

Design Your Own Electronic Gadget with Kit the Fox

Learning objective: To design and explain the function of an electronic product using switches, cells, and bulbs.

Use this writing frame to plan your invention. Think about how your circuit works and why it would be useful for others. Use the word bank to help you write in detail.

My innovative electronic invention is a device designed to help people in their everyday lives by using a simple series circuit.

Word bank: conductive · insulating · power source · terminal · component · consequently · furthermore · in addition · on the other hand · specifically

1. The Purpose: Describe what your gadget does. Who is it designed for and why is this problem important to solve? Start with: My invention is intended to... (2 marks)

2. The Circuit Design: Explain the components you have chosen. How do the cell, switch, and bulb work together to make your device function? Start with: To ensure the gadget operates, I have included... (3 marks)

3. Material Selection: Justify your choice of materials for the casing and the wiring. Why did you choose these specific materials for safety and conductivity? Start with: I have selected these materials because... (3 marks)

4. Functionality Analysis: Explain why your circuit is a series circuit. What might happen if one of the components were removed or broken? Start with: My circuit is defined as a series circuit because... (3 marks)

5. Comparison: Compare your electronic design to a non-electronic version of the same object. What are the advantages and disadvantages of adding electricity? Start with: When comparing my design to a manual version... (4 marks)

6. Future Improvements: If you had a larger budget, which additional components (such as buzzers or motors) would you add and why? Start with: If I were to develop a more advanced prototype, I would... (3 marks)

Extension challenge: Imagine your device is being sold in a shop. Write a persuasive 'pitch' to a customer explaining why your gadget is worth £15.00 compared to a cheaper, non-electric alternative. Use complex sentences to justify the price.