

Year 4 Design Technology: Electronics Assessment

Learning objective: To identify electronic components, understand simple circuits, and explain how switches work.

Read each question carefully. Use the word bank to help you. Write your answers in the spaces provided.
Max the monkey is here to help you solve these puzzles!

Max the monkey is building a small lamp to help him read his books at night. He needs to connect a battery, a bulb, and a switch using wires to make the light turn on. This path for electricity is called a circuit.

Word bank: battery · bulb · switch · wire · circuit · energy · closed

1. 1. Look at Max's circuit. Name two parts he needs to make the light work. (2 marks)

2. 2. What is the purpose of a battery in a circuit? (2 marks)

3. 3. What happens to the bulb if the switch is open? (2 marks)

4. 4. Draw a line to match the component to what it does:

Battery -> [] Lets electricity flow

Wire -> [] Turns the circuit on or off

Switch -> [] Provides power (3 marks)

5. 5. Max wants to make his lamp brighter. Explain what he might need to do to his circuit. (3 marks)

6. 6. Imagine you are helping Max build a torch. Write a set of instructions. Start with: First, connect the wire to the battery. Use the word bank words to help you. (5 marks)

7. 7. Why is it important to use plastic to cover wires? (Hint: Think about safety). (4 marks)

8. 8. If a bulb costs £2.50 and a battery costs £1.20, how much do they cost altogether? (4 marks)

Draw: In the box below, draw a simple circuit with one battery, one bulb, and one switch. Use a line for the wire.

Extension challenge: Total: /25. Challenge: Explain what happens if you add a second bulb to the same circuit. Does it get brighter or dimmer?