Lesson 4:
Electrical circuits

ERGON ENERGY RETAIL
Part of Energy Queensland

POWER SAVVY

What have we done so far?

Sit in a yarning circle to discuss the following questions:

What are some things in our homes or classroom that use electricity?

What do these devices/ appliances do with the electricity?

Where does the electrical energy come from?

How do these devices/ appliances get the electricity to work?

Today’s task

Electricity travels in a pathway to power different devices and appliances.

That pathway is called a **circuit**. Today, we’re going to learn how circuits work, and we’re going to build one ourselves using our bodies, draw electrical circuits and later in the lesson have a go at building some!

Learning intention:

Understand how electrical circuits allow electrical current to flow and power different appliances and devices.

Electrical circuit key terms

On your worksheet, you will need to either write down the correct definition or give the correct term from the list below.

Show to your teacher when you are done to check your answers!

Circuit:
an electrical circuit is a closed loop or path that electricity can flow through to make a component work.

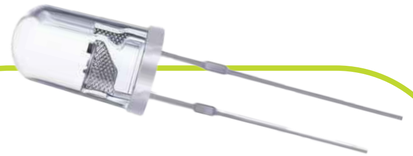
Component:
a component is a device in a circuit that has a specific function.

Cell:
a cell is a single unit that is needed for electricity to flow around a circuit.

Battery:
when two or more cells are used together, it is called a battery.

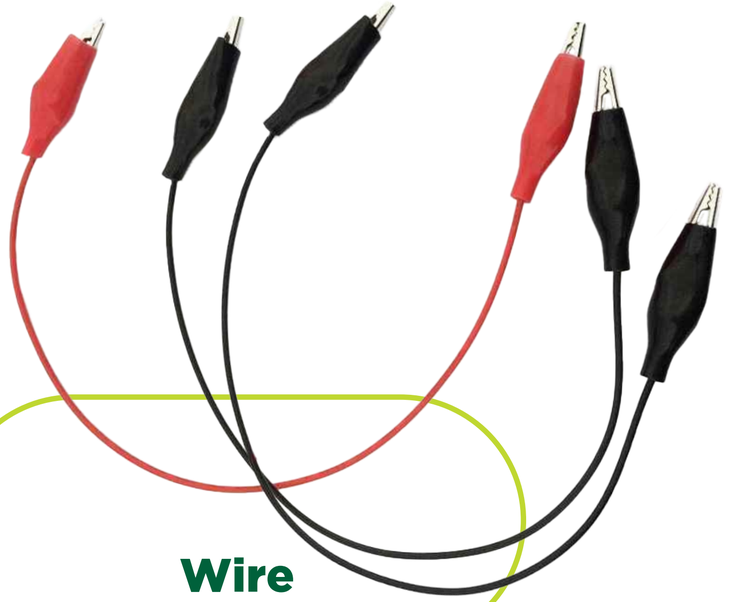
Terminal:
cells have a negative and positive terminal (end).

Components of a circuit

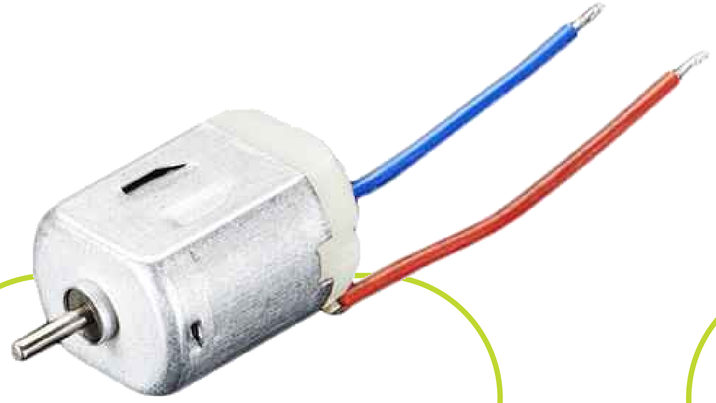


Lightbulb

Battery/cell



Wire



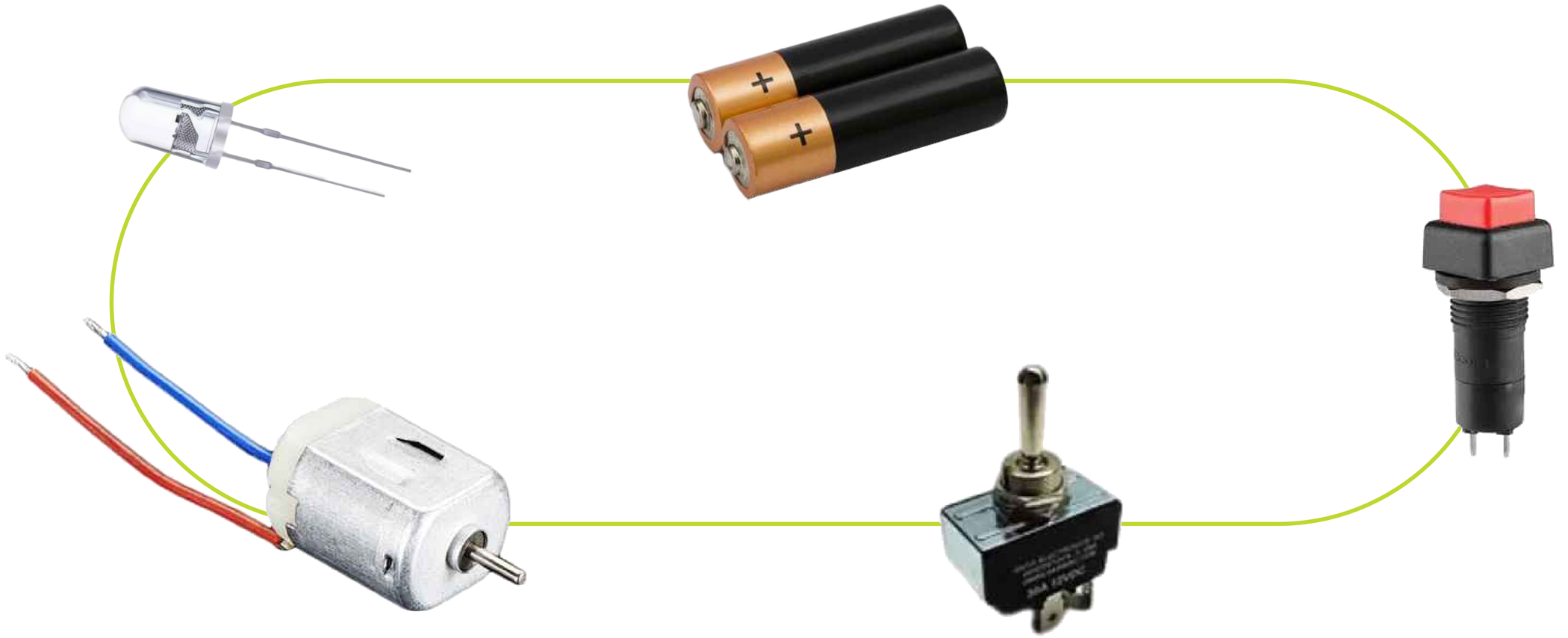
Motor

Switch

Buzzer

Make a human circuit!

Follow your teacher’s instructions on making a human circuit!

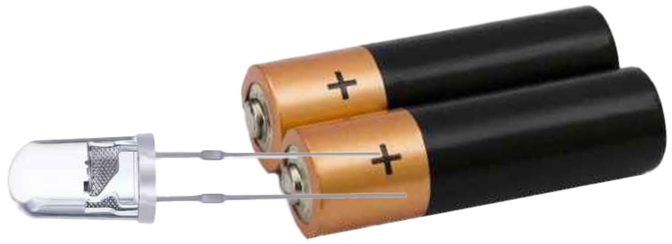


Plan your circuit

Using a piece of A4 paper, plan a circuit using the picture cards provided.

Stick the picture cards onto you're A4 paper and connect each picture by drawing a line between them.

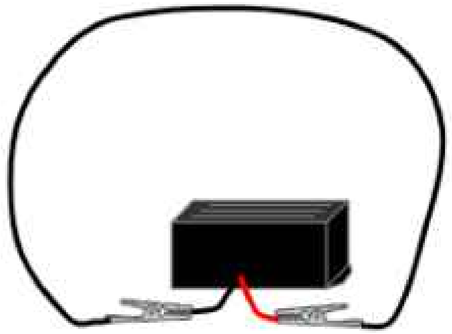
Remember: you need a power source and a way to be able to show your circuit is working!



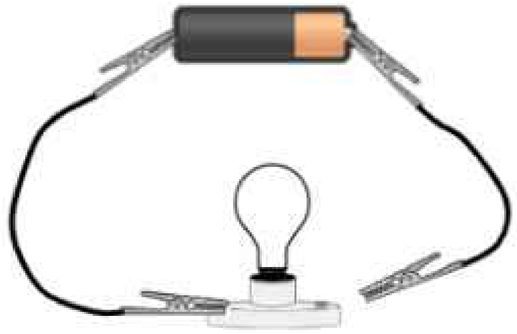
Will your circuit work?

Look at these examples of circuits below and discuss as a class why they won't work. Then look at your own circuit to see if there are any mistakes you need to correct!

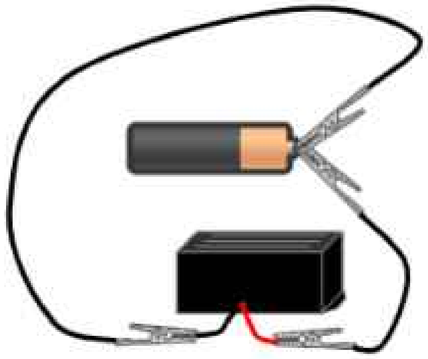
Can you explain what was wrong with each of these circuits?



Circuit 1



Circuit 2



Circuit 3

Make your circuit!

In pairs, use the Electrical Circuit Kits to make your circuit!

Reflection

Did your circuit work?
Why or why not?

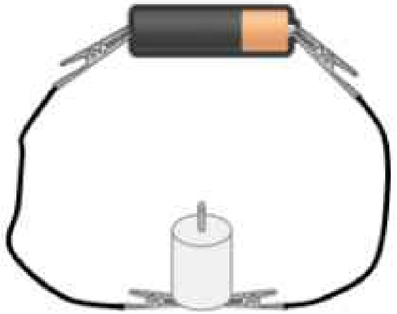
What changes did you make to your circuit?
Why or why not?

What other components could you add to your circuit to check if it is working?

Mission report!

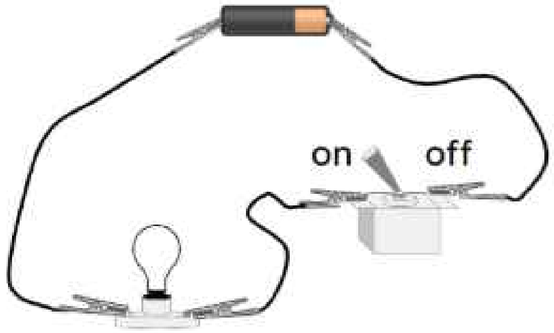
Complete the quiz to check your knowledge of circuits!

A



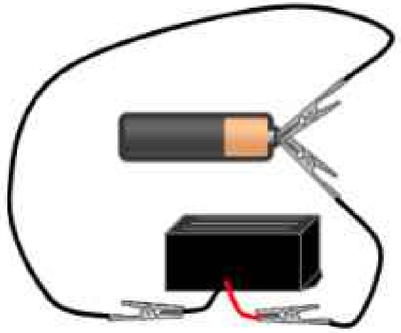
✓

B



✓

C



Mission report!

Complete the quiz to check your knowledge of circuits!

True or false?

Electricity is stored within cells and batteries.

T True

F False ✓

Justify your answer.

A The electricity is stored within the wires of the circuit.

B The cell or battery gives the push to start the movement or flow of electricity. ✓

Mission report!

Complete the quiz to check your knowledge of circuits!

What is the name of the part of the battery that the arrow is pointing at?

- **A** Negative end
- **B** Positive terminal ✓
- **C** Positive end
- **D** Negative terminal

Mission report!

Complete the quiz to check your knowledge of circuits!

In which direction does electricity flow in a circuit?

A From the positive to negative terminal ✓

B From the negative to positive terminal

C It depends on how you connect the components