

# Design Technology: Exploring Electronic Circuits with Kit the Fox

*Learning objective: To understand the function of components in a simple electrical circuit and how to represent them using standard symbols.*

Read the questions carefully and use your knowledge of electrical circuits to complete the tasks. Refer to the word bank if you need help with technical terms.

*Word bank: Cell · Switch · Component · Circuit · Buzzer · Conductive · Insulator · Voltage*

**1. Kit the Fox is building a simple circuit to power a small light. Explain the difference between a conductive material and an insulator when choosing wires for this project. (2 marks)**

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**2. Draw the standard circuit symbol for a cell and a switch. Why is it important to use standard symbols in circuit diagrams? (2 marks)**

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**3. If a circuit has a cell, a switch, and a buzzer, what happens to the energy flow when the switch is opened? Use the term 'complete circuit' in your answer. (2 marks)**

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**4. Max the Monkey tries to add a second buzzer to the circuit, but the sound becomes much quieter. Suggest a reason why adding more components might affect the performance of the circuit. (2 marks)**

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**5. Identify two common household items that use a simple electrical circuit to function. (2 marks)**

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**Draw:** Draw a circuit diagram that includes one cell, one switch, and one bulb connected in a simple loop. Label each component using the correct scientific name.



*Extension challenge: Imagine you are designing an alarm system for your bedroom door. Write a short plan describing which components you would need and where you would place the switch to ensure the alarm sounds when the door is opened.*