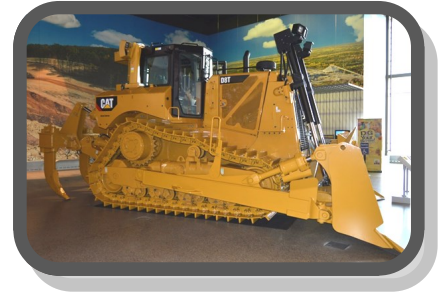
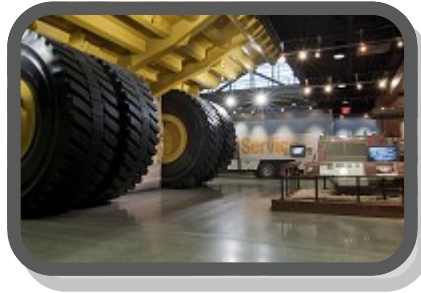


Simple Machines Scavenger Hunt

Caterpillar Visitors Center

Instructions: Work as a team, explore the galleries and record the simple machines you discover.



What does simple mean? Having few parts or features; not complicated or elaborate.

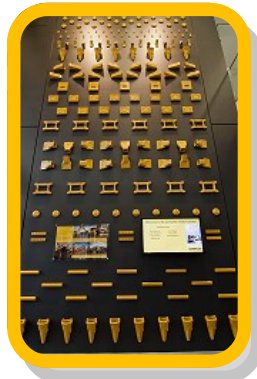
What is a machine? A machine is anything that uses energy to do work.

What is work? Science defines work as a force exerted over a distance.

What is a simple machine? A simple machine is any mechanical device that applies force and makes work easier.

What is a compound machine? A compound machine is a machine that consists of more than one simple machine.

BEGIN IN THE LOBBY

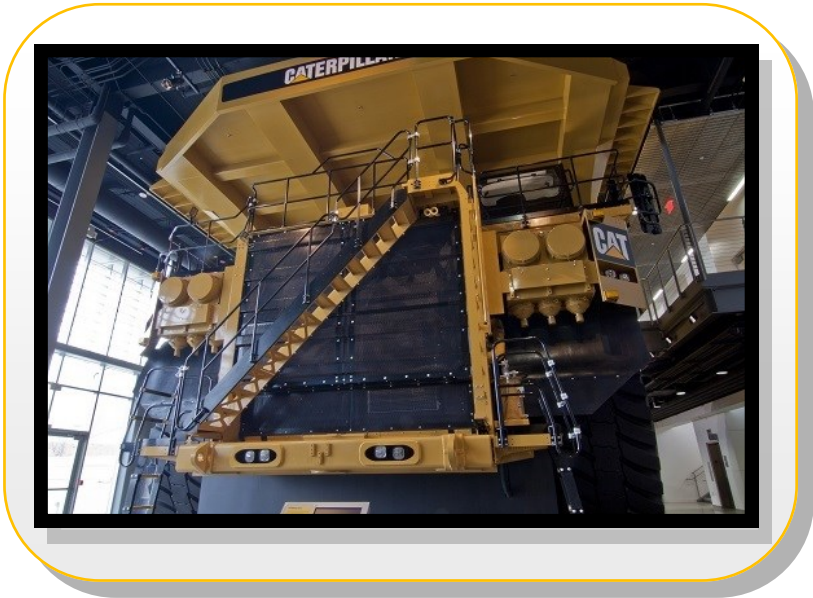


Look for the Ground Engaging Tool (GET) Wall. Discuss how and why these tools are used. Do they solve a problem? If so, what problem?

Can you find two simple machines in the lobby?
How about on one of the walls? Name them.

MOVE TO THE 797F MINING TRUCK

Which part of the Cat® 797F Mining Truck is a very large inclined plane?
Hint: What lifts up to dump?



When you return to your classroom, draw a picture of the 797F Mining Truck in dump position.

MOVE TO THE HERITAGE GALLERY



Find the Model Twenty Tractor. Name a simple machine found on the front of the tractor.

Find the D8 Simulator in the Heritage Gallery. Name a simple machine found on the D8?

MOVE TO THE PRODUCT DEVELOPMENT GALLERY



Compare the joysticks to the levers on the D8 Simulator you saw in the Heritage Gallery.
Name two differences.
Name two similarities.

Find the joysticks in the Ergonomics area.
Discuss whether a joystick is a simple machine or a compound machine made up of two or more simple machines.
What did your group decide?

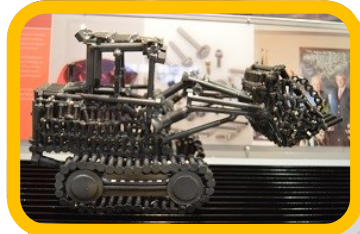
MOVE TO DESIGN YOUR OWN MACHINE



Which machine did you choose to design? Why?

Name the simple machines you find as you're designing a machine.

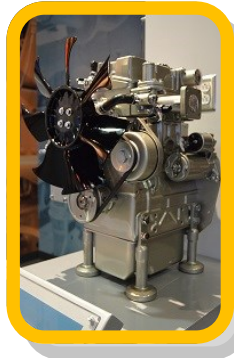
**MOVE TO THE
POWER SYSTEMS GALLERY**



Look for the track loader made of nuts and bolts. Are nuts and bolts simple machines? If so, name them.

What other simple machines can you find on the nut and bolt tractor? Hint: Consider the bucket or the tracks.

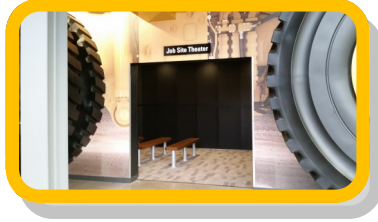
**MOVE TO THE POWER
SYSTEMS GALLERY**



Find the engine wall mural. Have each team member point out a simple machine. Record the simple machine each team member finds.

Find the Perkins® engine. Can your team find two simple machines and name them?

**MOVE TO THE
JOBSITE THEATER**



BONUS QUESTIONS

What types of jobs did you see
Cat equipment doing in the
movie? Which job would you
like to do when you grow up?

Watch Cat Construction Rocks (video #2).
As a team, identify a lever, pulley, screw,
inclined plane, wheel & axle and wedge.

**MOVE TO THE
PRODUCT FLOOR**



BONUS QUESTIONS

What is the largest and smallest
compound machine you can find on the
product floor? Which is your favorite?

What is the largest and smallest simple
machine you can find on the product
floor? Name them.

VOCABULARY ACTIVITY

Instructions: Draw a line from the vocabulary word to the correct definition.

productivity	Any mechanical device that applies force and makes work easier.
profitability	Something that has been or can be added to an existing object or arrangement
profit	having few parts or features; not complicated or elaborate
add-on	the effectiveness of productive effort, especially in industry, as measured in terms of the rate of output per unit of input
simple	the special use or purpose to which something is put
machine	A machine that consists of more than one simple machine
work	the money that a business has left after paying all of its expenses related to conducting business activities such as producing a product to sell
application	anything that uses energy to do work
simple machine	force exerted over a distance
compound machine	the ability of a business to earn a profit