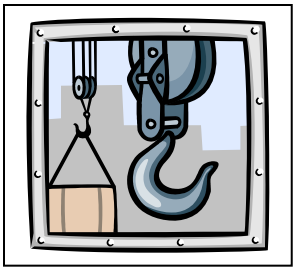


Capitol Park Museum

660 N. Fourth St.
Baton Rouge, LA 70802

Simple Machines

Elementary Learning Module

Grades Three and Four

A cross-curricular lesson linked to the common core state standards.

PERFORMANCE TASKS:

Students will observe a demonstration of each of the six simple machines. Each student will be given a booklet with drawings and a summary of the function of each machine. The students will tour the galleries of the Louisiana State Museum to locate and identify examples of simple machines. Students will predict and evaluate the outcome of the function of each machine. Students will be divided into six groups of three or four students and each group will construct one of the six simple machines. Each group will orally report on the construction and function of their machine. The students will then develop a fictional story in which one of the six machines is the main character in the story. In writing the story, students will use the knowledge gained from their observations to summarize the function and the description of their machine. Each student will read their story or perform a skit based on their story for the class.

STUDENT LEARNING:

-work collaboratively

-work independently

-identify the functions of the six simple machines

-compare and contrast the functions of the six simple machines

-describe the function of each of the six simple machines

-predict outcomes

-construct simple machines

-develop a fictional story

-sketch the six simple machines

STANDARDS:

Reading
3-5.2, 3-5 .3, 3-5 .4, 3-5 .5

WRITING
3-5.2, 3-5.3

SPEAKING and LISTENING
3-5.2, 3-5.4, 3-5.6

LANGUAGE
3-5.1, 3-5.2

GLE's
Science – Grade 3
2, 3, 4, 11, 16, 17, 23, 26, 31, 32, 33

Science - Grade 4
2, 3, 4, 11, 16, 17, 23, 26, 31, 32, 33

INSTRUCTIONAL FOCUS:

Science- recognize the six simple machines and understand the function of each machine

Writing – write an informative/explanatory narrative in the form of a short fiction story

Speaking and Listening-present a story orally and listen to other stories

Language-demonstrate command of the conventions of Standard English grammar

Reading-identify key ideas and details

GRADING

We suggest you grade on ability to recognize the six simple machines and understand their function as well as on writing style and grammar, presentation, and ability to identify key ideas and details

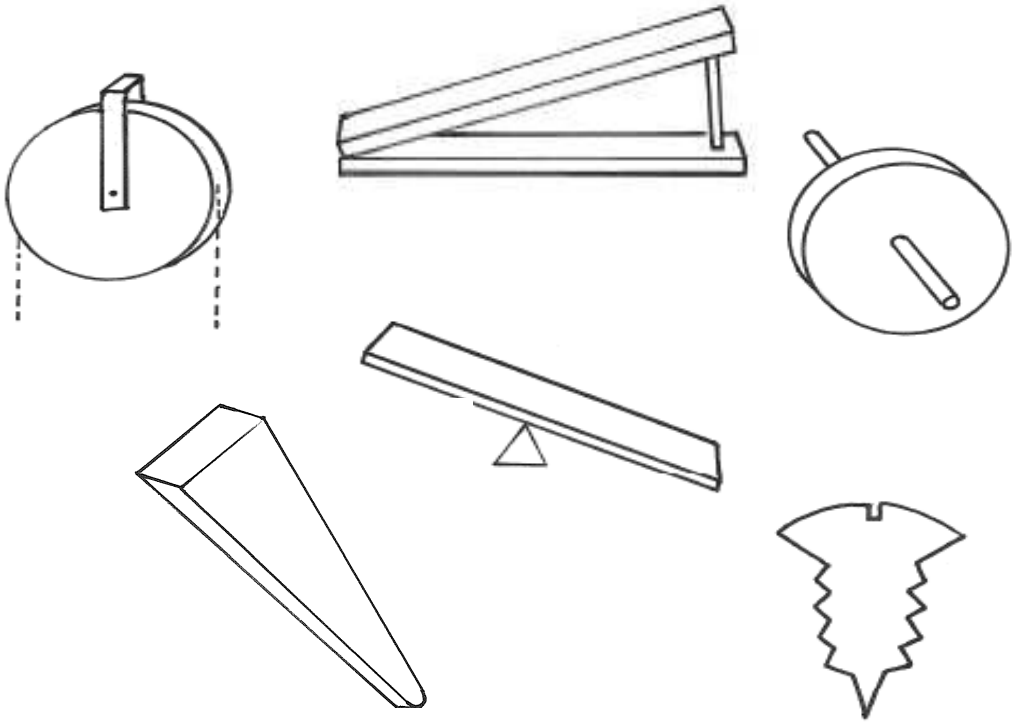
MATERIALS

Materials vary with each activity: books, paper, thumb tacks, toy cars, milk jugs with screw tops and pop-on tops, ropes or heavy string, coins, rulers, pencils, spring scale ,spools of thread, erasers, popsicle sticks, broom handles, scissors

SIMPLE MACHINES at WORK

in the

Capitol Park Museum

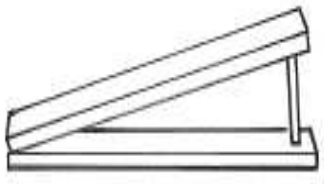


Student Booklet

This booklet belongs to _____

Capitol Park Museum Education
Elementary Learning Module
www.crt.state.la.us/education

Inclined Plane



An inclined plane is a simple machine that has a flat surface with one edge raised higher than the other edge. The slanting surface connects a lower level to a higher level.

Everyday examples of inclined planes are parking ramps, sidewalk ramps, and stairs.

Investigate: How do inclined planes make work easier?

1. **Explore our galleries** to find examples of inclined planes and the type of work they do. Use our chart to record your findings.

Exhibit Name	How does this exhibit show an inclined plane doing work?

2. **Draw one inclined plane that you see in our museum.**

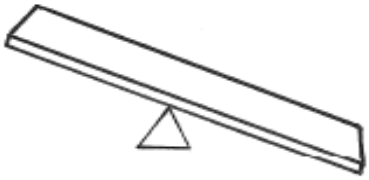
3. **How does an inclined plane make work easier?**

_____

_____

_____

LEVER



A lever is a simple machine that is a bar used for raising or moving weights centered on a fulcrum.

Everyday examples of levers include a teeter-totter or see-saw, crane arm, crow bar, hammer (using the claw end), fishing pole, and bottle opener.

Investigate: How do levers make work easier?

1. **Explore our galleries** to find examples of levers and the type of work they do. Use our chart to record your findings.

Exhibit Name	How does this exhibit show a lever doing work?

2. **Draw one lever that you see in our museum.**

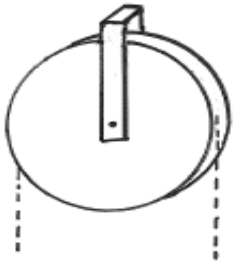
3. **How does a lever make work easier?**

_____

_____

_____

Pulley



A pulley is a simple machine that uses one or more grooved wheels connected by a rope to raise, lower, or move a load.

Everyday examples of pulleys are window blinds, flagpoles, elevators, rock climbing gear, and cranes.

Investigate: How do pulleys make work easier?

1. **Explore our galleries** to find examples of pulleys and the type of work they do. Use our chart to record your findings.

Exhibit Name	How does this exhibit show a pulley doing work?

2. **Draw one pulley that you see in our museum.**

3. **How does a pulley make work easier?**

_____

_____

_____

Screw

A screw is a specialized simple machine that is used to raise and lower things as well as to hold things together.

Everyday examples of screws are door locks, jar lid, car jack, and a spinning piano stool.

Investigate: How do screws make work easier?

1. **Explore our galleries** to find examples of screws and the type of work they do. Use our chart to record your findings.

Exhibit Name	How does this exhibit show a screw doing work?

2. **Draw one screw that you see in our museum.**

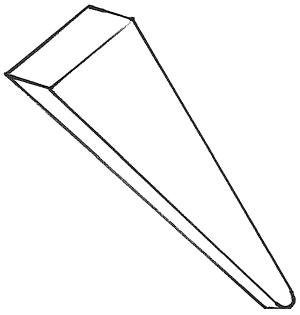
3. **How does a screw make work easier?**

_____

_____

_____

Wedge



A wedge is a simple machine with an inclined plane that is thick at one end and tapers to a point on the other. It is used often to separate things.

Everyday examples of wedges are an ax, nail, doorstop, horse plow, chisel, fork, and a saw. Scissors are two wedges working together to cut an object.

Investigate: How do wedges make work easier?

4. **Explore our galleries** to find examples of wedges and the type of work they do. Use our chart to record your findings.

Exhibit Name	How does this exhibit show a wedge doing work?

5. **Draw one wedge that you see in our museum.**

6. **How does a wedge make work easier?**

_____

_____

_____

Wheel and Axle

A wheel and axle is a moveable simple machine made of a wheel centered on a fixed point.

Everyday examples of the wheel and axle are pencil sharpener, bicycle, car, fan, shopping cart, and wheel barrow.

Investigate: How does a wheel and axle make work easier?

7. **Explore our galleries** to find examples of wheel and axles and the type of work they do. Use our chart to record your findings.

Exhibit Name	How does this exhibit show a wheel and axle doing work?

8. **Draw one wheel and axle that you see in our museum.**

9. **How does a wheel and axle make work easier?**

_____

_____

_____

Writing in the Museum
Four Square Writing: Simple Machines

Name _____

Directions
Use the four square writing method to write a story starring a simple machine of your choice.

Square One	**Square Two**
Choose a simple machine as your character. • Is it a boy or girl? • What is its name? • Describe its personality. • Is it big or little? • What does it like to do? • Who are its friends? <u>Story Starter:</u> Once upon a time there was a simple machine named _____. He/she was _____ (kind of simple machine). He/she liked to	Describe where your machine lives (an example is in a shrimp boat). What kind of trees are nearby? Is there a pond, ocean, or river nearby? Are other objects nearby? <u>Story Starter:</u> _____ the simple machine lived in a_____. There were
Square Three	**Square Four**
Continue to describe the problem. Make the problem something that the simple machine can solve by the use of its function. Example: A storm blows a tree down across the main road in town, and no one can leave or enter the town. Who or what can move the tree from the road? <u>Story Starter:</u> One day	Conclude your story with how the simple machine solved the problem with its function. Example: Could the pulley or the wedge lift the tree? How would this happen? Use an exclamation sentence to end your story, "Everyone thought _____ was the greatest machine in town!" <u>Story Starter:</u> Then,