

GEODE GEMS

Get glittery with homemade crystals!

Photos: Kristine Webber

Winter is a wonderful time to celebrate everything that sparkles. While you need cold weather for snowflakes and ice crystals, freezing temperatures aren't necessary to form the sort of crystals found in *geodes*.

A geode is a roundish, (formerly) hollow rock that has become filled with sparkly crystals. A geode is created when highly mineralized water drips into the hollow space and forms crystals. Over many, many years these crystals grow from the inside surface of the rock towards the centre of the space and can eventually fill the geode. Try this activity to discover how geodes are formed using materials you can find around the house.

WHAT YOU'LL NEED

- » 3 eggshell halves, cleaned
- » muffin tin
- » dried beans
- » yellow, blue, and red food colouring (optional but helpful!)
- » soluble salts/sugars such as table salt, sugar, and baking soda
- » measuring cup
- » boiling water
- » spoon

TO THINK ABOUT & WONDER The largest crystals found inside geodes take a *million* years to form! How long did it take before crystals started to form in your eggshell geode? Did some solutions form crystals before others? Did the crystals all have the same shape? Do you know the difference between an agate and a geode? You can go *rockhounding* to find geodes and then smash or cut them open to see the crystals. Contact your local gem or mineral society to see if they offer field trips on rockhounding in your area!

The Exploration Club for Families... NatureKids BC helps children get outdoors to play, imagine and explore in nearby nature. Join a family nature club near you or become a free-range member. Find out more at: www.naturekidsbc.ca. If you are already a member you can use this activity as part of your Action Awards Quest!

WHAT TO DO

1. Place a handful of dried beans or lentils into three muffin tin cups. In each cup place half an eggshell hollow side up. The beans will hold your eggshell upright while the crystals form.
2. Prepare three different solutions, pouring one into each eggshell half. Have an adult help you with the boiling water. Don't worry if some of the solution flows over the top of the eggshell!
 - Mix $\frac{1}{8}$ cup sugar into $\frac{1}{4}$ cup boiling water until dissolved then add one drop red food colouring
 - Mix $\frac{1}{8}$ cup salt into $\frac{1}{4}$ cup boiling water until dissolved then add one drop yellow food colouring
 - Mix $\frac{1}{8}$ cup baking soda into $\frac{1}{4}$ cup boiling water until dissolved then add one drop blue food colouring
3. Set the filled eggshells aside, somewhere they won't be disturbed, and observe daily for one week. Watch those colourful crystals form!

