. Use a "loose" format—vertical space between list items—if the list items are multiple lines long.
5. Use sentence-style capitalization for both columns.
6. Punctuate items in the columns only if they are complete sentences.
7. Left-align the items in both columns.
8. When possible, omit articles (*a*, *an*, *the*) from the beginning of list items.

Note: The best way to create a two-column list is to use a table and hide the grid lines. If you use tabs between the columns, you are in for a mess if the text changes at all.

✓ Example: Two-column list



Figure 15.20. Example of a two-column list (pairs of list items). Not illustrated here, column headings are often used to indicate the contents of the two columns (for example, here it might be "Term" as the heading for Column 1 and "Definition" for Column 2).

Lists with Run-in Headings

One last little variation on lists is the vertical list with run-in headings or labels at the beginning of the items. This format is used extensively in this book. It's like another way of doing a two-column list.

You can use bold or italics for the actual run-in heading (italics is used in the figure).

✓ Example : List with run-in headings



Figure 15.21. Example of a vertical list with run-in headings. Very useful for indicating the contents of each item in a lengthy vertical list when a two-column list is not quite right for the situation.

Nested Lists

A *nested* list contains two or more levels of list items. Nested lists can contain every combination of list type: numbered list items (123...) with lowercase-letter sublist items (abc...), filled-disc bulleted list items with clear-disc or hyphenated sublist items; and other combinations of these.

✓ Examples: Nested Lists



Figure 15.22. Example of a nested list. If the sublist items were in a required order, they would be abc....



Figure 15.23. Nested list. The standard is to use lowercase letters for sublist items that are in a required order.



Figure 15.24. More nested lists. If the sublist items are in no required order, try using the clear disc (standard in Word and Open Office) or the en dash.

Hanging Indents

Notice that all of the list-item "run-over" lines in this text and examples use a "hanging-indent" format. That's where any second and additional lines of a list item align to the *text* of the first list item. Not a good idea to use tabs or spaces to achieve this format.

In most versions of Microsoft Word, create this format by selecting hanging indent in Format > Paragraph and specifying an indent of 0.25 inches. Experiment with other indents.

Special notices are an important feature of professional technical writing: they highlight special information readers need to know to understand what they are reading, to accomplish what they want to do, to prevent damage to equipment, and to keep from hurting themselves or others. Look at these examples of [Very special notices](#). State-of-the-art notices with clever comments.

Notices

Notices alert readers to the possibility of error, damage, or injury. They can also provide extra emphasis.

1. Use special notices to emphasize key points or warn or caution readers about damage or injury.
2. Be careful to use the types of special notices precisely, for their defined purposes. Use the four types of special notices in the following ways:

Note—To emphasize points or reminders, or to indicate minor problems in a procedure.

Caution—To warn readers about possible damage to equipment or data, about potential problems in the outcome of what they are doing, or potential negative experiences (such as embarrassment).

Warning—To warn readers about the possibility of minor injury to themselves or others.

Danger—To warn readers about the possibility of serious or fatal injury to themselves or others.

Note: Take a look around your garage or kitchen, and look at the special notices you see on products. You will see plenty of variation, which is likely to be dependent on specific industry or corporate standards.

Guidelines for Notices

Deciding on which type of notice to use is not an exact science. Just don't use a danger notice when a warning is more appropriate (the same as "crying wolf"). Also, use notices in a consistent way throughout a document. Do *not* create your own notices, such as putting "Important:" in place of "Warning."

1. Place special notices at the point in text where they are needed. For example, place a caution or danger notice *just before* or *just after* discussing a step in which readers might hurt themselves.
2. Avoid having too many special notices at any one point in the text. Otherwise, the effectiveness of their special format will be lost. (If you have too many, combine them.)
3. With warnings, cautions, and danger notices, explain the consequences of not paying attention to the notice. State what will happen if the reader does not heed the notice.
4. The examples in this section use bold. Avoid all caps for the text of any special notice.

Note: In a properly set up publishing area, tech writers would not have to decide which type of notice to use or even craft notice language. That should be the job of organization attorneys. Still, those attorneys might be too busy to review your notices, and so the burden may still be on you the technical writer or editor.

Format for Notices

Use the following for specific details on the capitalization, typography (bold, underlining, different fonts, different types sizes), and spacing for each type of special notice.

Note

Format for a Note

1. Type the label "Note" followed by a colon. (Although some of the following examples use bold, prefer italics to prevent visual confusion with headings.)
2. Begin typing the text of the note one space after the colon. (But don't put the text of the note in bold or italics.)
3. Single-space within the text of the note; skip one line above and below the note.
4. Start run-over lines on the regular left margin.
5. Align the note with the text to which it refers (as illustrated in the second example).



Figure 15.25. Example of a simple note



Figure 15.26. Example of a note within a bulleted list (not regular running text). This same principle (that special notices align to the text they refer to) applies to the other types of special notices as well.

Notes

Format for Multiple Notes

1. Use this format when you have so many notes that they would be distracting to present individually.
2. Type the label "Notes" followed by a colon. (Although some of the following examples use bold, prefer italics to prevent visual confusion with headings.)
3. Use a numbered list for the individual notes; in it, follow the rules for numbered lists. (Do not use bold or italics for the individual notes.)
4. Align the notes with the text to which they refer; skip the equivalent of one line above and below the notes.

✓ Example: Multiple notes



Figure 15.27. Example of a multiple notes. Use this format if you have lots of notes and want to collect them all in one place to prevent distraction.

Warnings

Warnings create a sense of urgency for the user and should be used only when serious injury or irreparable damage could result.

Format for Warnings

1. Type the label "Warning," italicize it, and follow it with a colon.
2. Either tab to beginning of the text of the warning, or use the hanging-indent format (which is much better). The hanging-indent format for the warning in the example below uses 0.63 inches for both the tab and the hanging indent, but font sizes will cause this value to vary.
3. Use regular body font for the text of the warning notice (no bold, no italics, no all-caps, no color).
4. Align the warning notice with the text it refers to.
5. Skip the equivalent of one line above and below the warning notice.

✓ Example: Warning notice



Figure 15.28. Example of a warning notice. Use this one to alert readers to the possibility of minor injury.

Caution

Like warnings, cautions create a sense of urgency. However, cautions alert people to possible but minor injuries or reparable problems.

Format for Cautions

1. Type the label "Caution" follow it with a colon, and bold both the label and the colon.
2. Skip one line and begin the text of the caution aligned with the start of the caution label.
3. Single-space the text of the caution; skip one line above and below the notice.
4. Align the caution notice with the text it refers to (in the preceding, the warning notice occurs within a numbered list and is indented accordingly).



Figure 15.29. Example of a caution notice. Use this one to alert readers of possible damage to equipment or problems with the procedure.

Danger

Danger notices should be used only to warn the user of life-threatening results.

Format for Danger notices

1. Type the label "DANGER" in all-caps bold.
2. Align the danger notice with the text it refers to.
3. Single-space the text of the danger notice; skip one line above and below the danger notice.
4. Use bold on the text of the danger notice if you have it (but never all-caps).
5. If you have graphics capability, draw a box around the danger notice (including the label).

✓ Example 12.1



Figure 15.30. Danger notice. Use this one to alert readers of the possibility of serious injury or fatality.

Other Formatting Issues

Here are some additional points to consider concerning special notices:

Special alignment: Special notices must align to the text to which they refer. For example, if you have a note that adds some special detail to something in a bulleted list item, you must align that note to the *text* of the bulleted item. Of course, if the note follows a bulleted list but refers to the whole list, then you can use the regular left margin.

Notice formats eliminate garish unreadable combinations of bold, italics, color, and all caps.

Single-spaced text: All of the examples and discussion in this unit are based on single spaced text. Leave either one blank line between running text and special notices—depending on what looks best to you. (And of course both running text and the text of the special notices would be single spaced.)

Placement of Special Notices: Place special notices *just before* or *just after* the point at which they are relevant. For example, you can warn readers to back up all data *before* you tell them to reformat their hard drive. However, in practice serious special notices are placed at the very beginning of a procedure where great harm to data, equipment, or people is likely to occur.

One technique used by very cautious writers (maybe those who have been burned) is to place all serious notices (warnings, cautions, and dangers) somewhere at the beginning of the document, and then repeat them individually where they apply. An organization is likely to have a style guide that states requirements on placement of notices.

Multiple Special Notices: You run into situations where you have three or four special notices, all jammed together in the same part of the text, each one following another. This is a problem because the whole point of the special formatting of the notices is

lost: something is special because it is different from the surrounding. The solution to this problem is to create one identifying heading (for example, "Notes and Warnings"), and then list the notices (either bulleted or numbered) below it.

Highlighting as the term is used here, is the use of typographical effects to call attention to text. These effects can include italics, bold, all-caps, quotation marks, color, and so on. Highlighting calls readers' attention—or "cues" them—to actions they must take or to information they must consider carefully.

One of the problems in technical writing—in particular, technical writing about computers—involves the use of the various techniques for emphasis. Unfortunately, some technical texts go overboard on the use of the various emphasis techniques which are discussed here.

Highlighting Fundamentals

Consider a few fundamental principles of emphasis:

Highlighting cues readers when they are to press something, enter something verbatim, or pay special attention to something.

- Practically any special textual effect that is different from regular body text can function as an emphasis technique. Things like italics, bold, underscores, caps, different size type, alternate fonts, color, the various graphical ingenuities (showing, reverse color, outline fonts) can act as emphasis techniques.
- Used in excess, any emphasis technique or combination of emphasis techniques can lose their ability to emphasize and become busy and distracting. Used in excess, any emphasis technique or combination of emphasis techniques can cause readers to be reluctant to read a text, if not avoid it altogether. Notice how unreadable the overly highlighted version of the notice is in this [popup](#)
- When extended text must be emphasized, use the special notice format (rather than creating all-bold or all-caps paragraphs, for example).
- A carefully planned functional relationship must exist between the text that is emphasized and the emphasis technique that is used.
- Emphasis techniques must be used consistently to prevent readers from becoming confused.
- To promote consistency, you must use a style guide or style sheet, which records and then dictates all of your decisions about how you are going to use emphasis techniques.
- To help your readers understand your highlighting scheme, you can include a brief section somewhere in your document (usually in the preface) explaining how you're going to be using the emphasis techniques.

In the following discussion, you'll notice that any system of emphasis techniques can get quite complicated and hard to remember for writers and editors. You'll notice that there are many equally valid ways of using emphasis techniques: for example, in some cases, it's arbitrary whether you use bold or italics for simple emphasis. To address this problem, you must document your highlighting guidelines in a style guide that writers and editors (or just you) can refer to. A [style guide](#) is simply a record of the decisions you and your documentation team have made about how you want your documents to look.

Your readers also need to be informed as to the highlighting scheme you plan to use. This can be handled in the preface: include a section called "Highlighting" or "Typographical Conventions" where you list how you use italics, bold, fonts, and other such effects.

Specific Emphasis Techniques

This next section goes one by one through the various emphasis techniques, explaining the common practices. To keep things simple, highlighting issues for [tables](#), [figures](#), headings, lists, and notices are presented in those sections.

Bold

In publishing, technical publishing in particular, usage is mixed as to whether to use bold or italics for basic emphasis. For example, if you want to emphasize that readers should not turn off the computer without first shutting it down, the "not" can be bold or italics. Traditionally, italics has been used, but, perhaps because of computers, bold is commonly used as well.

Whichever technique you use, use it consistently throughout your text or library of related texts. By the way, readers are not likely to be able to distinguish between levels of emphasis: for example, using italics for important text and bold for very important text is likely to be lost on most readers.

If you are tempted to make an entire paragraph bold, remember one of the principle of emphasis discussed above: using too much of an emphasis technique causes the effect of the technique to be lost. Not only that, but too much emphasis makes readers less inclined to read. Instead of carefully reading an all-bold paragraph, readers may just ignore it entirely!

Instead of creating an all-bold paragraph, use the [special-notice format](#). In it, a key word (for example, Important, Note, Danger, Caution, Warning) is bolded, while the rest of the text is left regular roman (that is, the same font and style as the regular body text).

Legitimate use of bold in technical texts varies widely. As long as you develop a scheme that is directly related to the reader's need and to the characteristics of the text (or technology) and that does not lead to overkill, your use of bold should work fine.

Here are some common, standard uses of bold:

- **Simple emphasis.** As discussed in the preceding, some technical texts use bold for simple emphasis instead of the traditional italics. For example, "Do **not** turn off the computer before shutting it down."
- **Commands.** Computer texts commonly use bold for commands, for example, "Use the **move** command to rename UNIX files." See the section on highlighting computer text for a review of the complete set of emphasis techniques.
- **Buttons that initiate commands.** In a graphical user interface, some of the buttons initiate commands. For example, "press the **Exit** button to exit the application."
- **Field labels.** While some computer text bolds field labels, it is not general practice because it leads to highlighting overkill. For example, "In the **Indentation** area of the dialog box, click on **Left**." More common is to use the cap style used on the screen. It's preferable to write this: "In the Indentation area of the dialog box, click on **Left**."
- **Icons or keyboard or mouse buttons.** While not universally observed, another highlighting technique that follows this system logically is to bold the name of a keyboard key or mouse button. For example, "Press the **Q** key or the **left** mouse button." In keeping with this system too is to use bold on icons: "Click the **Start** icon."
- **Labels on hardware.** Another practice that is common in computer publishing is to bold the name of a hardware label. For example, "Press the **Reset** button to reboot the computer."

You'll notice that the preceding discussion stated no absolute rules. That's the way it is—technical publishing practice is quite varied. The main idea is to develop a logical, controlled system of highlighting, use it consistently, and document it in a style guide so that you and your documentation team members can refer to it.

Italics

Here are some of the standard uses for italics:

- **Simple emphasis.** As mentioned earlier, usage is mixed on whether to use bold or italics for simple emphasis, although italics has been traditional: for example, "Do *not* turn off the computer before shutting it down." Whichever you use, be consistent with it, and document it in your style guide or style sheet so that everybody on your document team can see it. If you're not sure which to use, use italics for simple emphasis: it's less busy.
- **Variables .** In computer publishing, one of the most common uses of italics is for variables. For example:

copy oldfile newfile

Users know not to type oldfile or newfile but to substitute their own file names instead.

- **Definitions in definition (two-column) lists.** While bold is more common for the items in the left column of a two-column list, italics is also used. (See the discussion of two-column lists in the preceding section on bold.)
- **Terms where the term is defined.** A nice touch is to italicize a word where it is defined in regular body text.

Underscores

There is almost no reason for using underscores in technical text. In the days of typewritten text, there certainly was. However, in these times, when bold, italics and other such typographical effects are readily available, underscores look obsolete. If you want to emphasize something, use your standard guidelines—for example, use italics or bold. Don't try to create gradations of emphasis: for example, a scale of increasing importance ranging from italics to bold to underscore will be lost on your readers.

If you see good use of underscores in technical text, it will probably occur in heading design.

Capitalization

In technical publishing, there seems to be a running battle between technical writers and technical experts over capitalization. Technical experts like to use initial caps for practically every component and process in a system. Also, technical experts (and management) typically use all caps for the text they consider important and want readers to attend to. Meanwhile, technical writers and editors (rightly) insist on using caps for proper names only.

As a technical writer, hold the line against capitalization. Capital letters are distracting; all-caps text is uncomfortable to read. Capital letters create a busy text, which sends lots of unnecessary signals. Capital letters are traditionally intended for proper names such as Microsoft, Netscape, Gateway, Dell Computers, WordPerfect, and so on. The classic guideline in technical publishing is to capitalize the names of *separately orderable products* only. However, the politics of organizations bend this guideline considerably. If a company is proud of a certain feature in its new release, for example, EnergyMiser, it will capitalize it, even though you can't order it separately.

Guidelines for Capitalization

- Use the exact capitalization style of messages shown on the computer screen, menu or screen names, field names, hardware labels, and so on. (In rather old interfaces, all-caps was used for things like field, menu, and screen names. A common practice in these cases is to use initial-caps for references to these things in the regular text. The principle here is that unnecessary all-caps in regular text is distracting.)
- Do **not** use capital letters for emphasis; use italics or bold instead.
- Do not use all-caps for any extended text; use the special-notice format instead.
- Do not capitalize the names of the components or processes of a product. Capitalize only the names of products, that is, components that are separately orderable.

For example, your product may be called WordStuff and of course it must be capitalized according to the style dictated by the marketing and product planners. However, one of WordStuff's features called "spell checker" shouldn't be capitalized—just about everybody has one of those. However, WordStuff may have a feature called "ZippyFormat" and another called "Image Worker." Even though these are not separately orderable, you will want to use the initial-cap style because of their special style and their marketing value. "Image Worker" is obviously something WordStuff, Inc., wants to show off—therefore, the caps.

But when you have to break rules like this, the exceptions need to go in the style guide or style sheet.

Single or double quotation marks

Quotation marks are often mistakenly used as emphasis techniques in technical text. As a technical writer, limit quotation marks to the traditional usage, which includes quoted speech; numbers, letters, or words referred to as such. Quotation marks, like capital letters, tend to create a busy, distracting text and therefore should be avoided.

One legitimate use of double quotation marks is odd, quirky, nonstandard use of words. For example:

In a core dump, the computer "barfs" all data into a single file.

Well-designed computer text avoids quotation marks rather vigorously. One of the primary reasons is that some readers might mistakenly assume that they must include the quotation marks in the commands they enter.

Problem: Use the "move" command.

Revision: Use the **move** command.

Problem: Enter "copy install installnow."

Revision: Enter *copy install installnow*.

Note: While some technical texts have well-defined uses for single quotation marks, in general there is no standard use for single quotation marks, other than the traditional quotation-within-a-quotation rule and the quirky-usage rule. When you see single quotation marks within technical text, there is usually no more rationale for their use than there is for double quotation marks.

Alternate fonts

One of the most common styles involving alternate fonts is to use Courier or some similar monospaced, old-typewriter-style font in contrast to the standard body font (such as Times New Roman or Helvetica). You can create this effect in web page by using a CSS

style like `<span class="example_text">`. For example, "type install to install the program."

Here's a review of the common uses of alternate fonts:

- *Example text.* To signal that an example rather than a required entry is being shown, an alternate font like Courier is often used:

For example, if you want to copy a file, type `copy yourfile.txt myfile.txt`. A file called `myfile.txt` will be created, and its contents will be the same as `yourfile.txt`.

- *Displayed text.* Computers and other equipment typically display things such as warnings or status codes or error messages. These appear on monitor or in LCD panels and the like. When you refer to this displayed text, you can use an alternate font such as Courier. For example, "If the directory does not exist, the system will respond with No such file or directory." Or, "As the computer boots up, the digital read-out window will display 8888."
- *Extended code samples.* In computer programming texts, extended programming samples are often shown in Courier, for example:

```
#check for mean hackers
if ($address1 eq "" & $address2 eq "") { &wicked_address (500, "Search Error", "Please enter a name."); } elseif ($address1 =~ /[<>&*\\|/| $address2 =~ /[<>&*\\|/| { &wicked_address (500, "Search Error", "Malformed e-mail address. Please do not destroy
our poor, humble, one-virtual-room schoolhouse!"); }
```

Color

Color is used in technical text but it is expensive and hard to manage through the publishing cycle.

However, color is easy to use in online information. It's common to see hypertext links, for example, using color. Online helps typically use green while web pages typically use blue for new links and purple for links the user has already explored.

The tendency to use color indiscriminately in online information is much like the tendency to go wild with bold, italics, type sizes, and alternate fonts in hardcopy information. The feeling must be something like, "It's there, it's cool, so let's use it!"

There are not any strongly developed trends in the use of color in technical text, either online or hardcopy, other than the use of green and blue for hypertext links, mentioned earlier. Printed technical texts rarely use color because of the cost. Of course, if the documentation ships as a PDF, then color can easily be used, and it's up to the reader whether print it out with a color printer.

If you want to use color, plan it carefully. Don't expect readers to remember that red signals one idea, blue another idea, and green still some other idea. Just stick to one color. In general, avoid using color for extended text. Instead of making an entire warning notice red, just make the Warning label red and leave the warning text regular roman (text like the regular body text).

Better still, read some of the standard literature on color in the technical communication field. There are general design issues and international issues.

Combinations of the preceding

In general, it's a bad idea to combine emphasis techniques, for example, bold and italics. In non-professional technical text, you'll see such garish combinations as all all-caps bold-italics or all-caps bold-italics with double quotation marks. Avoid these!

One legitimate combination is to use italics with alternate fonts. For example, when you show the syntax of a command, you want the entire text to be in Courier, but you also want the variables to be in italics: `copy OldFileName NewFileName`

Functional names for character styles and tags

If you have ever been around the publishing industry, you may have encountered something called *semantic markup*. This means naming sections of text according to the structural role they play in the document—for example, heading. The reader does not see these names, but they play an important role in how the document is formatted and how it can be reused.

This same idea applies to words in phrases within text. For example, in the HTML for a web page, you can use the `<b>`bolded word`</b>` tags to make a word bold. But bold does not indicate the function of the word or phrase. Instead, command or

interface_label would. Therefore in semantic markup using HTML CSS, things are more functional if they look like this: `<span class="command">bolded word</span>`.

Files using HTML and CSS are typically converted to other media such as PDF or even to and from XML. Using *functionally* named highlighting styles, as described just above, can greatly ease the conversion process.

Further Explorations

Once you've read the preceding, a good thing to do next is to explore technical publications to see what highlighting schemes they use. Watch for the way things like bold, italics, caps, alternate fonts, and other such effects are used. Most likely, you'll see very different usage than what you've read about here. As you explore, think about the logic of the emphasis techniques you see being used; try to formulate the rules that the writers seem to be using; watch for inconsistencies in highlighting; and think critically about the usage you see—is it logical? overkill? "underkill?"

Highlighting Scheme

If all the options and alternatives discussed previously have you overwhelmed, consider using the following highlighting scheme. It's based on highlighting you'll find in many UNIX, Windows, and Linux documents.

Names of fields, tabs, folders, dialogs (boxes), menus	Cap style on screen; regular roman
Names of icons	Cap style on screen; bold
Buttons (or functional equivalent if not so labeled)	Cap style on screen; bold
Menu selections, selectable options	Cap style on screen; bold
Commands entered verbatim with no parameters or flags	Bold
Text entered or displayed	Courier New; 1-point size smaller than body font
Variables	Italics; regular roman
Programming code	Courier New; 1-point size smaller than body font; regular roman
Labels on hardware	Courier New; 1-point size smaller than body font; bold

Avoid highlighting overkill. Use notices to eliminate garish unreadable combinations of bold, italics, color, and all caps.

Notes:

1. *Regular roman* refers to whatever the font and font size that is used for body text.
2. While these suggestions recommend "cap style on screen," developers sometimes have an unfortunate tendency to use all caps. Because an all-caps style cuts down on readability, use initial caps (title case).
3. If you show users how to enter a command including example text, don't bold the command that occurs in the example text:
Use the **mv** command to change the name of location of a file, for example:
`mv thisfile.txt thatfile.txt.`
4. If you show users how to enter a command including example text, and include variables in the example text, use italics on the variables.
Use the **mv** command to change the name of location of a file:
`mv my_file.txt your_file.txt.`
5. If you simply refer to the name of a screen or menu that is not clicked or initiates any event, use cap style on screen and regular roman.
6. Some styles bold the action that users are to take (for example, **press**, **enter**, **delete**). That certainly is an option, but for me it's too much highlighting.

Index

As a technical writer, you'll typically have to create indexes for the print books and for online helps you develop. The type of index we mean here is the classic back-of-book index that shows page numbers on which topics and subtopics occur within the book. An

online index is much the same except that you supply hypertext links rather than page numbers.

✓ Example 12.1



Figure 15.31. Index in a print document



Figure 15.31. Index in an online-help system (left panel)

Rough-drafting an Index

As with any writing project, there is a rough-drafting phase for indexing. And of course, you need to think about your audience—who they are, how they'll use the index, why they'll use it, and what sorts of terminology they might be accustomed to. After that, here's what to do next:

- **Convert each heading into multiple index entries.** Headings are a good place to start: they indicate topics and subtopics—precisely what an index does. However, don't just copy headings directly into an index and walk away. As you will see below, you need to cross-list heading-based entries in as many ways as practically possible.
- **Cross-list each entry.** Rearrange each of your heading-based entries in as many practical ways as you can. For example, a heading such as "Changing screen resolution" can be indexed as "screen resolution, changing" as well as "changing screen resolution." You might also include "resolution, changing screen." These cross-listed entries attempt to anticipate all the likely ways a reader might look for this topic in an index: "screen," "resolution," or "changing."

✓ Example :Organizing an index rough-draft

Heading	Index entries
Optimizing Video Display	video display, optimizing optimizing video display display, optimizing video
Playing Streaming Multimedia	streaming multimedia, playing playing streaming multimedia multimedia, playing streaming
Networking Basics	networking networks
Introducing Streaming Multimedia	streaming multimedia multimedia, streaming

Note: You can't always cross-list index entries on every word. For example, "introducing streaming multimedia" in the preceding just wouldn't work. Would any reader ever look for this topic starting with "introducing"?

- **Create synonym entries.** Readers don't necessarily use the same terminology as you do in your documentation. They may call a diskette drive a "floppy drive." They may refer to a display as a "monitor." As an indexer, you must anticipate these common variations in terminology. In the preceding entries, it would be a good idea to have a synonym for "video display" such as "monitor." But instead of repeating the page numbers, use a *See* reference. That way, you point readers to the preferred term. (Of course, if there is only one page number, just repeat it with the synonym entry.)

✓ Example: Synonym entries

Index entry	Synonym entries
volume, adjusting	loudness, adjusting
transmission rate	speed, transmission
capturing video	copying video

- **Review the text for additional index entries.** It's ordinarily not enough just to index by headings. You have to dig down in the text for concepts, terms, and tasks that are not represented by the headings. For example, under the heading "Creating a Multimedia Stream," you might see definitions of "capturing" and "encoding." These are important terms, but they appear nowhere in the headings—index them too! In this case, you'd want to create these additional index entries: "capturing streams" and "encoding streams."
- **Index front and back matter.** Don't forget to dig around in the preface, safety notices, appendixes, and other such peripherals for additional index entries. Typically, technical-support numbers and addresses are shown in the preface. Index them—and don't forget to create cross-listed entries and synonym entries for them as well.

✓ Example: Cross-reference entries

Index entry	Cloned and synonym entries
technical support	support, technical help desk problems

Revising and fine-tuning an index

Once you've brainstormed all the index entries that you can think of, it's time to see what the index looks like and start working it over. To revise a rough-draft index:

1. **Build a first-draft index.** Once you've created as many index entries, cross-listings, and synonyms as you can, it's time to "build" a first draft of the index. Unless you are working the old-fashioned way with index cards, you can get your software application to do this for you. For example, if you work in a desktop publishing system, you've gone through your text inserting index entries. The same process applies to help-authoring tools. When you build the first-draft index, don't be dismayed. It's just a rough draft, to which you'll need to apply several kinds of revision.
2. **Toss useless entries.** In the preceding steps, you've been rough-drafting the index. In that phase, you don't get hung up about the exact phrasing of entries or the likelihood that anybody would ever use them. But now is the time to start weeding out the entries that no reader would ever use. For example, first-level entries beginning with "introducing," "using," "about" are not likely to be useful. Delete them! But don't delete them from the built index. Go back into your document and get rid of the original index entry.
3. **Consolidate entries with similar phrasing.** You'll also find lots of entries that have only minor variations in phrasing. For example:

Rough-draft entries	Revised entries
technology, streaming multimedia technologies, streaming multimedia	technologies, streaming multimedia
video display video displays	video displays
change screen resolution changing screen resolution	changing screen resolution

As you can see in these examples, singular/plural entries and verb variations are the most common causes of similar phrasing in index entries. Your house style may dictate using singulars as opposed to plurals. Whichever way you handle these, just be consistent.

4. **Group similar entries.** You'll also see entries that need to be grouped and subordinated. For example, they may all begin with the same word, but have different modifiers. Here's an example:

Similar entries	Grouped and subordinated entries

projector, defined	projectors
projectors, compiling	compiling
projectors, considerations	considerations
projectors, creating	creating
projectors, defined	defined
projectors, troubleshooting	troubleshooting

5. **Rework entries with excessive page entries.** Some organizations have actual style-guide rules concerning how many page references following an index entry are allowable. Three is a common maximum; two is aggressive, ambitious. For example, "programming syntax, 12, 45, 74, 122, 219, 222." A string of anonymous page references like this helps no one. Instead, identify the subtopic for these page references. Here's an example:

Too many unidentified page references	Subordinated and labeled entries
projectors, 124, 136, 154-155, 156 157	projectors compiling, 154-155 considerations, 156 controls, 136 defined, 124, 136, 157

A very good touch you don't often see in indexes is the page range on which a topic is discussed—even if there are subentries. If it were accurate, you could have entry like this: "projectors, 126–137"

6. **Look for entry groupings.** A nice useful touch in indexes is to hunt for ways that you can group entries. For example, imagine a user guide that explains the various dialog boxes that pop up in the application. There's the Password dialog box, the New User dialog box, the Delete User dialog box, and so on. How about repeating all those entries under "dialog boxes"?

Entries	Grouped entries
<i>(entries are scattered throughout the index)</i>	
Add User dialog box	Add User dialog box
...	...
Delete User dialog box	Delete User dialog box
...	...
New User dialog box	dialog boxes
...	Add User
Password dialog box	Delete User
	New User
	Password
	...
	New User dialog box
	...
	Password dialog box

7. **Look for shift-up entries.** In your indexing work, you may have some subentries that need to be copied out as main entries.

Entries	Shifted-up entries <i>(entries are scattered throughout the index)</i>

batteries	batteries
disposing, 33	disposing, 33
explosion warning, 34	explosion warning, 34
manufacturer recommendation, 34	manufacturer recommendation, 34
polarity, 33-34	polarity, 33-34
purchasing, 33	purchasing, 33
replacing, 33-34	replacing, 33-34
tabs, 33(illus)	tabs, 33(illus)
	disposing, batteries, 33
	...
	polarity, batteries, 33-34
	...
	warning, battteries, 34
	...

In this example, the indexer thought some (probably not many) readers would look up "polarity" first as opposed to "batteries, polarity." Similarly, the indexer thought people might look up "disposing" first. Even though possibilities like these are small, put them in the index anyway.

8. **Look for *See also* and additional *See* references.** Toward the end of your revising phase, take a look at your index for the possibility of *See also* references. *See also* references are for closely related terms that readers might choose by mistake. For example, in the old DOS systems, there was the **copy** command and the **xcopy** command. The two commands are so closely related in name and in function that you'd want to put *See also* references to each other. And don't forget the *See* references: those point readers from synonym terms to the terms you prefer to use and index by in your book.
9. **Check the style and mechanics of index entries.** The organization for which you work may have its own house style guide or refer you to some standard style such as the *Chicago Manual of Style*. Look at these very carefully for how they tell you to capitalize and punctuate index entries. Indexes commonly use lowercase on all nonproper-noun entries, but a certain percentage do use initial caps on first-level entries. Most styles have you put a comma just after the index term and before the page numbers; but a few do not. Some styles require you to use the same highlighting in the index as you do in the main text. If something is bold in the main text, they want it bold in the index too.

Note: This chapter uses a variety of punctuation and capitalization styles—not to confuse you, but to make you aware of stylistic variability.

One common index style	Another common index style
projectors, 123	projectors
compiling, 154-155	compiling 154-155
considerations, 156	considerations 156
controls, 136	controls 136
defined, 124, 136, 157	defined 124, 136, 157
project profiles, 451-461	Project profiles 451-461

Notice in the right-hand example that there is no comma between the index term and the page references. Also, you'll find that some indexing standards and styles disapprove of having a page reference on an index entry that has subentries: for example, "projectors, 123" in the left-hand example. Why isn't the page 123 reference down amongst the sub-entries? Just what is the subtopic on page 123?

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13: Proposals

Chapter Objectives

- Utilize audience analysis to plan, write, and revise a proposal.
- Explain the proposal process and various proposal types.
- Format and organize a written proposal.
- Adapt the style and content of a proposal based on the type of proposal and audience analysis.

In a technical writing course, the proposal is an opportunity for you to present an idea to a specific, named audience about an idea you have that company, organization, center, or other business. Whatever topic you choose, you must be able to conduct thorough research that you will integrate into your final report.

To begin planning a proposal, remember the basic definition: a proposal is an offer or bid to complete a project for someone. Proposals may contain other elements—technical background, recommendations, results of surveys, information about feasibility, and so on. But what makes a proposal a proposal is that it asks the audience to approve, fund, or grant permission to do the proposed project.

A proposal should contain information that would enable the audience of that proposal to decide whether to approve the project, to approve or hire you to do the work, or both. To write a successful proposal, put yourself in the place of your audience—the recipient of the proposal—and think about what sorts of information that person would need in order to feel confident having you complete the project. Consider the example of a proposal written to a supervisor at a solar power company suggesting the creation of a policy manual for residential solar panel installers. The proposal's audience may be an executive, whose knowledge of the technicalities may be very broad. Let's imagine the executive approves the proposal and requests completion of the manual, which will be produced well after the proposal. The manual's audience is the technicians, who may have more specialized knowledge than the executive. The content and language used for these two different audiences will need to be adjusted to fit the writing situation.

It is easy to confuse proposals with other kinds of documents in technical writing. Imagine that you have a terrific idea for installing some new technology where you work, and you write up a document explaining how it works, showing the benefits, and then urging management to install it. Is that a proposal? All by itself, this would not be a complete proposal. It would be more like a feasibility report, which studies the merits of a project and then recommends for or against it. However, all it would take to make this document a proposal would be to add elements that ask management for approval for you to go ahead with the project. Additionally, for some technical writing classes offered in college, one of those elements may be scholarly research. Certainly, some writers of proposals must sell the projects they propose, but in all cases, proposals must sell the writer (or the writer's organization) as the one to complete the project.

Types of Proposals

Consider the situations in which proposals occur. A company may send out a public announcement requesting proposals for a specific project. This public announcement—called a request for proposals (RFP)—could be issued through websites, emails, social media, newspapers, or trade journals. Firms or individuals interested in the project would then write proposals in which they summarize their qualifications, project schedules and costs, and discuss their approach to the project. The recipient of all these proposals would then evaluate them, select the best candidate, and then work up a contract.

But proposals also come about much less formally. Imagine that you are interested in doing a project at work (for example, investigating the merits of bringing in some new technology to increase productivity). Imagine that you met with your supervisor and tried to convince him or her of this. They might respond by saying, "Write me a proposal and I'll present it to upper management." This is more like the kind of proposal you will write in a technical writing course.

Most proposals can be divided into several categories:

- Internal, external: A proposal to someone within your organization (a business, a government agency, etc.) is an internal proposal. With internal proposals, you may not have to include certain sections (such as qualifications) or as much information in them. An external proposal is one written from one separate, independent organization or individual to another such entity. A typical example is an independent consultant proposing to do a project for another firm. This kind of proposal may be solicited or unsolicited, as explained below.

- Solicited, unsolicited: A solicited proposal is one in which the recipient has requested the proposal. Typically, a company will send out requests for proposals (RFPs) through the mail or publish them in some news source. But proposals can be solicited on a very local level: for example, you could be explaining to your boss what a great thing it would be to install a new technology in the office; your boss might get interested and ask you to write up a proposal that offered to do a formal study of the idea. Unsolicited proposals are those in which the recipient has not requested proposals. With unsolicited proposals, you sometimes must convince the recipient that a problem or need exists before you can begin the main part of the proposal.

Scenarios for Proposals

Many of you may have never given much thought to producing a technical report based on a viable proposal. Here are some sample proposal ideas to ponder:

- Imagine that a company has a problem or wants to make some sort of improvement. The company sends out a request for proposals; you receive one and respond with a proposal. You offer to come in, investigate, interview, make recommendations—and present it all in the form of a report.
- An organization wants a seminar in your expertise. You write a proposal to give the seminar—included in the package deal is a guide or handbook that the people attending the seminar will receive.
- An agency has just started using a new online data system, but the user's manual is technically complex and difficult to read. You receive a request for proposals from this agency to write a simplified guide or startup guide.
- Imagine that a nonprofit organization focused on a particular issue wants a consultant to write a handbook or guide for its membership. This document will present information on the issue in a way that the members can understand.

Not all research topics are appropriate for technical writing. Topics that are based on values and beliefs do not fall into the category of technical writing. Historical and literary topics do not qualify.

Sections in a Proposal

You have the following options for the format and packaging of your proposal. It does not matter which you use as long as you use the memorandum format for internal proposals and the business-letter format for external proposals.

- Cover letter or memo with a separate proposal: In this format, you write a brief "cover" letter or memo and attach the proposal properly after it. The cover letter or memo briefly announces that a proposal follows and outlines the contents of it. In fact, the contents of the cover letter or memo are pretty much the same as the introduction (discussed in the previous section). Notice, however, that the introduction to the proposal proper that follows the cover letter or memo repeats much of what preceded. This is because the letter or memo may get detached from the proposal or the recipient may not even bother to look at the letter or memo and just dive right into the proposal itself.
- Consolidated business-letter or memo proposal: In this format, you consolidate the entire proposal with a standard business letter or memo. You include headings and other special formatting elements as if it were a report.

The following provides a review of the sections you will commonly find in proposals. Do not assume that each one of them has to be in the actual proposal you write, nor that they have to be in the order they are presented here. Refer to the assignment sheet provided by your instructor and consider other kinds of information unique to your topic that should be included in your particular proposal.

Introduction. Plan the introduction to your proposal carefully. Make sure it does all of the following things (but not necessarily in this order) that apply to your particular proposal:

- Indicate that the content of the memo is a proposal for a specific project.
- Develop at least one brief motivating statement that will encourage the recipient to read on and to consider approving the project (especially if it is an unsolicited or competitive proposal).
- Give an overview of the contents of the proposal.

Background on the problem, opportunity, or situation. Often occurring just after the introduction, the background section discusses what has brought about the need for the project—what problem, what opportunity exists for improving things, what the basic situation is. For example, management of a chain of daycare centers may need to ensure that all employees know CPR because of new state mandates requiring it, or an owner of Pine Timberland in eastern Oregon may want to get the land producing saleable timber without destroying the environment.

While the named audience of the proposal may know the problem very well, writing the background section is useful in demonstrating your particular view of the problem. Also, if the proposal is unsolicited, a background section is almost a requirement—you will probably need to convince the audience that the problem or opportunity exists and that it should be addressed.

Benefits and feasibility of the proposed project. Most proposals briefly discuss the advantages or benefits of completing the proposed project. This acts as a type of argument in favor of approving the project. Also, some proposals discuss the likelihood of the project's success. In an unsolicited proposal, this section is especially important—you are trying to “sell” the audience on the project.

Description of the proposed work (results of the project). Most proposals must describe the finished product of the proposed project. In a technical writing course, that means describing the written document you propose to write, its audience and purpose; providing an outline; and discussing such things as its length, graphics, binding, and so forth. In the scenario you define, there may be other work such as conducting training seminars or providing an ongoing service. At this early stage, you might not know all that it will take to complete your project, but you should at least have an idea of some of the steps required.

Method, procedure, theory. In some proposals, you will need to explain how you will go about completing the proposed work. This acts as an additional persuasive element; it shows the audience you have a sound, thoughtful approach to the project. Also, it serves to demonstrate that you have the knowledge of the field to complete the project.

Schedule. Most proposals contain a section that shows not only the projected completion date but also key milestones for the project. If you are doing a large project spreading over many months, the timeline would also show dates on which you would deliver progress reports. If you cannot cite specific dates, cite amounts of time for each phase of the project.

Costs, resources required. Most proposals also contain a section detailing the costs of the project, whether internal or external. With external projects, you may need to list your hourly rates, projected hours, costs of equipment and supplies, and so forth, and then calculate the total cost of the complete project. Internal projects, of course, are not free, so you should still list the project costs: hours you will need to complete the project, equipment and supplies you will be using, assistance from other people in the organization, and so on.

Conclusions. The final paragraph or section of the proposal should bring readers back to a focus on the positive aspects of the project. In the final section, you can urge them to contact you to work out the details of the project, remind them of the benefits of doing the project, and maybe make one last argument for you or your organization as the right choice for the project.

Special project-specific sections. Remember that the preceding sections are typical or common in written proposals, not absolute requirements. Always ask yourself what else might your audience need to understand the project, the need for it, the benefits arising from it, your role in it, and your qualifications to do it. What else do they need to see in order to approve the project and to approve you to do it?

Figure: Schematic view of proposals. (2021; David McMurrey, <https://www.prismnet.com/~hcexres/textbook/acctoc.html>)

Figure: Schematic view of proposals cont... (2021; David McMurrey, <https://www.prismnet.com/~hcexres/textbook/acctoc.html>)

Organization of Proposals

As for the organization of the content of a proposal, remember that it is essentially a sales or promotional kind of thing. Here are the basic steps it goes through:

1. Introduce the proposal, telling the readers its purpose and contents.
2. Present the background – the problem, opportunity, or situation that brings about the proposed project. Get the reader concerned about the problem, excited about the opportunity, or interested in the situation.
3. State what you propose to do about the problem, how you plan to help the readers take advantage of the opportunity, how you intend to help them with the situation.
4. Discuss the benefits of doing the proposed project, the advantages that come from approving it.
5. Describe exactly what the completed project would consist of, what it would look like, how it would work – describe the results of the project.
6. Discuss the method and theory or approach behind that method – enable readers to understand how you'll go about the proposed work.
7. Provide a schedule, including major milestones or checkpoints in the project.
8. List your qualifications for the project; provide a mini-resume of the background you have that makes you right for the project.

9. Now (and only now), list the costs of the project, the resources you'll need to do the project.
10. Conclude with a review of the benefits of doing the project (in case the shock from the costs section was too much), and urge the audience to get in touch or to accept the proposal.

Notice the overall logic of the movement through these sections: you get them concerned about a problem or interested in an opportunity, then you get them excited about how you'll fix the problem or do the project, then you show them what good qualifications you have – *then* hit them with the costs, but then come right back to the good points about the project.

Format of Proposals

You have the following options for the format and packaging of your proposal. It does not matter which you use as long as you use the memorandum format for internal proposals and the business-letter format for external proposals.

The examples below layout the differences and similarities of a cover letter or memo.

Figure: Proposal that uses the memo format (left) and a proposal that is separate from its cover letter (right). (2021; David McMurrey, <https://www.prismnet.com/~hcexres/textbook/acctoc.html>)

Sample formal Proposal layout

Title for your proposal
For
Company Name
(20XX-XX)

Prepared for:
Name of the Person
Name of their company
City, State

By
Your Name
Your Title

Date (May 1, 2021)

Figure: Sample formal proposal title page

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METHODS	4
COST	4
FEASIBILITY	5
PERSONNEL	5
CONCLUSION	5
APPENDIX	5

Figure: Sample formal proposal table of contents page

Informative Abstract

An **abstract** is a condensed version of a longer piece of writing that highlights the major points covered, concisely describes the content and scope of the writing, and reviews the writing's contents in abbreviated form. Abstracts are typically 100 to 250 words and follow set patterns.

[Writing an Abstract \(Paper/Proposal Summary\)](#)

Figure: Sample formal proposal abstract page

Introduction

Overview
Opens with an overview of the situation

Background
Provides relevant background

Statement of Problem
Describes the problem concisely

Needs
States the need in a clear succinct manner

Scope

Previews the plan before getting into details

Proposed Plan

State the plan

Methods

Itemize realistic ways to save money and retain staff

Idea 1

Idea 2

Idea 3

Idea 4

Cost

Provide detailed breakdown of cost – the central issues on the situation

Figure: Sample formal proposal page

Sample Research Proposal

2

To: The Recipient's name
From: Your Name
Date: March 2, 20XX
Subject: Proposal for

Introduction

Opens with background and causes of the problem

Statement of Problem

Describes the Problem

Proposed Solution

Describes one possible solution

Scope

Define scope of the proposed study

Methods

Describes how study will be done

Mentions literature review

My Qualifications

Cites a major reference and gives the writer's qualification for this project

Conclusion

Encourages reader acceptance

Feasibility

Assesses probability of success

Personnel

Addresses important issues of personnel

Conclusion

Reemphasizes need and encourages action

Appendix

Provides detailed breakdown of cost comparisons.

Figure: Sample Research Proposal

Hopefully, when the time comes for you to create a proposal, the steps in this chapter will help you create one that will engage your audience and get your idea or product accepted. As a reminder, a proposal should contain information that would enable the audience of that proposal to decide whether to approve the project, to approve or hire you to do the work or both. Make sure to always read the requirements for the proposal; especially, if it is going to an external client. Do research on your audience, so you know how to gear the proposal to them for acceptance. The content in this chapter will help you prepare proposals for various audiences.

Figure: Sample formal page

General Tips for Proposals

As you reread and revise your proposal, keep the following tips in mind:

- Use the right format. Remember, the memo format is for internal proposals; the business-letter format is for proposals written from one external organization to another. (Whether you use a cover memo or cover letter is your choice.)
- Write a good introduction as discussed in the preceding, and identify exactly what you are proposing to do.
- Make sure that a report – a written document – is somehow involved in the project you are proposing to do. Remember that in a technical writing course we are trying to do two things: write a proposal and plan a term-report project.
- Organize the sections in a logical, natural order. For example, don't hit the audience with schedules and costs before you've gotten them interested in the project.
- Break out the costs section into specifics; include hourly rates and other such details. Don't just hit them with a whopping big final cost.
- For internal projects, don't omit the section on costs and qualifications: there will be costs, just not direct ones. For example, how much time will you need, will there be printing, binding costs? Include your qualifications – imagine your proposal will go to somebody in the organization who doesn't know you.
- Address the proposal to the real or realistic audience – not your instructor. (You can use your instructor's name as the CEO or supervisor of the organization you are sending the proposal to.)
- Watch out for generating technobabble. Yes, some of your proposal readers may know the technical side of your project – but others may not. Challenge yourself to bring difficult technical concepts down to a level that nonspecialists can understand.
- Include all the information listed in "Special assignment requirements". If it doesn't logically or naturally fit in the proposal itself, put it in a memo to your instructor.

This chapter was derived by Annemarie Hamlin, Chris Rubio, and Michele DeSilva, Central Oregon Community College, from [Online Technical Writing](#) by David McMurrey – [CC: BY 4.0](#) and David McMurrey, Saylor.org and Saylor English 210 Technical Writing, used under a CC BY license. "Proposal" is licensed under CC BY 4.0 by Lise-Pauline Barnett.

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14: Oral Presentations

Chapter Objectives

- Create oral presentation materials that reflect standards of effective presentations.
- Apply the standards of effective presentation to Technical Writing.
- Demonstrate formatting and designing of presentations.
- Evaluate presentations for effectiveness.

A common assignment in technical writing courses—not to mention in the workplace—is to prepare and deliver an oral presentation, a task most of us would be happy to avoid. However, while employers look for coursework and experience in preparing written documents, they also look for experience in oral presentations as well.

Oral presentations will be prepared differently face-to-face than in an online environment. You would see many presenters use flip charts, PowerPoint, and other visuals for face-to-face presentations. If you are presenting online, oral reports can be sent in as "scripts," or audio versions can be transmitted live or recorded. You might also use PowerPoint and Prezi presentations as well.

Most people would rather have root canal surgery without Novocaine than stand up in front of a group and speak. It truly is one of the great stressors. But with some help from the resources that follow, you can be a champion presenter. Learning how to have effective presentations can help you close a big deal or explain information to your colleagues at work.

Topics and Situations for the Oral Presentation

For the oral report in a technical writing course, imagine that you are formally handing over your final *written* report to the people with whom you set up the hypothetical contract or agreement. For example, imagine that you had contracted with a software company to write its user guide. Once you have completed it, you have a meeting with the chief officers to formally deliver the guide. You spend some time orienting them to the guide, showing them how it is organized and written, and discussing some of its highlights. Your goal is to get them acquainted with the guide and to prompt them for any concerns or questions.

The first step is to figure out a topic. It is important to remember what you did in the writing process and the same steps apply here. Start with brainstorming some possibilities on what you want to present:

- **Purpose:** One way to find a topic is to think about the purpose of your talk. Is it to instruct (for example, to explain how to run a text editing program on a computer), to persuade (to vote for or against a certain technically oriented bond issue), or simply to inform (to report on citizen participation in the new recycling program).
 - *Informative purpose:* An oral report can be primarily informative. For example, as a member of a committee involved in a project to relocate the plant, your job might be to give an oral report on the condition of the building and grounds at one of the sites proposed for purchase.
 - *Instructional purpose:* An oral report can be instructional. Your task might be to train new employees to use certain equipment or to perform certain routine tasks.
 - *Persuasive purpose:* An oral report can be persuasive. You might want to convince members of local civic organizations to support a city-wide recycling program.
- **Topics:** You can start by thinking of a technical subject, for example, solar panels, microprocessors, drip irrigation, or laser surgery. For your oral report, think of a subject you would be interested in talking about, but find a reason why an audience would want to hear your oral report.
- **Place or situation:** You can find topics for oral reports or make more detailed plans for them by thinking about the place or the situation in which your oral report might naturally be given: at meetings for your employer? at a city council meeting? at a meeting of the board of directors or high-level executives of a company? Thinking about an oral report this way makes you focus on the audience, their reasons for listening to you, and their interests and background. As in all technical writing situations, identifying and understanding your audience is of the utmost importance.

Contents and Requirements for Oral Presentations

Once you have picked a topic for your oral presentation, it is time to organize your thoughts. The focus for your oral presentation is clear, understandable presentation; well-organized, well-planned, well-timed discussion.

When you give your oral presentation, use the following as a requirements list, as a way of focusing your preparations:

- **Situation:** Plan to explain the situation of your oral report and who you are. Make sure that there is a clean break between this brief explanation and the beginning of your actual oral report.
- **Introduction:** Pay special attention to the introduction to your talk. Here's where you tell your audience what you are going to present.
 - Indicate the *purpose* of your oral report.
 - give an *overview* of its contents.
 - find some way to *interest* the audience.
- **Visuals:** Use at least one visual—preferably slides using presentation software (such as Powerpoint, Keynote, and Prezi). Flip charts and objects for display are good, but avoid scribbling stuff on the chalkboard or whiteboard or relying strictly on handouts. Make sure you discuss key elements of your visuals. Don't just throw them up there and ignore them. Point out things about them; explain them to the audience.
- **Explanation:** Plan to explain any technical aspect of your topic clearly and understandably. Don't race through complex, technical stuff—slow down and explain it carefully so that your audience understands it.
- **Transitions:** Use "verbal headings"—by now, you've gotten used to using headings in your written work. There is a corollary in oral reports. With these, you give your audience a very clear signal you are moving from one topic or part of your talk to the next. Your presentation visual can signal your headings.
- **Planning:** Plan your presentation in advance and practice it so that it is organized. Make sure that your audience knows what you are talking about and why, which part of the talk you are in, and what is coming next. Overviews and verbal headings greatly contribute to this sense of organization.
- **Closing:** End with a real conclusion. People sometimes forget to plan how to end an oral report and end by just trailing off into a mumble. Remember that in conclusions, you can:
 - *summarize* (go back over high points of what you've discussed).
 - *conclude* (state some logical conclusion based on what you have presented).
 - provide some *last thought* (end with some final interesting point but general enough not to require elaboration).
 - or some combination of the three.
- **Questions:** And certainly, you'll want to prompt the audience for questions and concerns.

The sample chart below can help you with your organization and brainstorming.

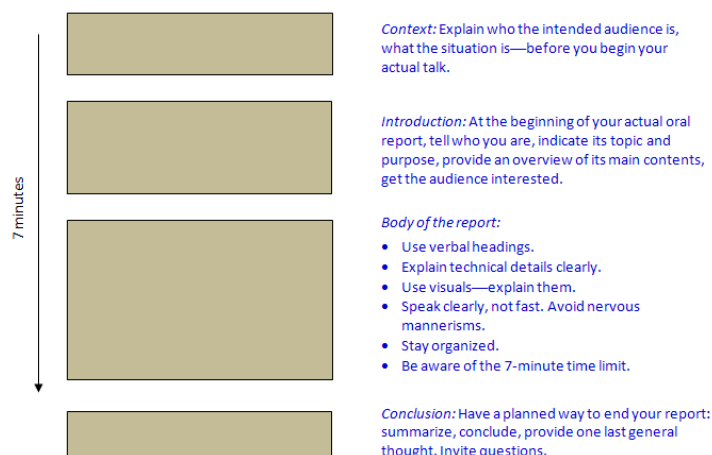


Figure: Diagram of the 7 minute oral presentation. (CCBY 2019; Tiffani Reardon)

Preparing for the Oral Presentation

Pick the method of preparing for the talk that best suits your comfort level with public speaking and with your topic. However, plan to do ample preparation and rehearsal—some people assume that they can just jump up there and ad lib for so many minutes and be relaxed and informal. It does not often work that way—drawing a mental blank is the more common experience. A well delivered presentation is the result of a lot of work and a lot of practice.

Here are the obvious possibilities for preparation and delivery:

- Write a script, practice it; keep it around for quick-reference during your talk.
- Set up an outline of your talk; practice with it, bring it for reference.
- Set up cue cards, practice with them, and use them during your talk.
- Write a script and read from it.

A good presentation is one that is clear, understandable, well-planned, organized, and on target with your purpose and audience.

It does not matter which method you use to prepare for the talk, but you want to make sure that you know your material. The head-down style of reading your report directly from a script will not work. There is little or no eye contact or interaction with the audience. The delivery tends to be toward a dull, boring monotone that either puts listeners off or is hard to understand. And, most of us cannot stand to have reports read to us!

For many reasons, most people get nervous when they have to give oral presentations. Being well prepared is your best defense against the nerves. The nerves will wear off someday, the more oral presenting you do. In the meantime, breathe deeply and enjoy.

Visuals for Oral Presentations

There are various types of presentation formats you can use:

- **Presentation software slides:** Projecting images ("slides") using software such as PowerPoint, Keynote, Google Slides, and Prezi, to name a few. One common problem with the construction of these slides is cramming too much information on individual slides.
- **Poster board-size charts:** Another possibility is to get some poster boards and draw and letter what you want your audience to see. Of course, it's not easy making charts look neat and professional.
- **Handouts:** You can run off copies of what you want your audience to see and hand them out before or during your talk. This option is even less effective than the first two because you cannot point to what you want your audience to see and because handouts distract the audience's attention away from you. Still, for certain visual needs, handouts are the only choice. Keep in mind that if you are not well prepared, the handouts become a place for your distracted audience to doodle.
- **Objects:** If you need to demonstrate certain procedures, you may need to bring in actual physical objects. Rehearse what you are going to do with these objects; sometimes they can take up a lot more time than you expect.
- **Zoom, Teams, Google Hangouts (conference style software):** We are seeing more and more companies using these software to conduct business meetings. So, people are conducting virtual meetings and presenting. So learning how to use this software to present your presentations is very important.

Take some time to make your visuals look sharp and professional—do your best to ensure that they are legible to the entire audience.

As for the content of your visuals, consider these ideas:

- **Drawing or diagram of key objects:** If you describe or refer to any objects during your talk, try to get visuals of them, so that you can point to different components or features.
- **Tables, charts, graphs:** If you discuss statistical data, present it in some form or table, chart, or graph. Many members of your audience may be less comfortable "hearing" such data as opposed to seeing it.
- **Outline of your talk, report, or both:** If you are at a loss for visuals to use in your oral presentation, or if your presentation is complex, have an outline of it that you can show at various points during your talk.
- **Key terms and definitions:** A good idea for visuals (especially when you cannot think of any others) is to set up a two-column list of key terms you use during your oral presentation with their definitions in the second column.
- **Key concepts or points:** Similarly, you can list your key points and show them in visuals. (Outlines, key terms, and main points are all good, legitimate ways of incorporating visuals into oral presentations when you cannot think of any others.)

During your actual oral report, make sure to discuss your visuals, refer to them, guide your audience through the key points in your visuals. It is a big problem just to throw a visual up on the screen and never even refer to it.

As you prepare your visuals, look at resources that will help you. There are many rules for using PowerPoint, Keynote, Google Slides, and Prezi down to the font size and how many words to put on a single slide, but you will have to choose the style that best suits your subject and your presentation style.

You may also have heard about the presentation skills of Steve Jobs. The video that follows is the introduction of the I-Phone...and as you watch, take notes on how Jobs sets up his talk and his visuals. Observe how he connects with the audience...and then see if

you can work some of his strategies into your own presentation skills. This is a long video...you don't need to watch it all, but do take enough time to form some good impressions.

[Steve Jobs iPhone Presentation](#)

Format and Design



Figure: There are four commonly accepted modalities for learning, often abbreviated as VARK.

Presentation software allows you to take an oral presentation to the next level—engaging your audience verbally and visually as well as aurally. What’s particularly powerful about using presentation software and other visual aids is the ability to use imagery to bridge cultural and language gaps and arrive at a shared understanding of the issue/opportunity at hand.

Using multimedia—images, photos and video and animation—that supports your point also provides repetition and can increase retention.

Common Presentation Tools

There are various formats you can use to create effective presentations. Depending on your operating system there is Keynote for Mac computers, PowerPoint is a Microsoft product, and there are online options such as Prezi. These applications are easy to use and can provide step by step instructions.

Various Types of Presentation tools to consider:

1. PowerPoint
2. Prezi
3. Keynote

Creating Effective Presentations

Presentations are quite common in both academic and professional settings, and, because they are such an important part of how you’ll likely present your ideas and information to an audience, it’s helpful to have some basic information on how to create an effective presentation.

The basic purpose of a presentation is to give you a way to present key ideas to an audience with visual support. Your presentation shouldn’t be full of text. It is meant to provide you with speaking points, and detailed notes should be kept from your audience. You want to keep your slides clear, clean, short, focused, and you want to keep your audience from using the expression that we sometimes hear in reference to long, boring presentations, “death by PowerPoint.”

When you start to think about the layout of your presentation make sure to have an outline of how you want your presentation to flow. This will help you make sure you cover all your points. Make sure that your presentation is spaced out well and your content does not look cluttered on the slide. Remember that you want the color to be suitable for all audiences. Some people are color blind and cannot see certain colors. So make sure your colors go well together.

Designing the Presentation

When creating a presentation make sure it is visually appealing and easy to read for your audience. You want to have less text and use more bullet points. You want to also have visuals to highlight your topic. The examples below will help you create a slide that highlights bullet points, illustrated points, and speaker props.

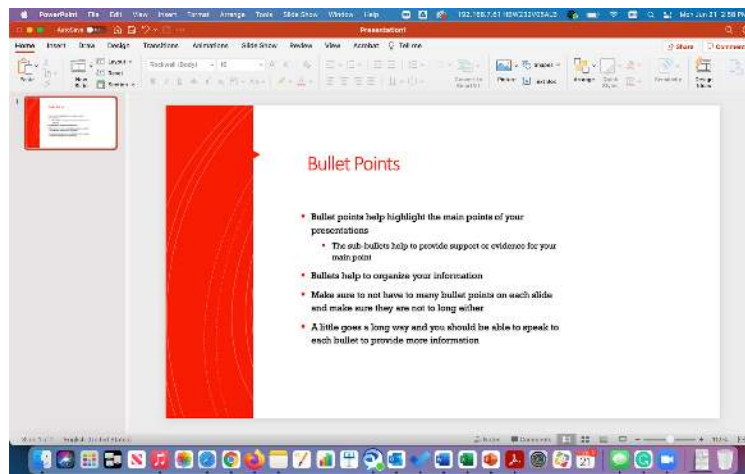


Figure: Bullet Pointed Slide (2021; Lise-Pauline Barnett)

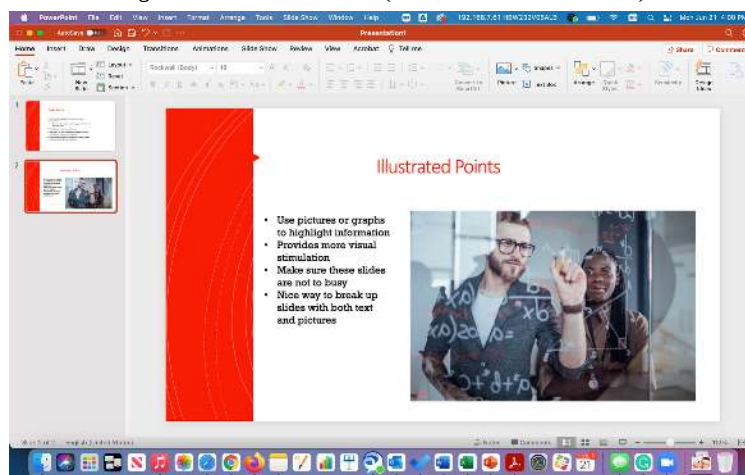


Figure: Illustrated points. (2021; Lise-Pauline Barnett)

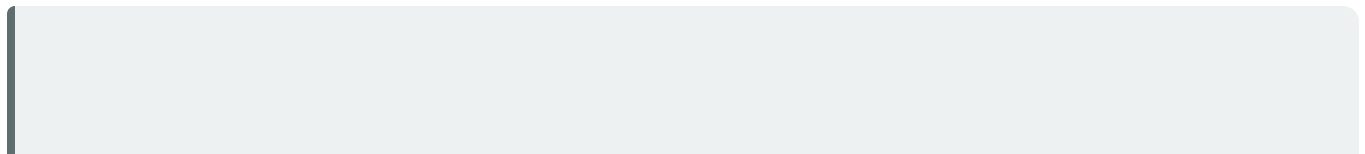
Speaker Props

This type of presentation is random pictures that will flash across your screen. You have to be careful when using it as it could be distracting for the audience and some people cannot handle flashes like that. The video below is an example of this type of presentation.

https://www.youtube.com/watch?feature=player_embedded&v=RrpajcAgR1E

Fonts and Size for Your Presentation

When you are creating your presentation make sure to pick a font and size that is easy for your audience to read. Your audience needs to be able to read the information being projected in the room. Remember you could be in a conference room or an auditorium. Make sure you are using the same font throughout your presentation and the font is appropriate for your topic and audience. It can be distracting if you have various fonts throughout the presentation.



Tips

1. Use a font that is easy to read.
2. Make sure the font and the background are compatible.
3. Make sure your title font is bigger than the content and stands out.
4. The common size is 24 font.
5. Bold important information.

Fonts in Both Mac & PC Versions of PowerPoint

*Available in PowerPoint Online

• Arial*	• Calisto MT	• Corbel*
• Arial Rounded MT Bold	• Cambria*	• Courier New*
• Baskerville Old Face	• Cambria Math	• Curlz MT
• Batang	• Candara*	• Dubai
• BatangChe	• Century*	• <i>Edwardian Script ITC</i>
• Bauhaus 93	• Century Gothic*	• ENGRAVERS MT
• Bell MT	• Century Schoolbook*	• Franklin Gothic Book*
• Book Antigua*	• Colonna MT	• Gabriola
• Bookman Old Style*	• Comic Sans MS*	• Garamond*
• Calibri*	• Consolas*	• Georgia*
• Calibri Light*	• Constantia*	• Gill Sans MT*

Figure: <https://www.templatemonster.com/blog...presentations/>

Aesthetically Pleasing

For our purposes, aesthetics refers to the beauty or good taste of a presentation aid. Earlier we mentioned the universal principles of good design: unity, emphasis or focal point, scale and proportion, balance, and rhythm. Because of wide differences in taste, not everyone will agree on what is aesthetically pleasing, and you may be someone who does not think of yourself as having much artistic talent. Still, if you keep these principles in mind, they will help you to create attractive, professional-looking visuals.

The other aesthetic principle to keep in mind is that your presentation aids are intended to support your speech, not the other way around. The decisions you make in designing your visuals should be dictated by the content of your speech. If you use color, use it for a clear reason. If you use a border, keep it simple. Whatever you do, make certain that your presentation aids will be perceived as carefully planned and executed elements of your speech.

How to Choose Good Color

Color is very important and can definitely make a strong impact on an audience. However, don't go overboard or decide to use unappealing combinations of color. For example, you should never use a light font color (like yellow) on a solid white background because it's hard for the eye to read. You should also realize that while colors may be rich and vibrant on your computer screen at home, they may be distorted by a different monitor. While we definitely are in favor of experimenting with various color schemes, always check your presentation out on multiple computers to see if the slide color is being distorted in a way that makes it hard to read.

Visual and Audio Effects

Everyone who has had an opportunity to experiment with PowerPoint, Keynote, and Prezi knows that animation in transitions between slides or even on a single slide can be fun, but often people do not realize that too much movement can actually distract audience members. While all presentation software packages offer you very cool slide movements and other bells and whistles, they are not always very helpful for your presentation. If you're going to utilize slide transitions or word animation, stick to only three or four different types of transitions in your whole presentation. Furthermore, do not have more than one type of movement on a given slide. If you're going to have all your text come from the right side of the screen in a bulleted list, make sure that all the items on the bulleted list come from the right side of the screen.

Good writers make conscious choices. They understand their purpose and audience. Every decision they make on the page, from organizing an essay to choosing a word with just the right connotations, is made with their purpose and audience in mind.

The same principle applies to visual communication. As a presenter, you choose the following:

- When to show images or video for maximum impact;
- Which images will best produce the effect you want;
- When to present information using a table, chart, or other graphic;
- How much text to include in slides or informational graphics; and
- How to organize graphics so they present information clearly.

Your goal is to use visual media to support and enhance your presentation. At the same time, you must make sure these media do not distract your audience or interfere with getting your point across. Your ideas, not your visuals, should be the focus.

Tips

Here are some tips to keep in mind when creating an effective presentation:

1. Remember to avoid too much text. You should keep your text brief and include talking points only. Detailed notes can be inserted into the notes section (or you can use some other form of notes as you present), but only you should see those notes, unless a professor asks to see your notes to evaluate your presentation as an assignment.
2. Be consistent and clear with your font choices. Helvetica is a nice font for presentations. Make sure your font is large enough that an audience in a room would be able to see your text, even if audience members are sitting in the back of the room.
3. Be careful with your color choices for text and background. You want to make sure your audience can read your text easily. Black on white text is easiest to read but is also boring for a presentation. Still, when you add color, just be sure you are adding color that works and doesn't distract.
4. Add images. Text on slides for every slide is boring. Add appropriate images to your slides. Relevant charts and graphs are excellent, as are pictures that will connect to your content. Think about moments where an image can more easily convey information or a message. A powerful image on a slide with no accompanying text can be a powerful way to capture your audience's attention.
5. Make sure your main points are clear. Remember to connect your ideas well and provide background information and transitions when necessary.
6. Keep your audience in mind. Your audience will affect the overall tone and appearance of your presentation. Sometimes, humor can be appropriate. Other times, a more serious tone may be necessary. Just as you evaluate your situation any time you write a paper, you should evaluate your situation for creating a presentation.

Delivering Oral Presentations

When you give an oral report, focus on common problem areas such as these:

- **Timing:** Make sure you keep within the time limit. Finishing more than a minute under the time limit is also a problem. Rehearse, rehearse, rehearse until you get the timing just right.
- **Volume:** Obviously, you must be sure to speak loud enough so that all of your audience can hear you. You might find some way to practice speaking a little louder in the days before the oral presentation.
- **Pacing, speed:** Sometimes, oral presenters who are nervous talk too fast. All that adrenaline causes them to speed through their talk, making it hard for the audience to follow. In general, it helps listeners understand you better if you speak a bit more slowly and deliberately than you do in normal conversation. Slow down, take it easy, be clear...and breathe.
- **Gestures and posture:** Watch out for nervous hands flying all over the place. This too can be distracting—and a bit comical. At the same time, do not turn yourself into a mannequin. Plan to keep your hands clasped together or holding onto the podium and only occasionally making some gesture. Definitely keep your hands out of your pockets or waistband. As for posture, avoid slouching at the podium or leaning against the wall. Stand up straight, and keep your head up.
- **Verbal crutches:** Watch out for too much "uh," "you know," "okay" and other kinds of nervous verbal habits. Instead of saying "uh" or "you know" every three seconds, just do not say anything at all. In the days before your oral presentation, practice speaking without these verbal crutches. The silence that replaces them is not a bad thing—it gives listeners time to process what you are saying.
- **Practice, Practice, Practice:** It is vital to practice using the technology. Nothing is worse than watching a speaker stand up and not know how to turn on the computer, access the software, or launch his or her presentation. When you use technology, audiences can quickly see if you know what you are doing, so don't give them the opportunity to devalue your credibility because you can't even get the show going.

- **Always Have a Backup Plan:** Unfortunately, things often go wrong. One of the parts of being a professional is keeping the speech moving in spite of unexpected problems. Decide in advance what you will do if things break down or disappear right when you need them. If you take this responsibility seriously and check the room where you will be presenting early, you will have time to adapt.
- **Face Your Audience:** Maintaining eye contact may not be as simple as it sounds. The trick is to focus on one person at a time. Zero in on one person, make eye contact, and maintain it just long enough to establish a connection. (A few seconds will suffice.) Then move on. This way, you connect with your audience, one person at a time. Pay attention to your facial expressions as well. If you have thought about how you want to convey emotion during different parts of your presentation, you are probably already monitoring your facial expressions as you rehearse. Be aware that the pressure of presenting can make your expression serious or tense without your realizing it.

Tips

If you are speaking to a very large group, it may be difficult to make eye contact with each individual. Instead, focus on a smaller group of persons or one row of people at a time. Look in their direction for a few seconds and then shift your gaze to another small group in the room.

This chapter highlighted how to plan, create, and present oral presentations. There are so many presentation solutions out there that you need to find one that works with your computer and you feel comfortable using. When you create a PowerPoint, Prezi, Google Slide, or Keynote presentation, be sure to consider the principles discussed.

GENERAL PRESENTATION TIPS

When you create a PowerPoint, Prezi, Google Slide, or Keynote presentation, be sure to consider the principles discussed. You now know how to:

- Brainstorm your topic.
- Plan and prepare your presentation.
- Create content for an effective presentation.
- Choose a presentation medium that fits your audience.
- Use a font and size that is appropriate.
- Position objects and content appropriately.
- Avoid distracting colors and text and make sure colors are in contrast with each other.
- Select backgrounds that are easy to read and see - remember some people are color blind.
- Pick effects and visuals that are stimulating and pleasing to the eye.

This work "[Oral Presentations](#)" is a derivative of "[ENGL210: Technical Writing - Tips for Creating an Effective Presentation](#)", "[Oral Presentations](#)" by [David McMurrey and Cassandra Race](#) - [Open Technical Communication](#), Authored by: [Excelsior Online Reading Lab](#), Presentations and Other Visual Aids. Authored by: Nina Burokas. Provided by: Lumen Learning, and VARK Illustration. Provided by: Lumen Learning. "Oral Presentations" is licensed under CC BY 4.0 by Lise-Pauline Barnett.

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15: Reports

Chapter Objectives

- Explain the difference between formal, informal, and progress reports.
- Explain how to take meeting minutes.
- Prepare an introduction, body, and conclusion structure in a formal report.

For the final report in some technical-writing courses, you can write one of (or even a combination of) several different types of reports. This chapter defines these different report types and all the reports are briefly defined here:

- **Standard operating policies and procedures.**
- **Recommendation, feasibility, evaluation reports.**
- **Technical background reports.**
- **Technical guides and handbooks.**
- **Primary research reports.**
- **Business plans.**
- **Technical specifications.**
- **Progress Reports.**
- **Meeting Minutes**

The technical background report is hard to define—it's *not* a lot of things, but it's hard to say what it *is*. It doesn't provide step-by-step directions on how to do something in the way that instructions do. It does not formally provide recommendations in the way that feasibility reports do. It does not report data from original research and draws conclusions in the way that primary research reports do.

So what does the technical background report do? It provides information on a technical topic but in such a way that is adapted for a particular audience that has specific needs for that information. Imagine a topic like this: renal disease and therapy. A technical background report on this topic would *not* dump out a ten-ton textbook containing everything you could possibly say about it. It would select information about the topic suited to a specific group of readers who had specific needs and uses for the information. Imagine the audience was a group of engineers bidding on a contract to do part of the work for a dialysis clinic. Yes, they need to know about renal disease and its therapy, but only to the extent that it has to do with their areas of expertise. Such a background report might also include some basic discussion of renal disease and its treatment, but no more than what the engineers need to do their work and to interact with representatives of the clinic.

There is a difference between the reports you will find in this chapter.

Informal Reports - These reports do not need planning or much background. They usually require a quick response and need concise information and do not require all of the elements of a formal report (cover page, letter of transmittal, table of contents, abstract, or work cited)

Formal Reports - These reports need planning and background. These reports are long and have the following components (cover page, letter of transmittal, table of contents, abstract, or work cited).

Progress Reports - These reports follow the progress of projects. They explain what has been completed, what needs to be completed, and other things that are important to the project.

Meeting Minutes - Record the meeting and information that was discussed. It will tell all the attendee what decisions were made, next steps, and tasks assigned.

Report Format

Unlike most of the other reports discussed in this course guide, the technical background report does not have a common set of contents. Because it focuses on a specific technical topic for specific audiences who have specific needs or uses for the information, it grabs at whatever type of content it needs to get the job done. You use a lot of intuition to plan this type of report. For example, with the report on renal disease and treatment, you'd probably want to discuss what renal disease is, what causes it, how it is

treated, and what kinds of technologies are involved in the treatment. If you don't fully trust your intuition, use a checklist like the following:

- **Definitions**—Define the potentially unfamiliar terms associated with the topic. Write *extended* definitions if there are key terms or if they are particularly difficult to explain.
- **Causes**—Explain what causes are related to the topic. For example, with the renal disease topic, what causes the disease?
- **Effects**—Explain what are the consequences, results, or effects associated with the topic. With the renal disease topic, what happens to people with the disease; what effects do the various treatments have?
- **Types**—Discuss the different types or categories associated with the topic. For example, are there different types of renal disease; are there different categories of treatment?
- **Historical background**—Discuss relevant history related to the topic. Discuss people, events, and past theories related to the topic.
- **Processes**—Discuss mechanical, natural, human-controlled processes related to the topic. Explain step by step how the process occurs. For example, what are the phases of the renal disease cycle; what typically happens to a person with a specific form of the disease?
- **Descriptions**—Provide information on the physical details of things related to the topic. Provide information about size, shape, color, weight, and so on. For the engineering-oriented report, this would mean size, power requirements, and other details about the treatment technologies.
- **Comparisons**—Compare the topic, or some aspect of it, to something similar or something familiar. With the renal disease example, you could compare renal disease to some other disease; the treatment to some treatment; the functions of the kidney to something familiar (an analogy); or even the treatment to something familiar, for example, the filter system for a swimming pool.
- **Applications**—Explore how some aspect of your topic can be used or applied. If it's some new technology, what are its applications?
- **Advantages and disadvantages**—Discuss the advantages or disadvantages of one or more aspects of your topic. In the renal disease topic, for example, what are the advantages of one treatment over another?
- **Economic considerations**—Discuss the costs of one or more aspects associated with your topic. How much does treatment for renal disease cost? How much does the equipment and personnel cost?
- **Social, political, legal, ethical implications**—Explore the implications or impact of your topic or some aspect of it in relation to social, political, legal, or ethical concerns. The renal disease example doesn't lend itself much to this area, but imagine the possibilities with a topic like cryogenics—suspended animation of human beings. Often, new technologies have a profound impact in these areas.
- **Problems, questions**—What problems or questions are there associated with your report topic or some aspect of it?
- **Solutions, answers**—What solutions or answers can you offer on those problems or questions raised by your topic or some aspect of it?

We could add many other categories to a checklist like this, but maybe this is enough to get you started planning the contents of your technical background report. And remember that each of these checklist items may represent a full section in the report—not a sentence or two.

As for the organization of these parts of the report, again, your intuitions are in order. Some subtopics logically come before others. See the chapter on [organizational patterns](#) and applying them.

The typical format of technical background reports. See the [format for technical background reports](#). That chapter takes you from the front cover all the way to the last page in this type of report, showing the expected contents and format. Remember that in most technical-writing courses, you are expected to use a format like this exactly and precisely—unless you work out some other arrangements with your instructor.

Cover Letter

The cover letter is either attached to the outside of the report with a paper clip or is bound within the report. It is a communication from you—the report writer—to the recipient, the person who requested the report, and who may even be paying you for your expert consultation. Essentially, it says “Here is the report that we agreed I’d complete by such-and-such a date. Briefly, it contains this and that but does not cover this or that. Let me know if it meets your needs.” The cover letter explains the context—the events that brought the report about. It contains information about the report that does not belong in the report.

In the example of the cover letter that follows, notice the standard business-letter format. If you write an internal report, use the memorandum format instead. In either case, the contents and organization are the same:

First paragraph. Cites the name of the report, putting it in italics. It also mentions the date of the agreement to write the report.

Middle paragraph. Focuses on the purpose of the report and gives a brief overview of the report's contents.

Final paragraph. Encourages the reader to get in touch if there are questions, comments, or concerns. It closes with a gesture of goodwill, expressing hope that the reader finds the report satisfactory.

As with any other element in a report, you may have to modify the contents of this letter (or memo) for specific situations. For example, you might want to add another paragraph, listing questions you'd like readers to consider as they review the report. Since we use APA format in class, a cover letter is not required; however, your employer might request it, so it is included just in case this situation arises.

Title Page

Be sure to create a title page for your report. It's a step that some report writers forget. Without a label, a report is anonymous; it gets ignored.

The best way to create a title page is to have the following information: the report title, your name, your organization's name, and a date. There are no standard requirements for the label, although your company or organization should have its own requirements. (An example of a report label is shown below.) Your title page should be formatted in APA.

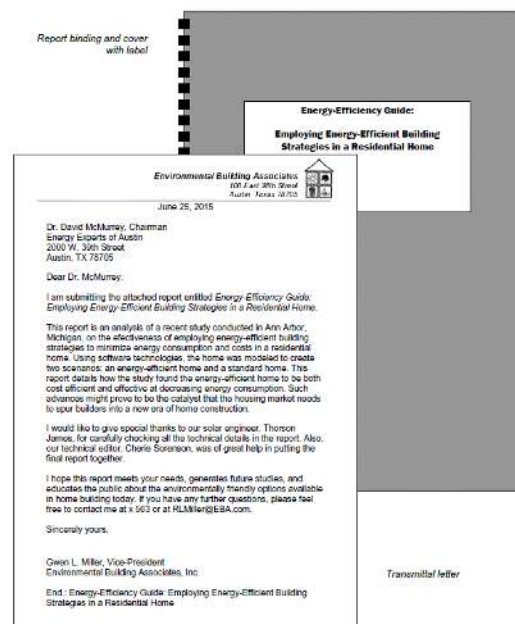


Figure:

The transmittal letter and report cover (with cover label). (2017; David McMurrey viahttps://www.prismnet.com/~hcexres...rt_design.html)

Abstracts

Most technical reports contain an abstract. Abstracts summarize the contents of a report, but the different types do so in different ways:

- **Descriptive abstract.** This type provides an overview of the purpose and contents of the report. In some report designs, the descriptive abstract is placed at the bottom of the title page, as shown in the following:

LIGHT WATER NUCLEAR REACTORS

submitted to

Mr. David A. McMurrey
Energy Research Consultants, Inc.
Austin, Texas

April 27, 19XX

by
Jeffrey D. Lacruz

This report examines light water reactors as a possible alternative source of energy for Luckenbach, Texas. Both types of light water reactors are described, and an explanation of how each reactor produces electricity is presented. Safety systems and economic aspects conclude the main discussion of the report.

Figure: Descriptive abstract. Traditionally, it is placed on the title page (not the cover page). (2017; *David McMurrey* viahttps://www.prismnet.com/~hcexres...rt_design.html)

If the abstract, introduction, and letter strike you as repetitive, remember that readers don't necessarily start at the beginning of a report and read page by page to the end. They skip around: they may scan the table of contents; they usually skim the abstract for key facts and conclusions. They may read carefully only a section or two from the body of the report and then skip the rest. For these reasons, reports are designed with some duplication, so that readers will be sure to see the important information no matter where they dip into the report.

Contents and Organization of Specifications

The organization is critical in specifications—readers need to be able to find one or a collection of specific details. To facilitate the process of locating individual specifications, use headings, lists, tables, and identifying numbers as discussed previously. But a certain organization of the actual contents is also standard:

- General description—Describe the product, component, or program first in general terms—administrative details about its cost, start and completion dates, overall description of the project, scope of the specifications (what you are not covering), anything that is of a general nature and does not fit in the part-by-part descriptions in the following.
- Part-by-part description—In the main body, present specifications part by part, element by element, trade by trade—whatever is the logical, natural, or conventional way of doing it.
- General-to-specific order—Wherever applicable, arrange specifications from general to specific.

Graphics in specifications. In specifications, use graphics wherever they enable you to convey information more effectively. For example, in the specifications for a cleanroom for the production of integrated circuits, drawings, diagrams, and schematics convey some of the information much more succinctly and effectively than sentences and paragraphs. See the example of graphics used in specifications writing in the [second illustration](#) and [graphics](#).

Table of Contents

For the purposes of this course, we will use APA style, which does not require a Table of Contents. That said, at some point in your future, you may write a report for your employer or organization that does require a Table of Contents. For that reason, here is some basic information about the form.

The Table of Contents shows readers what topics are covered in the report, how those topics are discussed (the subtopics), and on which page numbers those sections and subsections start.

In creating a Table of Contents, you have a number of design decisions:

- Levels of headings to include. In longer reports, consider not including only the top two levels of headings. This keeps the Table of Contents from becoming long and unwieldy. The Table of Contents should provide an at-a-glance way of finding information in the report quickly.
- Indentation, spacing, and capitalization. Notice in the illustration below that items in each of the three levels of headings are aligned with each other. Although you can't see it in the illustration, page numbers are right-aligned with each other. Notice also the capitalization: Main chapters or sections are all caps; first-level headings use initial caps on each main word; lower-level sections use initial caps on the first word only.
- Vertical spacing. Notice that the first-level sections have extra space above and below, which increases readability.

Using the automatic Table of Contents creator in your word processor can help you produce a clean, professional document. If you prefer to make your own, learn to use dot leader tabs in order to line up the page numbers correctly.

One final note: Make sure the words in the Table of Contents are the same as they are in the text. As you write and revise, you might change some of the headings—don't forget to change the Table of Contents accordingly.

List and Figures and Tables

If your document has more than two figures or tables create a separate list of figures. The list of figures has many of the same design considerations as the table of contents. Readers use the list of figures to quickly find the illustrations, diagrams, tables, and charts in your report.

Complications arise when you have both tables and figures. Strictly speaking, figures are illustrations, drawings, photographs, graphs, and charts. Tables are rows and columns of words and numbers; they are not considered figures.

For longer reports that contain dozens of figures and tables each, create separate lists of figures and tables. Put them together on the same page if they fit, as shown in the illustration below. You can combine the two lists under the heading, "List of Figures and Tables," and identify the items as figures or tables as is done in the illustration below.

Graphics and Tables

Graphics and tables used for present information in specifications

- Use either the open (performance) style or the closed restrictive style, depending on the requirements of the job. In the open or performance style, you can specify what the product or component should do, that is, its performance capabilities. In the closed style, you specify exactly what it should be or consist of.
- Cross-reference existing specifications whenever possible. Various government agencies as well as trade and professional associations publish specifications standards. You can refer to these standards rather than include the actual specifications details.
- Use specific, concrete language that identifies as precisely as possible what the product or component should be or do. Avoid words that are ambiguous—words that can be interpreted in more than one way. Use technical jargon the way it is used in the trade or profession.
- Test your specifications by putting yourself in the role of a bumbling contractor—or even an unscrupulous one. What are the ways a careless or incompetent individual could misread your specifications? Could someone willfully misread your specifications in order to cut cost, time, and thus quality? Obviously, no set of specifications can ultimately be "foolproof" or "shark-proof," but you must try to make them as clear and unambiguous as possible.
- For specifications to be used in design, manufacturing, construction, or procurement, use "shall" to indicate requirements. In specifications writing, "shall" is understood as indicating a requirement. (See the outline-style specifications in the [first illustration](#) on specifications for examples of this style of writing.)
- Provide numerical specifications in both words and symbols: for example, "the distance between the two components shall be three centimeters (3 cm)."
- The writing style in specifications can be very terse: incomplete sentences are acceptable as well as the omission of function words such as articles and conjunctions that are understood.
- Exercise great caution with pronouns and relational or qualifying phrases. Make sure there is no doubt about what words such as "it," "they," "which," and "that" refer to. Watch out for sentences containing a list of two or more items followed by some descriptive phrase—does the descriptive phrase refer to all the list items or just one? In cases like these, you may have to take a wordier approach for the sake of clarity.

- Use words and phrasing that have become standard in similar specifications over the years. Past usage has proven them reliable. Avoid words and phrases that are known not to hold up in lawsuits.
- Make sure your specifications are complete—put yourself in the place of those who need your specifications; make sure you cover everything they will need.

Introduction

An essential element of any report is its introduction—make sure you are clear on its real purpose and contents. In a technical report, the introduction prepares the reader to read the main body of the report.

See this example of an introduction:

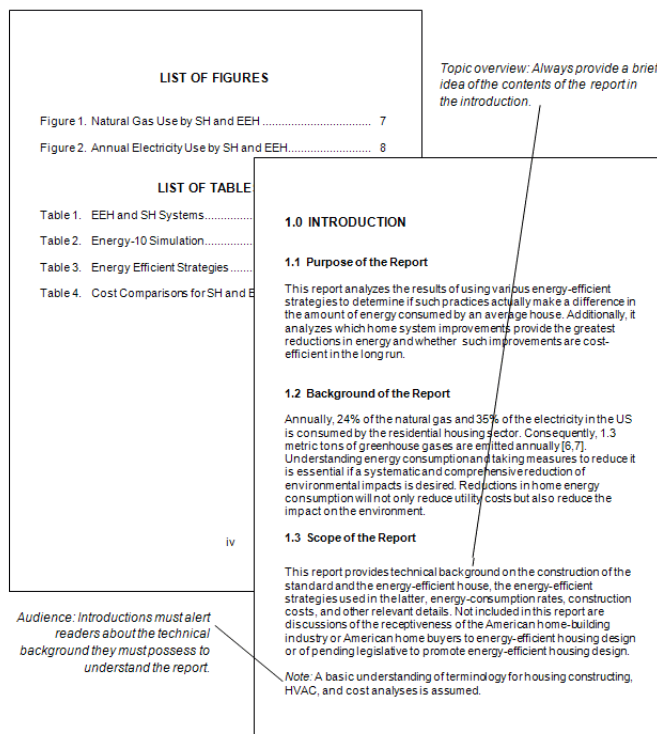


Figure: Copy and Paste Caption here. (Copyright; author via source)

List of figures and tables followed by the introduction. If there are no tables, make it “List of Figures.” In a technical writing course, ask your instructor if the decimal-numbering style for headings is required.

Body of the Report

The body of the report is of course the main text of the report, the sections between the introduction and conclusion. Illustrated below are sample pages.

Headings

In all but the shortest reports (two pages or less), use headings to mark off the different topics and subtopics covered. Headings are the titles and subtitles you see within the actual text of much professional scientific, technical, and business writing. Headings are like the parts of an outline that have been pasted into the actual pages of the document.

Headings are an important feature of professional technical writing; they alert readers to upcoming topics and subtopics, help readers find their way around in long reports and skip what they are not interested in, and break up long stretches of straight text.

Headings are also useful for writers. They keep you organized and focused on the topic. When you begin using headings, your impulse may be to slap in the headings after you’ve written the rough draft. Instead, visualize the headings before you start the rough draft, and plug them in as you write.

Your task in this chapter is to learn how to use headings and to learn the style and format of a specific design of headings. Here are a number of helpful tips:

- Make the phrasing of headings self-explanatory: instead of “Background” or “Technical Information,” make it more specific, such as “Physics of Fiber Optics.”
- Make headings indicate the range of topic coverage in the section. For example, if the section covers the design and operation of a pressurized water reactor, the heading “Pressurized Water Reactor Design” would be incomplete and misleading.
- Avoid “stacked” headings—any two consecutive headings without intervening text.
- Avoid pronoun reference to headings. For example, if you have a heading “Torque,” don’t begin the sentence following it with something like this: “This is a physics principle.....”
- When possible, omit articles from the beginning of headings. For example, “The Pressurized Water Reactor” can easily be changed to “Pressurized Water Reactor” or, better yet, “Pressurized Water Reactors.”
- Don’t use headings as lead-ins to lists or as figure titles.
- Avoid “widowed” headings: that’s where a heading occurs at the bottom of a page and the text it introduces starts at the top of the next page. Keep at least two lines of body text with the heading, or force it to start the new page.

If you manually format each individual heading using the guidelines presented in the preceding list, you’ll find you’re doing quite a lot of repetitive work. The styles provided by Microsoft Word, OpenOffice Writer, and other software save you this work. You simply select Heading 1, Heading 2, Heading 3, and so on.

Excerpt from the body of a technical report. In a technical writing course, ask your instructor if the decimal-numbering style for headings is required. Also, a different documentation system may be required.

Bulleted and numbered lists

In the body of a report, also use bulleted, numbered, and two-column lists where appropriate. Lists help by emphasizing key points, by making information easier to follow, and by breaking up solid walls of text. Always introduce the list so that your audience understands the purpose and context of the list. Whenever practical, provide a follow-up comment, too.

Note

Here are some additional tips:

- Use lists to highlight or emphasize text or to enumerate sequential items.
- Use a lead-in to introduce the list items and to indicate the meaning or purpose of the list (and punctuate it with a colon).
- Use consistent spacing, indentation, punctuation, and caps style for all lists in a document.
- Make list items parallel in phrasing.
- Make sure that each item in the list reads grammatically with the lead-in.
- Avoid using headings as lead-ins for lists.
- Avoid overusing lists; using too many lists destroys their effectiveness.
- Use similar types of lists consistently in similar text in the same document.

Following up a list with text helps your reader understand the context for the information distilled into list form. The tips above provide a practical guide to formatting lists.

Graphics and figure titles

In a technical report, you are likely to need drawings, diagrams, tables, and charts. These not only convey certain kinds of information more efficiently but also give your report an added look of professionalism and authority. If you’ve never put these kinds of graphics into a report, there are some relatively easy ways to do so—you don’t need to be a professional graphic artist. For strategies for adding graphics and tables to reports, see the chapter on Creating and Using Visuals. See the chapter on visuals for more help with the principles for creating visuals.

Conclusions

For most reports, you will need to include a final section. When you plan the final section of your report, think about the functions it can perform in relation to the rest of the report. A conclusion does not necessarily just summarize a report. Instead, use the

conclusion to explain the most significant findings you made in relation to your report topic.

Appendixes

Appendixes are those extra sections following the conclusion. What do you put in appendixes? Anything that does not comfortably fit in the main part of the report but cannot be left out of the report altogether. The appendix is commonly used for large tables of data, big chunks of sample code, fold-out maps, background that is too basic or too advanced for the body of the report, or large illustrations that just do not fit in the body of the report. Anything that you feel is too large for the main part of the report or that you think would be distracting and interrupt the flow of the report is a good candidate for an appendix. Notice that each one is given a letter (A, B, C, and so on).

Information sources

Documenting your information sources is all about establishing, maintaining, and protecting your credibility in the profession. You must cite (“document”) borrowed information regardless of the shape or form in which you present it. Whether you directly quote it, paraphrase it, or summarize it—it’s still borrowed information. Whether it comes from a book, article, a diagram, a table, a web page, a product brochure, an expert whom you interview in person—it’s still borrowed information.

Documentation systems vary according to professionals and fields. For a technical writing class in college, you may be using either APA style. Engineers use the IEEE system, examples of which are shown throughout this chapter. Another commonly used documentation system is provided by the American Psychological Association (APA).

Page numbering

The page-numbering style used in traditional report design differs from contemporary report design primarily in the former’s use of lowercase roman numerals in front matter (everything before the introduction).

- All pages in the report (within but excluding the front and back covers) are numbered; but on some pages, the numbers are not displayed.
- In the contemporary design, all pages throughout the document use arabic numerals; in the traditional design, all pages before the introduction (first page of the body of the report) use lowercase roman numerals.
- On special pages, such as the title page and page one of the introduction, page numbers are not displayed.
- Page numbers can be placed in one of several areas on the page. Usually, the best and easiest choice is to place page numbers at the bottom center of the page (remember to hide them on special pages).
- If you place page numbers at the top of the page, you must hide them on chapter or section openers where a heading or title is at the top of the page.

List of figures and tables followed by the introduction. If there are no tables, make it “List of Figures.” In a technical writing course, ask your instructor if the decimal-numbering style for headings is required.

Conclusion

We normally use the word “conclusion” to refer to that last section or paragraph of a document. Actually, however, the word refers more to a specific type of final section. If we were going to be fussy about it, the current chapter should be called “Final Sections,” which covers all possibilities.

There are at least four ways to end a report: a summary, a true conclusion, an afterword, and nothing. Yes, it is possible to end a document with no conclusion (or “final section”) whatsoever. However, in most cases, that is a bit like slamming the phone down without even saying goodbye. More often, the final section is some combination of the first three ways of ending the document.

Summaries

One common way to wrap up a report is to review and summarize the high points. If your report is rather long, complex, heavily detailed, and if you want your readers to come away with the right perspective, a summary is in order. For short reports, summaries can seem absurd—the reader thinks “You’ve just told me that!” Summaries need to read as if time has passed, things have settled down, and the writer is viewing the subject from higher ground.

Progress Reports

You write a progress report to inform a supervisor, associate, or customer about progress you’ve made on a project over a certain period of time. The project can be the design, construction, or repair of something, the study or research of a problem or question,

or the gathering of information on a technical subject. You write progress reports when it takes well over three or four months to complete a project.

Functions and Contents of Progress Reports

In the progress report, you explain any or all of the following:

- How much of the work is complete.
- What part of the work is currently in progress.
- What work remains to be done.
- What problems or unexpected things, if any, have arisen.
- How the project is going in general.

Progress reports have several important functions:

- Reassure recipients that you are making progress, that the project is going smoothly, and that it will be complete by the expected date.
- Provide recipients with a brief look at some of the findings or some of the work of the project.
- Give recipients a chance to evaluate your work on the project and to request changes.
- Give you a chance to discuss problems in the project and thus to forewarn recipients.
- Force you to establish a work schedule so that you'll complete the project on time.
- Project a sense of professionalism to your work and your organization.

Be sure to check out the (find a example)

Timing and Format of Progress Reports

In a year-long project, there are customarily three progress reports, one after three, six, and nine months. Depending on the size of the progress report, the length and importance of the project, and the recipient, the progress report can take the following forms:

- **Memo**—A short, informal report to someone within your organization.
- **Letter**—A short, informal report sent to someone outside your organization.
- **Formal report**—A formal report sent to someone outside your organization.

Take a look at the discussion in [Format of Proposals](#). You can use the same format for progress reports as you can for proposals: memo, letter, separate report.

Organizational Patterns for Progress Reports

The recipient of a progress report wants to see what you've accomplished on the project, what you are working on now, what you plan to work on next, and how the project is going in general. To report this information, you combine two of these organizational strategies: time periods, project tasks, or report topics.

Time periods. A progress report usually summarizes work within each of the following:

- Work accomplished in the preceding period(s).
- Work currently being performed.
- Work planned for the next period(s).

Project tasks. Practically every project breaks down into individual tasks:

Project	Individual tasks
Building municipal ball parks on city-owned land	Measuring community interest Locating suitable property Clearing the property Designing the bleachers, fences, etc.

Writing a report	Studying the assignment
	Selecting a topic
	Identifying the audience of the report
	Narrowing the topic
	Developing a rough outline
	Gathering information
	Writing one or more rough drafts
	Documenting the report
	Revising and editing the report draft
	Typing and proofreading the report
	Putting the report in its final package

Project tasks. One organizational approach to progress reports.

Report topics. You can also organize your progress report according to the work done on the sections of the final report. In a report project on cocombusting municipal solid waste, you would need information on these topics:

Topics to be covered in the final report
1. The total amount of MSW produced —locally —nationally
2. The energy potential of MSW, factors affecting its energy potential
3. Costs to modify city utilities in order to change to cocombustion

Topics to be covered in a final report. An organizational approach to a progress report about the progress on a report.

For each of these topics, you'd explain the work you have done, the work you are currently doing, and the work you have planned.

A progress report is actually a combination of two of these organizational strategies. The following outline excerpts give you an idea of how they can combine:

Progress report A	Progress report B	Progress report C
<i>Task 1</i>	<i>Work Completed</i>	<i>Topic 1</i>
Work completed	Task 1	Work completed
Current work	Task 2	Current work
Planned work	Task 3	Planned work
<i>Task 2</i>	<i>Current Work</i>	<i>Topic 2</i>
Work completed	Task 1	Work completed
Current work	Task 2	Current work
Planned work	Task 3	Planned work
<i>Task 3</i>	<i>Future Work</i>	<i>Topic 3</i>
Work completed	Task 1	Work completed
Current work	Task 2	Current work
Planned work	Task 3	Planned work

Combination of organizational strategies for progress reports

The following illustration shows an example of the project-tasks approach with subheadings for time periods:

Brine Drainage Tube Modifications

During this period, we have continued to work on problems associated with the brine drainage tubes.

Previous period. After minor adjustments during a month of operation, the drainage tubes and the counterwasher have performed better but still not completely satisfactorily. The screen sections of these tubes, as you know, are located at variable distances along the height of the washer.

Current period. The screen portion of the brine drainage tubes have been moved to within 5 feet of the top of the pack. So far, no change in counterwasher performance has been observed. Production statistics at the end of this month (February) should give us a clearer idea of the effect of this modification.

Next period. Depending on the continued performance of the screen in its current position in relation to the top of the pack, we may move the screen to within 3 feet of the top of the pack in the next period of testing. Although the wash ratio was greater with greater screen height, the washing efficiency seems to remain relatively constant; the production vs. compressor KW data for all screen locations so far has seemed to follow the same linear curve.

Example progress reports organized by time periods

These two outlines show progress reports organized by project tasks:



WORK COMPLETED

As of this time, I have completed almost all of the research work and am putting the sections of the final report together. Here is a breakdown of the work that I have done so far.

Development of the Bottle

In the development section of my report, I have written a technical description of a typical PET soft-drink bottle. It is complete and gives the reader a good idea of what the product should look like and able to accomplish.

Favorable Properties

The section of the report describing the properties of PET is finished. I have chosen four physical properties that many raw materials containers are tested for, and I have shown how PET withstands these tests.

Manufacturing Processes

For the section on manufacturing processes, I have done research to help me recommend one particular production method for PET bottles. Here, I have described this chosen method and have explained exactly how a plastic bottle is produced on an assembly line.

Economics

I have finished work on half the economics section of this report. So far, I have written an economic comparison of the use of plastic and glass bottles.

PRESENT WORK

Right now I am mainly involved in determining just which areas of my report are lacking information. Also, I am continuing my work in locating financial information on PET bottles.

Manufacturing Processes

In the manufacturing section, I am currently . . .

Example progress reports organized by project tasks

Other Parts of Progress Reports

In your progress report, you also need (a) an introduction that reviews the purpose and scope of the project, (b) a detailed description of your project and its history, and (c) an overall appraisal of the project to date, which usually acts as the conclusion.

Introduction: Review the details of your project's purpose, scope, and activities. This will aid recipients who are unfamiliar with the project, who do not remember certain details, or who want to double check your approach to the project. The introduction can contain the following:

- Purpose of the project.
- Specific objectives of the project.
- Scope, or limits, of the project.
- Date the project began; date the project is scheduled to be completed.
- People or organization working on the project.
- People or organization for whom the project is being done.
- Overview of the contents of the progress report.

I am now submitting to you a report on the progress that I have made on my research for your company, Ginseng Cola. Immediately following the January 15 acceptance of my firm's bid to study the advantages of bottling your soft-drink product in plastic bottles, I began investigating all areas of the project.

In the following sections of this progress report, you will be informed on the work that I have already accomplished, the work I am now involved in, the work left to do, and finally an overall appraisal of the how the project is going.

Example introduction to a progress report

Project Description: In most progress reports, include a project description to review the details of your project for the recipients:

PROJECT DESCRIPTION

Here is a review of the purpose and scope of this project.

Purpose. The original investment plan of this corporation included only long-term, low-risk investment in corporate bonds and U.S. securities. This project was designed to answer questions about the potential of short-term, high-dollar investments, particularly those suited to the future expansion of this company's investment plan.

Scope. The report will cover basic definitions of stocks and options as well as reasons for and against these two investment strategies. The report will be broken down into four areas:

- Mechanics of stocks and options
- Comparisons of stocks and options
- Example investment scenarios
- Recommendations for an investment plan

Example project description from a report

Conclusion: The final paragraph or section usually reassures audiences that all is going well and on schedule. It can also alert recipients to unexpected changes or problems in the project.

OVERALL APPRAISAL

The project to recommend PET production is coming along well. I have not run into any major problems and have found plenty of material on this subject. However, I have not heard from Mr. Simon Juarez of PET Mfg., who is sending information on PET production methods used in several plants in the Southwest.

I can foresee no major problems that will keep me from submitting my report to you on the contract date. In fact, I may be able to get it to you a few days earlier than planned. In general, I am finding that the PET bottle is an even more attractive packaging idea than had seemed in our earlier discussions. Full details on this, however, will appear in the final report.

Sincerely,

Steven C. Crosswell
Process Engineer
C & S Engineering

Overall appraisal used as conclusion to a progress report

Meeting Minutes

Usually during in meeting or team project there is a note taker. It is important to have a note taker to record the discussion of the meeting. Without fail, there is always a question about what occurred or a motion that was passed. Many people will either hand

write the minutes or record them with a tape recording. It is important to make sure that once you complete the minutes to distribute them to all the members of the meeting. There are various ways to type up meeting minutes.

It is important to capture the following information:

1. The title of the meeting.
2. The date of the meeting.
3. The time the meeting started.
4. The participants that attended the meeting.
5. Headers for the various agenda items that were covered in the meeting.
6. Summarize the discussion of each agenda items.
7. Tell who said what at the meeting.
8. Write down all motions, votes, decisions, and conclusions that were reached.
9. Time the meeting was adjourned.
10. Make sure to proofread.

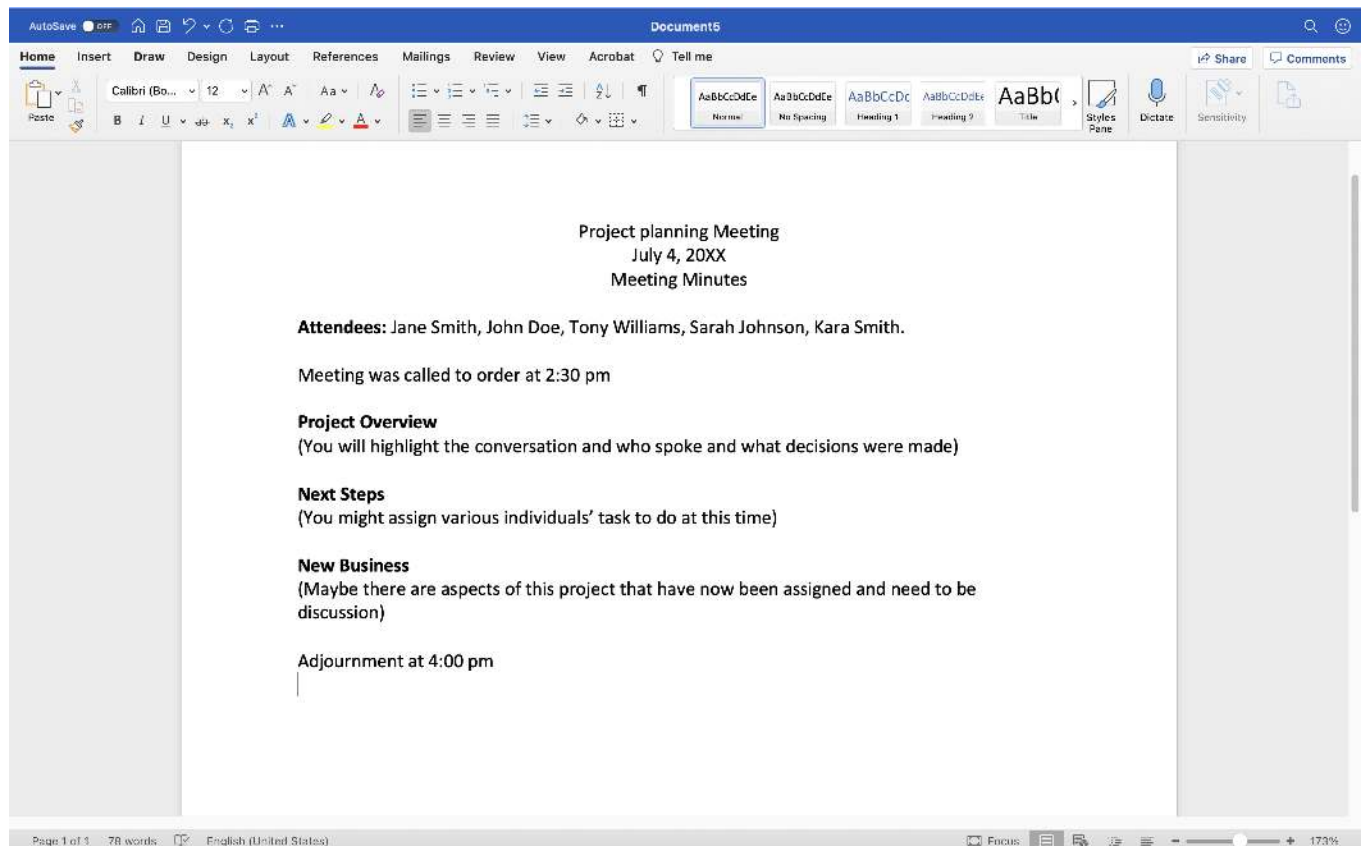


Figure: Sample Meeting Minutes. (2021; Lise-Pauline Barnett)

After reading this chapter, you have the tools needed to write an effective informal, formal, and progress report as well as meeting minutes. At the end of this chapter, there are sample formal reports, informal reports, progress reports, and meeting minutes for your review. There are many sections and areas of your report that need to be formatted with headers, charts, letter of transmittal, table of contents, etc...

The skills you have learned in this course will help you craft a well-organized and effective technical report.

GENERAL REPORT TIPS

As you reread and revise your report, watch out for problems such as the following:

1. Does the report identify a problem or purpose?
2. Is the detail and information appropriate for the subject?

3. Can the reader make a decision based on the information provided in the report?
4. Is the data easy to interpret?
5. Is the information accurate? Provide specifics—avoid relying on vague, overly general statements about the work you've done on the final report project.
6. Are visuals, graphs, list, and charts used to convey the points in the report?
7. Are the conclusions accurate?
8. Is the format correct and all the necessary components presented?
9. Are the sources cited correct and formatted correctly in the report?
10. Is the writing clear and concise?
11. Is the writing grammatically correct?
12. Make sure you use the right format. Remember, the memo format is for internal progress reports; the business-letter format is for progress reports written from one external organization to another. (Whether you use a cover memo or cover letter is your choice.)
13. Write a good introduction—in it, state that this is a progress report, and provide an overview of the contents of the progress report.
14. Make sure to include a description of the final completed project - Use one or a combination of the organizational patterns in the discussion of your work.
15. Use headings to mark off the different parts of your progress report, particularly the different parts of your summary of work done on the project.
16. Be sure and address the progress report to the real or realistic audience—not your instructor - Assume there will be nonspecialists reading your progress report. But don't avoid discussion of technical aspects of the project—just bring them down to a level that nonspecialists can understand.

Sample Report Layout

Figure: Sample Report Layout

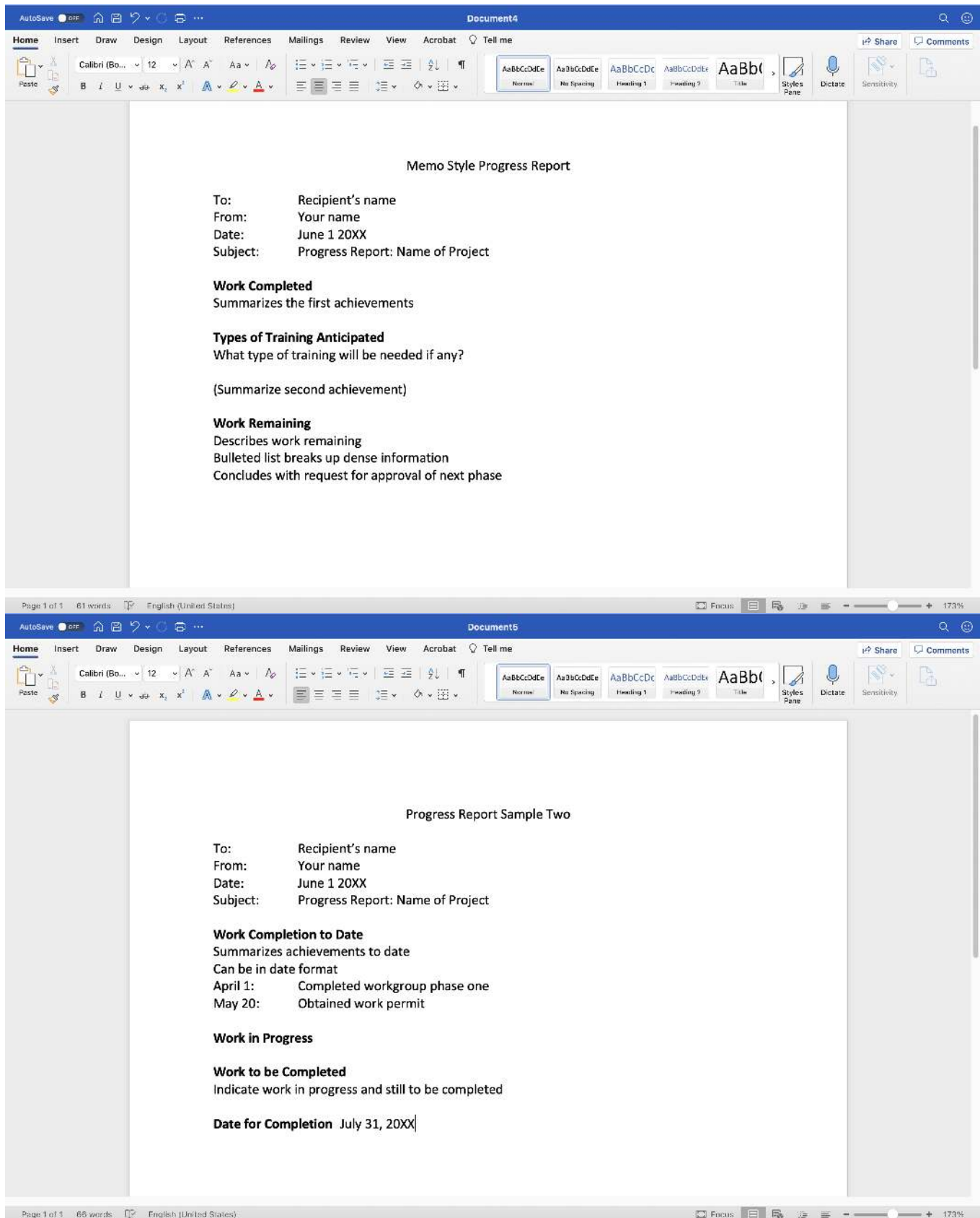


Figure: Sample Progress Reports. (2021; Lise-Pauline Barnett)

Sample Progress Report - <https://www.prismnet.com/~hcexres/te...rogrep3c.html>

This work by Annemarie Hamlin, Chris Rubio, and Michele DeSilva, Central Oregon Community College, from [Online Technical Writing](#) by David McMurrey,

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16: Job Application Materials

Chapter Objectives

- Explain a cover letter, an application letter, and a resume.
- Describe research techniques for job searching.
- Explain the process of interviewing.
- Teach networking strategies.

The job search process can be intimidating. Many people struggle with how to look for jobs and the application process. The diagram below explains the steps of a job search. Many people think it starts with finding a job post, applying with your application/cover letter and resume, and then going into the interview. There are many more steps in order to be successful in your job search.

Job seeking is a process that involves several steps that should be completed in order to effectively obtain the desired position. Often, it looks like the following:

The Six-Step Job Search Process

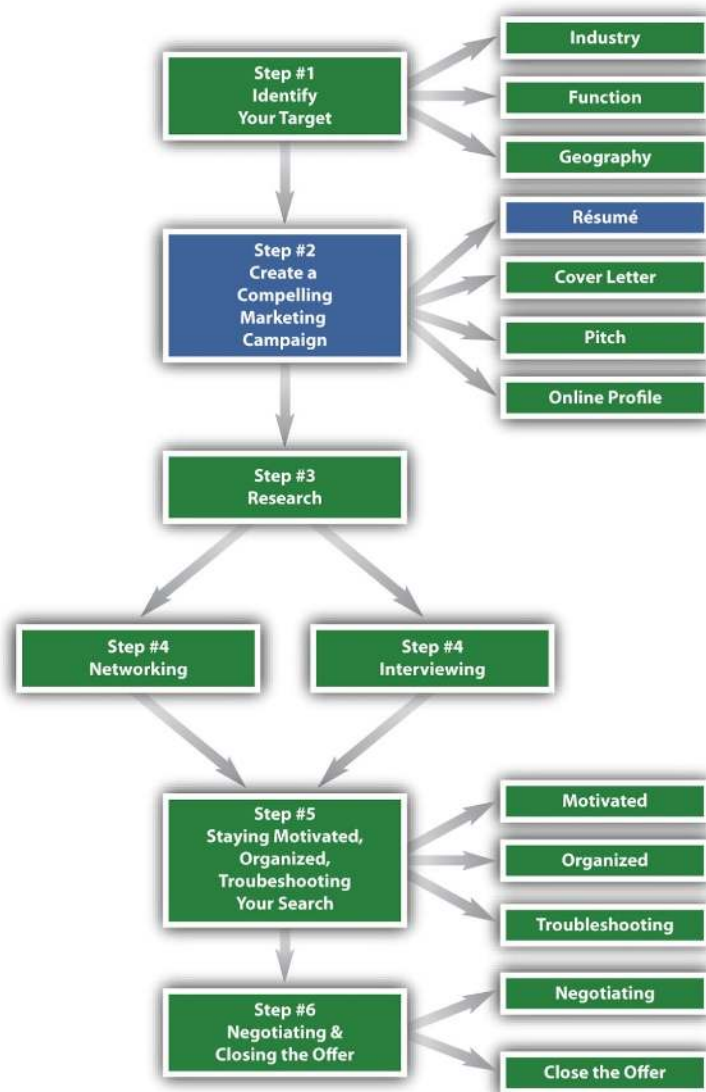


Figure: The Six-Step Job Search Process—Step 2. (2017; Amber Kinonen)

Job Research

The first question is what type of job are you looking for? Are you just coming out of college and looking for an entry level position? Are you an experienced technician in your field and you are looking for another job? Once, you have determined what type of job you are looking for then you need to do some research on positions available in your field. There are many places you can look to find a job in your field of study. There are job search websites like Monster, Indeed, LinkedIn, etc... You can also look at company websites in their "career opportunity" section. It is also good to tell friends, family, and colleagues that you are looking for a job. They might know of opportunities that are available at their employer.

Once you find the jobs you want to apply for you will need to decipher the job description.

Decipher the Job Description and Identify Each Skill and Qualification

Most job descriptions can be copied from the employer's website. Copy the job description and do the following (if you only have a hard copy, it's worthwhile to retype it as you'll want to manipulate each requirement for the position)

- Put each skill and qualification on a separate line.
- Group like with like. If communication skills are listed as important, in addition to giving presentations to potential clients, list one after the other.

In the following sample, each component of the job description is considered and deciphered, in preparation for applying and eventually interviewing for the position.

Resume

A *resume* is a selective record of your background—your educational, military, work experience, your certifications, abilities, and so on. You send it, sometimes accompanied by an application/cover letter, to potential employers when you are seeking job interviews.

A resume should be easily readable, effectively designed, and adapted to audience expectations. If you are taking a technical writing course, your instructor may be okay with your making up a few details in your resume to represent what you'll be when you graduate. However, if you're just starting your college education and have little work experience, why not try using the techniques and suggestions here to create a resume that represents your current skills, abilities, and background? Developing a decent-looking resume based on what you are now is a challenge that you have to deal with at some point—so why not now?

Resume Design: An Overview

Before personal computers, people used one resume for varied kinds of employment searches. However, with less expensive desktop publishing and high-quality printing, people sometimes rewrite their resumes for every new job they go after. For example, a person who seeks employment both with a community college and with a software-development company would use two different resumes. The contents of the two might be roughly the same, but the organization, format, and emphases would be quite different.

You are probably aware of resume-writing software: you feed your data into them and they churn out a prefab resume. You probably also know about resume-writing services that will create your resume for you for a hundred dollars or so. If you are in a time bind or if you are extremely insecure about your writing or resume-designing skills, these services might help. But often they take your information and put it into a computer database that then forces it into a prefab structure. They often use the same resume-writing software just mentioned; they charge you about what the software costs. The problem is that these agencies simply cannot be that sensitive or perceptive about your background or your employment search. Nor are you likely to want to pay for their services every month or so when you are in the thick of a job search. Why not learn the skills and techniques of writing your own resume here, save the money, and write better resumes anyway?

There is no one right way to write a resume. Every person's background, employment needs, and career objectives are different, thus necessitating unique resume designs. Every detail, every aspect of your resume must start with who you are, what your background is, what the potential employer is looking for, and what your employment goals are—not with from some prefab design. Therefore, use this chapter to design your own resume, browse through the various formats, and play around with them until you find one that works for you.

Sections in Resumes

Resumes can be divided into three sections: the heading, the body, and the conclusion. Each of these sections has fairly common contents.

Heading. The top third of the resume is the *heading*. It contains your name, phone numbers, address, and other details such as your occupation, titles, and so on. Some resume writers include the name of their profession, occupation, or field. In some examples, you'll see writers putting things like "CERTIFIED PHYSICAL THERAPIST" very prominently in the heading. Headings can also contain a goals and objectives subsection and a highlights subsection. These two special subsections are described later.

Body. In a one-page resume, the body is the middle portion, taking up a half or more of the total space of the resume. In this section, you present the details of your work, education, and military experience. This information is arranged in reverse chronological order. In the body section, you also include your accomplishments, for example, publications, certifications, equipment you are familiar with, and so on. There are *many* ways to present this information:

- You can divide it *functionally*—into separate sections for work experience and education.
- You can divide it *thematically*—into separate sections for the different areas of your experience and education.

Conclusion. In the final third or quarter of the resume, you can present other related information on your background. For example, you can list activities, professional associations, memberships, hobbies, and interests. At the bottom of the resume, people often put "REFERENCES AVAILABLE ON REQUEST" and the date of preparation of the resume. At first, you might think that listing non-work and personal information would be totally irrelevant and inappropriate. Actually, it can come in handy—it personalizes you to potential employers and gives you something to chat while you're waiting for the coffee machine or the elevator. For example, if you mention in your resume that you raise goats, that gives the interviewer something to chat with you about during those moments of otherwise uncomfortable silence.



Figure: Sample Résumé—Header and Objective. (2017; Amber Kinonen)

Resumes: Types and Design

To begin planning your resume, decide which type of resume you need. This decision is in part based on requirements that prospective employers may have, and in part based on what your background and employment needs are.

Type of organization. Resumes can be defined according to how information on work and educational experience is handled. There are several basic, commonly used plans or designs you can consider using.

- **Functional design:** Illustrated schematically below, the functional design starts with a heading; then presents either education or work experience, whichever is stronger or more relevant; then presents the other of these two sections; then ends with a section on skills and certifications and one on personal information. Students who have not yet begun their careers often find

this design the best for their purposes. People with military experience either work the detail into the education and work-experience sections as appropriate, or they create separate sections specifically for military experience at the same level as education and work experience.

- **Thematic design:** Another approach to resumes is the thematic design, illustrated schematically in the preceding. It divides your experience and education into categories such as project management, budgetary planning, financial tracking, personnel management, customer sales, technical support, publications—whichever areas describe your experience. Often, these categories are based directly on typical or specific employment advertisements. If the job advertisement says that Company ABC wants a person with experience in training, customer service, and sales, then it might be a smart move to design thematic headings around those three requirements. If you want to use the thematic approach in your resume, take a look at your employment and educational experience—what are the common threads? Project management, program development, troubleshooting, supervision, maintenance, inventory control? Take a look at the job announcement you're responding to—what are the three, four, or five key requirements it mentions? Use these themes to design the body section of your resume. These themes become the headings in the body of the resume. Under these headings you list the employment or educational experience that applies. For example, under a heading like "FINANCIAL RECORDS," you might list the accounting and bookkeeping courses you took in college, the company-sponsored seminars on Excel you took, and the jobs where you actually used these skills.



Figure: Two basic organizational approaches to resume design. Functional and thematic. (The "hanging-head" format is used in the functional-design version. (2017; *Resumes Show 'em how good you are* by David McMurrey)

Type of information. Types of resumes can be defined according to the amount and kind of information they present:

Detailed resumes: This type provides not only dates, titles, and names, but also details about your responsibilities and statements about the quality and effectiveness of your work. This is the type most people write, and the type that is the focus of most technical-writing courses. The rest of the details in this section of this chapter focus on writing the detailed resume.

Layout and Detail Format in Resumes

At some point in your resume planning, you'll want to think schematically about the layout and design of the thing. General layout has to do with the design and location of the heading, the headings for the individual sections, and the orientation of the detailed text in relation to those headings. Detail formats are the way you choose to arrange and present the details of your education and work experience.

Layout. Look at resumes in this book and in other sources strictly in terms of the style and placement of the headings, the shape of the text (the paragraphs) in the resumes, and the orientation of these two elements with each other. Some resumes have the headings centered; others are on the left margin. Notice that the actual text—the paragraphs—of resumes typically does not extend to the far left and the far right margins. Full-length lines are not considered as readable or scannable as the shorter ones you see illustrated in the examples in this book.

Notice that many resumes use a "hanging-head" format. In this case, the heading starts on the far left margin while the text is indented another inch or so. This format makes the heading stand out more and the text more scannable. Notice also that in some of the text paragraphs of resumes, special typography is used to highlight the name of the organization or the job title.

Detail formats. You have to make a fundamental decision about how you present the details of your work and education experience. Several examples of typical presentational techniques are shown below. The elements you work with include:

- Occupation, position, job title.
- Company or organization name.
- Time period you were there.
- Key details about your accomplishments and responsibilities while there.

There are many different ways to format this information. It all depends on what you want to emphasize and how much or how little information you have (whether you are struggling to fit it all on one page or struggling to make it fill one page). Several different detail formats are shown above.

Special Sections in Resumes

Here are some ideas for special resume sections, sections that emphasize your goals or qualifications.

Highlights, summary section. In the illustration below, you'll notice the "Highlights" section that occurs just below the heading (the section for name, address, phone number, etc.) and just above the main experience and education sections. This is a popular section in resumes. Resume specialists believe that the eye makes first contact with a page somewhere one-fourth to one-third of the way down the page—not at the very top. If you believe that, then it makes sense to put your very "best stuff" at that point. Therefore, some people list their most important qualifications, their key skills, their key work experience in that space on the page. Actually, this section is useful more for people who have been in their careers for a while. It's a good way to create one common spot on the resume to list those key qualifications about yourself that may be spread throughout the resume. Otherwise, these key details about yourself are scattered across your various employment and educational experience—in fact, buried in them.

Early-Career Resumes

If you are at the beginning of your career, all the advice and examples to this point may seem fine and good, but what if you have very little experience? Careers must start somewhere—and so must resumes. You can use several strategies to fill out your resume so that you appear to be the promising entry-level candidate that we all know you are.

- Cite relevant projects (both in academia and community) you've worked on, even if they are not exactly related to the career that you pursue.
- Spend extra time describing college courses and programs you have been involved in. What about team projects, research projects, or reports?
- Include volunteer work that has had any trace of technical in it. (If you've not done any volunteer work, get to volunteering!)
- List any organizations you have been a member of and describe any of their activities that have any trace of technical in them. (If you've not belonged to any technically oriented organizations, get to belonging!)
- Use formatting to spread what information you have to fill out the resume page.

In the student resume shown below, notice how much space that details about education take up. This resume writer could have included even more: Descriptions of key courses and projects could have been provided under a heading such as "Essential Coursework."

[Early-career resume](#). (Live link as of February 2021) Use the strategies suggested here to fill out your resume with good information.

Notice too that the resume above includes plenty of co-op and part-time work. The bulleted-list format extends the length of the resume so that it fills up the page. At the bottom of the resume, the writer lists awards and organizations. These too could be amplified if necessary. Details as to what the award is about, why this writer received it, and what those organizations are—these are examples of good information that could be added, if necessary.

Subtle changes in format can also help make your resume fill a page. Top, bottom, left, and right margins can all be pushed down, up, and in from the standard 1.0 inch to 1.25 inches. You can add extra space between sections. To do so, don't just press Enter. Instead, use the paragraph-formatting feature of your software to put 6 or 9 points, for example, below the final element of each section. Line spacing is another subtle way to extend a resume. If your software by default uses 13.6 points of line spacing for Times New Roman 12 point text, experiment with changing the line spacing to exactly 15.0 points.

Resume Checklist

As you plan, write, or review your resume, keep these points in mind:

- **Readability:** are there any dense paragraphs over 6 lines? Imagine your prospective employer sitting down to a two-inch stack of resumes. Do you think they are going to slow down to read through big thick paragraphs? Probably not. Try to keep paragraphs under 6 lines long. The "hanging-head" design helps here.
- **White space.** Picture a resume crammed with detail, using only half-inch margins all the way around, a small type size, and only a small amount of space between parts of the resume. Our prospective employer might be less inclined to work through that also. "Air it out!" Find ways to incorporate more white space in the margins and between sections of the resume. Again, the "hanging-head" design is also useful.
- **Special format.** Make sure that you use a special format consistently throughout the resume. For example, if you use a hanging-head style for the work-experience section, use it in the education section as well.

- **Consistent margins.** Most resumes have several margins: the outermost, left margin and at least one internal left margin. Typically, paragraphs in a resume use an internal margin, not the far-left margin. Make sure to align all appropriate text to these margins as well. Avoid unnecessary multiple margins: they give your resume a ragged messy look.
- **Terse writing style.** It's okay to use a rather clipped, terse writing style in resumes—up to a point. The challenge in most resumes is to get it all on one page (or two if you have a lot of information to present). Instead of writing "I supervised a team of five technicians..." you write "Supervised a team of five technicians..." However, you don't leave out normal words such as articles.
- **Bold, italics, different type size, caps, other typographical special effects.** Use special typography, but keep it under control. Resumes are great places to use all of your fancy word-processing features such as bold, italics, different fonts, and different type sizes. Don't go crazy with it! Too much fancy typography can be distracting (plus make people think you are hyperactive). Also, whatever special typography you use, be consistent with it throughout the resume. If some job titles are italics, make them all italics. Avoid all-caps text—it's less readable.
- **Page fill.** Do everything you can to make your resume fill out one full page and to keep it from spilling over by 4 or 5 lines to a second page. At the beginning of your career, it's tough filling up a full page of a resume. As you move into your career, it gets hard keeping it to one page. If you need a two-page resume, see that the second page is full or nearly full.
- **Clarity of boundary lines between major sections.** Design and format your resume so that whatever the main sections are, they are very noticeable. Use well-defined headings and white space to achieve this. Similarly, design your resume so that the individual segments of work experience or education are distinct and separate from each other.
- **Reverse chronological order.** Remember to list your education and work-experience items starting with the current or most recent and working backwards in time.
- **Consistency of phrasing.** Use the same style of phrasing for similar information in a resume—for example, past tense verbs for all descriptions of past work experience.
- **Consistency of punctuation style.** For similar sections of information use the same kind of punctuation—for example, periods, commas, colons, or nothing.
- **Translations for "inside" information.** Don't assume readers will know what certain abbreviations, acronyms, or symbols mean—yes, even to the extent of "GPA" or the construction "3.2/4.00." Take time to describe special organizations you may be a member of.
- **Grammar, spelling, usage.** Watch out for these problems on a resume—they stand out like a sore thumb! Watch out particularly for the incorrect use of its and it's.

A well-written résumé can do seven specific things for you and your job search:



1. It represents you when you are not there.

2. It quantifies your accomplishments.

3. It clearly states your abilities.

4. It shows your command of the written word.

5. It creates talking points for a future interview.

6. It proves your worth to your past employers.

7. It demonstrates what you can do for your future employer.

(2017; Amber Kinonen)

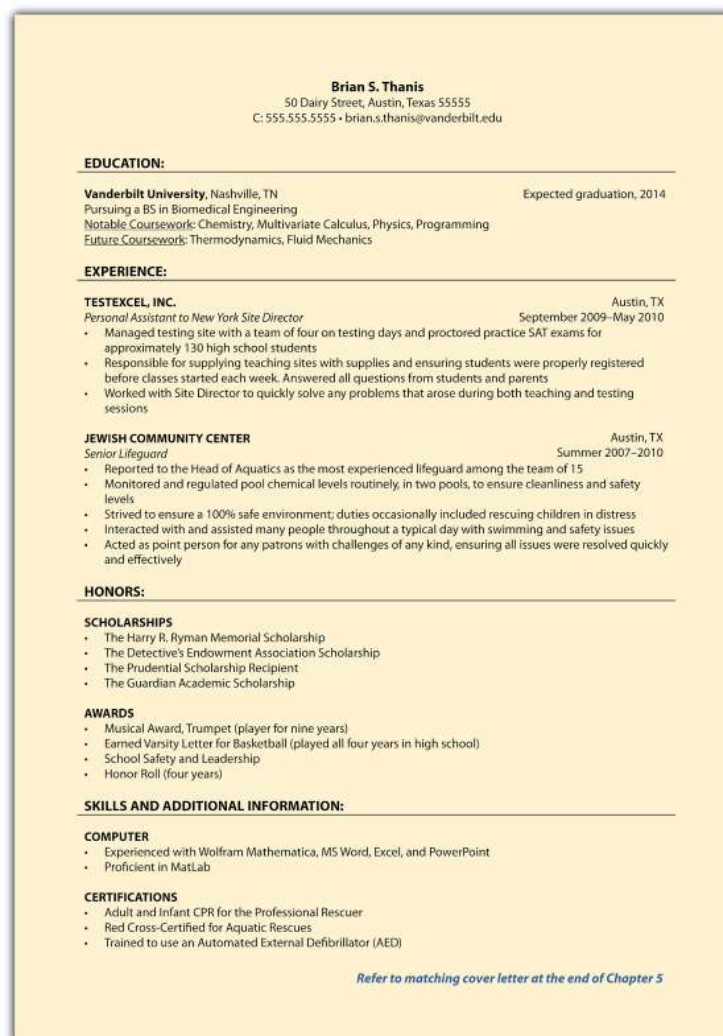


Figure: Sample Functional Résumé 2. (2017; Amber Kinonen)

Application/Cover Letters

In many job applications, you attach an application/cover letter to your resume. Actually, the letter comes before the resume.

The role of the application/cover letter is to draw a clear connection between the job you are seeking and your qualifications listed in the resume. To put it another way, the letter matches the requirements of the job with your qualifications, emphasizing how you are right for that job. The application/cover letter is not a lengthy summary of the resume—not at all. It selectively mentions information in the resume, as appropriate.

Application/Cover Letters

When writing an application/cover letter, remember that you probably have competition. Your audience is a professional who screens and hires job applicants—someone who may look through dozens or even hundreds of other applications on the day they receive yours. The immediate objective of your application/cover letter and accompanying resume is to attract this person's attention. Your ultimate goal is to obtain an interview.

As you write your application/cover letter, be sure you complete three tasks: catch the reader's attention favorably, convince the reader that you are a qualified candidate for the job, and request an interview.

Application letter checklist:

1. Identify the job by title and let the recipient know how you heard about it.
2. Summarize your qualifications for the job, specifically your work experience, activities that show your leadership skills, and your educational background.

3. Refer the reader to your enclosed resume.
4. Ask for an interview, stating where you can be reached and when you will be available. If your prospective employer is located in another city and you plan to visit the area, mention the dates for your trip.
5. If you are applying for a specific job, include any information pertinent to the position that is not included in your resume.

To begin planning your letter, decide which type of application letter you need. This decision is, in part, based on employers' requirements and, in part, based on what your background and employment needs are. In many ways, types of application letters are like the types of resumes. The types of application letters can be defined according to amount and kind of information:

- **Highlight letters**—Another type of application/cover letter, the type you do for most technical writing courses, tries to summarize the key information from the resume, the key information that will emphasize that you are a good candidate for the job. In other words, it selects the best information from the resume and summarizes it in the letter—this type of letter is especially designed to make the connection with the specific job.

Preparation and practice are critical to every step of the job search process, and the application/cover letter is no different. Five actions can help make your application/cover letter compelling:

1. Make a list of your top ten strengths.
2. Make a list of your top five weaknesses (also known as areas you'd like to strengthen).
3. Decipher the job description to identify each separate skill and qualification.
4. Compare the two lists to see if they are in alignment. Also identify the gaps—does the job description list something that you haven't done?
5. Highlight your top three skills that align with the job description as you will use them in your application/cover letter.

Your application/cover letter should be engaging, informative, and show your command of the written word. It should flow easily from a reader's perspective, making the connection between the opportunity and your ability to succeed if given the chance. The tone should be compelling. You should be excited about the opportunity and you should be confident of your ability to succeed (even if you truly lack the confidence).

Letter Template

The application/cover letter template includes three main sections:

1. The introductory paragraph.
2. The last paragraph, which reiterates your interest.
3. The magic middle.

The Introductory Paragraph

In the introductory paragraph, you introduce yourself to the hiring manager or recruiter. That first paragraph of the application letter is the most important; it sets everything up—the tone, focus, as well as your most important qualification. A typical problem in the introductory paragraph involves diving directly into work and educational experience. The paragraph should include three general items:

1. State the purpose of the letter—to inquire about an employment opportunity.
2. Indicate the source of your information about the job—newspaper advertisement, a personal contact, or other.
3. State one eye-catching, attention-getting thing about yourself in relation to the job or to the employer that will cause the reader to want to continue.

And you try to do all things like these in the space of very short paragraph—no more than 3 to 4 lines of the standard business letter.

Main body paragraphs

In the main parts of the application letter, you present your work experience, education, and training—whatever makes that connection between you and the job you are seeking. Remember that this is the most important job you have to do in this letter—to enable the reader see the match between your qualifications and the requirements for the job.

There are two common ways to present this information:

- **Functional approach**—This one presents education in one section, and work experience in the other. If there were military experience, that might go in another section. Whichever of these sections contains your "best stuff" should come first, after the

introduction.

- Thematic approach—This one divides experience and education into groups such as "management," "technical," "financial," and so on and then discusses your work and education related to them in separate paragraphs.

Another section worth considering for the main body of the application/cover letter is one in which you discuss your goals, objectives (the focus of your career) , what you are doing, or want to do professionally. A paragraph like this is particularly good for people just starting their careers, when there is not much to put in the letter. Of course, be careful about loading a paragraph like this with "sweet nothings." For example, "I am seeking a challenging, rewarding career with a dynamic upscale company where I will have ample room for professional and personal growth"—come on! give us a break! Might as well say, "I want to be happy, well-paid, and well-fed."

Keep in mind that cover letters should not simply reiterate the skills and experiences listed on the resume. They should add value to the job application package by sharing new information that demonstrates the applicant is appropriate for the position. Consider, for example, sharing an experience or project you have worked on that demonstrates your talents and accomplishments.

Closing paragraph

In the last paragraph of the application/cover letter, you can indicate how the prospective employer can get in touch with you and the best times for an interview. This is the place to urge that prospective employer to contact you to arrange an interview.

Joe Student
555 Campus Center Street
Hadley, MA 55555

Company Name
Company Address
City, State Zip

November 20, 2010

Dear Hiring Manager,

I am writing about the Marketing Summer Internship Program that I researched in my school's career services department. I am currently a junior at Success University with a major in marketing and a GPA of 3.6. I have executed several challenging marketing projects and I'm confident that I can succeed at your internship. Attached is my résumé in addition to my design portfolio.

My professional experience and various educational activities have prepared me well for this internship as I've honed the following skills:

- Research: Last fall, I researched over one dozen potential speakers to select the final list of three speakers that were invited to speak at my school's Women's Leadership Conference, which was attended by over 1,000 students. My team of five successfully invited the local leaders of various art galleries, in addition to other prominent leaders in the marketing field. The formal program featured solid advice given to participants on how to succeed in business with a particular focus on marketing, and we received extremely strong feedback from participants. The speakers also commented upon the overwhelming interest of the audience members and the quality of the students they spoke to directly.
- Creative problem solving: I have created many websites and logos to ensure that the brand image of each was relevant and strong. While working at XYZ Company last month, I designed a visual template for the new website using the research I conducted on potential marketing targets. My manager complimented me on my listening skills as they were critical to creating quality results.
- Communication: I am the lead campus event coordinator for our five "sister" campuses in the Massachusetts area. I've used my clear and transparent communication skills most recently when planning a marketing conference this past April for all five campuses. The entire project took approximately six months to plan, and during the first four months, each coordinator met via a conference call every two weeks. We constructed very clear project plans outlining everyone's responsibilities and due dates. We were vigilant in our communications because it was the only way to ensure success for the 500 participants, and the 10 speakers who attended. The conference received a 90 percent approval rating from participants.

I would like to reiterate my interest in your marketing internship. I am excited about the prospect of working for your company and I'm confident that my above mentioned skills will ensure my success. I will call you next week to follow up. In the meantime, please feel free to reach out to me at the phone number or email below.

Best regards,

Joe Student
Phone
E-mail address

Attachment

Figure: Application Letter Sample 1. (2017; Amber Kinonen)

Jane Smith
555 East 28th Street, Apartment 9E
New York, NY 10022

Company Name
Street
City, State, Zip

September 25, 2011

Dear Hiring Manager:

I would like to express my interest in the full-time position with your company which was posted on your website. I will graduate this spring from Fordham University with a BA in public accounting. My classmate, Alicia Smith, has shared with me her tax internship experience at ABC Company and she spoke very highly of her experience there. I am interested in this position because you have the largest tax practice in the United States, and I excel in large companies with a culture that is both inclusive and proactive.

My previous experiences make me a very strong candidate. I had two summer internships with XYZ Accounting, and partnered closely with my manager to set up the internal control system which helped us to meet regulatory requirements. In addition to improving the efficiency of our process, it saved our company significant time and money.

At EFG Inc., I organized and analyzed large amounts of data using excel and access. This work was shared with all accountants and strategies were created to compensate for areas of weakness. I'm proud to say that these programs and processes are still being used today, even though I worked at the company two years ago.

At Fordham University, teamwork and leadership are critical to our learning. I have been the vice-president of our accounting club for the past year. I managed the budget of \$7K but more importantly, worked closely with other student clubs leaders to hold a successful recruiter's panel discussion, which was attended by over 100 students. The panels resulted in many positive career discussions and will hopefully result in full-time jobs for my fellow students. This successful event would not have been possible without the teamwork of the accounting club, and the partnership we built with Career Services and the companies that were represented.

My experience and skills in addition to my enthusiasm for taxes, will allow me to make an immediate and meaningful contribution to your company. I am very interested in discussing my qualifications with you.

Thank you in advance for your consideration.

Sincerely,

Jane Smith
xxxxx@fordham.edu
(xxx) xxx-xxxx

Attachment

Figure: Application Letter Sample 2. (2017; Amber Kinonen)

Background Details in the Application/Cover Letter

One of the best ways to make an application/cover letter great is to work in details, examples, specifics about related aspects of your educational and employment background. Yes, if the resume is attached, readers can see all that details there. However, a letter that is overly general and vague might generate so little interest that the reader might not even care to turn to the resume.

In the application/cover letter, you work in selective detail that makes your letter stand out, makes it memorable, and substantiates the claims you make about your skills and experience. Take a look at this example, which is rather lacking in specifics:

✓ Example

As for my experience working with persons with developmental disabilities, I have worked and volunteered at various rehabilitation hospitals and agencies in Austin and Houston [*say which ones to inject more detail into this letter*]. I have received training [*where? certificates?*] in supervising patients and assisting with physical and social therapy [*which specific therapies?*]. Currently, I am volunteering at St. David's Hospital [*doing what?*] to continue my education in aiding persons with developmental disabilities [*which specific disabilities?*].

Now take a look at the revision:

✓ Example

As for my experience working with persons with developmental disabilities, I have worked and volunteered at *Cypress Creek Hospital in Houston* and *Capital Area Easter Seals/ Rehabilitation Center and Health South Rehabilitation Hospital in Austin*. I have received *CPR, First Aid, and Crisis Intervention certificates* from *Cypress Creek Hospital*. Currently, I am volunteering at *St. David's Hospital* assisting with *physical therapy* to persons with *developmental disabilities* in the *aquatics department*.

Early-Career Application/Cover Letters

In the preceding, you've seen some rather impressive application/cover letters. But what if you don't have all that experience—how do you construct a respectable application/cover letter?

- Cite relevant projects (both in academia and community) you've worked on, even if they are not exactly related to the career that you pursue.
- Spend extra time describing college courses and programs you have been involved in. What about team projects, research projects, or reports?
- Include volunteer work that has had any trace of technical in it. (If you've not done any volunteer work, get to volunteering!)
- List any organizations you have been a member of and describe any of their activities that have any trace of technical in them. (If you've not belonged to any technically oriented organizations, get to belonging!)
- As with the resume, you can use formatting to spread what information you have to fill out the resume page.

In the example student application/cover letter below, notice that the writer describes his coursework and the applications that he used. His reference to a professional exposition shows an active interest in a particular technical area. Moreover, his visit with an employee of the company with which he seeks employment is a crafty form of name dropping.

[Early-career application/cover letter](#). (Live Link as of February 2021) Use the strategies suggested here to fill your letter with good specific information.

Format

Formatting is important and must be neat and professional. It's recommended that you flush all text to the left, as various software programs can wreak havoc with indentations and tabs.

Greeting

Put extra effort into identifying the name of the hiring manager, so that your letter can be appropriately addressed to the specific person who will be reviewing résumés. Employers do not make this an easy step for you, and you have to do your research. Helpful exercises include researching the company website, reading news releases, and even calling the company to ask. Laziness will hurt your job search effort if this special effort is not made. If, after doing all the preceding, you still do not know the name of the person to whom you are sending your information, by all means, address it using Dear Hiring Manager or Dear Recruiter.

References

Pull from the information in the resume section since the link covers resumes and cover letters together. Just separate them.

Networking

A great way to meet people and market yourself is through networking. A long time ago, people would network at events in person. This was a great way to talk to someone give your "elevator speech" and get to know them. People would exchange business cards and it could lead to job opportunities. Now in the digital age, people network a bit differently. There are still events you can attend;

however, you can do most of your networking through social media. Many employers now have links to Facebook, Instagram, LinkedIn, and Twitter. These are platforms that allow you to connect with people and post job opportunities. I piece of advice, it is important to be careful of what you put on social media as employers will look at your social media to determine if you are a fit for their organization. There is much debate if employers should be allowed to use these platforms to determine employment. So, make sure to keep your social media neutral, so that you are not denied employment because of your post or pictures. In addition, you need to have your information current and up-to-date. If you have been hesitant to use social media, try it out and see the opportunities that might exist out there.

GENERAL JOB APPLICATION TIPS

- **Readability and white space**—Are there any dense paragraphs over 8 lines? Are there comfortable 1-inch to 1.5-inch margins all the way around the letter? Is there adequate spacing between paragraphs and between the components of the letter?
- **Page fill**—Is the letter placed on the page nicely: not crammed at the top one-half of the page; not spilling over to a second page by only three or four lines?
- **General neatness, professional-looking quality**—Is the letter on good quality paper, and is the copy clean and free of smudges and erasures?
- **Proper use of the business-letter format**—Have you set up the letter in one of the standard business-letter formats? (See the references earlier in this chapter.)
- **Overt, direct indication of the connection between your background and the requirements of the job**—Do you emphasize this connection?
- **A good upbeat, positive tone**—Is the tone of your letter bright and positive? Does it avoid sounding overly aggressive, brash, over-confident (unless that is really the tone you want)? Does your letter avoid the opposite problem of sounding stiff, overly reserved, stand-offish, blasé, indifferent?
- **A good introduction**—Does your introduction establish the purpose of the letter? Does it avoid diving directly into the details of your work and educational experience? Do you present one little compelling detail about yourself that will cause the reader to want to keep reading?
- **A good balance between brevity and details**—Does your letter avoid becoming too detailed (making readers less inclined to read thoroughly)? Does your letter avoid the opposite extreme of being so general that it could refer to practically anybody?
- **Lots of specifics (dates, numbers, names, etc.)**—Does your letter present plenty of specific detail but without making the letter too densely detailed? Do you present hard factual details (numbers, dates, proper names) that make you stand out as an individual?
- **A minimum of information that is simply your opinion of yourself**—Do you avoid over-reliance on information that is simply your opinions about yourself? For example, instead of saying that you "work well with others," do you cite work experience that proves that fact but without actually stating it?
- **Grammar, spelling, usage**—And of course, does your letter use correct grammar, usage, and spelling?

The job search process can feel overwhelming. Remember to start with researching what type of job you are looking for to start your career or move into a different journey. Once you have found some jobs that fit where you are in your career, take a look at the job description and note how your experiences fit what the employer is looking for in their position. You want to make sure your cover/application letter covers those points highlighted in the job description. Your resume will either be functional or chronological. You will gear your resume towards the job in which you are applying. You might have multiple versions of your resume based on the types of jobs you are applying. Be creative and make your resume and cover letter stand out. Employers have many job applications packages to review, so you want to make sure they look at it and pick you for an interview.

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