

Year 6 Science Assessment: Electricity

Learning objective: To assess understanding of electrical circuits, components, and the effects of voltage on electrical systems.

Read each question carefully. Use the provided word bank if you need help with scientific terminology. Ensure your explanations are clear and use the correct scientific vocabulary.

Nova the owl is building a series circuit in the school science lab. She uses a battery, wires, a switch, and two bulbs. Max the monkey is helping her test how changing the number of cells affects the glow of the bulbs.

Word bank: cell · battery · component · voltage · resistance · circuit · symbol · brightness · conductor · insulator

1. Draw the standard circuit symbol for a cell and a bulb. (2 marks)

2. Nova adds a second bulb to her circuit in series. Explain what happens to the brightness of the bulbs and why. (3 marks)

3. Max replaces the 1.5V cell with a 3V battery. Describe the effect this will have on the circuit. (2 marks)

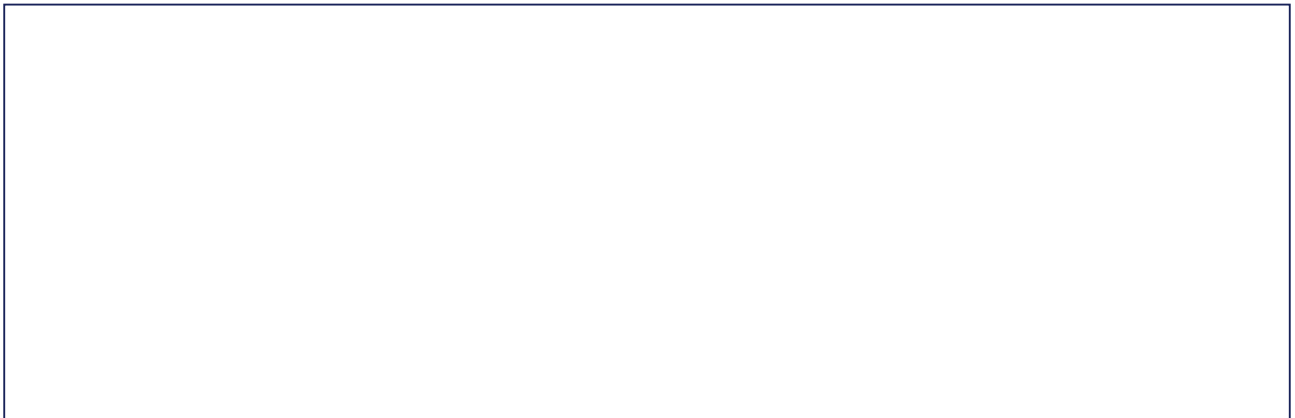
4. Define the difference between a conductor and an insulator. Give one example of each material used in electrical wiring. (4 marks)

5. Kit the fox is designing a torch. He needs to include a switch. Explain the function of a switch in a circuit and what happens to the flow of electricity when the switch is 'open'. (4 marks)

6. Look at a circuit containing a buzzer and a motor. If the motor stops working, explain why the buzzer might also stop working if they are connected in a series circuit. (5 marks)

7. If a circuit has a total resistance that is too high, what happens to the current? Explain your reasoning. (5 marks)

Draw: Draw a circuit diagram containing one battery, one closed switch, and two bulbs connected in a series circuit. Label your components clearly.



Extension challenge: Total: /25