

How Things Work

Adapted from A Guide to Gender Fair Education in Science and Mathematics

Grade Level:

K - 2
3 - 5



Objective(s):

Grades K - 2

To gain confidence with handling tools



Grades 3-5

To gain confidence with machines

Time:

1-2 class periods



Materials:



Small machines or devices that no longer work.

Choose items that are screwed together, not glued.

Examples of suitable devices include: typewriters, toasters, clocks, kitchen timers, flashlights, answering machines, CD players, electric can openers, drills, waffle irons, things with cranks, scales, hair dryers, and electric shavers

Smocks

Cleaning materials: soap, solvent, and paper towels

Flat box for students to keep small parts

Plastic bags for loose pieces

Basic tools: screwdrivers, hammers, and wrenches

Procedures:



Ask the students the following questions:

What do you think it is?

Have you ever seen this tool or device before?

How do you think one works?

Do you know how it is used?

Divide students into small groups. Allow students a chance to look at the device and handle the tools. Help them take the device apart or decide which tool should be used. The level of detail will depend on the age of the students.

Discuss what they have learned.

Ask the students the following questions:

What did the inside of the device look like?

What tools did you use to take it apart?

How does the device work? (belts, gears, etc.)

What if we left some parts out when we put it back together?

Extended:

Have older students draw diagrams of the device, labeling parts.

Make a list of problems encountered and the solutions.

Make connections to other devices—how are they similar?

Give each small group a different assignment in relation to use of tools or how the device works. Have them report to the larger group.

Have each student write for five minutes about what they learned.