

Simple Machines Packet

Simple Machines

- wheel and axle
- pulley
- inclined plane
- lever
- wedge
- screw

Simple Machines

- wedge
- screw
- wheel and axle
- pulley
- lever
- inclined plane

Simple Machines

Simple Machines

A simple machine is a basic mechanical device for applying a force. Simple machines make work easier for us because it allows us to push or pull over longer distances.

Simple machines are some of the first machines ever invented!

There are six simple machines:

The wheel and axle is a type of simple machine. It is a wheel with a rod through its center. The wheel and axle lifts or moves loads. The wheel reduces friction and allows us to transport heavy objects over longer distances.

A pulley is a simple machine that uses grooved wheels and a rope to raise, lower or move a load.

An inclined plane is a slanted surface connecting a lower level to a higher level.

A lever is a stiff bar that rests on a support called a fulcrum which lifts or moves loads.

A wedge is an object with at least one slanted side ending in a sharp edge, which can be moved apart.

A screw is an inclined plane wrapped around a pole which holds things together or lifts materials.

Simple Machines

Simple Machine Picture Sort

Cut out the following pictures and glue them in the correct category on the previous three pages!

Levers

First Class Lever - the fulcrum is in the middle between the effort and the load

Second Class Lever - the load is in the middle between the fulcrum and the effort

Third Class Lever - the effort is between the fulcrum and the load

The Three Types of Levers

Draw pictures identify the fulcrum (F), effort (E) and load (L)

Class One

Class Two

Class Three

Simple Machines Packet about 30 pages

Simple Machine Matching

- lever
- inclined plane
- screw
- wedge
- wheel and axle
- pulley

Hands-on Activities

LEVER! Challenge: Toothpick Tower - A long lever allows a small distance to be a great distance in a great time.

WEDGE! Challenge: Toothpick Tower - A long lever allows a small distance to be a great distance in a great time.

Lapboard - Mechanical Forces

Cut out the pieces below and hold up the flap to see the illustration on the bottom.

Lapboard - Mechanical Forces

Glue the pieces together and hold up the flap to see the illustration on the bottom.

Simple Machine Matching

Simple Machines in Construction

What simple machines do you see in use at the construction site?

Simple Machines in Construction

What simple machines do you see in use at the construction site?

Why? What are simple machines used for?

Why? Wedge: Wedges are used to split or cut objects.

Why? Pulley: Pulleys are used to lift or move heavy objects.

Why? Wheel and Axle: They are used to reduce friction and make it easier to move objects.

Why? Lever: Levers are used to lift or move objects.

Why? Inclined Plane: They are used to move objects up or down.

Why? Screw: Screws are used to hold things together.

Why? Wedge: Wedges are used to split or cut objects.

Simple Machines at a Construction Site

Worksheets

Suggested Answers

What simple machines do you see in use at this construction site?

Wheel & Axle Pulley Wedge Lever Inclined Plane

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What simple machines do you see in use at this construction site? Name: _____

What simple machines do you see in use at this construction site? Suggested Answers

Roller: Wheel & Axle Crane: Pulley Cement truck: Wheel & Axle Jackhammer: Lever
 Crane: Pulley Hand saw: Wheel & Axle Wheelbarrow: Wheel & Axle
 Wrench: Lever Shovel: Lever (just a wheel & axle)
 Hammer: Lever Wheelbarrow: Wheel & Axle Power drill: Screw
 Hammer: Lever Wheelbarrow: Wheel & Axle Power drill: Screw

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Levers

1st Class Lever 2nd Class Lever 3rd Class Lever

Cut out the pictures below. Glue the diagrams into the right area into the flap above. Glue the pictures of objects directly onto the notebook page on the next page. Make sure they are glued into the right section! There are 3 examples for each class. Cut out the two flaps above. Cut across the solid lines and cut along the dotted lines. Then tape the flaps onto the notebook page with the "Levers" flap on top and the "class" flap in the middle.



Inclined Plane

Screw

Pulley

Wedge

Wheel and Axle



Simple Machines Notebook Page

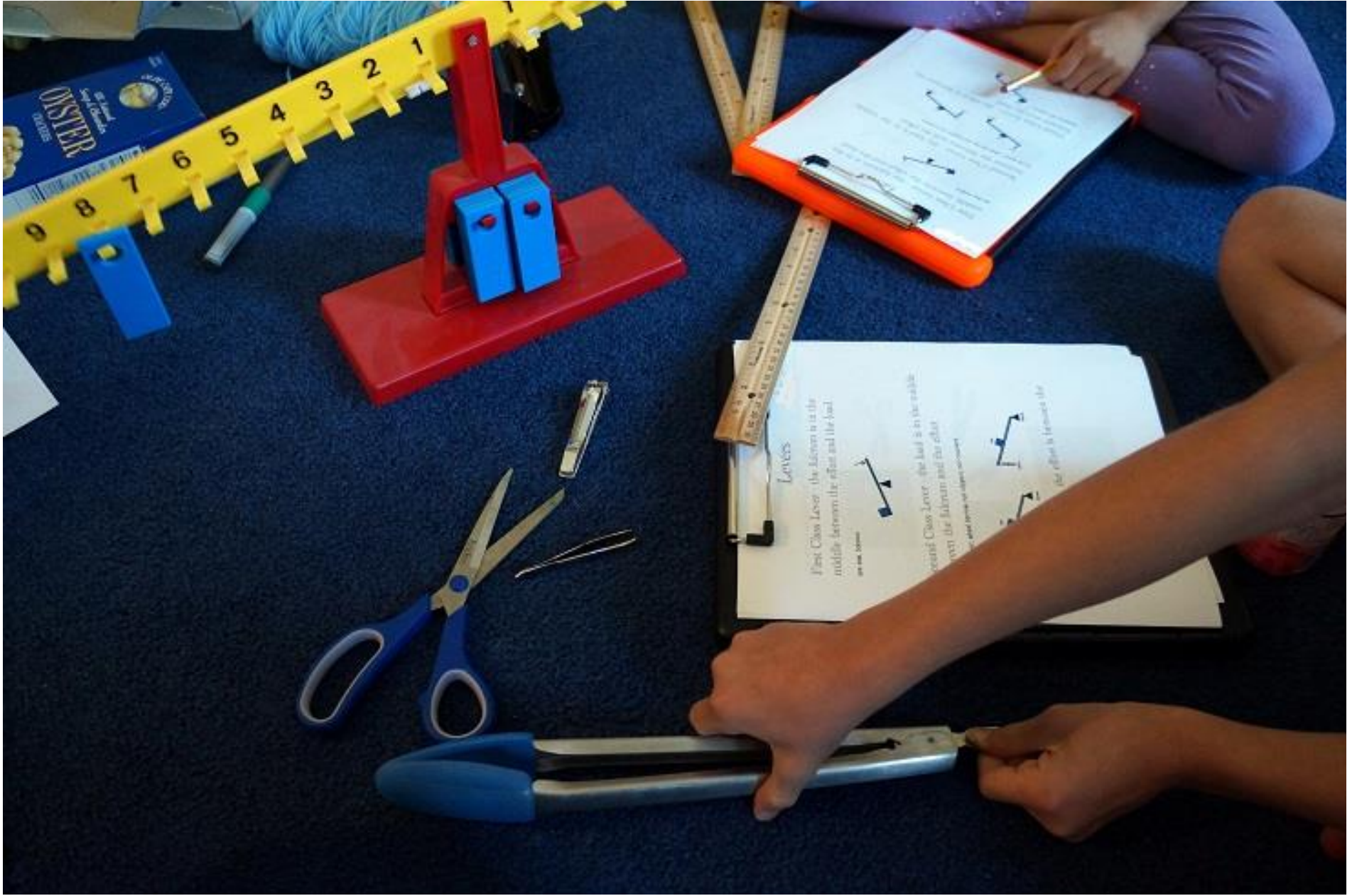
Name: _____



Simple Machines Interactive Notebook Activity



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Levers

First Class Lever - the fulcrum is in the middle between the effort and the load.



Second Class Lever - the fulcrum is in the middle between the effort and the load.



Third Class Lever - the fulcrum is in the middle between the effort and the load.



Levers

Inclined
Plane

Screw

Pulley

Wedge

Wheel
and
Axle

Inclined
Plane

Screw

Pulley

Wedge



Name: _____ Date: _____

Simple Machine Matching

	lever	
	inclined plane	
	screw	
	wedge	
	wheel and axle	
	pulley	



		
<u>inclined plane</u>	<u>screw</u>	<u>wheel and axle</u>
		
	<u>wedge</u>	
		
<u>wheel and axle</u>		
		

Simple Machine Worksheets

Simple Machine Picture Sort:

Wedge



Wheel and Axle



Simple Machine Picture Sort:

Pulley



Simple Machine Picture Sort:

Wedge



Plus some of our Hand-On Activities

