

Winter/Christmas – Crystals Ornaments

Learn how to make ornaments and how chemicals crystals form.

Materials:

- Pipe cleaners (craft store)
- Clear acrylic spray paint (optional)
- Pencil
- Borax detergent (laundry section)
- Boiling water
- Tablespoon
- String
- Canning jar



Procedure: (Remember to have your parent’s permission and have them watch and help you.)

- Form the pipe cleaner into the desired shape: stars, snowflakes, trees, initials or names. If you need to you can cut the pipe cleaner.
- Tie a string or thread to the top of the ornament and tie the other end to the middle of a pencil so that it looks like a letter 'T'. Keep it short, just enough to hang down from the top of the jar into the borax solution.
- Fill the jar with boiling water (jar size limits ornament size).
- While stirring, slowly add borax until water is cloudy even after the Borax is dissolved.
- Balance the pencil across the top of the jar and suspend the ornament in the hot borax solution. Make sure the pipe cleaner is completely immersed but not touching the jar.
- As the solution cools, crystals will form on the pipe cleaner.
- The longer you soak it, the more crystals will grow. Adjust the time until you get the desired affect -- overnight will give thick crystals, a few hours will result in a glittery look.
- Remove it from the solution and let dry.
- Spray with clear acrylic if desired.

What's Happening:

When you dissolve the borax in the hot water it become saturated, that is the water holds as much of the chemical as it can. When the solution cools some chemical has to come out of solution and become solid again. It does this by first depositing molecules on the fuzzy pipe cleaner and then depositing molecules on top of each other. Since there are limited ways the molecules can attach to each other the result is a pattern which when it get big enough we see as crystals.

Extension:

You can also make valentine hearts or flowers. Borax crystal are fairly sturdy but the crystals can be knocked off if hit too hard so spray it with clear acrylic spray paint/shellac when they're dry and this will be less of a problem.

This activity is based on our Winter/Christmas kit. The source for this lab was: <http://www.food.com/recipe/Crystal-Ornaments-Borax-145914>.

Our teaching kits (described on our website) are loaned out FREE to provide classroom teachers and parents of home schooled children an opportunity to explore Science in interesting ways. Please consider volunteering as a classroom guest speaker or allow your business as a field trip location.

Lorne Cooper, Regional Executive Director

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