

## How to grow crystals ?

### **Sodium Borate Crystal**

#### Materials:

• marked plastic cup • Styrofoam cup • 50 mL of deionized water • 2 teaspoons of sodium borate • String • plastic spoon

#### Procedure:

1. Label a Styrofoam cup, "Sodium borate solution".
2. Place 2 teaspoons of sodium borate in the Styrofoam cup.
3. Place 50 mL of water that has been warmed into the cup as well.
4. Using a plastic spoon, stir solution until all of the sodium borate is dissolved.
5. Using scissors cut a piece of string slightly longer than the height of the cup and tie to the plastic spoon.
6. Place the string into the mixture and rest the plastic spoon across the top of the cup.
7. Place a piece of paper over the beaker and let sit undisturbed overnight to one week.
8. Remove string to reveal crystals.
9. If a microscope is available, place string under microscope to observe the structure of the crystals. If a microscope is not available, use a hand lens to determine the shape of the crystal and observe its structure.

### **Nickel (II) Sulfate Crystals**

#### Materials:

• 6 teaspoons of Nickel sulfate hydrate • marked plastic cup • Styrofoam cup • 50 mL of deionized water • plastic spoon • String • scissors

#### Procedure:

1. Label a Styrofoam cup, "Nickel (II) sulfate solution".
2. Place 6 teaspoons of Nickel II sulfate in a Styrofoam cup.
3. Place 50 mL of deionized water, which has been warmed, into the Styrofoam cup.
4. Using scissors cut a length of string slightly longer than the height of the cup.
5. Place the string into the mixture, resting the spoon across the top of the cup.
6. Cover with a piece of paper and let sit undisturbed overnight to one week.
7. Remove string from mixture to reveal crystals.
8. If a microscope is available, place string under microscope to observe the structure of the crystals. If a microscope is not available, use a hand lens to determine the shape of the crystal and observe its structure.