Nova’s Guide to Electrical Circuits

Learning objective: To identify common appliances that run on electricity and understand the components of a simple series circuit.

Read the text carefully and answer the questions below in full sentences.

Nova the owl loves to study the night sky, but even she needs a flashlight to read her star charts! Electricity is a type of energy that powers many things in our homes, from kettles to televisions. An appliance is a device that uses electricity to work. Some appliances plug into the wall using a mains socket, while others use batteries to provide a portable source of power.

To make an electrical device function, we need a complete loop called a circuit. A simple circuit includes a power source, like a battery, and wires that allow the electricity to flow. We also need a component, such as a bulb or a buzzer, to show that the electricity is moving. If there is a break in the circuit, like a loose wire or a switch that is turned off, the electricity cannot flow and the bulb will not light up. Nova reminds us that we must always be careful; electricity is very useful, but it can be dangerous if we are not sensible with plugs and wires.

Word bank: appliance · circuit · battery · conductors · insulators · components · electricity

1. Identify two examples of appliances mentioned in the text. (2 marks)

2. According to the text, what two things must a simple circuit include to be complete? (2 marks)

3. Why does a bulb stop working if there is a break in the circuit? (2 marks)

4. What does Nova suggest about how we should handle electrical items? (2 marks)

5. Why do you think it is important for a battery-powered toy to have a switch? Explain your reasoning. (2 marks)

Draw: Draw a simple circuit including a battery, some wires, and a lightbulb. Label the parts clearly.

Extension challenge: List five items in your own home that use electricity and state whether they are powered by a mains plug or a battery.