## GRADE VI ELECTRICAL ENERGY

At the end of the module, you should be able to:

• Identify energy and their uses (electrical)



Study the type of energy shown in each picture. Identify whether it is light energy, chemical energy or mechanical energy.





In this lesson you, will learn more about another form of energy - - - electrical energy.

#### Activity 1

What you need:

comb tiny bits of paper

What to do:

- 1. Place the tiny bits of paper (size of a dot) on the table.
- 2. Comb you hair several times in one direction.
- 3. Then put the comb about  $\frac{1}{2}$  cm above the head of your seatmate. Observe what happens.
- 4. Repeat Procedure 2. Then, place the comb near the bits of paper. What happened?
  - What do you think caused the comb and paper to attract each other?
  - What is produced when you rub or comb your hair repeatedly?





Did you know that...

- When you comb or rub your hair, the comb, gains electrons (negatively charged). The hair loses electrons (positively charged).
- As the negatively charged comb is placed near your seatmate hair or bits of paper the electrons in the hair or paper move away! The hair or paper is now positively charged.
- The rule says "**Unlike poles attract**". That's why the comb and the bits of paper attract each other.
- Rubbing produced static electricity
- The electrons in the comb and the electrons flowing along the wires forms electricity that light our homes.

#### Activity 2

What you need:

60 m wire a battery a flashlight bulb



What to do:

1. Find ways of connecting the materials to make the bulb light. Draw as shown in the illustration above.

Answer these:

- Did the bulb light? Why
- What energy flow along the wire?
- Where did this energy come from?
- What are some uses of this energy?
- Can you tell how electrical energy is produced in a battery?
- Trace the energy changes in this energy.

vement of electrons

Did you know that...

When wire is connected to a battery just like the illustration of a simple circuit, chemical reaction takes place inside the battery. The substance chemically react to produce excess electrons. These electrons flow along the wires and is called **electrical energy**.

#### Activity 3

What to do:



- 1. Study the illustration.
  - What makes the turbine move? When the turbine move, the generator works.
  - What is the work of a generator?



2. Study the illustration.



- What happens to sunlight n the solar cell?
- What changes happen to he sunlight?
- What form of energy is produced?
- What are the uses of this energy?
- Trace the energy changes

# <u>light energy</u>

sunlight

energy light of bulbs



## Activity 4

- 1. Look around the classroom. Identify things that uses of show electricity.
- 2. Study the illustration of a shopping mall below. Identify things which uses electrical energy and describe how it is used. Write your answers in your notebook.





#### I LEARNED THAT:

- **Electrical energy** is formed from fast movements of electrons along wires and other conductors.
- Electrical energy can be generated by the following: <u>dry cell</u>, <u>generator</u>, <u>wind turbine</u>, <u>solar cells</u>, <u>hydroelectric plant</u>, <u>geothermal plant</u> and others.
- A generator is a device that converts mechanical to electrical energy.
- Electrical energy has many uses.
- Enables electrical equipment to work.



You often see your mother wipe the electric bulb and fluorescent light. Why?





A. Choose and check the item that uses electrical energy

<u>1. floor polisher</u>	6. burning
<u>2.</u> dancing girls	7. car
<u>3</u> . refrigerator	8. wielding
4. writing	9. light bulb
5. microscope	<u>10. television</u>

B. Complete the graph. Choose the words from the box.





#### Key to Correction

### Try to Recall

#### **Exploration Time**

Activity 1

Activity 2

Activity 3

Activity 4

#### Apply it

- 1.
- 2.

## Test Yourself

- 1. movement of electrons
- 2-6.

hydroelectric plant, solar cells, geothermal plant, windmills

