

Building and drawing simple circuits

Grade 6 science (Year 7 · Class 6) · Test

Name: _____ Date: _____ Class: _____ Mark: ____ / 20

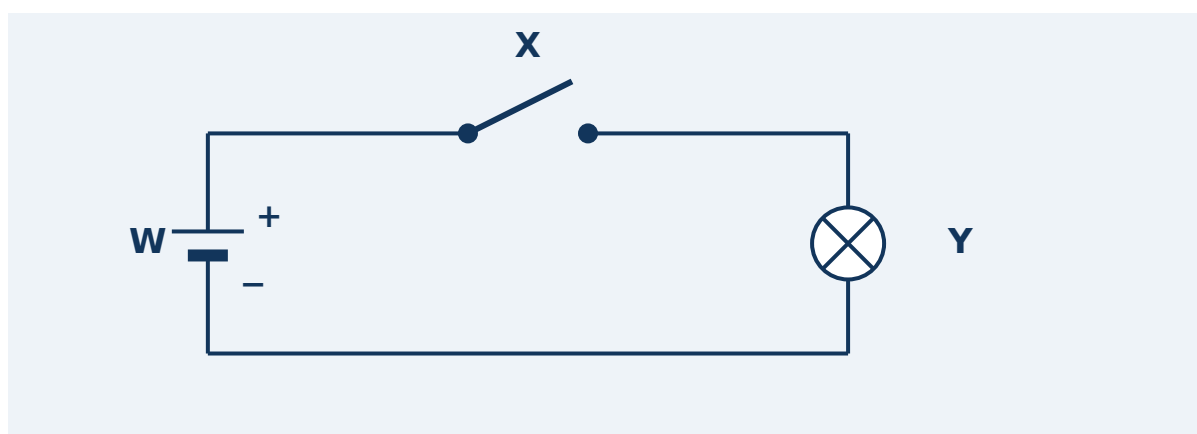
This test lasts 45 minutes and is worth 20 points. Use correct names for components and write clear reasons about gaps and loops. A ruler is useful for drawing circuit diagrams.

Level: Grade 6 science (Year 7 · Class 6) · **Curriculum:** MS-PS2-3

Time: 45 minutes · 8 questions · Total: 20 marks · Calculator allowed

Question 1 Labelled circuit (4 marks)

The diagram shows a simple circuit.



A circuit with three labelled components.

- Name component W. (1 mark)
- Name component X. (1 mark)
- Name component Y. (1 mark)
- Explain why the bulb is off. (1 mark)

Question 2 Conductor and insulator (2 marks)

Define the terms *conductor* and *insulator*, and give one example of each.

Question 3 Torch that fails (3 marks)

Aarav puts a new cell into his torch but the bulb will not light. A thin plastic film is left on the metal contact of the cell. Explain why the bulb stays off.

Question 4 Sorting objects (2 marks)

A steel spoon, a wooden ruler, a copper pipe and a glass jar are tested. State which two are conductors.

Question 5 Drawing a circuit (3 marks)

Draw a circuit diagram containing a cell, a closed switch and a bulb, joined in one loop. Label each component.

Question 6 Mains warning (2 marks)

Explain why students never use a mains socket in a school experiment on circuits.

Question 7 Cable covering (2 marks)

Explain why electrical cables are covered in plastic, although the wire inside is metal.

Question 8 Door alarm (2 marks)

Wanjiru builds a model door alarm. A lamp is in a circuit with a gap. A strip of aluminium foil on the door fills the gap when the door is shut. Explain why the lamp is on when the door is shut and goes off when the door opens.