

## Shop List for Unit 3: Matter (Density & Solids)

### Shaping Matter

Piece of bread  
Scale  
Pennies  
Marbles  
Cereal (about 20 pieces of anything)

### States of Matter

Microwave  
Grape (green, red, and/or black)  
Ivory soap bar  
Water bottle  
Cooking oil (about ½ cup)  
Two water or empty 2L soda bottles  
Food coloring/dye (two colors: red, blue, etc.)

### Crystals

10 cups of granulated sugar (any cheap brand)  
Wooden skewer  
Black construction paper  
1 cup vinegar (distilled white)  
Paper towel or coffee filter  
Cleaned pickle, jam, or mayo glass jar  
20-50 pennies  
2 cups cornstarch  
2 cups sand (yes, from the playground is fine)  
Clean egg shell  
1 full box of Borax  
4-6 cups Epsom salts  
10' string or yarn  
3-6 pipe cleaners

*Optional:* Nylon fishing line

*Optional:* Alum (check spice section)

### Additional Items for Grades 9-12:

#### Electrolysis

2 test tubes or something clear and closed at one end  
2 two wires, one needs to be copper (12 inches long)  
1 cup  
9 volt battery  
Long match or a long thin piece of wood  
Rubber bands  
Masking tape  
Salt (table salt is fine)

**NOTE: KEEP CHEMICALS OUT OF REACH OF CHILDREN. \*\*STORE THE AMMONIA SEPARATE FROM EVERYTHING ELSE.\*\***

#### BBQ Crystals

Uniodized salt (sodium chloride)  
Ammonia (clear, no additives)  
Laundry bluing  
Charcoal briquette, sponge, brick, cork, or porous rock  
Non-metal pie plate (an old glass pan works great)  
Food (dye) coloring

#### *Optional for Grades 9-12: Advanced Crystals*

We've provided you with inexpensive links to online stores on our website.

Sodium silicate (\$6.95)

*Select one (or more) of the following for the Advanced Crystals Experiment (the colors indicated are the colors your experiment will grow...)*

White - calcium chloride (approx \$3.00)

Blue - copper (II) sulfate (approx \$3.25)

Red - cobalt (II) chloride (approx \$5.00)

Yellow - iron (III) chloride (approx \$3.75)

*Store these chemicals out of reach of children and in a dry, cool location. We'll be using these for the rest of the year in different experiments. DO NOT mix these chemicals with anything other than what we indicate, as you can generate lethal gases such as HCN.*