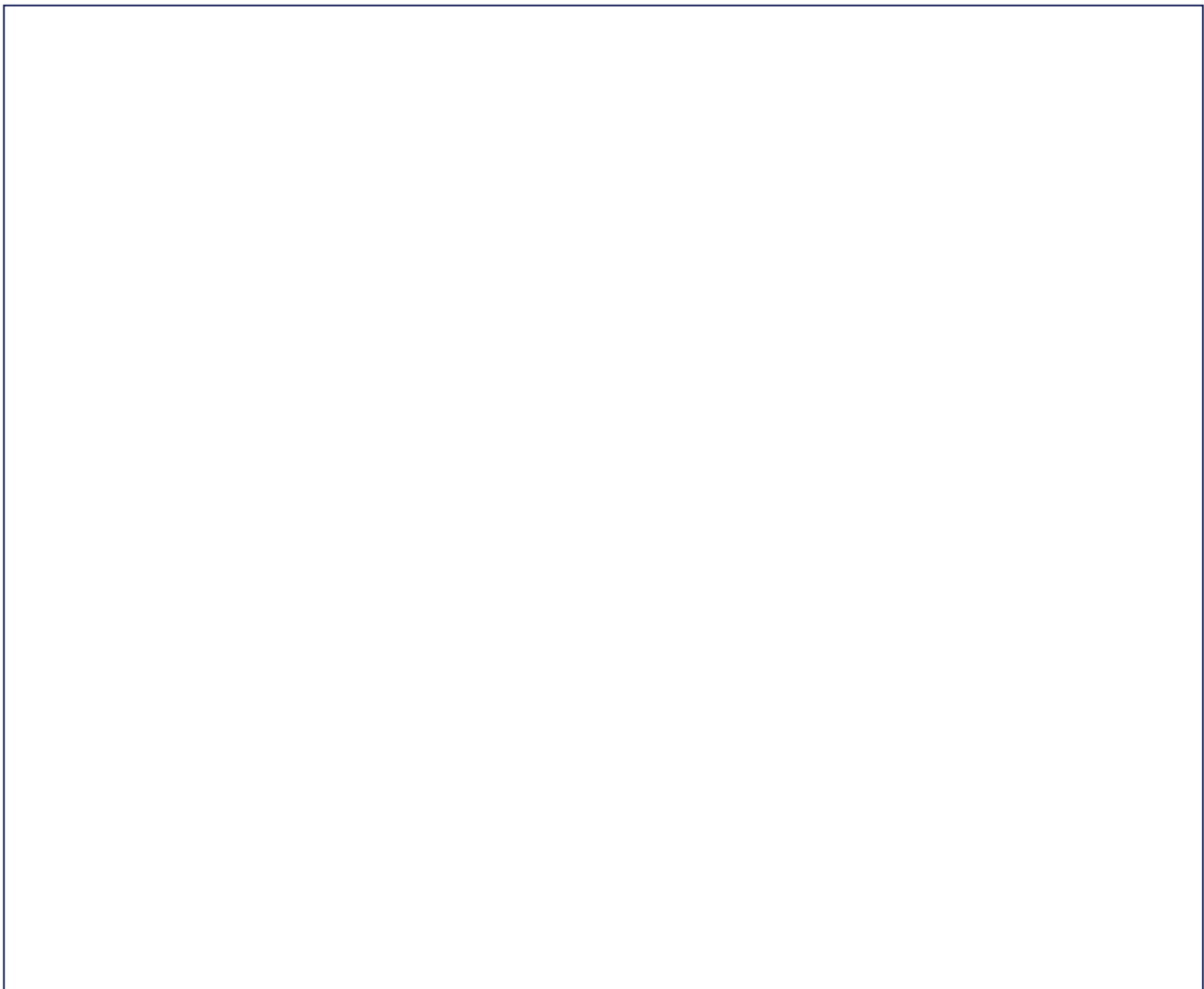


Kit's Clever Circuit Design Challenge

Learning objective: To identify and draw the components of a simple electrical circuit and understand how a switch controls the flow of electricity.

Kit the fox is building a new reading lamp for his den. Help him plan his project by drawing his circuit diagram below. Use standard circuit symbols to represent the components and ensure the circuit is complete so the bulb can shine brightly.

Draw: Draw a clear, neat circuit diagram in the centre of the page. Use a straight-edge ruler to draw the connecting wires. Represent the cell as a long and short parallel line, the bulb as a circle with a cross inside, and the switch as a small gap that can be closed. The style should be technical and precise, like an engineer's blueprint.



Label words: Cell · Switch · Bulb · Wire · Closed Circuit

Steps:

1. Label your drawing by pointing arrows to the cell, the switch, and the bulb. Why does the bulb only light up when the switch is in the 'closed' position?
2. Explain why the wires in Kit's circuit must be made of a conductive material, such as copper, rather than plastic.
3. Compare and contrast a 'series circuit' with a 'parallel circuit'. Which one might be better for lighting up

multiple rooms in a den?

4. Justify your answer: If you added a second bulb to your circuit in series, what would happen to the brightness of the bulbs? Explain why.

5. What might happen if Kit accidentally used a piece of string instead of wire to connect his circuit? Explain your reasoning.

6. Draw a small diagram in the corner showing what would happen to the flow of electricity if the switch was 'open'.