

Y4 Series Circuits

KS2 Y4 Science · Follows the national curriculum

Name _____ Class _____ Date _____

1. Worked example

What do you need to make a bulb light?

Step 1 · Something to push the electricity

A battery (cell)

Step 2 · Something to light

A bulb in a bulb holder

Step 3 · A path all the way round

Two wires joining them in a complete loop

Answer: A battery, a bulb and wires joined in a complete loop, from one end of the battery to the other.

Check: This is a simple series circuit: everything is joined in one loop.

2. Now try one with the steps

Kiran's bulb won't light. How should he find the problem?

Step 1 · Check the loop

Step 2 · Check the bulb

Step 3 · Check the battery

Step 4 · Check both ends

Answer:

3. Practice

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

1. What is a circuit?

2. Name the THREE things you need to make a bulb light.

3. What is the job of the battery?

4. What is the job of the wires?

5. Will a bulb light if there is a gap in the circuit?

6. Name a component that makes a sound in a circuit.

7. Name a component that makes something spin.

8. Both wires from a bulb are joined to the same end of the battery. Will it light?

9. A bulb's filament is broken. Will it light in a complete circuit?

10. Give TWO reasons why a bulb might not light in a circuit.

11. How could you find out if a bulb is broken?

12. A loop has a battery, a bulb and a motor. How many wires are needed?

13. What does 'series circuit' mean?

14. Why must you never join a wire straight from one end of a battery to the other with nothing else in the loop?

4. Before you hand it in

One wire from a battery is enough to light a bulb.

Use two wires to make a complete loop through the bulb and both ends of the battery.

Electricity gets used up in the bulb, so nothing comes back to the battery.

Think of a loop, not a one-way street. Every part must be joined in the loop.

If a circuit doesn't work, the battery must be flat.

Check every connection and swap one part at a time.

Wires touching the same end of the battery still make a loop.

Connect to the + end AND the – end.