

# SS Physics I

## Introduction

# Objectives

- Recognize the questions of physics.
- Define matter, mass, work and energy.

# What is Physics?

- Dictionary says physics relates to matter, energy, and their interactions.
  - What is matter?
  - What is energy?
  - How do they interact?

# Matter

- Matter, in scientific terms, is anything that has mass and takes up space.
- Mass is, in simple terms, the amount of "stuff" an object is made up of.

# Energy

- Physics texts oftentimes define energy as the ability or capacity to do work.
- Work can also be defined many ways, but let's start with the process of moving an object.
- If we put these two definitions together, we can vaguely define energy as the ability or capacity to move an object.

# Mass-Energy Equivalence

- In the early 20<sup>th</sup> century, Albert Einstein formalized a relationship between mass and energy.

Formula:  $E = mc^2$

- The source of all energy on Earth is the conversion of mass into energy.

# Next Steps

- For more information, check out:
  - [APlusPhysics.com](http://APlusPhysics.com)
  - [APlusPhysics: Your Guide to Regents Physics Essentials](#)