Borax Crystal Snowflake

Grow a snowflake in a jar! You will need:
- string
- wide mouth pint jar
- white pipe cleaners
- blue food coloring (optional)
- boiling water (with adult help)
- borax (available at grocery stores in the laundry soap section, as 20 Mule Team Borax Laundry Booster - NOT Boraxo soap)
- pencil

With a little kitchen science you can create long lasting snowflakes as sparkly as the real ones. Cut a white pipe cleaner into 3 equal sections. Twist the sections together in the center so that you have a "six-sided" star shape.

If your points are not even, trim the pipe cleaner sections to the same length. Now attach string along the outer edges to form a snowflake pattern. Attach a piece of string to the top of one of the pipe cleaners and tie the other end to a pencil (this is to hang it from). Fill a wide mouth jar with boiling water. Mix borax into the water one tablespoon at a time. Use three (3) tablespoons of borax per cup of water. Stir until dissolved, (don't worry if there is powder settling on the bottom of the jar). If you want you can add a little blue food coloring now to give the snowflake a bluish hue. Insert your pipe cleaner snowflake into the jar so that the pencil is resting on the lip of the jar and the snowflake is freely suspended in the borax solution. Wait overnight and by morning the snowflake will be covered with shiny crystals. Hang in a window as a sun catcher or use as a winter time decoration.

Pipe cleaners and string form a snowflake base for the crystals to grow on.

The Science Behind the Fun

Borax 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 it's unique shape. They may be big or little, but they all have the same "shape". Salt, sugar, and Epsom salts are all examples of crystals. Salt crystals are always cube-shaped while snow crystals form a six sided structure.

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. Now there's less room for the solution to hold onto as much of the dissolved borax. Crystals begin to form and build on one another as the water lets go of the excess and evaporates. This also applies to snowflakes - As water cools the molecules move closer together. Since all water molecules are shaped the same (H^20) they align in a six sided crystal.