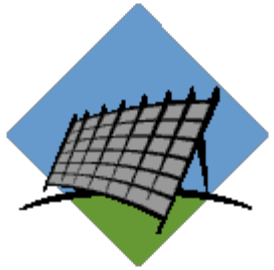
Sc. 10 Energy Conservation

Types and Forms – Use the template Note Sheet to take notes as you review the PowerPoint slides

Energy



- Energy exists in many forms.
- Energy can be moved from one object to another.
- Energy can be changed from one form to another.
- Energy cannot be created or destroyed.

What is Always Present But Never Visible?

ENERGY

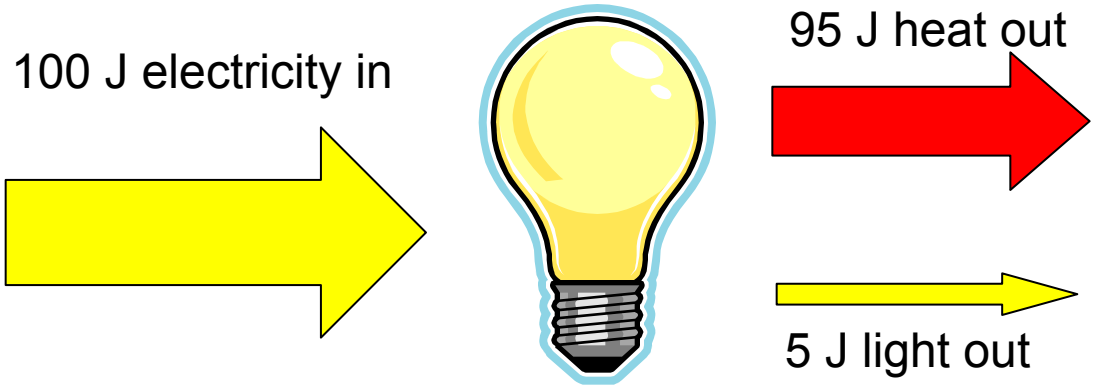
Although energy isn't visible,
you can detect evidence of energy.





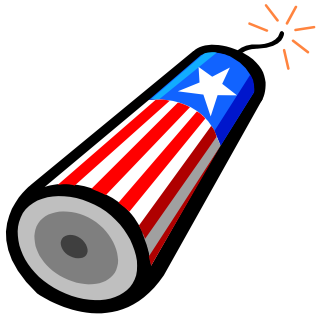
Law of Conservation of Energy

With every transformation, some energy is converted to less useful forms. Energy conversions are not 100% efficient. The energy output for the intended purpose is seldom the same as the energy we put in.



Potential Energy

The energy in matter due to its position or the arrangement of its parts

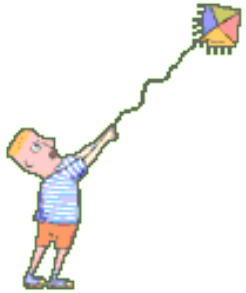


Kinetic Energy

Energy of a moving object











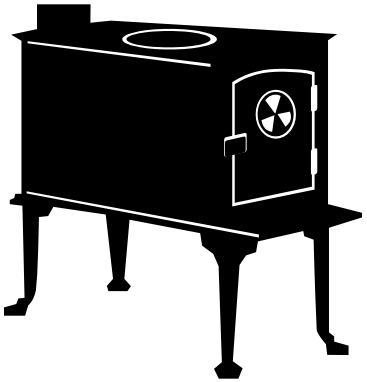
Six Forms of Energy

Mechanical

Chemical

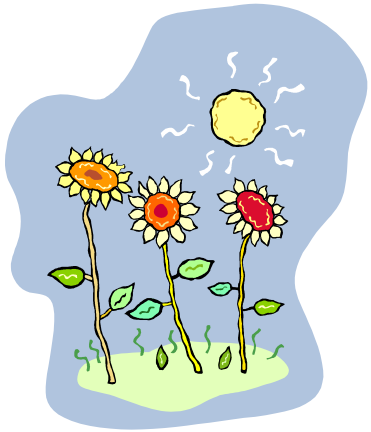
Electrical

Heat/Thermal



Nuclear

Light/Radiant



Mechanical Energy

- Energy that moves objects from place to place
- You use mechanical energy when you kick a ball or turn the pedals of a bicycle
- Other examples include water flowing in a stream, tires rolling down a road and sound waves from your iPod.

Chemical Energy

- Energy released by a chemical reaction
- The food you eat contains chemical energy that is released when you digest your meal
- Wood, coal, gasoline, and natural gas are fuels that contain chemical energy

Electrical Energy

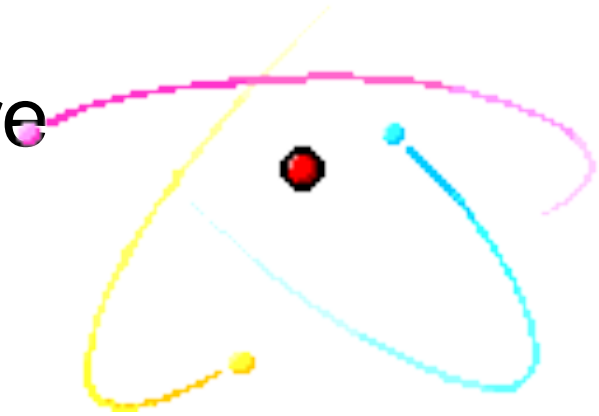
- Energy that comes from the electrons within atoms
- It can be generated at a power plant or inside a battery and can power everything from remote-controlled cars to refrigerators
- Lightning and static electricity are also forms of electrical energy

Heat (Thermal) Energy

- Energy created by the motion of atoms and molecules that occurs within an object
- Thermal energy exists when you heat a pot of water on a stove

Nuclear Energy

- Energy contained in the nucleus of an atom
- Nuclear energy is released when nuclei are split apart into several pieces, or when they are combined to form a single, larger nucleus

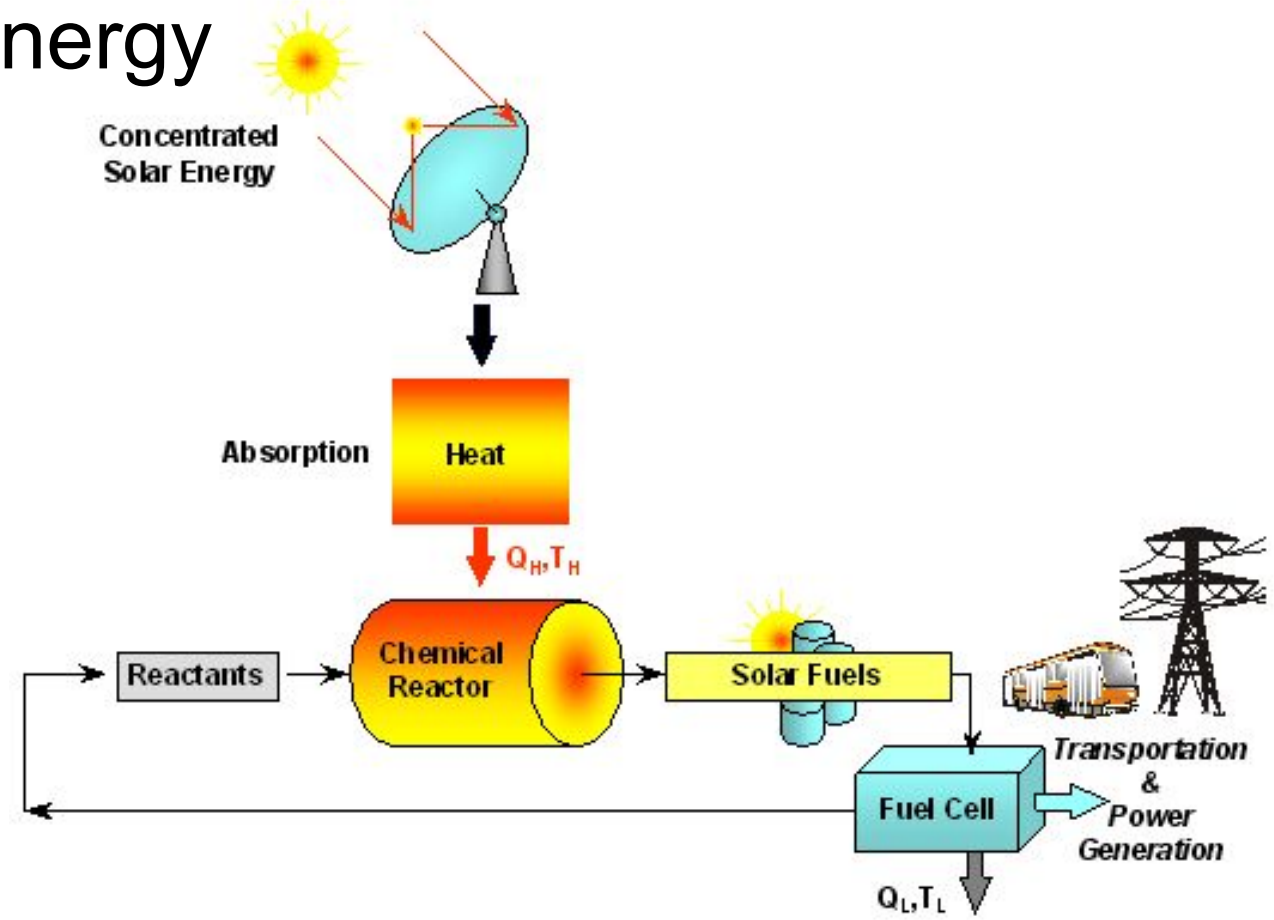


Light (Radiant) Energy

- Energy that can move through empty space
- The sun and stars are powerful sources of radiant energy
- The light given off by light bulbs and campfires are also forms of radiant energy

Energy Conversion

All forms of energy can be converted into other forms of energy



Energy Forms

- These forms of energy do work that end up as motion, light, or heat.
- Energy is used to power manufacturing, light buildings, propel vehicles, and communicate messages.

What else do we use energy for?

A Rube Goldberg Machine

- A Rube Goldberg Machine is a machine intentionally designed to perform a simple task in an indirect and complicated fashion.
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