Introduction to Simple Machines Homework Assignment

Student Name: _____

Class: _____

Due Date: _____

Introduction and Learning Objectives

Welcome to the Introduction to Simple Machines homework assignment! In this engaging activity, you will explore the fundamental concepts of simple machines, their types, functions, and applications in everyday life.

The learning objectives for this assignment are:

- Define and identify the six types of simple machines: lever, pulley, wheel and axle, inclined plane, wedge, and screw.
- Explain the concept of mechanical advantage and its importance in simple machines.
- Recognize and provide examples of how simple machines are used in real-world scenarios.
- Apply problem-solving skills to design and propose a simple machine for a specific task.

Simple Machine Sorting Game

Objective: Identify and categorize the six types of simple machines.

Instructions:

1. Create a table or diagram with columns for each type of simple machine.
2. Write down examples of devices or tools that use each type of simple machine (e.g., scissors for wedge, door handle for lever).
3. Illustrate each example to reinforce your understanding.

Simple Machine	Example	Illustration
Lever	_____	_____
Pulley	_____	_____
Wheel and Axle	_____	_____
Inclined Plane	_____	_____
Wedge	_____	_____
Screw	_____	_____

Design a Simple Machine

Objective: Apply knowledge of simple machines to design a solution for a real-world problem.

Instructions:

1. Choose a simple task that you find challenging, such as opening a tight jar or lifting a heavy box.
2. Design a simple machine that could make this task easier. Consider which type of simple machine would provide the best mechanical advantage.
3. Draw your design and label its components.
4. Write a short paragraph explaining how your simple machine works and why you chose the specific type(s) of simple machine(s) for your design.

Simple Machine Scavenger Hunt

Objective: Recognize simple machines in everyday life.

Instructions:

1. Over the next few days, observe the devices and tools you use or see around you.
2. Identify as many simple machines as you can in these devices (e.g., wheel and axle in a bicycle, inclined plane in a ramp).
3. Keep a journal or create a list of these observations, noting the type of simple machine and a brief description of its use.

Extension Activities

For students who complete the main activities quickly or wish for an additional challenge:

1. Research Project: Choose a historical figure who contributed significantly to the understanding or development of simple machines. Research and write a short biography focusing on their contributions to the field.
2. Simple Machine Model: Build a model of a simple machine using everyday materials (e.g., crafting sticks, cardboard, glue). Test its effectiveness and discuss potential improvements.

Success Criteria

The success criteria for this assignment are:

- Accurately identify and describe the six types of simple machines.
- Provide relevant examples of simple machines used in real-life scenarios.
- Demonstrate an understanding of mechanical advantage through design or explanation.
- Show evidence of critical thinking and problem-solving skills in designing or selecting a simple machine for a task.

Conclusion

Congratulations on completing the Introduction to Simple Machines homework assignment! You have demonstrated your understanding of simple machines and their applications in everyday life. Remember to apply your knowledge and skills to real-world problems and continue to explore the fascinating world of simple machines!