Chemistry Shopping List

eCamp Chemistry Lab

This is a Bonus Lab, *which means that the experiments in this section require adult help (we're working with fire in several of them), and/or the materials are more expensive and hard to find. Use the experiments in this section for kids wanting to go even further and deeper into the subject. Since these are more involved, be sure to browse through the videos for these experiments first before purchasing materials for these additional labs.*

Materials for Kitchen Chemistry

- Milk (whole or lowfat)
- Food dye
- Dish soap
- Water and Ice
- Bowl
- Drinking glass
- Egg (two hardboiled)
- Vinegar
- Salt
- Hydrogen peroxide
- Yeast (the kind you use for bread)
- Empty water or soda bottle (1 liter size)
- Cornstarch (a couple tablespoons)
- Iodine (from the pharmacy)
- Fresh citrus for testing
- Popsicle sticks or disposable plastic spoon
- Acetone (fingernail polish remover)
- Styrofoam cup

Materials for Bubblology

- Straws
- String
- Paper clips (small)
- 2L soda bottles
- Plastic berry basket
- Wire coat hangers (bendable)
- Thick rubber bands
- Stiff card stock (or paper)
- Plate or cookie sheet
- Balloon
- 6 feet of loosely woven inch-wide fabric trim (lace)
- Scissors
- Water (distilled if you have it)
- 1-2 cups clear Ivory dish soap OR liquid Joy Ultra OR green Dawn
- Buckets to hold your soap solution
- Glycerin (check your pharmacy)

Materials for Acids and Bases

- pH paper OR a head of red cabbage and paper towels/coffee filter
- Juice or fruit (anything you have will work)

Materials for Instant Crystal Sculptures

- Reusable hand warmer (the kind with a metal disc inside you flex to activate the sodium acetate)
- Disposable plate
- Scissors

Materials for Liquid Magnets

- Vegetable cooking oil (1/4 cup)
- Old toner or liquid toner
- Magnet
- Small soda bottle with cap

Materials for Volcanoes

- 9 cups flour
- 3 cups dirt
- 4 cups salt
- 1 cup sand
- Water
- Disposable roasting pan
- 4 cups baking soda
- 4 cups distilled white vinegar
- 2 empty water bottles
- 1 cup liquid dish soap
- 1 cup aluminum sulfate (check gardening section)
- 18" length of clear, flexible tubing (any diameter between ¼" – ½")
- Red food dye (optional)

Materials for Water Purification Experiment

- coffee with grinds mixed back in stored in an old plastic water bottle
- popsicle sticks for mixing
- activated carbon granules (from a fish tank supply store)
- clean water
- funnel
- two cotton balls
- three small disposable cups (clear is best so you can see what you're doing)
- medicine dropper or syringe (no needle)
- aluminum sulfate (AKA *alum* from the spice section)
- calcium hydroxide (AKA lime) from the gardening section. **Note: keep this chemical packed away, as the dust is toxic and should not be inhaled.**

Materials for Slime Science

- yellow highlighter pen
- guar gum (check health food stores)
- sodium tetraborate (AKA: borax)
- liquid starch (check the laundry aisle for Vano or Sta-Flo)
- cornstarch (about 2 cups)
- white glue
- clear glue
- disposable cups
- popsicle sticks
- measuring spoons
- water
- sugar (about 1 cup)
- goggles
- PVA (polyvinyl alcohol) (optional)
- food dye (optional)

Materials for Bouncy Balls

- Sodium Silicate (from Unit 3)
- Ethyl Alcohol (check your pharmacy)
- 2 disposable cups (don't use your kitchen glassware, as you'll never get it clean again)
- 2 Popsicle sticks (again, use something disposable to stir with)
- Gloves for your hands
- Goggles for your face

Materials for Burning Money

- Shallow baking dish
- Tongs
- Rubbing Isopropyl Alcohol (50-91%)
- Dollar bill
- Fire extinguisher with adult help

Materials for Football Ice Cream:

- 1 quart whole milk (do not substitute, unless your child has a milk allergy, use soy or almond milk)
- 1 pint heavy cream (do not substitute, unless your child has a milk allergy, then skip)
- 1 cup sugar (or other sweetener)
- 1 tsp vanilla (use non-alcohol kind)
- Rock salt (use table salt if you can't find it)
- Lots of ice
- Freezer-grade zipper-style bags (you'll need quart and gallon sizes)

Materials for Colored Campfires & Spectrometer

- Old ceramic or metal pot with lid
- Heat-proof surface
- BBQ lighter with adult help
- Methanol
- Popsicle sticks

Select the chemical additive you want:

- Boric acid for green flames
- Sodium tetraborate (borax) for yellow-green flames
- Epsom salts (magnesium sulfate) for purple flames
- Regular table salt (sodium chloride) for yellow-orange flames
- Salt substitute (potassium chloride) for rainbow flames

To build the simple spectrometer:

- Old CD
- Razor with adult help
- Index card
- Cardboard tube (paper towel rolls work great)

To build the advanced spectrometer:

- Cardboard box (ours is 10" x 5" x 5", but anything close to this will work fine)
- Diffraction grating (you can order a sheet here)
- Two razor blades (with adult help)
- Masking tape
- Ruler
- Photocopy of a cm (centimeter) ruler (or sketch a line with 1 through 10 cm markings on it, about 4cm wide)

Materials for Iodine Rainbow

- Iodine (clear, non-ammonia from the pharmacy)
- Hydrogen peroxide (3% solution)
- Vinegar (distilled white is best)
- Cornstarch (tiny pinch) or one starch packing peanut
- Water
- Sodium Thiosulfate
- Sodium Carbonate (AKA: "washing soda")
- Phenolphthalein (keep this out of reach of kids)
- 6 disposable cups
- 6 Popsicle sticks
- Gloves for your hands
- Goggles for your face