

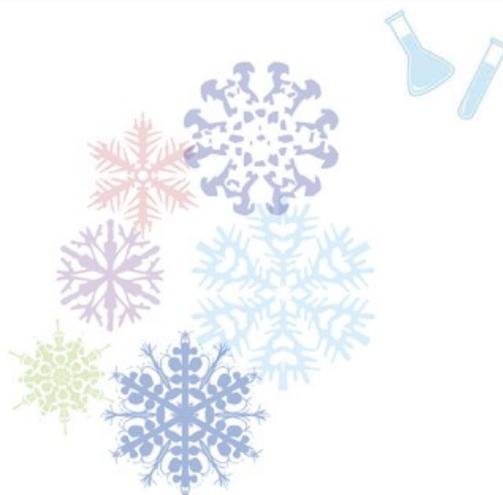


Years 5-6

Borax Snowflakes

Materials

Pipe cleaners
Wide mouthed jars
Boiling water
Borax crystals
String
Pencil.



Instructions

1. Twist the pipe cleaners together at their centres into an interesting shape like a snowflake. It needs to fit into the jar so trim if necessary.
2. Tie the string onto one of the snowflakes arms. Tie the other end to the pencil. The pipe cleaners must hang inside the jar and not touch the sides or bottom. The pencil will rest on top of the jar.
3. Mix boiling water (be careful) with the borax. (3 tablespoons borax/250 mls boiled H₂O).
4. Hang the pipe cleaner snowflake in the jar and add the borax solution so the snowflake is completely covered.
5. Try adding food colouring. Hypothesize what may happen if this is added to the solution.
6. Leave the jar to sit undisturbed overnight.

Why does it do that?

Borax is a common household and commercial chemical and is an example of crystal - "a solid with flat sides and a symmetrical shape because its molecules are arranged in a unique, repeating pattern." Every crystal has a repeating pattern based on its unique shape. They may be big or little, but they all have the same "shape."

How do the Borax crystals grow? Hot water holds more borax crystals than cold water. That's because heated water molecules move farther apart, making room for more of the borax crystals to dissolve. When no more of the solution can be dissolved, you have reached saturation. As this solution cools, the water molecules move closer together again. Crystals begin to form and build on one another as the water lets go of the excess and evaporates.

Borax is a material that grows into a crystal naturally. Just like snowflakes are crystals that form when warmer water in the clouds cools - enough borax solution will cool into crystals. The reason we use hot water to make borax crystals is because borax will dissolve into water. As it cools, it cannot hold as much borax in each water molecule, so it releases some of the borax into its natural repeating mineral shape.

