

Make Your Own Crystal Art

Type

Earth Sciences

Grades

1-3

Difficulty of Project

Easy

Cost (Approximate Cost of completing the project)

Less than \$20

Safety Issues

Requires parental involvement for heating water on the stove.

Material Availability

Commonly available at a grocery or hardware store.

Approximate Time Required to Complete the Project

3 days

Objective

To understand and explore the concepts of crystal formation and dissolving substances.

Materials

- $\frac{3}{4}$ cup water
- 1 cup epsom salt
- food coloring
- Small pot
- 16 oz glass jar
- Pipe cleaner
- String
- Magnifying glass
- Pencil or other writing utensil

Introduction

A crystal is an organized group of molecules, each with their own shape. For example, snowflakes are made of ice crystals and each snowflake is different. You can make crystals by using salt or sugar. For this experiment we will use salt. The atoms that make up salt, sodium (Na) and chlorine (Cl),

Separate when mixed with water and then reattach as the water begins to evaporate. As they continue to bond back together they make crystals. Salt is also a crystal in a 6-sided cube shape.

Research Questions

1. What is a crystal? What is it made of?
2. Can you think of any crystals we see at home? Are there crystals in your kitchen right now?
3. How long do you think it will take for crystals to grow on your sculpture?
4. What happens to the salt when we mix it with water? Does it disappear?



Experimental Procedure

1. Gather all materials over a waterproof or other protected surface.
2. Heat the water on the stove until it is boiling. Remove the pot from the heat and add one tablespoon of Epsom salt. Stir until all salt is dissolved. Continue adding one tablespoon of salt at a time until you have mixed the entire 1 cup with the hot water. Let this mixture cool.
3. Select a pipe cleaner or two and create a sculpture. Make sure the sculpture fits through the mouth of the 16 oz glass jar.
4. Once the mixture is cool, pour it into the glass jar. Add food coloring until desired color is achieved.
5. Tie one end of the string to your sculpture and the other end to a writing utensil.
6. Slowly lower your sculpture into the jar filled with the liquid mixture. Take a photograph for your presentation.
7. Store the jar in a safe spot and revisit it once a day for several days. Each day record your observations and take a photograph of your sculpture. If available, use a microscope to search for crystals as they begin to grow.
8. After three or four days remove your sculpture from the liquid. Hang it to dry and then find a place in front of a window for it. The larger crystals will reflect light and create rainbows in your home!