

## Simple circuit

**Main Focus** Science - practise using electrical components

**Topic Links** Design Technology – build models with working lights

**Suitable for** Year 1/2

### Learning Objectives

Sc4 1b - about simple series circuits involving batteries, wires, bulbs and other components

Sc4 1c - how a switch can be used to break a circuit

### Resources

- Bulbs and holders
- Batteries and holders
- Wires
- Buzzers
- Cardboard

### Introduction

Discuss the importance of electricity in our world today. What do we use electricity for in the classroom? What could we use to help us see in the dark if we did not have any electricity? Get the children to name some devices in the classroom and home that use electricity.

Discuss electrical safety with the children. Reinforce the idea that electricity is dangerous. Get the children to list some rules about working with electricity. Explain to the children that we can test electricity at school by using batteries because they produce only a small amount of electricity. Warn the children about the dangers of playing with a plug socket.

Hold up a bulb. Discuss with the children how they can make the bulb light up using a battery. Test out one of the children's suggestions to see if it works. Get the class to explain how the circuit could be changed so that it lights up the bulb.

### Activity

Separate the children into small groups, and give each group one bulb, one battery and two wires (with crocodile clip ends). Ask the children to explore how to join the equipment to make the bulb light. Any groups who complete the main task can try adding extra bulbs and buzzers into their circuit.

Get all of the children to draw a simple diagram of their circuit. Write labels for their diagram on the board for the children to use as a word bank. As you work with individual groups, get them to consider what happens when a wire is disconnected. What happens to the bulb if I take this wire out? How can I light the bulb again?

### Differentiation

You can support some children by taking a digital photograph of their completed circuit that they can glue into their books. Get the children to name the different components in the photo. Some children can be extended by getting them to explore what happens when they add another bulb into the circuit or if they use longer and shorter wires.

### Plenary

Get one group to feedback to the rest of the class how they completed their circuit. Ask the children to describe what happened when one of the wires was removed. Introduce the term *circuit*. Get some children to model a circuit by joining hands. They can send an example wave around the circuit. Break the circuit by getting the children to unlink the hands and model how the wave cannot be sent around the circuit.