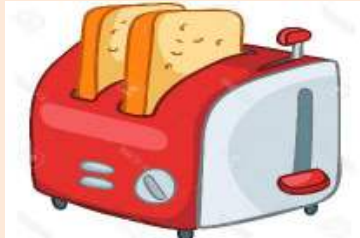




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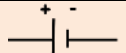
NATURAL SCIENCES: PLANNING & PREPARATION



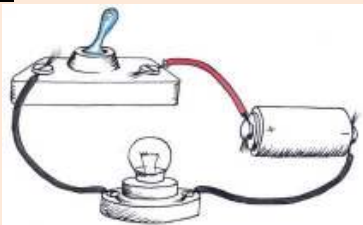
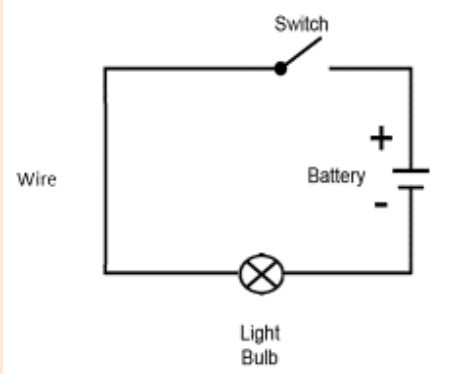
GRADE	8	TERM	3	KNOWLEDGE STRAND	ENERGY AND CHANGE
TEACHERS 	DATE: Term 3 Week 3; 2021				
	Topic / Content / Concepts / Skills (WHAT I am going to teach/guide/support...)		Teaching Methodologies & Classroom Management (HOW I am going to teach/guide/support...)		Resources / LTSM (WHAT I am going to use to teach/guide/support...)
	Topic: Energy transfer in electrical Systems Content & Concepts: - Circuits and current electricity - Components of a circuit To introduce the concept of: - A circuit - is considered a system for transferring energy - A closed circuit – is a circuit needed to make an electrical device work - Components – examples include a switch, a battery cell, conductors etc. - An electric circuit – a path through which electric charge can move and has a number of components connected together. - Electric current – is the flow of electric charges in a circuit		A circuit - is considered a system for transferring energy Refer to the examples: (a) a torch:  In a torch, the chemical energy from the battery is transferred into light energy (b) a toaster  In a toaster, the electrical energy is transferred into heat energy		Sasol Inzalo Textbook – Grade 8B Learners book – pages 20 – 29 Learner's own textbook – refer to the index of the book to find the section on Circuits and Current Electricity and Components of a circuit Watch the video: Simple Circuit: a fun, at-home science experiment - link https://youtu.be/INBYuA6KoLA Electricity and circuits – link https://youtu.be/D2monVkCkX4 How a lightbulb works – link https://youtu.be/YnMP1Uj2nz0

2. A closed circuit – is a circuit needed to make an electrical device work
3. Components of a circuit – include:
 - (a) Conducting wires which are usually made of metal and carry electricity over a short or long distance.
 - (b) Cells (or batteries) are chemical systems that store energy and are the source of electrical energy in a circuit.
 - (c) Switches are used to control the flow of electric current – when it is open it breaks the circuit and current cannot flow and when it is closed the current can flow.
 - (d) Resistors are devices that oppose the flow of current in a circuit – this means they resist the flow of current. Examples include the filament inside a light bulb, elements in kettles, heaters etc.

Symbols of circuit components:

Component	Symbol
Conductor	
Cell	
Battery	
Switches: Open	
Closed	
Resistors	

4. An electric circuit – a path through which electric charge can flow and has a number of components connected together. The

		path runs from one terminal of the cell – along the conducting wire – through the devices in the circuit – and back to the other terminal of the cell <u>Simple circuit:</u>  <u>The same circuit with component symbols:</u> 	
PARENTS 	<u>Parent to introduce the concept of:</u> 1. A circuit - is considered a system for transferring energy 2. A closed circuit – is a circuit needed to make an electrical device work 3. Components – examples include a switch, a battery cell, conductors etc. 4. An electric circuit – a path through which electric charge can move and	<u>ACTIVITIES AT HOME:</u> Support your child with this activity by: • Providing support when asked for it. • Guiding their learning through questions. • Showing an interest. • Providing a safe, secure area in which to do the work. • Allowing for the time it will require to do the activity.	<u>LAC:</u> • Glossary List / Science Dictionary <u>Materials:</u> • Science diary or Journal or workbook, pencils, • Video clips from the internet, Laptop / tablets / smart phones, etc.,

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has a number of components connected together.

5. Electric current – is the flow of electric charges in a circuit

- Helping them to acquire the materials they will need to investigate the topic using the key questions below
- Allowing them to make mistakes and seeing it as growth in their thinking and doing (don't give up attitude).
- Allowing them to fix their mistakes.

The idea is still that the learner should do their own work, but it is very important that they feel that their parents had some input and supported them.

Try to find activities and notes in the learner's textbook that covers the content described in the previous column.

Also, look for additional videos or pictures/diagrams on the internet to support the information provided in the column above.

- Learner's own textbook, articles on the internet etc.

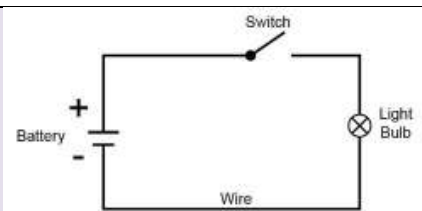
LEARNERS' ACTIVITIES

Learner activities: Worksheet:

1. Describe the energy transfer when you plug in a (1) heater and a (2) freezer at home.
2. Copy the table below and complete it by filling in the missing answers.

COMPONENT	FUNCTION
2.1	Source of energy in the circuit (can also store energy)
Open Switch	2.2
Closed Switch	2.3
Conducting wire	2.4
2.5	A component that opposes or inhibits electrical current in a circuit. It can also convert electrical energy to heat or light

3. Refer to the circuit diagram to answer the following questions.



- 3.1 Why is there a battery connected in the circuit?
- 3.2 Is there an electric current (charges) flowing through the circuit? Explain your answer.
- 3.3 Is the light bulb shining in the circuit? Explain your answer.
4. Refer to the circuit diagram in Question 3 and now **close** the switch.
- 4.1 What happens to the light bulb?
- 4.2 Is there an electric current flowing through the circuit? Explain your answer.
5. Draw a simple circuit by using the following components: a cell, 2 lightbulbs, a resistor, a closed switch and conducting wires.

Informal Assessment**ACTIVITY:** Recycling of batteries

Batteries which no longer work must not be thrown away in dustbins. They need to be recycled.

INSTRUCTIONS:

1. Find out why batteries should not be thrown away in normal dustbins.
2. Write a paragraph to explain why.
3. Find out where you can recycle batteries in your community. Write down the details of the centre(s) closest to where you live.

Values taught

Responsibility, Competence