



Cincinnati
Museum
Center

Teacher's Pre- and Post-Program Visit Guide

Program	Simple Machines at Work (and Play)
Grade Level	1 - 3
Time	50 minutes
Location	Duke Energy Children's Museum and <i>Energy Zone</i> exhibit

Program Objectives

- Students will identify names and types of simple machines.
- Students will identify complex machines as combinations of simple machines.
- Students will find and identify simple machines within the *Energy Zone* in the Duke Energy Children's Museum.

Program Description

After a fun introduction to simple machines, employ experimentation and creativity to analyze each machine station in the Duke Energy Museum's *Energy Zone*. Discover the function of each simple machine and their use to accomplish jobs both big and small.

Major Vocabulary and concepts

gear	wedge	lever
fulcrum	pulley	wheel and axle
inclined plane	screw	simple machine

Suggested things to do in your classroom before the program

- In your classroom, introduce simple machines. Define the terms above and demonstrate the uses for each simple machine. List everyday objects that employ simple machines, tire-jacks, can openers, and doorstops, for example.
- Use the simple machines as spelling/vocabulary words for the week. Use the terms in writing explorations and as journal topics.

Suggested things to do after the program

- Back in the classroom, have students cut out photos of simple machines to identify.
- Use knowledge of simple machines to construct a sculpture that moves! Incorporate at least one simple machine into each sculpture. Research to find artists that use machines or parts of machines in their creations.
- Discover the history of simple machines. Were they used to build the pyramids in Egypt? Do research on the subject and draw your own conclusions.

Curriculum and Standards Addressed

Ohio - Physical Science, Science and Technology, Scientific Inquiry,
Scientific Ways of Knowing

Kentucky - Physical Sciences, Scientific Inquiry, Applications and
Connections

Indiana - The Physical Setting, The Nature of Science & Technology,
Scientific Thinking, Common Themes

Related Exhibits and Features

- In the Duke Energy Children's Museum, visit the *Kid's at Work* exhibit—do you see simple machines in the crane (pulleys)?
- *Water Works* also contains several simple machines. Find a wheel, pulley and inclined plane in this exhibit.
- Find the simple machines located in *The Woods*. There are inclined planes, pulleys and gears.

Resources

- Simple Machines Made Simple, Ralph St. Andre
- Science Experiments With Simple Machines, Sally Nankivell-Aston and Dorothy Jackson