

Nova's Electrifying Science Challenge

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

Read the front of each flashcard to test your knowledge about electricity. Use the back of the card to check if you have identified the correct term or concept.

What is a simple electrical circuit?

A closed loop that allows electricity to flow from a power source to a component, such as a bulb or buzzer.

What is the function of a cell or battery in a circuit?

It acts as the power source, providing the energy needed to make the electricity flow.

Define a conductor and give an example.

A material that allows electricity to flow through it easily, such as copper or steel.

What is an insulator and why is it useful?

A material that does not allow electricity to flow through it, such as plastic or rubber; it is used to cover wires to keep us safe.

What happens in a circuit when you add a switch?

The switch allows you to open or close the circuit, which controls whether the electricity can flow or is stopped.

Name three common household appliances that require electricity to function.

Possible answers include: a toaster, a television, a kettle, a lamp, or a washing machine.

Explain why a bulb might not light up in a simple circuit.

The circuit might be incomplete (broken), the battery might be flat, the bulb might be broken, or the components might not be connected properly.

What is the difference between a series circuit and a broken circuit?

A series circuit is a complete loop where electricity can travel; a broken circuit has a gap, so the electricity cannot flow.

Compare and contrast conductors and insulators.

Conductors allow electrical current to pass through them, while insulators block the flow of electrical current.

Justify why electrical wires are coated in plastic.

The plastic is an insulator that prevents the electricity from escaping the wire and protects people from receiving an electric shock.

What might happen if you added a second bulb to a simple circuit with one battery?

The bulbs would likely glow more dimly because the energy from the battery is being shared between two components.

Explain why Nova the owl must be careful around electrical power lines.

Electricity is very powerful and can travel through objects that are not properly insulated, making it dangerous to be near power lines.