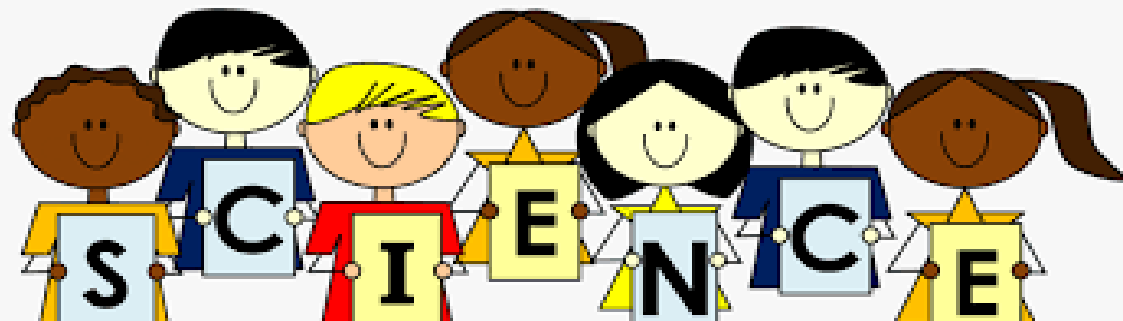


**GRADE 5
TERM 3
ADAPTED: THE RATP FOR 2021**

ENERGY AND CHANGE



ENERGY AND ELECTRICITY (3 weeks)

1. Cells and batteries.

New words:

Battery – A source of stored energy that is made of one or more cells.

Electrical circuit – A system that provides a path for the transfer of electricity.

Switch – Controls the electricity in an electric circuit.

Youtube video link: Difference between a cell and a battery

<https://youtu.be/4oxEn2NHHqE>

- Cells and batteries store energy.
- The stored energy is chemical energy.
- Energy is stored in cells until its needed to power a device.
- The two terminals of a cell are different.
- The one is the positive and the other end the negative terminal.
- Two or more cell together make a battery.
- A battery store more energy than a cell.
- When all chemical energy is used up, we say the cell/battery is flat.



A cell

ENERGY AND ELECTRICITY (3 weeks) cont...

How a torch works

- A torch light up when cells are used.
- The energy from the battery is transferred to the torch bulb.
- When the torch is switched on the light bulb turns on.
- The light bulb gives off light and heat energy.

Youtube video: How a torch works

<https://youtu.be/-n-etQ24Mlg>

Activity:

Learners put batteries inside a torch in the correct order then switch it on and off.

Suggested activity

Source: Thunderbolt Kids (5B)

Refer to pg. 29.



A torch



ENERGY AND ELECTRICITY (3 weeks) cont..

ELECTRICAL CIRCUITS:

- An electric circuit is a system that consists of different parts.
- We call these parts the components of the circuit. For example, batteries, light bulbs and connecting wires are components that can make up a circuit.
- When these components are connected the right way, electricity will be transferred from one component to another.
- In this example, the electricity would be transferred from the batteries through the connecting wire to the bulb and back through the wire to the batteries to complete the circuit.
- A **circuit** system that transfers electrical energy to where it is needed. A **system** is made up of two or more parts that work together to do something useful.



ENERGY AND ELECTRICITY (3 weeks) cont..

What is an electrical system?

- **An electrical system is called a circuit.** An example of a simple circuit consists of components as shown below.



Electrical wire



Light bulb holder



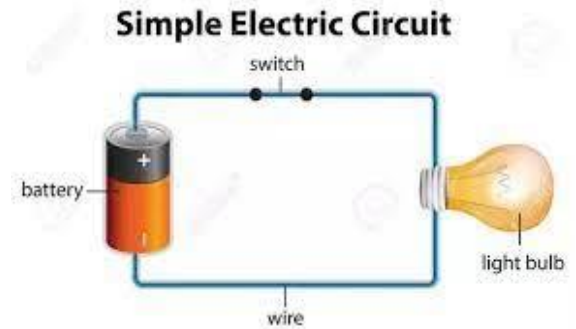
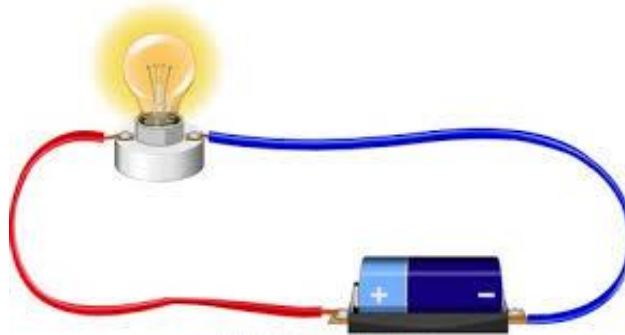
Light bulb



Cell/battery

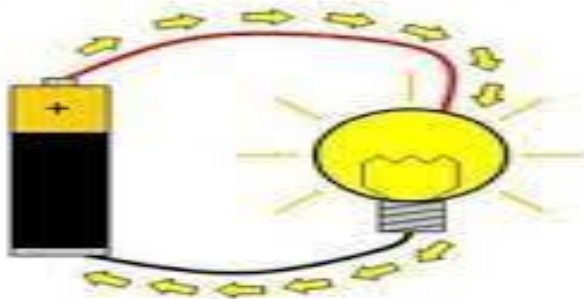
- When you connect these parts together, you can make an **electrical circuit**. This circuit will make the light bulb shine if and when all the parts are connected properly. The electrical energy moves very quickly to where it is needed. Electricity moves in the following way:
-
- Starting at the negative end (also called a Terminal) of the cell, electricity flows to the positive end / terminal of the cell.
- From the positive terminal of the cell it flows through the electrical wire.
- From the wires it flows into the light bulb which make the light bulb shine / light up.
- From the Light bulb the energy flows through the wires towards the negative terminal. Then the cycle starts again.

ENERGY AND ELECTRICITY (3weeks) cont...

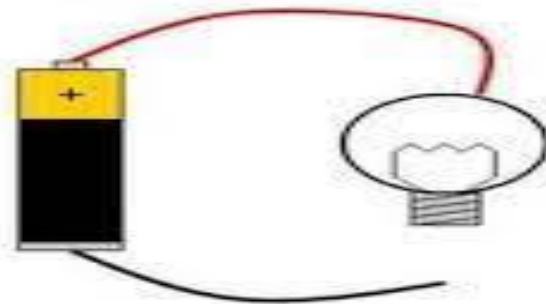


The light bulb will stop shining when the energy in the cell has been used up or if you break the circuit. When a circuit is connected and working (e.g. the light bulb shines), we say that it is a closed circuit. If there is a break (or a gap) in the circuit, we say that it is open.

Closed circuit



Open circuit



ENERGY AND ELECTRICITY (3 weeks) cont...

Symbols used in an electrical circuit.



Battery



Wire



Bulb



Buzzer



Motor



Switch (off)



Switch (on)

ENERGY AND ELECTRICITY (3 weeks) cont... Activities

Suggested activities

Sources: Gr.5 GDE Lesson plans 2019

Refer to pg. 254-260

Thunderbolt Kids (5B) Learners guide

Refer to pg. 30-32