

45. Simple Machines

Identify use on Farm Equipment

Overview: The six simple machines can be found and applied in farming equipment. This activity relates to Grade 5, Strand 5 (Physical Science), Concept 2 (Forces and Motion), Performance Objective 3.

Objective: Using the Garden's antique farm machinery display, students will identify uses of the 6 simple machines and predict their function as it relates to specific items.

Time Needed: Approximately 1 hour

Group Size: Any

Age appropriateness: 2nd grade and up

Site: The two areas of antique equipment located at the south edges of the Garden.

Background: A machine is a tool used to make work easier. Simple machines are simple tools used to make work easier. Compound machines have two or more simple machines working together to make work easier. In science, work is defined as a force acting on an object to move it across a distance. Pushing, pulling, and lifting are common forms of work. Gardeners do work when they pull weeds. They use a hand tools to help break through the weeds.

Man has long used simple machines to make work easier. With advancements in technology, farm machinery has become much more sophisticated and has greatly reduced the man hours needed to produce crops. Children need to know the impact this has on their community where a lot of hand labor has been and is being replaced by machines. The six simple machines are: lever, pulley, wedge, wheel and axle, inclined plane, screw.

Materials: Pencil, paper, and clipboard on which to draw and write.

Preparation: None

Pre Activity: Prior to visiting the Garden, students need to have been exposed to and given examples of simple machines.

Procedure:

1. Review the 6 simple machines
2. Assign small groups of students a piece of machinery
3. Have students identify by drawing or describing all the simple machines they can find on that piece of equipment
4. After about 15 minutes, regroup the students and have them share small group findings with the whole class

Modifications: The whole class could gather around one piece of equipment and students identify an example of a simple machine as determined by the group leader.

Extensions: Students can hypothesize the function of the simple machine for each one identified on a piece of equipment.

Visit a farm equipment dealership and look at the latest in technology used in farm equipment.

Study Rube Goldberg and the contraptions he drew.

Study the evolution of farm equipment from early man to present day.

Create a machine using the principals of the simple machines.

Reference List:

<http://sln.fi.edu/qa97/spotlight3/spotlight3.html>

Informational Site

<http://www.edheads.org/activities/simple-machines>

Interactive Site

Time of Year: any