

Equipment List for Chapter 8:

Materials needed for each group per activity.

Activity 1

- Hot plate
- Micro plate (24 cell) or, small test tubes
- Test-tube rack
- Ice cubes for class
- Small bottle lemon juice
- 1 quart milk
- Table salt or sodium chloride
- Vinegar
- Baking soda
- Table sugar
- Starch
- Iodine/potassium iodide solution in small dropping bottle/dropper
- Small pieces of zinc
- 0.1 M HCl in small dropping bottle/dropper
- Phenolphthalein in small dropping bottle/dropper
- 0.1 M NaOH in small plastic dropping bottle/dropper
- 0.1 M Na₂CO₃ in small dropping bottle/dropper
- 0.1 M NaHSO₄ in small dropping bottle/dropper
- Household ammonia
- 0.1 M CuSO₄ in small dropping bottle/dropper • Wood splints
- Bunsen burner
- Candle wax

- Scoopla or spatula to use in melting wax
- Chalk or calcium carbonate
- Pencil
- Disposable diapers containing sodium polyacrylate
- Styrofoam® cups
- Sodium polyacrylate
- 250 mL Erlenmeyer flask with stopper
- Sodium acetate
- Sodium silicate solution (water glass solution)
- 100 mL graduated cylinder
- Large jar
- Cobalt chloride crystals
- Copper (II) chloride crystals
- Nickel chloride crystals
- Iron (III) chloride crystals
- Manganese chloride crystals

Activity 2

- Micro plate (24 cell) or, small test tubes
- Test-tube rack
- Vinegar
- Baking soda
- 0.1 M HCl in small dropping bottle/dropper
- 0.1 M NaOH in small plastic dropping bottle/dropper
- 0.1 M NaHSO₄ in small dropping bottle/dropper
- 0.1 M CuSO₄ in small dropping bottle/dropper
- Bunsen burner
- Sheet of plastic
- 0.1 M Ba(NO₃)₂ in small dropping bottle/dropper
- 0.1 M NaHCO₃ in small dropping bottle/dropper

- 0.1 M KI in small dropping bottle/dropper
- 0.1 M AgNO_3 in small dropping bottle/dropper
- 0.1 M $\text{Fe}(\text{NO}_3)_3$ in small dropping bottle/dropper
- Calcium chloride
- Quart size Zip-lock bag
- Phenol red indicator solution in small dropping bottle/dropper
- Saturated solution of $\text{Ca}(\text{OH})_2$
- Straws
- 100 mL beakers
- Zinc oxide (anhydrous)
- Ringstand

Activity 3

- Hot plate
- Small test tubes
- Test-tube rack
- Vinegar
- Baking soda
- Phenolphthalein in small dropping bottle/dropper
- Household ammonia
- Wood splints
- Bunsen burner
- Packet of Alka-Seltzer® tablets
- Baking powder
- 250 mL beaker
- 0.1 M magnesium sulfate in small dropping bottle/dropper
- 2 M ammonium hydroxide
- 1 M magnesium sulfate

Activity 4

- Micro plate (24 cell) or, small test tubes

- Test-tube rack
- Phenolphthalein in small dropping bottle/dropper
- 0.1 M NaOH in small plastic dropping bottle/dropper
- 0.1 M CuSO_4 in small dropping bottle/dropper
- 0.1 M KI in small dropping bottle/dropper
- 0.1 M AgNO_3 in small dropping bottle/dropper
- 100 mL beakers
- 0.1 M magnesium sulfate in small dropping bottle/dropper
- 0.1 M potassium carbonate in small dropping bottle/dropper
- 1.0 M silver nitrate in small dark dropping bottle/dropper
- 0.1 M iron (III) chloride in small dropping bottle/dropper
- 2 M ammonium hydroxide
- 1 M magnesium sulfate

Activity 5

- Hot plate
- Small test tubes
- Test-tube rack
- 250 mL Erlenmeyer flask with stopper
- 100 mL graduated cylinder
- Calcium chloride
- Quart-size Zip-lock bag
- 100 mL beakers
- Balance
- Sodium carbonate
- Ammonium nitrate

- Sodium carbonate or calcium chloride
- Ammonium thiocyanate
- Barium hydroxide
- Stirring rod
- Sodium chloride (This can be tech-grade level)
- Clear bottles or plastic bottles of carbonated soda drink
- 1 or 2 L beaker
- Crushed ice
- Wood board
- Sodium hydroxide
- Sodium thiosulfate pentahydrate
- Thermometer
- 2 pint-size Zip-lock plastic bags

Activity 6

- Hot plate
- Small test tubes
- Test-tube rack
- Vinegar
- Small pieces of zinc
- 0.1 M HCl in small dropping bottle/dropper
- Bunsen burner
- Packet of Alka-Seltzer® tablets
- Magnesium ribbon cut into small equal size for each group
- Steel wool to clean magnesium ribbon
- Micro plate (12 cell)
- 1.0 M HCl in small dropping bottle/dropper
- Zinc metal
- 3% hydrogen peroxide
- Manganese dioxide
- Test-tube clamp
- Ringstand
- 400 mL beaker

- 250 mL beaker
- Tea bags
- 0.1 M potassium iodate
- 1% starch solution
- 0.25 M sodium hydrogen sulfite
- 500 mL beakers or large jars
- Light sticks
- 150 mL beaker

Activity 7

- Micro plate (24 cell)
- Lemon juice
- Milk
- Vinegar
- Baking soda
- Small pieces of zinc
- 0.1 M HCl in small dropping bottle/dropper
- Phenolphthalein in small dropping bottle/dropper
- 0.1 M NaOH in small plastic dropping bottle/dropper
- Household ammonia
- Saturated solution of $\text{Ca}(\text{OH})_2$
- Magnesium ribbon cut into small equal size for each group
- 1.0 M HCl in small dropping bottle/dropper
- Zinc metal
- 250 mL beaker
- 1 M sulfuric acid in small dropping bottle/dropper
- Mineral water
- Carbonated beverage
- Orange juice
- Dishwashing solution
- 1 M NaOH in small plastic dropping bottle/dropper
- Milk of Magnesia®
- Apple juice

- 1 M KOH in small dropping bottle/dropper
- Red and blue litmus paper vials
- pH hydrion paper (1-14)
- Large sheet of paper
- Window cleaner with ammonia and spray attachment
- Stirring rod
- Red cabbage
- 50 mL buret
- Ringstand with buret clamp
- 125 mL Erlenmeyer flask
- 0.1 M acetic acid

Activity 8

- Test tube with stopper
- 1 M CuSO_4
- Zinc powder
- 1 M $\text{Cu}(\text{NO}_3)_2$
- Aluminum strips
- Zinc strips
- Copper strips
- 1 M $\text{Al}(\text{NO}_3)_3$