

Chemistry Lab-in-a-Box

This curriculum is considered "No Hassle" because it does not require specialized equipment or chemicals. Use this section as a shopping list to gather supplies for your classroom. All materials can be found at supermarkets, office supply stores, craft stores, or hardware stores.

EQUIPMENT

There are some pieces of equipment that are used in virtually all activities. Designate an easy to access area of your classroom to store these materials. You may choose to have students collect these items and bring them in for use in your classroom.

Masking Tape and Permanent Markers

- ❑ Make these available to students for all activities. Encourage them to label materials as needed.
- ❑ When preparing an activity, always label all bottles, cups, or other containers to show their contents.
- ❑ Use multi-colored tape and markers to color code labels for ease of sorting.

Sponges and Towels

- ❑ Make these available to students for all activities.
- ❑ Hands-on experiments can be very exciting, and the curriculum is called "Messy Science" for this reason!

Cafeteria Trays

- ❑ When students do their experimenting on trays, any spills are contained in a small area.
- ❑ These are also useful for carrying and distributing equipment.

Pop-top Squeeze Bottles (e.g., water, sports drink)

- ❑ These help for transporting and measuring liquids in the classroom and minimize the need for clean up.
- ❑ Once you fill and label a class set of liquids, you can keep it on hand indefinitely (e.g., ammonia, water, vinegar, alcohol).

Sealing Plastic Bags (e.g., Ziploc)

- ❑ For reactions that need to be mixed well, these bags keep the reaction contained.
- ❑ Keep a variety of sizes on hand (e.g., snack, sandwich, pint, or quart)
- ❑ While more expensive, it is usually better to get the name brand bags since they are more durable.

Plastic Cups

- ❑ Some activities require clear cups, so purchase and store only these.
- ❑ Keep a variety of sizes on hand (e.g., 8oz., 9oz., or 12 oz.).
- ❑ These are used for reactions or for distributing materials.
- ❑ Wash and reuse for several activities.
- ❑ Once you label a set of plastic cups for an ingredient (e.g., salt) you can store these labeled cups with the salt and reuse them for future activities.

Styrofoam or plastic egg cartons

- ❑ Students can use these for completing multiple small reactions.
- ❑ Also, egg cartons can be used to distribute small amounts of multiple chemicals.
- ❑ White ice cube trays also work well for this.

MEASUREMENT

To make this curriculum "No Hassle," the activities have been designed so that precisely measured amounts (either in standard or metric) are not necessary for a successful experiment.

For the activities in this book, students are instructed to use a "spoonful" of material. The exact size and kind of the spoon (metal or plastic) is unimportant in most experiments. Spoons should be around a teaspoon size (think of a cheap plastic picnic spoon). Make sure that all the spoons students are using are about the same size.

It is important that the spoons be used the same way throughout the experiment. When you conduct these experiments with your class, take some time to discuss how to measure "a spoonful." For liquids, perhaps "a spoonful" is as much as you can put in the spoon. For solids, you can distinguish between a "heaping spoonful" (as much on the spoon as can fit) and a "level spoonful" (use a pencil to level the amount along the edge of the spoon).

For some extensions of the activities, students are required to use accurately measured amounts. You should have sets of measuring spoons, rulers, and measuring cups (either in metric or standard) for students to use in these situations.

SUPPLIES

This is a list of non-perishable items for all of the activities in this book. Stock up on these materials so you can do any activity on a whim!

Items available at a supermarket (e.g., Fred Meyer, Kmart, Wal-Mart, Target)

Alka-Seltzer
ammonia
baby powder
baking powder
baking soda
bleach
borax detergent
coffee filters
cornstarch
cream of tartar
extracts and flavorings (an assortment:
 almond, peppermint, lemon,
 orange, coconut, etc.)
Epsom salts
flour
food coloring (red, green, blue, and
 yellow)
isopropyl alcohol 70% (rubbing alcohol)
 and 90% or 99%
Kool-Aid, unsweetened packets (grape,
 black cherry, cherry, strawberry,
 watermelon-cherry, orange)
laundry detergent (must contain sodium
 carbonate)
M&M's
marshmallows, large
meat tenderizer
Mentholatum or Vicks VapoRub
microwaveable popcorn
plastic cups, clear, various sizes
powdered milk, non-fat
rice
salt
spices (an assortment: ground cloves,
 cinnamon, nutmeg, etc.)
sealing plastic bags, (e.g., Ziploc) snack,
 sandwich, pint, or quart size
spoons
Stäflo liquid starch
strainers
straws, clear
sugar, granulated white
tincture of iodine
towels and sponges
turmeric
vegetable oil
vinegar, white
watercolor paper
wax paper cups (e.g., Dixie) (4 oz.)

**Items available at office supply or craft store
(e.g., Office Depot, Michael's)**

8 ½" x 11" plastic protective sleeves
balloons
black paper
biodegradable packing peanuts
(e.g., Biofoam)
chalk
clear glue, 4 oz. bottle
clear tape
envelopes, any size
marbles
masking tape
permanent markers (e.g., Sharpie)
plaster of Paris
rulers

Styrofoam peanuts
scissors
small boxes of the same size (approx.
4-inch cubes)
small paintbrush (e.g., watercolor brush)
steel paper clips (or other small iron-
containing objects)
tempera paint (dry and liquid)
transparency sheets (optional)
water soluble markers, various brands
(e.g., Vis-à-vis, Flair, Mr. Sketch)
white glue (e.g., Elmer's), 4 oz. bottle
wooden craft sticks

**Items available at hardware or home improvement store
(e.g., The Home Depot, Lowe's, Ace, TrueValue)**

battery, 6-volt lantern
calcium chloride
drill with ⅛" bit (or small screw and screwdriver)
gravel
nails, screws, bolts, or other heavy metal scraps
sand
steel wool, fine grade
wooden block or scraps of wood