SMILE
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SIMPLE MACHINES ANTICIPATION GUIDE

Read each statement and decide if it is True or False. Complete the left column before the reading by circling the T for True or the F for False. Complete the right column after you finish the reading. Did any of your answers change?

BEFORE READING	STATEMENT	AFTER READING
T F	A ...g point is also known as a fulcrum.	T F
T F	...ds are an example of a lever.	T F
T F	A screw ... cord ...tached to a load that needs ...move.	T F
T F	Fo... is a pus... pull th... makes something move.	T F
T F	A lev... includes ...ar or bea... and a pivoting ...	T F
T F	Work is the ... of energy req... to move something.	T F
T F	A see-saw is an ex...mple o... ...ird-class lever.	T F
T F	Archimedes was a ...ek philos... and mathem...ician	T F
T F	Simple machines have m... moving p...rts	T F

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DID YOU KNOW?

A bicycle makes use o... ...ery hi... of simple machi...

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Simple Machines

Name: _____

Answer the questions below. Then on the coloring page, color each numbered section with the corresponding color.
If there is any space left over, color it your choice! Follow the directions provided to cite evidence from the reading.

Questions	Text Evidence	Answer A	Answer B
#1 How many types of simple machines are there?	Find proof in the reading and UNDERLINE it in BLUE	Two ORANGE	Six RED
#2 Who developed the wheel and axle 5,000 years ago?	Find proof in the reading and CIRCLE it in GREEN	Sumerians PURPLE STRIPES	Galileo BLUE STRIPES
#3 What class lever are tweezers considered?	Find proof in the reading and BOX it in RED	First YELLOW	Third ORANGE
#4 What machine has two inclined plane back to back	Find proof in the reading and BOX it in YELLOW	Wedge RED	Lever ORANGE
#5 What are ramps and slides an example of?	Find proof in the reading and CIRCLE it in ORANGE	Inclined Plane BLUE	Pulley BROWN
#6 The mechanism on a flagpole is an example of what?	Find proof in the reading and UNDERLINE it in PURPLE	Lever ORANGE STRIPES	Pulley GREEN STRIPES

PREVIEW

SIMPLE MACHINES

Before there was modern machinery and technology, how did things get built? How did ancestors move heavy objects? How were the pyramids of Egypt built? Those blocks of stone weigh about 2.75 tons each. They were carved into rectangles. Without modern machines, how were these large blocks carved into the shapes that stand today?

The answer is simple machines! Tools made from stone, wood, and bronze helped shape the blocks. Ramps, rollers, and levers moved the stones into place and held for position.

Archimedes was a Greek philosopher and mathematician who discovered and described simple machines. Galileo was the first to offer the math theory that explains how simple machines work.

A simple machine applies force and does work to make things easier. First, force is a push or pull that makes something move. For instance, a horse pulls a cart, a person pushes a grocery store carriage, and tug of war are all examples of force. Other examples of force happen when items connect:

- kicking a soccer ball (foot and ball)
- archery (pull and release of bow)
- bouncing a basketball (ball and floor)

Work is defined as the amount of energy required to move something. Energy varies according to how far you move something and the shape and weight of something.

Simple machines have few moving parts. They multiply force in various ways to do work:

- transferring a force
- changing the direction of force
- increasing the magnitude of force
- increasing the speed of force

There are six simple machines: lever, wheel and axle, pulley, inclined plane, wedge, and screw.

A lever includes a bar or beam and a pivoting point called a fulcrum. A lever uses itself to increase force. You push down on one end to move something upward on the other end (the load). If you move the fulcrum (pivot point) closer to the object you want to move, the work is easier. Levers are

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