

Energy Introduction

Read “Oil or Wilderness on Alaska’s North Slope?” on page 515 in your textbook.

Question: Can we depend on non-renewable energy resources for our energy needs?



Energy

Explicit Instruction

WHAT IS ENERGY?

Energy is the ability to do work.

- [Kinetic Energy](#) is energy in motion, the energy that an object has due to its motion.
- [Potential Energy](#) is energy to come, the energy that an object has due to its position or shape.
- Energy comes in many forms that can be converted from one form to another.
- Forms of energy include: mechanical, electrical, thermal, chemical, nuclear, and electromagnetic.

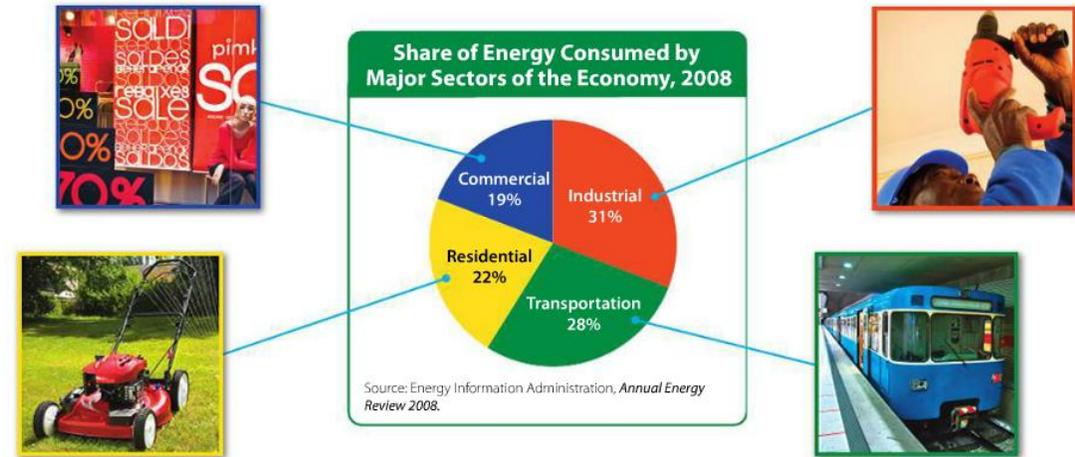


Energy

Explicit Instruction

SOURCES AND USES OF ENERGY

- Energy efficiency refers to the amount of energy put into a system that actually does work.
- Human society uses renewable and non-renewable energy resources in industry, transportation, commerce and residence.
- Renewable energy are nearly always available somewhere on the Earth's surface (sun, wind, moving water, wood, and geothermal)
- Non-renewable energy cannot be replaced (fossil fuels, nuclear energy).



Energy

Guided Practice

Describe what each of the following forms of energy are and come up with two examples of each.

Form of Energy	Description	Examples
Mechanical		
Electrical		
Thermal		
Chemical		
Electromagnetic		
Nuclear		



Energy

Independent Practice

1. Contrast kinetic and potential energy. Give an example of each.
2. Carbohydrate molecules are found in food. These carbohydrate molecules provide your body with energy. How does this happen?
3. Why is electricity considered a secondary source of energy?
4. Is the energy contained in fossil fuels potential or kinetic energy? Explain your answer.
5. A vehicle must have energy to run; however, not all the energy the vehicle is supplied is used to perform the intended work. Describe all of the pathways of energy conversion in a vehicle.
6. What are three ways you use electromagnetic energy?
7. Contrast energy use in developed nations and developing nations.

