

# UNIT 1: INTRODUCTION TO SCIENCE

**Brainstorm** - List the first 5 to 10 ideas that come to mind when you consider each of these words:

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Science →

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Technology →

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Society →

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Environment →

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# 1. Science, Technology, Society & the Environment (STSE)

## What is Science?

- a **process** used to acquire new knowledge
  - = an ongoing method of learning
- information gathered through observations is **proven & tested** by further investigation
- **changing** body of information

## What is Technology?

- an **application** of science used to extend human capabilities
  - = using scientific knowledge & understandings to make our lives better

## Are Science and Technology the Same Thing?

- No
  - :Scientific knowledge is used to **create** technology
  - :Science **depends on** technology (uses technology in present studies)
- Ex. Computers
  - :creation of the silicon chip = **science**
  - :computers used in research = **technology**

## What is a Society?

- A **group** of people that share common goals or interests
- Ex. Prince Albert Citizens, SLC, etc,

## What is an Environment?

- the **surroundings** and **conditions** in which a person or group of people live

## Goals of Science?

- improve our **lifestyles** (inventions and resource management)
- increase our **understanding** of the world around us

## What is a Real World Example That Connects All Four of These?

### Nuclear Energy

- Science = nuclear fusion ( $E = mc^2$ , how much energy is released)
- Technology = nuclear reactor providing electricity for a certain area
- Environment = nuclear waste
- Society = nuclear weapons

## STSE Assignment

1. Which of the following refer to **SCIENCE** or to **TECHNOLOGY**?

Put an **S** beside those that are science and a **T** beside those that are technology.

- \_\_\_\_\_ a. Diamond is the hardest known substance.
- \_\_\_\_\_ b. Diamond is used to cut glass.
- \_\_\_\_\_ c. X-rays are valuable in detecting tooth decay.
- \_\_\_\_\_ d. Some eye operations are made, possible by the "invention" of lasers!
- \_\_\_\_\_ e. When exposed to oxygen, hydrogen gas can become explosive!
- \_\_\_\_\_ f. Nitrogen can be liquefied at  $-196^{\circ}\text{C}$ .
- \_\_\_\_\_ g. Extension cords contain copper wire.
- \_\_\_\_\_ h. Coal is formed from ancient plant material.
- \_\_\_\_\_ i. Hydrogen is an ideal rocket fuel.
- \_\_\_\_\_ j. Metals conduct electricity.

2. Describe how each of the technological developments affected society in a positive way:

- a) television: \_\_\_\_\_
- b) electricity: \_\_\_\_\_
- c) telephone: \_\_\_\_\_
- d) jet aircraft: \_\_\_\_\_

3. Describe 1 or 2 negative affects on society of each technology:

- a) television: \_\_\_\_\_
- b) electricity: \_\_\_\_\_
- c) telephone: \_\_\_\_\_
- d) jet aircraft: \_\_\_\_\_

4. Identify which of these technologies have an effect (+ive or -ive) on the environment and explain.

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How are Science, Technology, Society, and Environment related?

