

Nova's Guide to Electrical Circuits

Learning objective: To explain how components affect the brightness of bulbs in a series circuit.

Use the following structure to write a scientific report based on your recent investigation. Use clear, formal language and ensure you explain the 'why' behind your observations.

During our investigation into electrical circuits, we set out to discover how changing the number of components impacts the performance of a bulb.

Word bank: consequently · furthermore · resistance · diminish · voltage · conductive · inversely proportional · therefore · demonstrates

1. Introduction: State the aim of your experiment and describe the equipment you used. Start with: The purpose of this investigation was to... (2 marks)

2. Methodology: Explain the steps you took to keep the test fair. Start with: To ensure this was a fair test, I decided to keep... (3 marks)

3. Observations: Describe what happened to the brightness of the bulb when you added more cells or bulbs. Start with: When I added an extra bulb to the circuit, I noticed that... (3 marks)

4. Scientific Explanation: Apply your knowledge of voltage and resistance to explain the results. Start with: This occurred because the electrical energy was... (4 marks)

5. Conclusion: Summarise your findings and suggest a real-world application. Start with: In conclusion, my findings support the theory that... (2 marks)

Extension challenge: Max has challenged you to draw a circuit diagram with two cells and three bulbs. Predict what would happen if one of the bulbs was removed from the circuit and explain why.