

Egg Geodes Experiment

By Rachelle

Today we're experimenting with **egg geodes**. This experiment is set up to engage children in the steps of the scientific method, which could easily make this a fun and successful **science fair project**. Not only is the process of making these beautiful geodes engaging for kids, but the end-result has a huge wow-factor. Give yourself at least two-three days to achieve the greatest results.

Set up the Egg Geodes Experiment

Supplies

- Eggs
- Rock Salt
- Sea Salt
- **Borax***
- Other substance that could be tested for crystallization such as sugar, epsom salts, cream of tartar, baking soda, or **alum***
- Mini-muffin pan
- Food Coloring



** Borax and alum are not food products, and using these ingredients with small children should be closely monitored, as ingestion can be fatal. Please use common sense and close supervision with such substances. My children were watched at all times and did not come in direct contact with borax in the process of this experiment.*



I tapped a **knife around the top of the eggs** to remove a bit of shell, and then emptied the eggs and cleaned them with water. Using a finger, it's important to gently rub around the inside of the egg to **remove the membrane** because the membrane can discolor crystals as they form.

If you happen to have a **mini-cupcake pan**, it's like they were made for this job. We heated a pot of water (not quite boiling) and then poured 1/2 cup into a mug. We added 1/4 cup of kosher salt into the first mug and mixed it until it dissolved.



The kosher salt was stubborn and wouldn't dissolve, so Nutmeg handed the mug to me for some rigorous mixing. Still no luck.

We moved on to the next mug: 1/2 cup hot water + 1/4 cup sea salt. The sea salt dissolved quickly and then we added a bit more. The idea is to saturate the solution without putting in too much of the dry ingredient.

And then the final mug: 1/2 cup hot water + 1/4 cup borax. Dissolved.



We added a couple drops of food coloring to each mug and then made a chart so we wouldn't lose track.

Then we poured the liquid into our eggs. Each solution made just enough to pour into two eggs. Perfect!

And then you wait 5 days for the liquid to mostly evaporate.

We couldn't that long, but after 1 day salt crystals evaporated through the egg shell, and after 2 days our eggs looked like this...

Kosher Salt

Through the process of diffusion, the salt actually passed through the permeable shell. Gorgeous, isn't it?

Sea Salt

Borax

With opposite results of the salt-solutions, borax created the most sparkly, crystal-looking egg with crystals inside the egg and nothing on the outside.

And of course, things like this are irresistible to little hands. My toddler wanted to pick all the crystals off the shells, and I had to pull them away because not only will she break them into a gazillion pieces, but substances like borax are safe for looking, not for touching.