

**Student Name:** _____**Class:** _____**Due Date:** _____

Introduction and Instructions

Welcome to the Introduction to Electricity and Circuits homework sheet! This activity is designed for children aged 7-8 years to explore the basics of electricity and circuits. Your task is to complete at least two of the main activities and record your findings.

1. Read and understand the introduction to electricity and circuits.
2. Choose two activities from the main activities section.
3. Conduct the experiments and record your observations.
4. Write a short paragraph summarizing your findings and what you enjoyed most about the experiments.

Main Activity 1 - Building a Simple Circuit

Objective: To understand the basic components of a circuit and how they work together.

Materials:

- Battery
- Small light bulb
- Wires
- Switch

1. Connect the battery to the light bulb using wires.
2. Observe what happens when the circuit is closed and opened.
3. Introduce a switch into the circuit and test its function.

Questions:

1. What happens when you add more batteries?
2. How does the brightness of the bulb change?

Main Activity 2 - Conductors and Insulators

Objective: To identify and understand the difference between conductors and insulators.

Materials:

- Various materials like copper wire, rubber, wood, metal spoon, and a battery with a small light bulb
1. Test each material by placing it between the battery and the light bulb to see if it conducts electricity.
 2. Record which materials are conductors and which are insulators.

Questions:

1. Why do you think some materials conduct electricity while others do not?
2. Can you think of any real-life examples of conductors and insulators?

Main Activity 3 - Series and Parallel Circuits

Objective: To understand the difference between series and parallel circuits.

Materials:

- Battery
- Light bulbs
- Wires

1. Build a series circuit with two light bulbs and observe what happens when one bulb is removed.
2. Build a parallel circuit with two light bulbs and observe what happens when one bulb is removed.
3. Compare the observations from both circuits.

Questions:

1. What are the advantages and disadvantages of series and parallel circuits?
2. Can you think of any real-life examples of series and parallel circuits?

Reflection and Summary

Write a short paragraph (about 100-150 words) summarizing your findings and what you enjoyed most about the experiments.

Extension Activities

For those who wish to explore further:

1. Design a circuit that includes a switch, a battery, and at least two light bulbs.
2. Research and present on a real-world application of electricity and circuits.

Conclusion and Feedback

Congratulations on completing the Introduction to Electricity and Circuits homework sheet! Please submit your work to your teacher for feedback. Remember to ask questions and think critically about your observations.