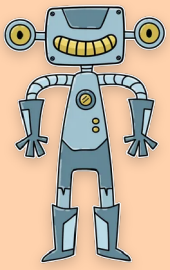
SCIENCE · SIMPLE MACHINES AND ENGINEERING · GRADES 2–4

The Six Simple Machines

Label the lever, pulley, wheel and axle, inclined plane, wedge and screw.



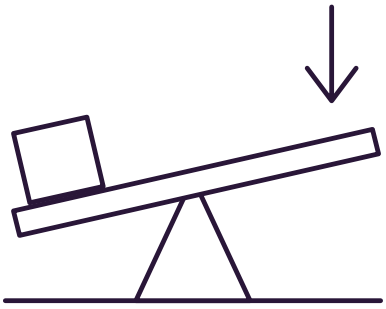
Name: _____ **Date:** _____

Word bank

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

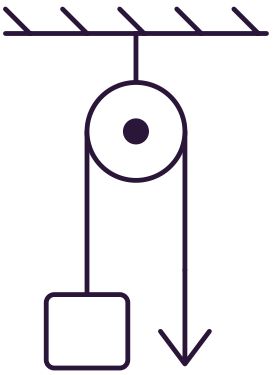
Write the name of each simple machine.

1



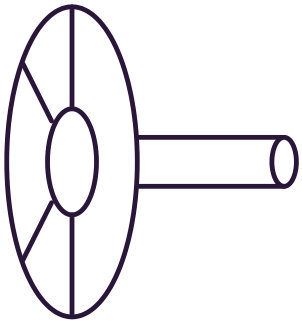
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2



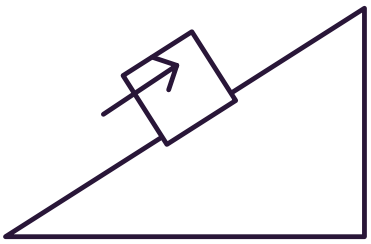
_____

3



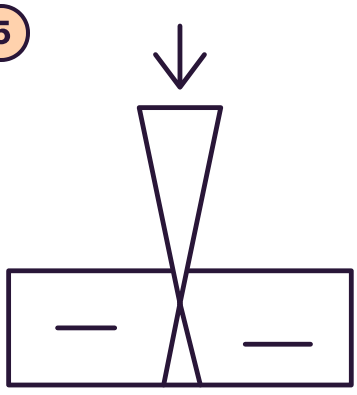
_____

4



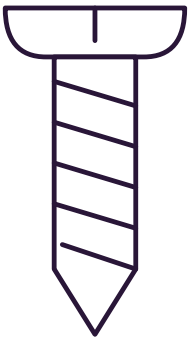
_____

5



_____

6



_____

A simple machine makes work easier. Which one would you use to lift a heavy box onto a truck?

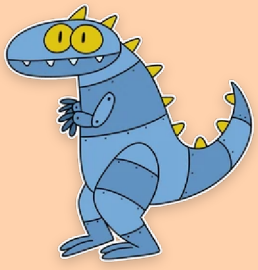
_____

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SCIENCE · SIMPLE MACHINES AND ENGINEERING · GRADES 2–5

Simple Machines All Around

Name the simple machine in ten everyday things, from a seesaw to a jar lid.



Name: _____ **Date:** _____

Word bank

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

Write the simple machine you find in each thing.

a seesaw _____

a wheelchair ramp _____

a flagpole rope _____

a doorknob _____

an axe _____

a jar lid _____

a bottle opener _____

a zipper _____

a light bulb base _____

a steering wheel _____

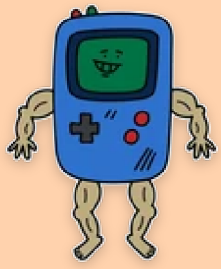
Find a simple machine in your classroom or home. Draw it and name it.

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SCIENCE · SIMPLE MACHINES AND ENGINEERING · GRADES 2–5

Paper Tower Challenge

An engineering challenge: plan, build, test and improve the tallest tower from ten sheets of paper.



Name: _____ **Date:** _____

The challenge: build the tallest tower that stands on its own for 10 seconds. **You get:** 10 sheets of paper, 1 meter of tape, scissors and 20 minutes.

1. Ask

What makes a tower strong and tall?

2. Imagine

List two ideas.

3. Plan

Draw your best idea.

4. Create

Build it. Height:

5. Test

Did it stand 10 seconds?

6. Improve

What will you change?

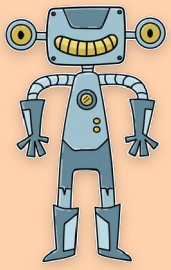
Try	Height (cm)	Stood 10 seconds?
1		
2		
3		

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SCIENCE · SIMPLE MACHINES AND ENGINEERING · GRADES 2–5

Paper Bridge Challenge

An engineering challenge: fold a paper bridge between two stacks of books and see how many pennies it holds.



Name: _____ **Date:** _____

The challenge: make two stacks of books 20 cm apart. Build a bridge from one sheet of paper (no tape!) that holds as many pennies as it can in the middle.

Design 1: draw how you fold the paper.

Design 2: try a new fold.

Design	Pennies it held	What happened?
1		
2		
3		

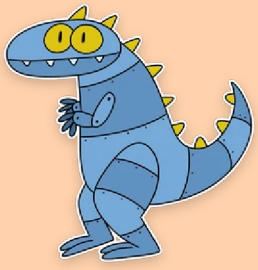
Which fold was strongest? Why do you think it worked?

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SCIENCE · SIMPLE MACHINES AND ENGINEERING · GRADES 3–5

Ramp and Car Experiment

Roll a toy car down a ramp at three heights, measure how far it goes, graph it and explain.



Name: _____ **Date:** _____

Question: does a higher ramp make a toy car roll farther? Lean a board on 1, then 2, then 3 books. Let the car go from the top (no pushing) and measure from the end of the ramp to where it stops.

My hypothesis: If the ramp is higher, then _____

Ramp height	Try 1 (cm)	Try 2 (cm)	Try 3 (cm)
1 book			
2 books			
3 books			

Graph your best try for each height. First write a scale up the side, like 0, 20, 40, 60 cm.

1 book 2 books 3 books

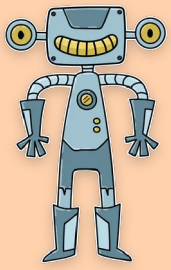
Conclusion: what happened, and which simple machine is a ramp?

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ANSWER KEY · SIMPLE MACHINES AND ENGINEERING · GRADES 2–4

Answer Key: The Six Simple Machines

Answers for grown-ups. Some questions have more than one good answer.

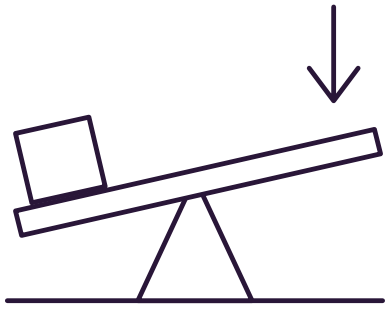


Word bank

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

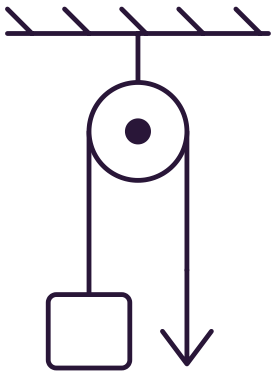
Write the name of each simple machine.

1



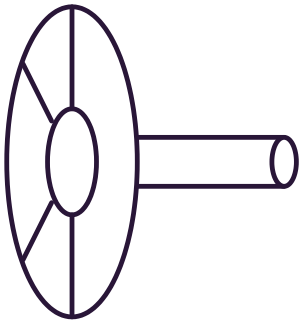
lever

2



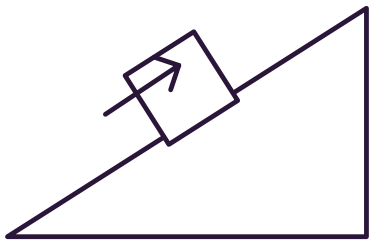
pulley

3



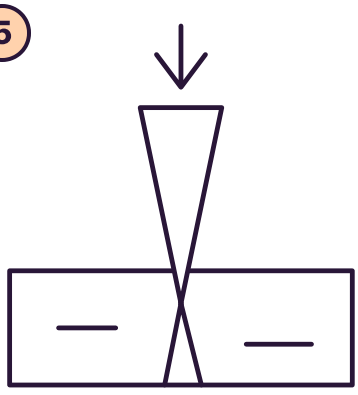
wheel and axle

4



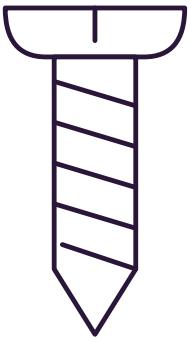
inclined plane

5



wedge

6



screw

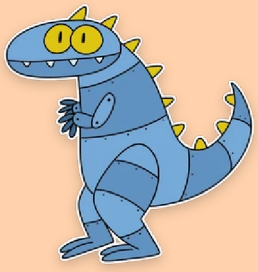
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ANSWER KEY · SIMPLE MACHINES AND ENGINEERING · GRADES 2–5

Answer Key: Simple Machines All Around

Answers for grown-ups. Some questions have more than one good answer.



Word bank

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

Write the simple machine you find in each thing.

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- a flagpole rope: pulley
- a doorknob: wheel and axle
- an axe: wedge
- a jar lid: screw
- a bottle opener: lever
- a zipper: wedge
- a light bulb base: screw
- a steering wheel: wheel and axle

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