

***You Be The Chemist* Activity Guide**

Materials List (5-8)

Gear Up!

The following items should be on hand at all times and are used in multiple experiments. All of the items can be purchased at a grocery store or all-purpose store. Don't forget to check out "dollar stores"; they sometimes have most of these items for a dollar or less.

- Balloons
- Borax
- Bowls
- Clear cellophane/plastic tape
- Clear plastic/glass cups
- Diet Coke® or Diet Pepsi® (2-liter bottle)
- Food coloring
- Ice
- Index cards
- Measuring spoons
- Metric rulers
- Paper towels
- Plastic spoons
- Plate
- Salt
- Straws (transparent)
- Vinegar
- Water
- White school glue
- Ziploc® bags (quart size with easy zipper)

Material/Item	Lesson	Where to Purchase
Ammonia	2, 9	All-purpose store; grocery store
Baking soda	2, 9, 24	All-purpose store; grocery store
Balloons (round and long)	11, 18, 22, 28, 31	All-purpose store; party supply store
Borax	1, 2, 9	All-purpose store; grocery store
Bowls (large with flat bottoms)	4, 11, 13 [†] , 17, 19, 21 [†] , 29, 30	All-purpose store
Butter or margarine (stick with the wrapper on)	4	Grocery store
Cake pans	30	All-purpose store; grocery store
Candles (white)	14	All-purpose store
Cardboard	22, 32	
Carnation flowers (white)	26	Grocery store; florist
Charging cloths (wool, plastic wrap, carpet, etc.)	18	All-purpose store; grocery store
Clear cellophane/plastic tape	19, 22, 23, 32	All-purpose store; office supply store
Clear plastic food wrap	19	Grocery store
Clear plastic/glass cups (8 oz)	1, 5, 7, 8, 12, 15, 19 ^{††} , 20, 23, 26, 27, 29 ^{††} , 33	All-purpose store; grocery store
Coffee filters (white)	23	All-purpose store; grocery store
Coin (any)	19	Bank
Construction paper	16, 22	All-purpose store; office supply store

Cornstarch	30	All-purpose store; grocery store
Cotton swabs	2, 8	All-purpose store; grocery store
Diet Coke® or Diet Pepsi® (2-liter bottle)	2, 9, 11, 16	All-purpose store; grocery store
Duct tape	25, 32*	All-purpose store; hardware store
Eggs	5, 9	Grocery store
Epsom salt	7	Grocery store; all-purpose store
Eye dropper	7, 33	All-purpose store
Food coloring (blue, red, yellow, green)	7, 8, 9, 19, 20, 26	All-purpose store; grocery store
Forks	15	All-purpose store; grocery store
Glass cylinder (tall, slender)	3, 31	All-purpose store; online
Goldenrod-colored copy paper	2	All-purpose store; office supply store
Ice	6*, 11, 17	Grocery store
Index cards	16, 27, 29	All-purpose store; office supply store
Isopropyl rubbing alcohol	23, 33	All-purpose store; grocery store
Jar with a screw-on top	5*, 29*	All-purpose store
Lemon juice	2, 9	All-purpose store; grocery store
Liquid dishwashing soap	8, 15	All-purpose store; grocery store
Magnets	10	All-purpose store; hardware store; craft store (Michael's, JoAnn Fabric & Craft)
Markers (black - different brands)	23	All-purpose store; office supply store
Markers (colored)	33	All-purpose store; office supply store
Measuring cups	24	All-purpose store; online
Measuring spoons	1, 7, 19	All-purpose store; online
Metric rulers	4, 11, 23, 27	All-purpose store; office supply store
Milk jugs	20, 32	All-purpose store; grocery store
Milk of magnesia	2, 9	All-purpose store; grocery store; drug store
Newspaper	21	Newsstand; grocery store
Original Mentos® breath mints	16	All-purpose store; grocery store
Paintbrushes	14	All-purpose store; hardware store
Paper bags	12	Grocery store
Paper clips	15, 22	All-purpose store; office supply store
Paper towels	21, 28	All-purpose store; grocery store
Pepper	28	All-purpose store; grocery store
Permanent marker	22	All-purpose store; office supply store
Plastic spoons	1, 9, 12, 24, 28	All-purpose store; grocery store
Plastic trash bag	25	All-purpose store; grocery store
Plate (waterproof)	8, 10, 18, 28	All-purpose store

Powdered laundry detergent	7	All-purpose store; grocery store
Puffed rice cereal	18	Grocery store
Pyrex® brand glassware, with and/or without markings	13	All-purpose store
Rubber bands (different sizes)	32, 33	All-purpose store; office supply store
Salt (kosher salt recommended)	12, 19, 20, 27, 28	All-purpose store; grocery store
Scissors	22, 26	All-purpose store; office supply store
Shallow dish	3	All-purpose store; grocery store
Sponge	21	All-purpose store; grocery store
Spoon (large)	10, 30	All-purpose store; grocery store
Steel wool (size 0000, soap free)	3	All-purpose store; grocery store
Straw (bendable) or rubber tube	3	All-purpose store; hardware store
Straws (transparent)	20, 22, 28, 32	All-purpose store; grocery store
String	11, 22	All-purpose store; hardware store
Super-absorbent disposable diapers	12	All-purpose store
Thermometers (non-digital)	17	All-purpose store; hardware store
Toilet paper	15, 24	All-purpose store; grocery store
Toothpicks	3	All-purpose store; grocery store
Total® cereal or other high-iron cereal	10	Grocery store
Trash can (small, plastic)	25	All-purpose store; hardware store
Vegetable oil	13	Grocery store
Vegetable shortening (solid)	17	Grocery store
Vinegar	2, 5, 9, 24, 33*	Grocery store
Water (hot, cold, and room temperature)	1, 6*, 7, 11, 12 ^{†††} , 15, 17, 21, 23, 26, 30, 31	
Watercolor paint	14	All-purpose store; office supply store
Wax marker	3	All-purpose store; office supply store
White paper	14	All-purpose store; office supply store
White school glue	1, 22, 32	All-purpose store; office supply store
White T-Shirt	33	All-purpose store
Whole milk	8	Grocery store
Window screen (scrap piece)	21	Hardware store
Ziploc® bags (quart size with easy zipper)	10, 17, 24, 30	All-purpose store; grocery store

* These items are optional for this lesson.

† For Lesson 13 - may need some other large glass container, such as a small aquarium, if bowl is not large enough. For Lesson 21 - may need a large dishpan or sink if bowl is not large enough.

†† For Lesson 19 - heavy glass cup will work best for this experiment. For Lesson 29, use high-strength plastic.

††† Distilled water will work best for this experiment.

The following items are not necessary to perform the experiments. Some of the items are only needed for optional extensions, and other items can be substituted for more common items. For example, The Fountain of Soda experiment (Lesson 16) recommends a test tube, but construction paper (that can be rolled into a tube) can work as well. Read through the experiments before purchasing any items to determine what you will need.

Material/Item	Lesson	Where to Purchase
Beakers (500 mL)	6*, 13*, 23*	Online
Blender	21*	All-purpose store or online
Erlenmeyer flask	31	Online
Graduated cylinder	3*	Online
Hot plate and a pan	6*, 31	All-purpose store or online
Magnifying glass	12*, 28	All purpose store; online
Model car wheels	32*	Toy store; hobby store
Other small cargo (bottle caps, candy, etc.)	22	All-purpose store
Red and blue litmus paper	9*	Online
Refrigerator or freezer	11*, 31*	All-purpose store; hardware store; online
Rolling pin	21*	All-purpose store; grocery store
Test tube	16*	Online
Wood glue	32*	Hardware store; hobby store
Wooden skewers or dowels	32*	All-purpose store; hobby store

* These items are optional for this lesson.

Where to Purchase - Examples

- Grocery store: Albertson's, Giant, Kroger, Publix, Safeway, Shoprite, Vons, etc.
- All-purpose store: Target, Wal-Mart, K-Mart, etc.
- Office supply: Office Depot, Staples, etc.
- Hardware store: Home Depot, Lowes, Sears hardware, etc.
- Online resources: (see list below)

Online Resources:

- Basic measurement tools and Pyrex glassware:
www.shopworldkitchen.com
www.cooking.com
www.pyrex.com
www.amazon.com
www.thecontainerstore.com
- Beakers and graduated cylinders
www.thelabdepot.com
Griffin beaker – low form borosilicate
100 mL - 12pack/\$21.12 (\$1.76 each)
1000 mL - 6/pack\$36.84 (\$6.14 each)

www.sciencelab.com
Various types of graduated cylinders ranging from:
10 mL at \$3.75 (min.) – 200 mL at \$37.50 (max.)
- Clear glass jar with lid:
www.sciencelab.com \$2.50 - \$4.95
www.thelabdepot.com \$2.40 - \$6.15
- Laboratory Hot Plates:
www.sciencelab.com \$45.00
www.wardsci.com \$40.00 – \$67.00
- Litmus paper:
www.sciencestuff.com \$1.75 - \$5.50
- Magnifying glass:
www.sciencelab.com \$4.50 - \$10.50