

# Evaporation Station

## Take-Home Family Activities



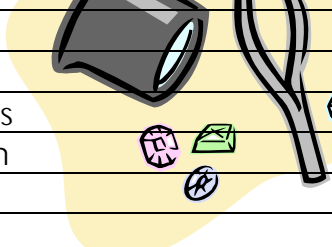
Thank you for participating in the **Evaporation Station** Workshop. We hope that you will join us again. To build on your experience at the museum, we have put together some simple science activities that you and your family can do together at home. Like the workshop, these activities are aligned with New York State Learning Standards and will help your child to grasp important physical science concepts being taught in school. Please visit our website to find out which standards these activities meet and to access additional resources. Have fun exploring the world of science!



## Growing Glorious Crystals

### Materials

Table Salt	Pipe Cleaners
Rock Salt	String
Baking Soda	Clear Glass Jars
Alum	Wooden spoon
Epsom Salt	Stove Pot
Borax	Water



### Activity #1 Creating Crystal Solutions

Crystals of varying shape and size can be made by dissolving any of the substances listed above in water. To create a crystal solution, dissolve one substance in tap water and stir. Continue adding the substance slowly until the water becomes saturated and can no longer dissolve the substance. You will know that the solution is saturated when solids start settling on the bottom on the container.

The next step is to turn the saturated solution into a supersaturated crystal growing solution. To do this, you must add heat. Place the saturated solution on the stove and heat until boiling. Remove the solution from the stove and allow it to cool for 2 minutes. Slowly add more solids to the solution and stir regularly. Continue dissolving solids into the hot water until a few solids begin to collect on the bottom of the container. The solution is now supersaturated and ready for crystal growing. All you need now is a little imagination, patience and the power of evaporation.



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### Activity #2 Crystal Space Mobile

Use pipe cleaners to create fun shapes like stars, hearts, planets and whatever else you can think of. Tie a piece of string to the pipe cleaner shapes. Dip the shapes into the container of warm super saturated crystal solution and leave them there overnight. Let the solution cool slowly by placing it in a dim place. The longer you leave the pipe cleaners in the solution, the bigger the crystals will grow. When you are ready, remove the pipe cleaners carefully and hang them from a coat hanger. Put your sparkling mobile in a place that can easily be admired, but remember to keep it out of harms way because home-grown crystals are fragile.



### Activity #3 Crystal-painted Handmade Cards

Use dark sheets of construction paper and cotton swabs and create cool cards for your friends and family. Get a Rocks and Minerals book from the library and find crystal shapes and patterns that appeal to you. Use those shapes to design scenes pictures. Then paint those shapes onto dark paper using your crystal solution. Baking soda and alum solutions are fast acting. Once the water evaporates, you should have crystal designs in 30 minutes or less.

#### Things to Remember:

Solid crystals are everywhere. Look around at crystals in the form of snow flakes falling from the sky, salt sprinkled on your food and jewelry worn on special occasions. Crystals are beautiful materials that form as molecules and atoms line up in organized units that repeat themselves. Although we can think of many different kinds of crystals, crystal molecules join together in one of six basic, flat-sided shapes. Use a magnifying glass and look at different crystal shapes around your home. To learn more about crystal formation, the following books will be a great help:

Blobaum, Cindy, 1999. Geology Rocks! 50 Hands-on Activities to explore the Earth (Kaleidoscope Kids). Williamson Publishing Co.

Holden, A. and P. Singer, 1982. Crystals and Crystal Growing. MIT Press.

Smithsonian Handbooks: Rocks and Minerals. 1992. DK Publishing.