

Unit 2 Materials List

Chapter 1

Lesson 2:

- For each student group: 1 D battery, 1 small light bulb, 1 piece of wire.

Lesson 3

- Stations setup for *Converting Energy – Part 1* and *Converting Energy – Part 2* are described in detail in the description of Lesson 3.

Chapter 2

Lesson 1

- For each pair of students: samples of four different types of coal: anthracite, bituminous, lignite, peat. Additionally, electronic balance, glass slide, magnifying glass and a 100 ml graduated cylinder.

Lesson 2

- Obtain the materials to build calorimeters. For each group of four students:
 - 1 wire coat hanger, wrapped with aluminum foil
 - 1 aluminum beverage can
 - 1 piece of clay
 - 1 straight pin
 - 1 peanut
 - 1 100 ml graduated cylinder
 - 1 glass thermometer
 - Water
 - Matches
 - Electronic balance
- Students will have to bring in three other food sources, for example: other kinds of nuts, cereal flakes, Chee-tos, Fritos, and Doritos. Pork Rinds also work well.

Chapter 3

Lesson 1

- Each pair of students will need: 2 wads of cotton, 1 jar lid, 1 600 ml beaker, 4 sheets white paper, 4 matches, 1 medicine dropper, 1 wad wool, 1 piece Styrofoam, and 2 drops turpentine.

Lesson 2

- Teacher may want a flashlight, chalk, and erasers for a demonstration of the particles in the air.
- Each student will need: 2 index cards, tape to cover cards, tape or tacks to attach cards to observation points. Students will need access to a digital balance to weigh their particulate cards.

Lesson 3

- Lab supplies needed for each group: indicator solution, samples of acid and bases, graduated cylinder, distilled water, matches, plastic zip lock bag, and plastic cups.

- Additional lab supplies needed: 5% acetic acid solution, eye dropper, limestone and other building materials, steel wool, plastic cups, vinegar, pH paper, universal indicator, and distilled water.

Lesson 5

- Students will need colored pencils, ruler, 1 large sheet of white paper (3' × 4' or larger), clear tape, 2 tablespoons of sand, and old textbooks.

Chapter 5

Lesson 1

- Arrange to show the video “Earth in the Hot Seat.” Links to where this video can be found at the IES Teacher’s Webpage.

Lesson 3

- For each student group: 6” piece of black construction paper, 6” foil, and 6” clear plastic wrap. (White paper can be used in place of foil for this activity.) A 100-watt light bulb can be used as an optional substitute for the Sun.

Lesson 5

- Make methane baggies by filling Ziploc bags from the gas jets in the chemistry lab.
- Arrange to have dry ice in class for the lab. Many restaurants and shipping companies have dry ice and they will often donate to science classrooms.
- For each group: 50mL of vinegar, 12 grams of baking soda, 2 Erlenmeyer flasks, 2 one-hole stoppers, 2 bent glass tubes, 2 straight glass tubes, 2 rubber tubes, plastic wrap, 2 beakers, 2 thermometers, thermometer clamps or tape, shiny black disks to place in the bottom of the beakers, heat lamp with a 120W reflector bulb, and a stopwatch.