



Energy:

Energy is the ability to do work.

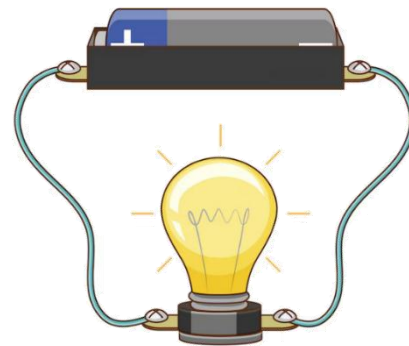
Requirement of Energy:

Energy is like a special power that helps us do things. Just like a battery gives power to a toy, or food gives energy to our bodies, energy helps everything work.

Examples:



Jumping uses energy to push off the ground.



Turning on a light uses electricity (a form of energy) to make the light shine.



Eating food provides energy for running, playing, and thinking.



A battery-operated toy uses energy from the battery to move.

Related SLO

Students' Learning Outcomes

- **Recognize that energy is required for doing work.**



Sources of Energy:

Energy is essential for our daily lives, and it comes from various sources. Here are some common sources of energy:

- **The Sun (Solar Energy)**

The Sun is the most significant source of energy for the Earth. Energy obtained from the Sun is called solar energy. Plants use this energy to make food.



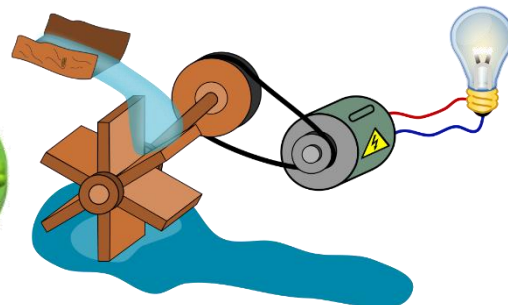
Related SLO

Students' Learning Outcomes

- **Identify natural sources of energy (e.g., Sun, wood, flowing water, wind coal, oil, gas)**

- **Flowing Water (Hydropower)**

The energy obtained from water is called hydropower. Water in rivers and streams can be used to make electricity, which is a form of energy.





Wind (Wind Energy)

- Wind energy is the power we get from the wind blowing through the air. Wind turbines, which are tall machines with spinning blades, capture this wind and convert it into electricity.



Coal

- Coal is a fossil fuel that can be burned to produce heat which is a form of energy. Which is then used to generate electricity in power plants.





Gas

- Natural gas is another fossil fuel that can be burned to generate heat and electricity. It is considered cleaner than coal, but it still releases carbon dioxide when burned.

Forms of Energy:

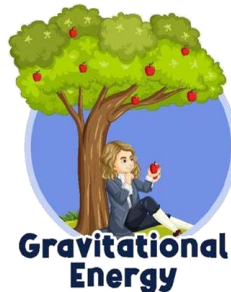
Energy comes in different forms, each useful for various purposes.

- Heat Energy
- Mechanical Energy
- Light Energy
- Solar Energy
- Chemical Energy
- Electrical Energy

Related SLO

Students' Learning Outcomes

- Understand that sources of energy are used for many things (move an object, heating, lighting, transportation, electric appliances etc).



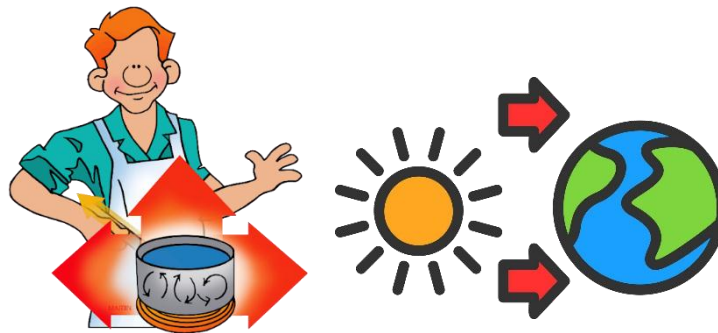


- **Heat energy: (Thermal Energy)**

Heat energy is the energy that makes things warm. It comes from sources like the sun, a stove, or a heater.

Example:

When you touch a warm cup of tea, the heat energy from the tea makes your hand feel warm. Heat energy can make things hot or even cook food.

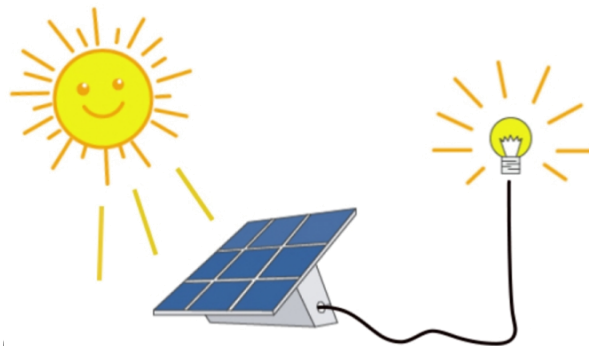


- **Light energy:**

Light energy is the energy that comes from light. It allows us see things around us. Light energy travels in rays and can make things bright.

Example:

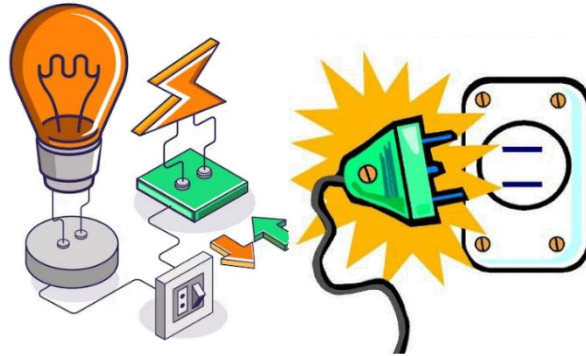
The sunlight helps us see during the day and makes flowers grow.





- **Electrical energy**

This is the energy that powers things like lights, computers, and toys. It comes from batteries or from the electrical outlets in your home.

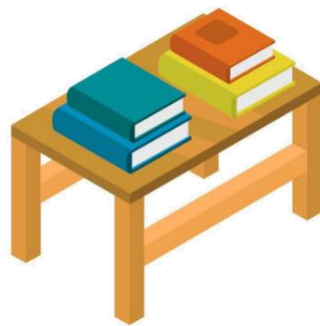


- **Mechanical energy**

Energy released from a moving object is mechanical energy. There are two types of mechanical energy.

Kinetic Energy: The energy of moving things. For example, a rolling ball or a flying bird has kinetic energy.

Potential Energy: The energy stored in an object because of its position. For example, a book on a high shelf has potential energy because it can fall down.



Potential Energy



Kinetic Energy