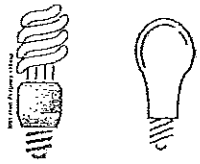
Forms of Energy

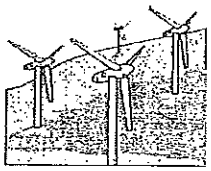
Essential Question: What are 6 forms of energy?



Please set up Cornell notes 

Why is it important that we know what forms energy comes in?








Food, sunlight, and wind all have energy, but they contain different forms of energy.

We are going to learn about 6 different forms of energy.

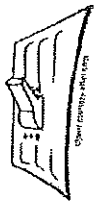
1. This helps us understand why energy can be neither created nor destroyed. Energy just changes forms

2. Knowing the different forms helps us to trace the various transformations that occur.

Energy is measured in Joules

Electrical Energy = energy that is carried by electricity.

What are examples of objects that use electrical energy?


Other examples?

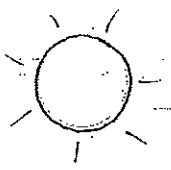
- cars
- computers
- cell phones

Chemical Energy = When chemicals are broken apart, energy is released.

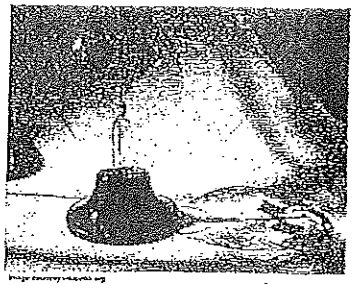

Examples: Batteries, gasoline, food in your body

Food Energy is Measured in Calories

Light Energy = energy carried by light

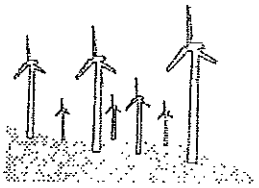



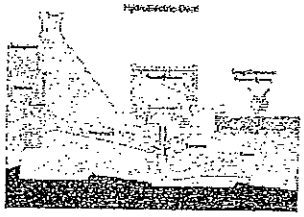

This object is called a radiometer.
Lets shine a flashlight on the paddles inside and see what happens.
Does it matter if we shine the light on the black side or the white side of the paddles?



Mechanical Energy = Energy because something is moving

What examples of mechanical energy can you think of?





Thermal Energy = energy due to temperature.

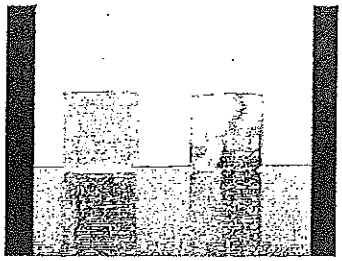
The temperature increases as its thermal energy increases. (The hotter it is, the more energy it has)

Thermal Energy = TOTAL kinetic energy

Temperature = Average kinetic energy

Try this!

Take 2 beakers. Fill one with hot water, and the other with cold water. Add a drop of food coloring to each beaker at the same time. What happens? Why?



Nuclear Energy = When atoms are split apart energy is released.

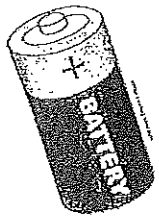
Nuclear energy comes from power plants

Match the form of energy with the correct example:

Word	Description	
electrical	Plugging in a blender	Light
light	Sun's rays	Electrical
chemical	Eating food	Chemical
mechanical	Spinning windmill	Thermal
thermal	Cooking food in the oven	Nuclear
Nuclear	Power plant	Mechanical

The Law of Conservation of Energy states that energy can never be created or destroyed.

If energy can't be destroyed, why do batteries go dead after they have been used for a while?



So energy isn't ever created or destroyed, **but can change from one form to another.**

Lets look at some examples:
(click to reveal)

An oven uses electrical to thermal.

A windmill uses mechanical to electrical.

A flashlight uses chemical to light.

If energy can't be created or destroyed, then the amount of energy on Earth will always be the same.

Then why does my Mom always tell me to turn off the lights to save energy?

When energy is transferred or transformed there is

ALWAYS

Waste energy in the form of heat.