

WORLD OF MACHINES

AN INTRODUCTION TO SIMPLE MACHINES
for Young Scientists

BOOK

World of Machines, Heron Books

Young Scientist Journal, Heron Books

OTHER MATERIALS

- standard size brick
- block of wood the same size and shape as the brick
- several small, moveable objects of different weights and sizes
- 12-inch ruler
- pencil
- spring scale that measures up to 1,000 grams and 10 newtons
- small box, such as a small plastic tote
- small cart or platform with wheels that can hold the small box
- 500 g weight
- 1,000 g weight
- something to use as a fulcrum
- large pry bar
- 3- to 4-foot length of 2 x 4 wood
- meter stick or yard stick
- three 1 ¼ inch binder clips
- ¼-inch wood dowel, approx. 1 foot long
- several books – enough to create two stacks, each about one foot tall
- various examples of levers – scissors, can opener, pliers, stapler, kitchen tongs
- two single wheel pulleys
- two double wheel pulleys

- 1-inch thick board about 1 foot wide by 3 to 4 feet long
- several wooden wedges of different thicknesses
- various examples of objects that have a screw – jar with screw-on lid, light bulb, small adjustable wrench, radio dial
- several large wood screws
- several pieces of soft wood (pine is recommended)
- 2 pieces of 1-inch thick wood
- screwdriver
- hammer or mallet
- windlass made according to instructions in *World of Machines* Teacher Tips
 - half-liter plastic bottle (should be thicker plastic that can withstand pressure)
 - one ball of 12-16 ply bakers twine or thin cord – approx. 36 feet
 - ¾-inch wood dowel approx. 2 feet long
 - ¼-inch wood dowel approx. 1½ feet long
 - two 1 inch by 3 ½ inch screw eyes
 - two pieces of 1-inch thick board approx. 3 inches wide by 9 inches long
 - two 4-inch C-clamps
 - hot glue gun and glue
 - drill with ¾-inch bit and ¼-inch bit

