

Y4 Switches

KS2 Y4 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What happens when you open a switch in a circuit with a bulb?

Step 1 · What does opening the switch do?

Makes a gap in the loop

Step 2 · Can electricity flow across the gap?

No (air doesn't conduct)

Answer: The circuit is broken, so the bulb goes out.

Check: Open switch = gap = off. Closed switch = complete loop = on.

2. Now try one with the steps

Make a simple switch from card, two split pins and a paper clip.

Step 1 · Push two split pins through the card, a little apart

Step 2 · Hook a steel paper clip round one pin

Step 3 · Join a wire to each pin

Step 4 · Swing the clip to touch the other pin

Answer:

3. Practice

Have a go at each one. There is space underneath to work it out.

1. What does a switch do in a circuit?

2. When a switch is open, is the circuit complete?

3. When a switch is closed, does the bulb light (if everything else works)?

4. Is 'off' an open or a closed switch?

5. Name an object at home that has a switch.

6. What kind of switch is a doorbell button?

7. What material must the touching parts of a switch be made from?

8. Why is the case of a switch usually plastic?

9. In a paper clip switch, what closes the circuit?

10. Would a switch made from a lolly stick instead of a paper clip work? Why?

11. A loop has two switches. Switch A is open and switch B is closed. Does the bulb light?

12. Using question 11, what must you do to make the bulb light?

13. Design: which kind of switch would make a buzzer sound when someone stands on a doormat?

14. Explain how a fridge light turns on when you open the door.

4. Before you hand it in

A closed switch means 'off', like a closed door.

Closed switch = ON. Open switch = gap = OFF.

A switch makes electricity.

A switch controls the circuit — it's a gate, not a power source.

A switch can be made of anything.

Use metal for the contacts. Plastic or wood can be the handle.

With two switches in one loop, closing either one turns on the bulb.

In a single loop, all the switches must be closed.