



Simple Machines

Grades K-3

Teacher's Notes

Goals

Simple machines are used everyday. They are found in the kitchen, on the playground, and in the classroom. They can be of assistance to us such as opening a can or lifting a heavy object or they can be used for amusement like a seesaw. The goal of this lab is to expose the girls to some common simple machines, learn how they work, and then let them build and design.

Equipment Needed

This experiment is designed to be done in teams of 2-4. Enough equipment is included for 8 teams.

- **8 Lego Dacta Primary Simple Machines Building Sets with activity cards (green and blue)**
- **Instructor activity card set (red and yellow)**
- **3 Design challenge card sets (laminated)**
- **Simple Machine glossary (laminated)**
- **Copies of paper models, scissors, colored pencils.**
- **Lego Dacta Early Simple Machines Teacher Guide (book)**



Introduction

This lab is best started with a general discussion of simple machines. Before the lab, familiarize yourself with the simple machine glossary. Use the glossary and the Lego parts in one of the building kits to demonstrate a gear, a pulley, and a lever.

Continue the discussion using the yellow activity cards numbered 1-6. On the front of each card is a picture of a child using a common object. On the back is some questions and comments to stimulate a discussion with the girls. This discussion should give the girls a general introduction to simple machines. They will learn more as they build some sample machines and later as they design their own.

Building a Simple Machine

The best way to learn about a machine, is to build one. Break the girls into 8 groups. Give each team a building set and a set of activity cards. The green cards are designed to familiarize the girls with the pieces in the building set. If the girls are new to Legos then these may be helpful, otherwise proceed to the blue cards. Have the teams build at least 2 models each. You can assign which models to build or let them choose. Models 2-6 are the best examples of simple machines. The phone in model 1 is a little far-fetched.

Designing a Simple Machine

In this activity the girls are encouraged to work as a team to design a simple machine to complete the specified task. Give each team a design challenge card. These challenges are the same that are on the red cards. You can show the girls the red cards for inspiration. Allow the teams to share their creations with each other.