Equipment Lists for Discretionary Activities

Mod 1, Unit A

2 glass canning or mayonnaise jars (or 1 to re-use if you have access to a sink)  
paper towels  
 ice cubes  
2 tablespoons salt  
aluminum foil  
matches  
a small amount of water  
computer with Internet access for research  
PowerPoint software and projector  
poster board and markers  
balloons  
string  
glass rod  
samples of nylon, wool, fur, silk, paper, cotton, hard rubber, polyester, PVC plastic

**Mod 1, Unit B**

example electricity bills  
1 piece of corrugated cardboard, at least 8 in. x 8 in. (20.3 cm x 20.3 cm)

pushpins/thumbtacks

ruler

pencil

cutting tool or pair of scissors

glue or tape

1 large nail, 3.5 in. (9 cm) or longer

2 fender washers with holes large enough for nail to fit through, outside diameter of about 1.5 in. (3.8 cm)

4 high-energy ceramic bar magnets: ⅜ in. x ⅞ in. x 1 ⅞ in (1 cm x 2.2 cm x 4.8 cm)

several metal washers with inside diameter of about ¼ in. (0.6 cm)

200 ft (61 m) of 30-guage magnet wire

sandpaper

1 miniature incandescent bulb, 1.5 V 25mA

**Mod 1, Unit C**

computer with Internet access for research

**Mod 2, Unit A**

computer with Internet access  
PowerPoint software or poster board and markers

**Mod 2, Unit B**

computer with Internet access for research   
users’ manual for various power tools  
respirators  
goggles  
gloves  
hard hats  
steel-toed shoes  
hearing protection

**Mod 2, Unit C**

computer with Internet access

**Mod 3, Unit A**

computer with Internet access

**Mod 3, Unit B**

candle, canned heat, paraffin, and other appropriate fuel sources

matches

watch glass (optional)

water

thermometer, celsius

hot pads

ceramic fiber pad

glass rod

graduated cylinder, 100 ml

safety goggles

triple-beam balance

calorimeter kit

compressed air supply (for example, compressed-air tank with pressure gauge and shut-off valve, about 6 gallon capacity charged to 100 psi)

plastic (polyethylene) tubing:

1/4” OD tubing: one 20-ft length, one 10-ft length, and two 6-in. lengths

5/16” OD tubing: one 10-ft length

rotameter, 50 to 450 SCFH

pressure regulator, 0 to 30 psi

pressure gage, compound type, 15 mm Hg vacuum to 30 psi pressure, with connecting tee

quick-connect fittings for polyethylene tubing, 1/4” diameter for regulator, rotameter, and pressure gage

connectors for plastic tubing (two quick-fit adaptors, 1/4” to 5/16”)

**Mod 3, Unit C**

computer with Internet access  
2 white cans  
2 black cans  
2 cans of another color  
water  
equipment for Fermentation Challenge: Making Ethanol from Cellulose, see:  
<http://www.glbrc.org/education/educationalmaterials>

**Mod 4, Unit A**

computer with Internet access  
tubing various lengths and diameters  
buckets  
water under pressure (e.g., flowing out of a faucet)  
PowerPoint software, computer and projector   
oscilloscope6 lemons   
7 alligator clips   
6 pennies   
6 large metal paperclips   
knife   
voltmeter   
light emitting diode (LED) that requires low voltage and low current   
calculator that requires low voltage and low current

**Mod 4, Unit B**

PowerPoint software, computer and projector  
computer with Internet access

**Mod 5, Unit A**  
computer with Internet access  
computer with PowerPoint presentation software installed, projector and screen

**Mod 5, Unit B**  
computer with Internet access  
computer with PowerPoint presentation software installed, projector and screen

**Mod 5, Unit C**  
computer with Internet access  
computer with PowerPoint presentation software installed, projector and screen