

Cool Crystals! April 30 Virtual STEAM Club

Geodes are sphere-shaped rock formations that look very plain and ordinary on the outside, but if you break into their shells, you find that they are often hollow and lined with beautiful crystals and colors. Crystals have many flat sides to reflect light and that gives them their sparkle. The most common crystal you can find on the inside of a geode is quartz.

Geodes are abundant in the Midwest (including Southern Indiana!) because they erode from limestone bedrock and roll downstream. They can often be found scattered along creeks and beaches.

In sedimentary rock, geodes form inside hollows or cavities, like those made by a tree root, animal, or a mud ball. Around this hollow space, a shell forms and hardens. If water containing tiny pieces of minerals slowly fills up the space beneath the shell, then crystals can form inside. It can take millions of years for the crystals to grow and the space to fill up. Most geodes are not entirely filled with crystals, but if they are completely solid, then they are called nodules. Geodes can also be found in volcanic rock, where the crystals form inside gas bubbles.

Today, make a cluster of crystals that will resemble the inside of a geode!

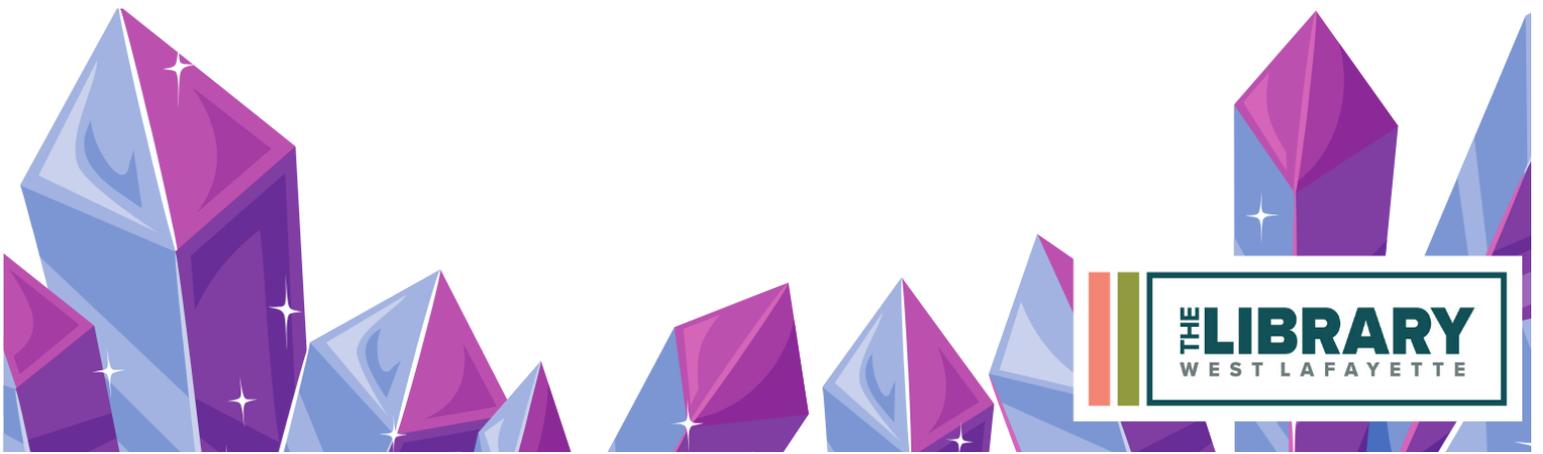
Materials:

- 3 Tablespoons Borax
- 1 Cup boiling water
- Food coloring
- Pipe cleaners
- Large jar, glass or pitcher (3+ cup capacity)
- Dish cloth
- Skewer, butter knife, or chopstick
- String or thread



Steps:

1. Heat two cups of water to boiling.
2. While your water is heating, take three pipe cleaners and intertwine them into a loose ball. Tie a piece of string or thread and tie it to the pipe cleaner ball.



3. Carefully pour your water into the glass jar. Make sure the jar is set on top of a dish cloth in case of spills.
4. Stir in the Borax. Add the Borax slowly and stir until it doesn't dissolve in the water anymore. There should be a thin layer of Borax at the bottom of the jar.
5. Add about 20 drops of food coloring into the water/Borax solution.
6. Lower the pipe cleaner ball into the solution while it's still hot. Tie the other end of the string to a skewer to hold your ball in the solution from the top of the jar. Let the ball hang in the solution for at least 5 hours. The longer the ball hangs in the solution, the larger the crystal will grow.

How do different shapes or methods of twisting your pipe cleaners affect how the crystals grow?

Learn more:

[What Is a Geode? Today's Wonder of the Day totally rocks!](#)

[Guest Blog: What's in a Geode?](#)

[Let's Grow Some Crystals!](#)

[Explore Rocks and Minerals](#) by Cynthia Light Brown (available on Overdrive/Libby)

[Get the Dirt on Geology](#) by Chris Eboch and Alexis Cornell (available on Hoopla)

[Geology Lab for Kids](#) by Garret Romaine (available on Hoopla)

