

Rocks & Minerals – Growing Rocks Eggsperiment

Rocks and minerals grow. The growth is usually by liquid rock cooling, evaporation or chemical reaction. In this activity we'll explore growing a mineral through chemical reaction and evaporation.

Materials:

- Pickling Vinegar (7% also called Extra Strength)
- Egg shells (or chalk or marble rock chips)
- 500 mL container (clear if available)



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

- Pour 250 mL pickling vinegar into plastic tub (500 mL)
- Crush eggshells and add to liquid.
- Observe immediate reaction for 5 minutes.
- Regular white vinegar will work but not as much of an effect.
- Place container in a warm spot where it can be undisturbed and observe changes every few days.
- Observe until there is no more liquid left in the container (about 3 weeks).

What's Happening:

Did you see anything happening when you added the vinegar to the ground up egg shells? What happened? Why would extra strength vinegar work faster than regular white vinegar? Why did you place it in a warm spot to continue to react and evaporate?

In this activity you observed a chemical reaction. Vinegar reacted with the egg shells to create bubbles of (carbon dioxide) and the smaller pieces may have been seen floating up to the surface on the gas bubbles. The vinegar, which is an acid, dissolved the calcium which in turn combined with the acetate ion in vinegar to grow **calcium acetate crystals**. These crystals will form on the sides of the container and look like popcorn we call that botryoidal (bumpy – like a bunch of grapes or popcorn). Minerals may be formed in this manner and rocks are made out of one or more minerals. Next time you're a hot spring check out the new layers of rock (crystals) growing near the water's edge.

Extension:

Will adding something to colour the vinegar result in coloured crystals? Try it. Put a rock into the container for the crystals to grow on. Try different material that contains calcium (Tums, Rolaids, clam shells, limestone landscaping rock), differing temperatures (cold vs. warm room), and material size (powdered vs. chunks). Predict how this would change the result before trying it.

This activity is based on our Rocks & Minerals kit. The source for this lab was: <http://www.rocksforkids.com/RFK/Experiments.htm>. 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

PRAXIS, "Making Science Fun". Contact Praxis at praxis@praxismh.ca, www.praxismh.ca, Tweet or follow us @PraxisMedHat, or friend us on Facebook. Address: c/o 200 7th Street S.W., Medicine Hat, AB, T1A 4K1 Phone: 403-527-5365, Fax: 403-527-6570.