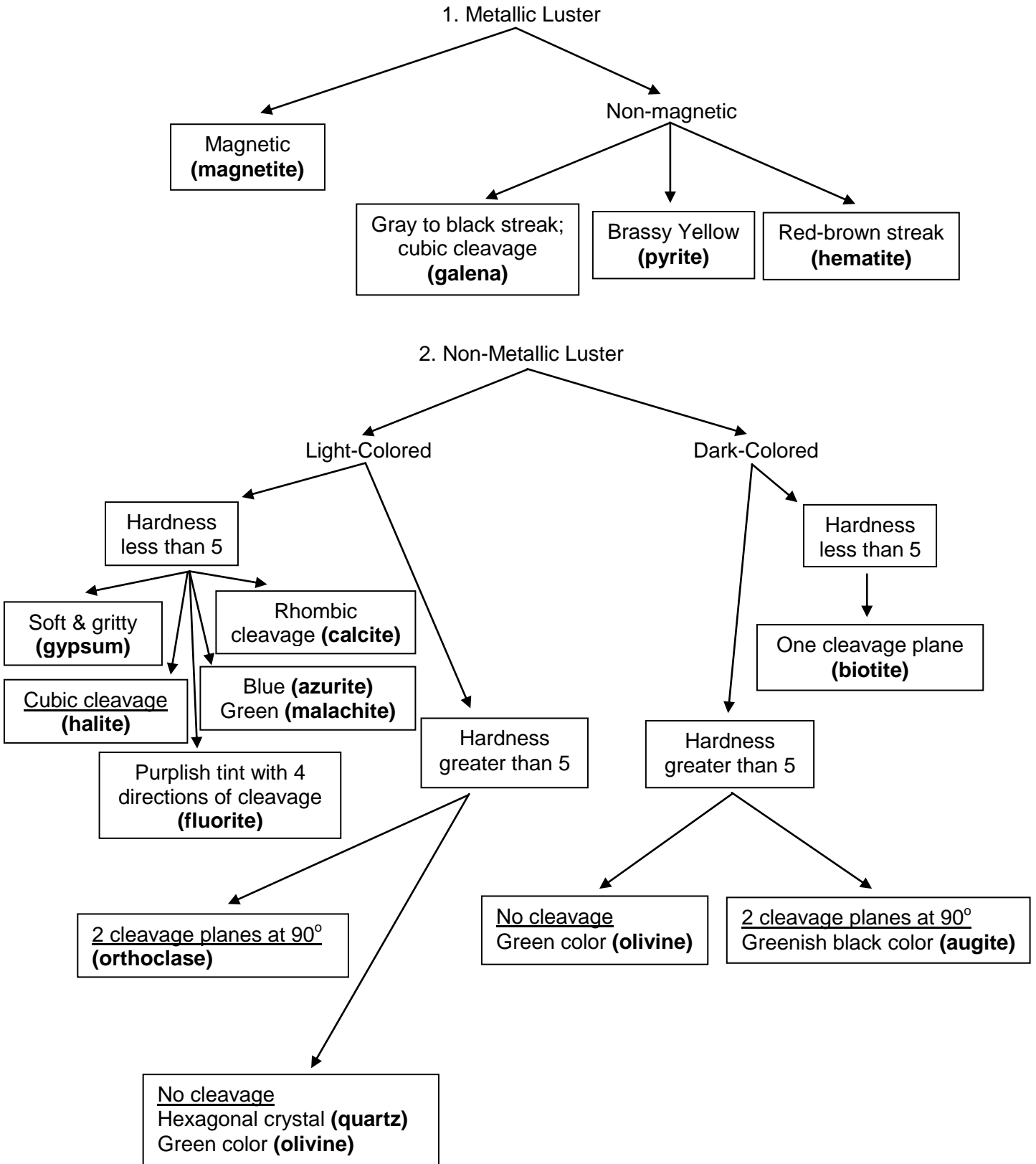


# Flow Chart for Identification of Minerals



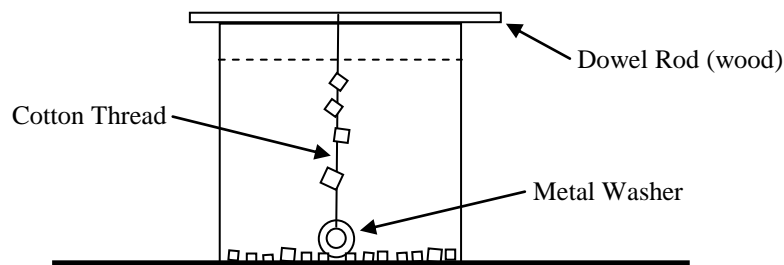
## Growing Your Own Salt Crystals

### Materials

- 1 pound table salt, sodium chloride (NaCl)
- 20 oz. clear jar with wide mouth (pickle jar works well)
- 100 percent cotton thread or string and scissors
- Small metal washer
- 1/16-inch dowel rod (wood)
- Medium saucepan

### Procedure

First, you will need to set-up the crystal growing chamber for this experiment. To begin, break the wood dowel rod into a length that will sit across the top of your jar. Then, cut a length of cotton thread about 12 inches long. Tie the thread around the small metal washer. Make sure the knot is secure and cut any remaining thread from the washer. Next, tie the thread to the wooden dowel rod, making sure the washer is hanging just above the bottom of the jar (see picture below). Tie the cotton thread tightly to the rod, and then cut off any excess thread. With the thread attached to the washer and the wooden dowel rod, wet your thread. Dump some loose salt on a plate and drag your wet thread through the salt. You will see salt grains sticking to your thread. These will become the “seed” crystals for your experiment. Place the thread back into the jar. You are now ready to prepare the salt crystal growing solution.



With the help of an adult, bring about 3 cups of water in a saucepan to a boil. Once the water is boiling, add about 1 cup salt. Bring the water in the saucepan back to a boil; if all of the salt dissolves, add more until you see some salt remaining in the bottom of the sauce pan. When no more salt can be dissolved in the water, you have created a saturated solution.

Take the saturated solution that you have made and have an adult pour the hot salt water into your crystal growing chamber. Make sure the jar is placed in a warm out of the way place so that it will not be disturbed. Within a few minutes, you will see lots of salt precipitating in the solution and settling to the bottom of your jar. You will also notice that salt will begin precipitating on your “seed” crystals. Let the water evaporate from your jar over a week; you will observe the growth of your salt crystals. Draw sketches to keep track of their growth.

### Results & More Experiments

Repeat the experiment and add food coloring to the hot salt water? Does the food coloring change the color of the salt crystals, or do the salt crystals remain clear? Why? Try other materials in this experiment, such as sugar or Epsom salts. How does the shape of these crystals differ from salt? Why?

In natural environments, some minerals form in a similar way and are precipitated from saturated solutions. What do you think controls the crystal size of minerals in nature?