



Items to be purchased

These items should be purchased. Any source is fine. Prices given are for budgeting purposes and subject to change based on suppliers.)

General Supplies

Also used in other science courses. If you have taken other courses in the high school sequence, you should already have these supplies.)

- Mead Quadrille Notebook (for labs)
 - Each student needs their own notebook. It can be used in multiple courses.
- Composition or Note-taking notebook (for homework)
- Blue or Black indelible ink pen
- Pencils
- Ruler with both inches and centimeters
- Scientific calculator (also used in upper level math courses)
 - Recommended: [TI-30XIIS](#) (\$12)
- Digital Scale (3000g capacity and 0.1 g specificity are the minimum requirements for the general program)
 - Recommended: [Fuzion digital scale](#) (\$16)
 - For students who only need a more accurate scale for chemistry: [Mafiti scale](#) (\$9)
- 100 mL graduated cylinder
 - Recommended: [100 mL graduated cylinder](#) (\$9) (Amazon)
 - Recommended: [100mL graduated cylinder](#) (\$4.75) (HST)
- Thermometer: One of these options (needs to read Celsius and measure as low as 15°C)
 - Recommended: [Scientific](#) (\$13) (Amazon)
 - Recommended: [Scientific](#) (\$3.30) (HST)
 - Recommended: [Digital meat](#) (\$11)
 - Please note: A regular thermometer used for taking one's temperature will not work. The range is not sufficient.

Chemistry Supplies (Supplies specific to this course.)

- Hot plate
 - Recommended: [Ovenette hot plate](#) (\$20.10)
 - Note: A hot plate with coils will not work. Glassware will be set directly on the hot plate.
- Eyedroppers (2)
 - Recommended: [Pipet \(medicine dropper\)](#) (2 for \$1)
 - You may have these from medicine or make-up



- Ring stand + support ring + clamp
 - Recommended, clamp may be easier to use: [EISCO Ring Stand Set](#) (\$32)
 - Recommended: [LabZhang Ring Stand Set](#) (\$24)
- Two Heat-resistant 250 mL beakers
 - Recommended: [HST 250 mL beaker](#) (\$2.80)
 - Note: Beakers must be made of borosilicate glass. Standard household Pyrex cannot be safely used.
- Goggles
 - Recommended: [goggles](#) (\$4)
- mossy zinc
 - Recommended: [Mossy Zinc](#) (\$5.25)
- 1 Molar Hydrochloric acid
 - Recommended: [1M Hydrochloric acid](#) (\$5.15)
- Copper (II) chloride dihydrate (1 g)
 - Recommended: [Copper \(II\) Chloride](#) (\$4.70)
- Iron Sulfate
 - Recommended: [Ferrous Sulfate \(Iron II\)](#) (\$3.55)
- calcium chloride dihydrate (2 g)
 - Recommended: [Calcium chloride dihydrate](#) (\$3.85)
- sodium carbonate (1 g)
 - Recommended: [Sodium Carbonate](#) (\$3.75)
- 250 mL heat-resistant Erlenmeyer flask
 - Recommended: [HST Erlenmeyer flask](#) (\$4.19)
 - Must be borosilicate glass.
- 3 small ungalvanized nails (from any hardware store)
- Students will also need an empty dish soap bottle to hold water (a “wash bottle”)
- Disposable gloves (ex. latex, nitrile) OR rubber gloves (ex. for washing dishes)
 - Especially if the gloves are thicker, they must fit properly



Complete list of materials

What follows is a list of materials for each lab. The majority of the materials are common household items. Students should ensure that all materials are ready before work is begun on each lab throughout the year. Students should always bring their calculator and lab notebook to class. Items listed above are underlined.

Unit 1: Properties of Water (about 200 mL)

- Isopropyl alcohol or ethanol (about 15-20 mL)
- Cooking oil (olive, canola, etc.) (about 100 mL)
- Soap (hand or dish, a few drops)
- 2 Eyedroppers
- 250 mL beaker (2)
- Cup
- Paper clip
- String
- Salt

Unit 2: Primary Source Discussion and Conversion Practice

- Textbook
- Primary Source Handout
- Calculator

Unit 3: Colloidal Properties Observation and Significant Digit Practice

- candle
- 250 mL beaker (2)
- small plate (NOT paper)
- matches/lighter
- water
- salt OR sugar (1/4 tsp)
- Vegetable oil (canola, olive, ect.) (1/4 tsp)
- flashlight
- large bowl
- goggles



Unit 4: Separating Sucrose and Sand

- goggles
- balance
- 3 coffee filters
- hotplate
- 250 mL beaker (2)
- water 25 mL
- graduated cylinder
- sand (about 10 g)
- sugar (about 10 g)
- funnel
- small plate
- spoon
- masking tape

Unit 5: Finish Separating Sand and Sucrose Lab, Calculation Practice

- Dried sand on filter paper from unit 4
- Textbook
- Calculator

Unit 6: Spectral Line Simulation and Conversion Practice

- Textbook
- Calculator

Unit 7: Electron Configuration Practice

- Textbook

Unit 8: Chromatography Mixture Separation

- 2 pencils
- ruler
- scissors
- 250 mL beaker (2)
- coffee filters (white is preferable, but not required)
- isopropyl alcohol (less than 50 mL)
- masking tape
- 3 different black pens/markers/sharpies
- A fresh leaf (picked or fallen the day of the lab or the day before)



Unit 9: Empirical and Molecular Formula Practice

- Textbook
- Calculator

Unit 10: Empirical Formula of Copper Chloride Hydrate Lab

- hot plate
- balance
- plastic spoon
- small plate
- water (distilled/filtered if possible)
- pot holder
- oven mitt (or 2nd pot holder, will be used to grab things)
- “wash bottle” (dish soap bottle with water)
- goggles
- 250 mL beaker (2)
- mossy zinc
- 1 Molar Hydrochloric acid (25 mL)
- Copper Chloride dehydrate (1 g)
- 250 mL Erlenmeyer flask
- funnel
- coffee filter

Unit 11: Finish Empirical Formula Lab and Ionic Formula Practice

- Copper and Filter paper from Unit 10 lab
- Textbook
- Calculator

Unit 12: Ionic vs Covalent compound lab

- Water (about 200 mL)
- Salt
- Sugar
- Cream of tartar or cornstarch (if neither is possible, butter)
- Copper Chloride dihydrate (2 g)
- Graduated cylinder
- ring stand + ring
- aluminum foil
- hot plate



- masking tape
- 4 spoons
- 4 small cups/beakers
- goggles

Unit 13: Dot diagrams and Naming Practice

- Textbook

Unit 14: Final Review

- Calculator

Unit 15: Lewis Structure Practice

- Textbook

Unit 16: Bond Polarity and VSEPR Simulation

- Water (about 50 mL)
- Isopropyl alcohol or ethanol (about 50 mL)
- Oil (about 50 mL)
- Paper cup
- masking tape
- ring stand and clamp
- balloon
- large bowl

Unit 17: Law of Conservation of Mass Lab

- vinegar
- baking soda
- 250 mL beaker
- bowl
- balance
- coffee filter
- spoon
- graduated cylinder
- 250 mL Erlenmeyer flask
- balloon



Unit 18: Balancing Practice

- Textbook

Unit 19: Activity Series

- 2 eyedroppers
- 9 small glass jars
- 250 mL beakers (2)
- “wash bottle” (dish soap bottle with water)
- bowl
- goggles
- graduated cylinder
- water
- balance
- spoon
- 2 coffee filters
- 3 ungalvanized iron nail (small)
- 3 pennies (pre-1982 is ideal)
- mossy zinc
- 1 M HCl (10 mL)
- Copper Chloride dehydrate
- Ferrous (Iron) Sulfate

Unit 20: Stoichiometry Calculations

- Textbook
- Calculator

Unit 21: Limiting Reagent Calculations

- Textbook
- Calculator

Unit 22: Limiting Reagent Lab

- goggles
- balance
- Coffee filter
- 250 mL beaker (2)
- graduated cylinder
- “wash bottle” (dish soap bottle with water)
- small plate



- funnel
- calcium chloride dihydrate (2 g)
- sodium carbonate (1 g)

Unit 23: Phase Diagrams and Simulation

- Textbook

Unit 24: Charles's Law Lab

- hot plate
- thermometer
- 250 mL Erlenmeyer flask
- bowl of ice water (able to hold Erlenmeyer flask)
- small pot (will be heated on the hot plate; able to hold Erlenmeyer flask)
- water
- ring stand and clamps
- ruler
- string
- balloon
- tongs or oven mitt

Unit 25: Ideal Gas Law Calculations

- Textbook
- Calculator

Unit 26: Primary Source Discussion

- Primary source reading

Unit 27: Boiling Point Elevation lab

- hot plate
- thermometer
- goggles
- graduated cylinder
- large bowl (to hold waste liquid)
- water
- balance
- coffee filter
- salt (40 g)
- metal spoon



- oven mitts
- potholder

Unit 28: Acid-Base Investigation

- One of the following options (200 mL liquid)
 - Grape juice concentrate OR
 - Cherry juice OR
 - Beet juice OR
 - Red cabbage juice (Blend $\frac{1}{2}$ cup cabbage in just enough water to cover it. Strain the mixture and collect the juice.)
- Five common clear household liquids (Examples are listed below, but you can use other ones as well.) (about 50 mL each)
 - white vinegar
 - lemon soda
 - apple juice
 - shampoo (clear)
 - liquid soap
 - laundry detergent
 - cleaning solution
- Water
- Baking soda (1/4 cup)
- graduated cylinder
- tablespoon
- 7 cups

Unit 29: pH calculations and titration simulation or demonstration

- Textbook
- Calculator

Unit 30: Final Review

- Calculator