Introduction to Technology

UNIT 1, LESSON 1

Big Idea

▶ ENGR-EET-1: Students will examine the nature of engineering & technology.

▶ ENGR-EET-2: Students will evaluate the impacts of engineering & technology on Society

Critical Knowledge/Elements

- Define engineering & technology
- Compare the relationship of math and science to engineering
- Assess the impacts of technological products and systems

Essential Question

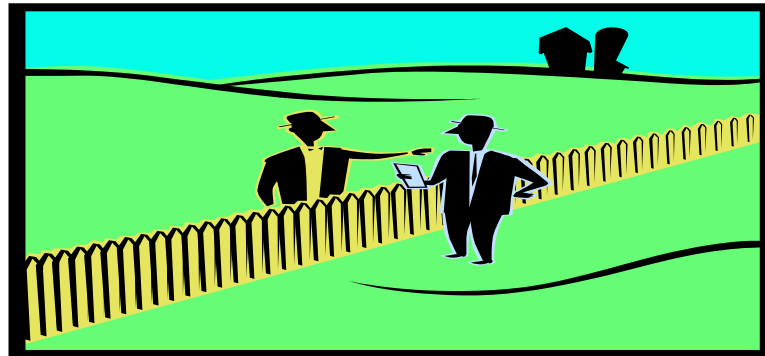What are "Technology" and "Engineering" and how do they affect us?

Word Wall

- Technology
- Engineering
- Science

- Societal Impacts
- Mathematics

What is technology?

On a sheet of paper, write your definition for technology and give 3 examples.
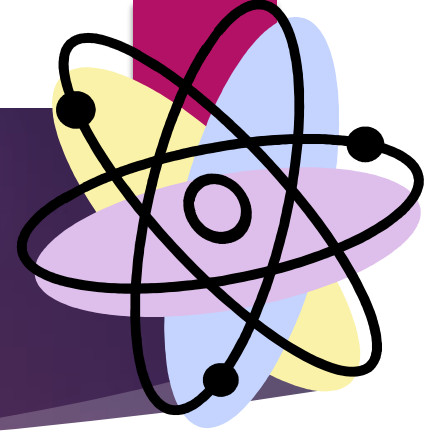
Discuss the Definitions

Technology
"Human innovation in action"

- Applies problem-solving strategies to solve real-world problems.

- Focus is on the human-made world.

- Uses the design process to develop solutions.

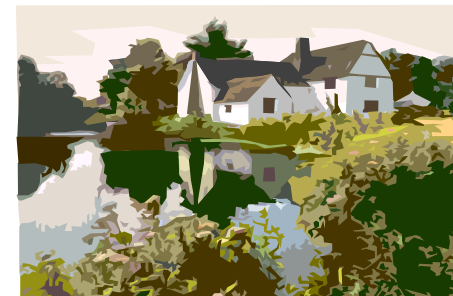- Knowledge and skills deal with creating, using, managing, and assessing technology.

Definition

"Technology is the use of knowledge to turn resources in to goods and services that extend our capabilities."

Science – The study of the natural world.

- Applies methods of inquiry to answer questions.

- Focus primarily on natural world.

- Uses the scientific method to propose explanations.

- Focus is on finding out "Why…"the design process to develop solutions.

Mathematics - the science of numbers, quantities, and shapes and the relations between them

- Important part of science and technology
- Used in trade & economics
- Determine a quantity or number of

► Engineering – A profession that combines science, mathematics, and technology to solve practical problems.

► Solutions gained by study, experience, and practice

► Requires both judgment and creativity to develop

► Solutions are evaluated using predictive analysis before construction of a product or system begins.

Technology's Impact

▶ The use of technology affects humans in various ways, including their safety, comfort, choices, and attitudes about technology's development and use.

▶ Technology, by itself, is neither good nor bad, but decisions about the use of products and systems can result in desirable or undesirable consequences.

▶ Technology has strongly influenced the course of history.
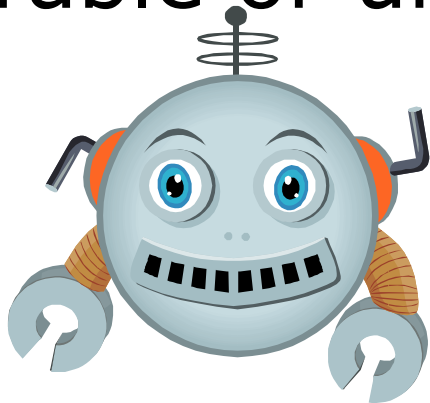
Example: Nuclear Power

▶ *Desirable Outcome* – Beneficial results (more electricity, safer country.

▶ *Undesirable Outcome* – Radioactive waste is dangerous or harmful to the environment or individuals (radioactive waste, global danger).

▶ *Planned Outcome* – Certain impacts are anticipated initially whether they were good or bad (more jobs, save natural resources).

▶ *Unplanned Outcome* – Impacts that are not anticipated occurred, sometimes for the good and sometimes for the bad (harmful effects to the environment, better research data for possible nuclear powered space propulsion).

Activity

Now, let's list ten technological products that you encounter on the way to or from school.

Then for each item, identify its desirable or undesirable outcomes .

Worksheet: Technology Encounters"

Conclusion

What are "Technology" and "Engineering" and how do they affect us?