DIY Crystal Geode Eggs

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Grow gorgeous crystal geodes in your own home! The perfect science-craft to do with your kids from our friend Professor Figgy!

Science Behind the Project: Geodes are essentially rock cavities with crystals inside. They occur when gas bubbles become trapped in molten rock or rounded cavities form in sedimentary rock. Minerals dissolved in water seep into the space in the rock and are slowly deposited on the inside surface over time. Here, crystals form from a supersaturated solution and grow directly on the Alum attached to the eggshell by the glue. The egg dye gives the crystals their color and the result is very similar to a real geode.

Tools and Materials:
Alum (Potassium Aluminum Sulfate) powder
School or glitter glue

Egg dye
Blown-out white jumbo eggshell
Small scissors (optional)
Craft stick or plastic spoon
Paintbrush
Latex gloves (to protect hands from dye)
Container (preferably microwave safe glass or plastic - quart deli containers work well)
Microwave (or saucepan and stove)
Water
Measuring cup
Newspaper or drying rack

Directions:

1. Crack the eggshell in half lengthwise or cut it in half with a small pair of scissors.
2. Using a small paintbrush, coat the inside surface of each half with a thin layer of glue and sprinkle a small amount of Alum powder over the glue until adequately covered (like glittering). Set aside and allow to dry overnight.
3. Add 2 c. of water to the container and heat to almost boiling in the microwave (or heat the water in a saucepan on the stove and add it to the container).
4. Use latex gloves to protect your hands and add one packet of egg dye to the hot water. Stir thoroughly with a craft stick or plastic spoon until completely dissolved.
5. Slowly stir ¾ c. of Alum into the hot dye solution, making sure that all of it dissolves. To dissolve any remaining grains of Alum, place the solution in the microwave for a few minutes. NOTE: All of the Alum must dissolve because any remaining crystals will compete with the crystals growing in your geode.
6. Let the solution cool for about 30 minutes and then submerge one of the eggshell halves into the growing solution so it rests on the bottom of the container with the inside of the shell facing up. Loosely cover the container with the lid (to keep dust out) and place it in a safe place, to sit undisturbed overnight. 12 to 15 hours will result in a perfect geode.
7. Once grown, remove the geode from the solution very carefully – wet crystals are fragile. Be sure to wear latex gloves again to protect your hands.
8. Place the geode on a drying rack or newspaper and allow it to dry completely before handling.
9. To grow a second geode in the other eggshell half, re-dissolve the crystals remaining at the bottom of the growing solution in the microwave and follow the instructions starting at step 6.
10. To grow crystals on large egg shells, use a larger container and prepare enough dye/alum solution (using the same ratio above) to adequately cover the egg shell.