



# Activity Kit

## Simple Machines Jr.

### Materials

#### Simple Machines Activity Set

- Pulley with rope and hook
- Wedge
- Lever board
- Archimedes screw
- 4 Wheels on 2 axles (threaded screw on one end)
- Cart
- 2 Light barrels (yellow)
- 2 Heavy barrels (purple)
- 10 Activity Cards



#### Binder

- About This Kit
- Kit Components Sheet
- Glossary
- Prediction Sheet, Observation Sheet, & Data Sheet

#### Book

- *Simple Machines* by D.J. Ward

Recommended for Grades K and Up

Choking Hazard



# What to Know About This Kit...

Simple machines are all around you: on the playground when you go down a slide (inclined plane), or when a flag is raised or lowered on a pole (pulley). All simple machines have one common purpose: to make work easier. The six simple machines include: **Wheel and Axle, Lever, Inclined Plane, Pulley, Screw, and Wedge.**

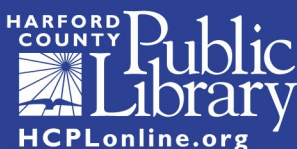
This activity set includes real science concepts and support materials for you, paired with interesting pieces (including a cranking, twisting Archimedes screw, weighted barrels, pulley with rope and hook, and more) and activities to spark children's imaginations and stimulate their curiosity.

You can use the included Activity Cards to learn about each simple machine. Each Activity Card, based on the scientific method, follows the same format: it begins with a real-world problem to solve, followed by a prediction (or hypothesis), hands-on experimentation and data collection, and ends with children drawing a conclusion about their findings.

In this binder, there are sample copies of a Prediction Sheet, Observation Sheet, and Data Sheet. Feel free to make photocopies of these pages, or just use plain paper to record your findings.

**Recommended for Grades K and Up**

**Choking Hazard**



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Appropriate accommodations for individuals with disabilities will be provided upon request. Please notify the branch offering the program at least 5 business days prior to the event. TTY users call Maryland Relay (711). This document is available in alternative format upon request.



# Simple Machines Jr. Kit Components



Pulley with rope and hook



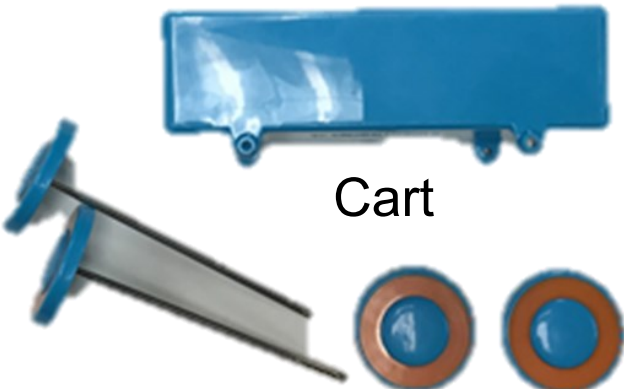
Archimedes screw



Wedge



Lever board



Cart



Weighted barrels

Wheels on axles

Wheels

# Glossary

The words below are key concepts taught throughout the activities. On the Activity Cards, these words are **bolded** the first time they appear in an activity. Children can better understand these vocabulary-building words when they are used within the context of real, hands-on experiments.

- **effort** - force applied to a lever in order to move a load
- **force** - any push or pull
- **fulcrum** - support on which a lever rests while moving or lifting an object
- **inclined plane** - surface that is angled or sloped, which connects a lower level to an upper level; used to help move an object
- **lever** - board or pole that rests on a fulcrum; used to move or lift an object or a load
- **pulley** - a wheel that a rope, cord, or belt moves around; used to raise or lower a load or object
- **screw** - an inclined plane wrapped or twisted around a cylinder
- **simple machine** - a tool with few moving parts that makes work easier
- **wedge** - two inclined planes, back-to-back, used to separate, lift, or tighten an object or load
- **wheel and axle** - an axle is a rod that goes in or through the wheel to move it, and keeps the wheel in place as it turns.