

Explore



Introduction:

A visit to the Patton Museum may serve as an initial introduction to simple machines, or as a final culminating activity to demonstrate acquired knowledge.

A visit will take approximately 1-2 hours. You must book three weeks ahead. The program is free but a \$20.00 donation by check to the Patton Museum Foundation is appreciated.

- It includes a 15-minute Simple Machines PowerPoint presentation (which can also be used in the pre-visit lesson plan)
- Sorting activities where students must identify and construct a chart about simple machines
- A tour of the Patton Museum where simple machines used in tank construction is identified.

Goals of a visit to The Patton Museum:

- Allow students to become familiar with simple machines
- Provide students the opportunity to sort and classify simple machines
- Facilitate the identification of simple machines within complex machines

Meets **Kentucky** Core Content Guide SC-E-1.2.3: The position and motion of objects can be changed by pushing or pulling. The amount of change in position and motion is related to the strength of the push or pull (force). The force with which a ball is hit illustrates this principle.

Meets **Indiana** Standard 3.6.1: Investigate how and describe that when parts are put together, they can do things that they could not do by themselves.

Meets **Ohio** Academic Content Standards: Grade 3: Understanding Technology:

1. Describe how technology can extend human abilities (e.g., to move things and to extend senses).

Purpose:

To familiarize students with physical science vocabulary used by museum specialists when discussing Simple Machines.

Objectives: Students will:

1. Be able to identify simple machines (Wheel and axle, inclined plane, pulley, wedge, screw, lever, gear)

Vocabulary:

- a. Wheel and axle
- b. Pulley
- c. Lever

- d. Screw
- e. Inclined plane
- f. Wedge
- g. Gear

Materials:

1. [Simple Machines PowerPoint presentation](#) **AND/OR**
2. [Simple Machines Bingo work sheet](#)
3. [Word list](#)
4. [Definition list](#)
5. Pictures of [wheel and axle](#), [pulley](#), [screw](#), [wedge](#), [inclined plane](#), [gears](#) and [lever](#)
6. [Graph Sheet for Patton Museum Tour](#)

Methods:

Time: 30 minutes. Additional time is required to see the PowerPoint presentation or play Simple Machine Bingo. Use the words, definitions and pictures to start your simple machines bulletin board.

Anticipatory Set:

Explain that the students will be visiting the Patton Museum and that the museum Tour Guides may be introducing words and ideas they may not know and that you would like to take the opportunity to familiarize them with some of these words.

Set:

Place the words wheel and axle, inclined plane, pulley, wedge, screw, gear and lever on the board. Hold up the first picture so the class can see it. Ask them what is this? (A good idea is to start with the wheel since most children know what it is.) Have the student place the picture underneath its name. Continue with the screw and pulley (some children may know what that is). All children will know what the hammer is but not that it is a lever, just as all children will know that the picture is of a man pushing something up a ramp but not that the ramp is an inclined plane. The same will occur for a wedge, as children will know that it is doorstop but that its proper scientific name is a wedge. Explain each item before the student places the picture under the word.

Gears: It is open for debate whether a gear is just a wheel with teeth and should be taught as part of the wheel section. (After all a wedge is two inclined planes joined together and a pulley is just a wheel with a groove around the outside). Personally I prefer including it since it looks significantly different from a wheel (particularly [worm](#) and [bevel](#) gears)

Now pull out the definition strips. Have the students read out the definition strips together and then ask one student to come and place the definition under the picture.

Now you have the choice of either watching the Power Point presentation or playing Bingo. If playing Bingo, start with simply showing the students the picture, naming the object and the type of simple machine it is. As the students progress in knowledge, you can have them play by

just calling out the type of simple machine. Eventually allow students to be the caller to reinforce their understanding.

Good websites to further promote simple machine understanding:

<http://edheads.org/activities/simple-machines/sm-glossary.htm>

<http://www.mos.org/sln/Leonardo/InventorsToolbox.html>

<http://edtech.kennesaw.edu/web/simmach.html>

<http://www.proteacher.com/110064.shtml>

<http://teacher.scholastic.com/dirtrep/simple/>

<http://www.enchantedlearning.com/physics/machines/Levers.shtml>

<http://www.professorbeaker.com/simple.html>

Excellent interactive site:

<http://oac.schools.sa.edu.au/eshop/machine/index.html>