

# Shopping List for Unit #4: Energy Part 1

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**How many of these items do you already have?** We've tried to keep it simple for you by making the majority of the items things most people have within reach (both physically and budget-wise), and even have broken down the materials by experiment category so you can decide if those are ones you want to do.

## **Pulleys**

50'+ Rope (use nylon rope with >200 pound tensile strength that fits through your pulleys)

Pulleys (at least 6 small ones)

Fishing line

Two broomsticks (or use a tree)

Pen (any size)

Large, heavy nut

6" length of ½" PVC pipe

Wire coat hanger

Thread spool

Vice grips and pliers

## **Optional Items For Grades 9-12:**

[Trebuchet](#) (order from us at a discounted price – see website for details).

Optional: Thick slab of wood to make a pulley-swing

Optional: Roller skate (the old-fashioned kind with a wheel at each corner) and a large rubber band

## **Levers**

Stud (2×4x96" or other long, strong piece of scrap wood to play with)

## **Hydraulic/Pneumatic Earth Mover**

Disposable plastic cup

20+ tongue-depressor-size popsicle sticks

6 syringes (anything in 3-10mL size range will work)

6 brass fasteners

Thin wire or narrow zip ties

5' of flexible tubing (fits over the nose of syringes)

four wheels (use film canister lids, yogurt container lids, milk jug lids, etc.)

4 rubber bands

two naked (unwrapped) straws

skewers that fit inside your straws

hot glue gun (with glue sticks)

sharp scissors or razor (get adult help)

drill with small drill bits (you'll be drilling holes

large enough to fit the stem of a brass fastener)