

Nova's Night-time Circuit Challenge

Learning objective: To identify common appliances that run on electricity and understand the difference between mains electricity and battery power.

Nova the owl is getting her observatory ready for a night of stargazing! She has gathered several items, but she isn't sure which ones need to be plugged into the wall (mains) and which ones need batteries. Look at the word bank and sort the items into the correct columns in the table below.

Word bank: Television · TV remote control · Toaster · Handheld torch · Washing machine · Wristwatch · Electric kettle · Mobile phone (when charging)

1. Draw a table with two headings: 'Mains Electricity' and 'Battery Power'. Place each item from the word bank into the correct column. (6 marks)

2. Why is it important to never touch a plug socket with wet hands? (2 marks)

3. Nova has a toy that uses two batteries. If she puts the batteries in the wrong way around, will the toy work? Explain why. (2 marks)

4. List one household appliance that uses electricity but is not in the word bank. (1 mark)

5. True or False: A circuit must be complete for a light bulb to shine. Explain your answer. (2 marks)

Draw: Draw a simple circuit diagram showing a battery, a wire, and a bulb that is lit up. Label the parts.



Extension challenge: Imagine Nova wants to build a circuit to light up her telescope. If she uses a buzzer instead of a bulb, what would happen when the circuit is complete?