

## Supply List for Friendly Chemistry

Note that these supplies are listed in the order that they are used in the course. Some lessons have multiple lab activities. Before purchasing or collecting all of these, you may find it helpful to read through the lab activities to determine which will work best for your situation. We encourage you do them all, if possible! If you have any questions or concerns, please email us or call. We will happily advise you as you prepare and carry out these fun activities with your students. Please note that an orientation video is available for all lab activities and can be found free-of-charge on the Teaching Library Tab on our website.

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### Course Introduction

- Small objects like buttons, bolts, toy animals or cars, figurines, a Christmas bulb, paper clip, etc.
- Duplos or legos—enough to make similar sets of 4 blocks each, two sets per team of players.

### Lesson 1

- 6-8 white “powders” from your kitchen such as white flour, wholewheat flour, baking powder, baking soda, wheat gluten, salt, sugar, powdered sugar, sucanat, turbinado, corn starch. All should be edible—nothing poisonous!
- “testing” containers such as low Styrofoam bowls or lids from yogurt or sour cream containers—ideally enough of these to allow each child to have one for each powder you’ve gathered from your kitchen.
- Iodine solution—available in the drug section of the grocery store as “tincture of iodine.” It will be highly concentrated in this form, so 1-2 bottles is plenty for a group of students.
- Droppers or pipettes—if not readily available soda straws will work—you’ll use these to transfer small amounts of liquids to each unknown powder

### Lesson 2

- Marshmallows—regular size, at least 3-4 per student
- Metal spoons—the older the better, they will become stained black during the lab, one per student
- Candle with some means to support it—a cup filled with small rocks with the candle inserted works well.
- Matches or lighter
- Newspaper to serve as a “placemat” to catch drips and spills.
- Sports balls of various colors and sizes—at least 2-3
- Garden hose—used to make a large circle on the floor. Not needed if you have access to a playing surface with circles already on it.
- Hoola-hoop or “shorter” length of hose to make small circle on the floor.
- Playdough ingredients: see page 2-5 to determine your needs.

### Lesson 3

- Apple
- Paring knife
- Pears or incandescent light bulbs.
- Large ball—soccer or volley or basketball work equally well.
- Christmas bulbs—need not be working.

### Lesson 10

- Cake mix—1 per family or group of 3.
- Twizzler brand licorice candy (the kind you can pull off into thin string-like strands) red or black, one package. If not available in your area, gel frosting in a tube, one tube per family or group of 3
- Toothpicks—1 package per family or group of 3.

### Lesson 11

- Play props and costumes—see page 11-1 for details.

### **Lesson 12**

- Supplies to make “charge balance” which includes ruler, 2 Styrofoam cups or bowls, cardboard toilet tissue roll, rubber band or tape, ping-pong balls or other small balls or blocks to represent electrons.

### **Lesson 16**

- Two Styrofoam cups.
- Cotton balls or packing peanuts (something with low density)
- Dry beans, wheat berries, pebbles or sand (something with high density).
- Marker to write onto cups.
- Small container of lead shot or BB’s (found at sporting goods or hunting stores).

### **Lesson 17**

- Kitchen scale which can read in grams
- Styrofoam cups or bowls
- Spoon or scoop
- Container of table salt, baking soda and Epsom salts.

### **Lesson 19**

- Candle—white safety candles work well. Do not use votive candles. One per pair of students.
- Tall, narrow glass jar—olive jar or tall jelly jar—one per pair of students.
- Bowl to hold water—low, flat, pie plate works well.
- Grease pencil or marker capable of writing on glass jar.
- Matches or lighter.
- Paper towels or coffee filters
- Pint jars or quart jars depending upon use of paper towels or coffee filters.
- Rubber bands
- An assortment of ink pens and markers (both permanent and water soluble markers) of many colors.
- Rubbing alcohol and/or fingernail polish remover
- Assortment of fresh leaves—as many different shades of green possible
- Assortment of flower petals—check with local florist or garden center for discarded flowers. Garden centers often “dead head” flowering plants and will have a good supply of petals for you.

### **Lesson 20**

(Please read through these labs first—you may choose the ones that work best for you—doing them all would be ideal!)

Krazee Krunch lab:

- 1 cup butter or margarine
- 1/2 cup light corn syrup
- 1/2 cup white syrup
- Pop corn—enough to make 2 quarts of popped corn.
- Sauce pan, wooden spoon, cookie sheet.

Peanut brittle lab

- 2 cups white sugar
- 1 cup light corn syrup
- Salt
- 1 TBsp butter
- Baking soda
- 2 cups of Spanish raw peanuts (shelled)
- Candy thermometer
- Sauce pan, wooden spoon, cookie sheet or wax paper

#### Precipitate formation lab

- Epsom salts
- Ammonia (continued on next page).
- Tall, narrow jar

#### pH Lab

- Red cabbage or blueberry juice
- Baby food jars
- Vinegar
- Baking soda
- Baking powder
- Ammonia
- Lemon or orange juice
- Milk
- Egg whites
- Shampoos
- Contact lens solutions
- Distilled water

#### Baking Soda and Vinegar Reaction Lab

- Baking soda—at least one box per pair of students
- Vinegar—at least 1 gallon per class.
- Narrow-mouthed jar—ketchup bottle is ideal.
- Balloon or latex glove, rubber bands if using gloves.
- Plastic aquarium tubing
- Cork or stopper with hole
- Tub—the kind you get while in the hospital work well.
- Glass jar—quart-sized or larger.
- Birthday candles
- Matches
- Short piece of rain gutter
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#### Cold or hot-pack lab:

- 1 instant cold pack per student or pair of students.
- 1 instant hot pack per student or pair of students.
- Baby thermometer—ideally, one per pair of students.
- Matches
- Fireworks—firecrackers, sparklers
- Steel wool (do not use SOS pads)
- Dry cell battery

#### Plaster casts lab:

- Plaster of Paris (found at art supply stores or building supply centers)
- Plastic bucket—an ice-cream bucket works well.
- Wooden spoon or paint stirring stick.
- Strip of cardboard.

#### **Lesson 22**

- Graham crackers
- Chocolate bars (miniature sized ones work well)
- Marshmallows
- Candles with means to support them.

**Lesson 23**

- Repeat of smorz lab from Lesson 22 (see above).

**Lesson 24**

- Repeat of smorz lab from Lesson 22 (see above).

**Lesson 25**

- Option of smorz lab or basic cookie preparation (see student text).

**Lesson 26**

- Packages of powdered drink mixes or hot chocolate packets.
- Cups for preparing drinks.
- One-liter pop bottle or quart-size container to measure water.

**Lesson 29**

- Vinegar
- Baking soda
- Gas collecting apparatus used in Lesson 20

**Lesson 30**

- Balloon
- Candle
- Matches or lighter
- Newspaper to be torn into strips for burning.
- Several aluminum cans from various brands of pop.
- Heat source—stove top or hot plate
- Metal tongs
- Hard boiled eggs, peeled. At least a dozen per class.
- Narrow-mouthed glass jar with opening slightly smaller than diameter of boiled egg. Bottles from Karo syrup work well.

**Lesson 31**

- Large hypodermic syringe (30 or 60 cc) readily found at local vet clinic or animal supply stores. No needles necessary.
- Miniature marshmallows.
- Bell jar with vacuum pump—optional.
- Marshmallow “peeps”- optional.

**Lesson 32**

- “Treats” for the last class meeting.