

Lab Materials

Before teaching, prepare supersaturated solutions of salt and sugar.

Supersaturated Sugar Solution Ratio: 100 mL water + 220–250 g sugar	Highly Concentrated Salt Solution Ratio: 100 mL water + 36–40 g salt
Procedures: 1. Measure 100 mL of water into a beaker. 2. Heat to 60–80°C (hot, not boiling). 3. Add sugar gradually while stirring until 220–250 g is dissolved. 4. Stop when sugar no longer dissolves easily. 5. Remove from heat and allow to cool undisturbed to form a supersaturated solution. 6. Store covered. Add a “seed crystal” when ready to demonstrate crystallization.	Procedures: 1. (Optional) Grind salt with a mortar & pestle. 2. Heat 100 mL of water to near boiling. 3. Add salt slowly while stirring until no more dissolves. 4. Keep hot until dissolved, then remove from heat. 5. Let cool covered and undisturbed to promote crystal formation.

Set up 6-8 lab stations depending on your class size. 2-3 students per group works best. Each station can include all the materials, or you can set up separate stations for each test type.

- Stereoscope/pocket microscope
- Dark Colored Cardstock
- Graphite (shaved down pencil or mechanical pencil graphite works well)
- Coal
- Diamond (Picture)
- Sugar / Salt (up to 2 mg for each test)
- Hot Plate
- Well plate
- Foil Squares – precut to fit hotplate
- Droppers
- Toothpicks/glass stirring rod
- Water (Tap and Distilled)
- Ethanol or Isopropyl Alcohol
- Spoons or Scoopulas
- Magnifying Glass
- Conductivity Tester
- Mortar and Pestle
- Scale or triple beam balance
- 100 ml Graduated Cylinder
- 250 ml beakers for boiling test
- Tongs/forceps
- Thermometer

