

Week	Topic	Details	Items in kit	Items not included in kit
Class 1 (Jan 29)	The Scientific Method	-perform a simple experiment using the Scientific Method -form a hypothesis, determine independent/dependent variables and controls, perform the experiment, record and analyze data, and make a conclusion		6 tablespoons white granulated sugar 3 clear plastic cups/glasses and a dark surface to put them on or 3 dark-colored mugs colored pencils tablespoon measuring spoon measuring cup to measure ½ cup stopwatch or phone stopwatch thermometer to measure room temp and hot water (optional) 2 worksheets (printed from website)
Class 2 (Feb 5)	Atoms and the Periodic Table of Elements	make an atom molecule, learn about protons, neutrons, and electrons, intro to the periodic table	6 red, 6 blue, 6 green beads ball of clay 12" string atom information card 24" & 17" wires 6" white pipe cleaner plastic bowl safety goggles	perfume or any spray with fragrance 1 clear cup or glass 4 drops blue or green food coloring water colored pencils periodic table (print from website) small piece of foil to put clay on scissors
Class 3 (Feb 12)	Subatomic Particles (SAPs)	determine electron configuration of shells	16 red, 12 blue, 12 green beads plastic bowl	colored pencils atom model and legend from previous class 2 worksheets (print from website) periodic table from previous class
Class 4 (Feb 19)	Molecules	make molecule models, learn about chemical formulae and covalent/ionic bonding	Dots candies - save extras for next class blue & red beads from SAP class plastic bowl toothpicks	glue stick 9 white mini marshmallows, cotton balls + glue, or small balls of white clay/playdough worksheet (print from website) molecule labels (print from website)-keep bottom key for next week Ionic bonding worksheet (from website) periodic table from previous class scissors colored pencils

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Class 5 (Feb 26)	Balancing Chemical Equations	perform simple chemical reaction and learn how to balance chemical equations	Skittles candies extra Dots candies from previous lab plastic bowl safety goggles 1 T. yeast (labelled "Y")	colored pencils 4 pennies 1 T. vinegar paper towel small zip lock bag 3 small clear cups 1 T. baking soda 1 t. vinegar paper towels/old towel Balancing Chemical Equations Key (printed on molecule label sheet last week) worksheet (print from website) paper towels/old towel teaspoon, tablespoon measuring cup (1/2 c.) warm water (wait to get until needed in class) periodic table from previous class small water bottle, empty with label removed dishsoap (a squirt) hydrogen peroxide (1/2 c.) - don't premeasure cake pan or large bowl to catch elephant toothpaste overflow 12 white mini marshmallows, small cotton balls, or small balls of white clay/playdough
Class 6 (Mar 5)	Elements, Compounds, & Mixtures	learn about the difference between elements, compounds, & mixtures by separating a mixture using various methods	1/2 T. sand and bean sample 1 coffee filter small magnet in a bag Skittles candies plastic bowl red, blue, green pony beads	funnel (or cut off top half of water bottle) 4 small plastic cups 1/2 c. water 2 worksheets (print from website) paper towels/old towel
Class 7 (Mar 12)	Acids, Basics, and the pH Scale/Lab Safety	learn about the acids/bases/pH scale and measure the pH of various household chemicals and foods, discuss laboratory safety	9-10 pieces of litmus paper safety goggles 1/4 tsp. cabbage juice indicator (purple powder) plastic bowl	2 t. of various test liquids: lemon juice, vinegar, laundry detergent or dish soap, baking soda, Windex or other ammonia-based cleaner, water, bleach (with adult supervision) scissors 1/2 teaspoon 14 small clear or white cups or bowls (or 2x the number of test liquids) paper towels/old towel worksheet (print from website) 3/4 c. water in large cup small cup of water for rinsing spoon

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Class 8 (Mar 19)	Endothermic & Exothermic Reactions	learn how some chemical reactions absorb and release energy	1/2 T. calcium chloride (labelled "CaCl ₂ ") safety goggles 2 Alka-Seltzer tablets instant heat pack instant cold pack 3 ziplock sandwich bags bingo card	2 T. baking soda in a cup 1/2 c. water in a cup 2 t. vinegar in a cup 1/2 teaspoon, 1 teaspoon, 1 tablespoon thermometer (optional) 3 small plastic cups paper towels/old towel worksheet (print from website)
Class 9 (Mar 26)	Polymers and Slime	learn about the structure of polymers and make slime	1 box of paperclips 1/2 T. borax (labelled "B") safety goggles plastic bowl	4 oz. white PVA glue (like Elmer's) or more to make more slime disposable plastic cup worksheet (print from website) paper towels/old towel food coloring 1 c. water 1/2 cup measuring cup 1/2 teaspoon metal spoon plastic cup about 12" long piece of wax paper or foil cookie sheet or baking pan for paper clip setup resealable container to store slime
Class 10 (Apr 16)	Nature's Amazing Polymer: DNA Structure and Extraction	-learn about the structure of DNA by making a model -extract DNA from fresh or frozen strawberries using dish soap, salt, and isopropyl alcohol.	1 ziplock sandwich bag coffee filter 6 red, 4 blue, 6 green, 4 yellow beads 12 toothpicks Red Vines plastic bowl	2-3 strawberries (fresh or frozen, thaw if using frozen) funnel (or cut top 1/3 off a plastic water bottle) clear plastic or glass cup 2 T. 70% or 91% isopropyl alcohol (chilled in the freezer) (NOT 50%) 1 teaspoon, ½ teaspoon, ¼ teaspoon, 1 tablespoon 2 worksheets (printed from email) colored pencils or markers (same colors as marshmallows or beads) (Optional if you don't want to use colored beads) 4 colors (need about six of each color) of mini-marshmallows 1-1/2 tsp. liquid dish soap (like Dawn, Palmolive, etc.) water 1/4 teaspoon salt measuring cup to measure ½ cup

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Class 11 (Apr 23)	Flinkers	-learn about buoyancy and density -design an object that neither floats or sinks	1/2 cork paperclips pony beads	Various small items of different weights that can be stuck into the cork to weigh it down Examples: tacks, large and small nails, sewing pins clear container that can hold about 6" water/wide enough to put hand in & reach bottom Examples: tall clear pitcher, large pickle jar, or 2-L soda bottle with top/neck cut off Sharpie marker or masking/painter's tape worksheet (printed from website) stopwatch or phone stopwatch water old towels or paper towels 1-foot piece aluminum foil scissors ruler 10 quarters baking pan to catch spilled water Optional items (I will demonstrate): 1 small cups, turkey baster, kitchen scale that measures ounces or grams
Class 12 (Apr 30)	Density of Liquids	learn about the density of different liquids and liquids of different temperatures		Tall, clear smooth-sided bottle or vase with a 1'-2.5" diameter (17 oz. Sparkling Ice drink type bottle with top cut off works well) funnel red and blue food coloring ¼ c. dish soap (or less depending on diameter of bottle/vase)-preferably not yellow water ¼ c. vegetable oil (or less depending on diameter of bottle/vase) cake pan to catch spills smooth sided empty plastic bottle with very tight-fitting lid (a 17 oz. Sparkling Ice drink type bottle works well) ¼" slice of carrot knife to cut carrot slice paper towels/old towel 3 t. salt 5 clear cups/glasses 1 teaspoon (measuring spoon) small spoon for stirring 1-1/4 c. (10 oz.) or about 50% volume of your bottle - baby oil, mineral oil, or very light-colored vegetable oil (baby or mineral oil are best) (Dollar Tree has cheap baby oil) 1-1/4 c. (10 oz.) or about 50% volume of your bottle - water worksheet (printed from website) measuring cup calculator