

Grade 4 Science Assessment: Electricity

Learning objective: To assess understanding of electrical circuits, components, and the safe use of electricity.

Read each question carefully. Ensure you use scientific terminology. Where a calculation is required, show your working out.

Max the monkey is helping his friends set up a science lab. He has a box containing cells, wires, bulbs, and buzzers. He needs to make sure all his circuits are complete so the equipment works. Nova the owl is watching closely to ensure everything is safe and that they do not use too many components in one circuit.

Word bank: cell · battery · bulb · buzzer · switch · conductor · insulator · circuit · component

1. Identify two components that would allow a bulb to light up in a simple circuit. (2 marks)

2. Explain the function of a switch in a circuit. What happens to the flow of electricity when the switch is open? (3 marks)

3. Max adds a second cell to his circuit. Predict what will happen to the brightness of the bulb and explain why. (4 marks)

4. List three materials that act as electrical conductors and one material that acts as an electrical insulator. (4 marks)

5. Draw a circuit diagram using standard symbols that includes one cell, one closed switch, and one buzzer. (4 marks)

6. Nova wants to build a circuit to warn the forest animals if it starts to rain. Write a short paragraph explaining why it is important to only use battery-powered cells for this experiment rather than plugging it into the mains electricity in a house. (8 marks)

Draw: In the space provided for the circuit diagram, use a pencil and ruler to draw: a cell (long and short line), a closed switch, and a buzzer (circle with a B inside).



Extension challenge: Total: /25