

INTRODUCTION TO PHYSICAL SCIENCE



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Introduction to Physical Science

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Licensing

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

CHAPTER OVERVIEW

1: What is Science?

Topic hierarchy

- [1.1: Lecture 1 - What is Science?](#)
- [1.2: Lecture 2 - Physical Quantities and Units](#)
- [1.3: Lecture 3 - Accuracy, Precision, and Significant Figures](#)

This lesson is based on Chapter 1 of the OpenStax College Physics textbook. Each section of the chapter will include my lecture slides as well as an embedded link to my YouTube video for that lecture.

1: [What is Science?](#) is shared under a [CC BY 4.0](#) license and was authored, remixed, and/or curated by LibreTexts.

1.1: Lecture 1 - What is Science?

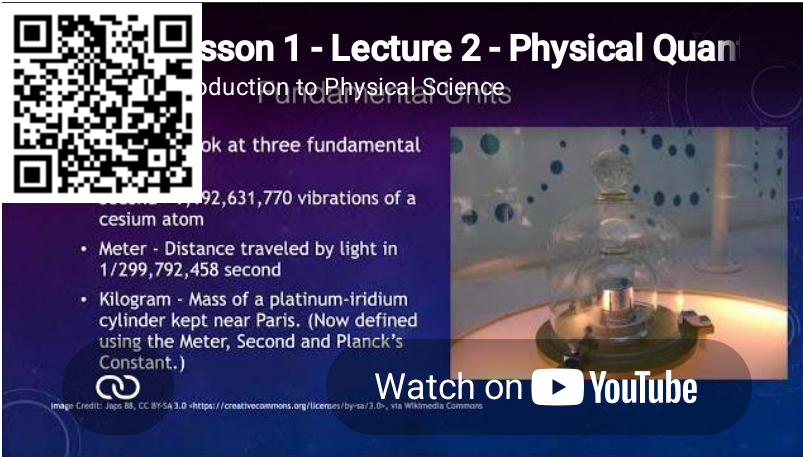
The lesson is based on section 1.1 in the OpenStax College Physics textbook. The lecture slides are provided in [PowerPoint](#), [Keynote](#), and [pdf](#) format.



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1.2: Lecture 2 - Physical Quantities and Units

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Lesson 1 - Lecture 2 - Physical Quantities and Units
Introduction to Physical Science

Look at three fundamental units:

- Second - 919,263,170 vibrations of a cesium atom
- Meter - Distance traveled by light in $1/299,792,458$ second
- Kilogram - Mass of a platinum-iridium cylinder kept near Paris. (Now defined using the Meter, Second and Planck's Constant.)

Watch on  **YouTube**

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1.3: Lecture 3 - Accuracy, Precision, and Significant Figures

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Lesson 1 - Lecture 3 - Accuracy, Precision, and Significant Figures

Introduction to Physical Science

Leading zeros are ALWAYS significant

- Leading zeros are NEVER significant
- Embedded zeros (zeros appearing between two non-zero digits) are significant
- Trailing zeros are significant ONLY if the decimal point is specified
- All digits to the left of the $\times 10^x$ in scientific notation are significant

Watch on  YouTube

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CHAPTER OVERVIEW

2: Motion in One Dimension

Topic hierarchy

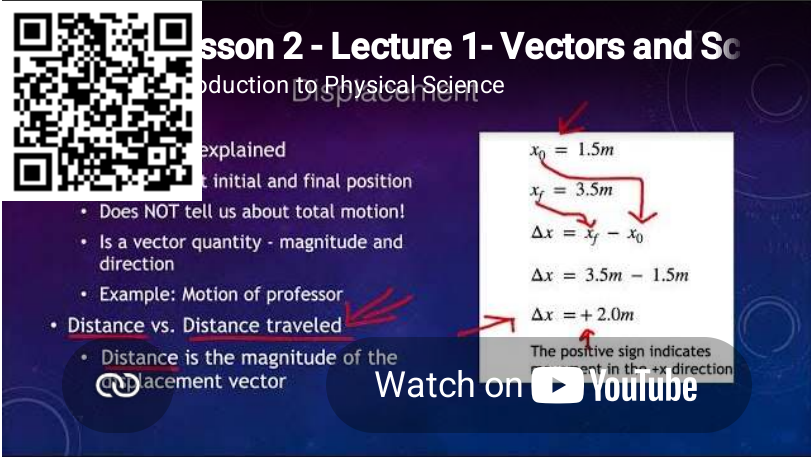
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This lesson is based on Chapter 2 (2.1-2.7) and Chapter 4 (4.1-4.4) and Chapter 6 (6.5) of the OpenStax College Physics textbook. Each section of the chapter will include my lecture slides as well as an embedded link to my YouTube video for that lecture.

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2.1: Lecture 1 - Vectors and Scalars

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Lesson 2 - Lecture 1- Vectors and Scalars
Introduction to Physical Science

Displacement explained

- Does NOT tell us about total motion!
- Is a vector quantity - magnitude and direction
- Example: Motion of professor
- **Distance vs. Distance traveled**
- Distance is the magnitude of the displacement vector

$x_0 = 1.5m$
 $x_f = 3.5m$
 $\Delta x = x_f - x_0$
 $\Delta x = 3.5m - 1.5m$
 $\Delta x = +2.0m$

The positive sign indicates displacement in the +x direction

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