

PARENT BRIEFING

Module

Simple Machines

- Investigate relationships among forces, work, and energy by using the scientific method of problem solving.
- Determine the mechanical advantage of an inclined plane, wedge, screw, lever, and wheel and axle.
- Explore and construct various pulley systems.
- Build a machine to solve a challenge.

Session Focus

1 Work and Energy

2 Inclined Planes

3 Wedge and Screw

4 Levers

5 Wheel and Axle

6 Pulleys

7 Compound Pulleys

Dear Parent,

As parents and teachers, we realize it can be hard to get a child to discuss what he or she is learning in school. We hope the information provided on this page will assist you in communicating with your child about what he or she is learning.

For the next few days, your child will be learning about work, forces, energy, and how machines make work easier by completing the *Simple Machines* Module. As your child's best teacher, your participation in the learning process is extremely important.

Words students will learn in this Module include:

- compound machine
- dependent variable
- effort force
- force
- fulcrum
- hypothesis
- independent variable
- mechanical advantage
- resistance force
- simple machine
- theory
- work
- x-axis
- y-axis

Questions for discussion

During the course of this Module, your child will be assessed on key concepts and activities. You might want to discuss these concepts with your child.

He or she will be asked to:

- Calculate the length of the incline on an inclined plane when the height and length of the inclined plane are given. *The (length of the incline)² = height² + length²*
- Explain how levers make work easier. *(Like all simple machines, levers convert a small force over a large distance into a larger force over a smaller distance.)*
- State and explain the formula for mechanical advantage of a lever. *(Mechanical advantage = length of effort arm ÷ length of resistance arm. The student should explain that as the ratio of the length of the effort arm to the resistance arm increases, the effort required to move a mass decreases.)*



Student: _____

Parent: _____