

Make CRYSTAL CREATURES from STEAM Lab for Kids

MATERIALS

- Pipe cleaners (1 to 2 per creature)
- 2 or 3 (5-10 ounce, or 150-285 ml) clear glass jars (if you don't have these, any size should work)
- 3 cups (720 g) Epsom salt
- Large pan or microwaveable container
- Magnifying glass (optional)
- 2 cups (475 ml) water
- Food coloring (optional)
- Pencil or wooden skewer

PROTOCOL

1. Twist the pipe cleaners into interesting shapes. Make sure they're small enough to fit into the jar.
2. Pour the Epsom salt into a large pan or microwaveable container. Look at a few crystals under a magnifying glass. What do you see?
3. Add the water to the Epsom salt.
4. Heat and stir the solution in the microwave on high power or on the stovetop on high heat until the Epsom salt completely dissolves, about 2-3 minutes.
5. Remove from the microwave or stovetop and let the salt solution cool.
6. Pour the salt solution into the jars.
7. Add food coloring, if you want to.
8. Hang your pipe cleaner from a pencil or wooden skewer so it is suspended in the salt solution.
9. Let the crystals grow overnight.
10. Remove the crystal creature from the jar.



STEAM behind the FUN
Epsomite is another name for Epsom salts. This useful mineral is made of magnesium sulfate and water and is used in both medicine and agriculture. Adding lots of Epsom salt to water and heating it allows you to create what scientists call a supersaturated solution that holds far more dissolved salt than it normally would at room temperature. As the solution cools, some of the salt molecules stick to the pipe cleaner bristles. Other salt molecules start to snap onto those molecules like puzzle pieces, creating the repeating three-dimensional patterns that form



crystals. As more and more salt molecules snap on, the crystals become visible. You'll notice they all have the same shape, although their sizes may vary. You can find gems and other crystals in art, including Chinese jade and the famous Fabergé eggs.

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STEAM Lab for Kids

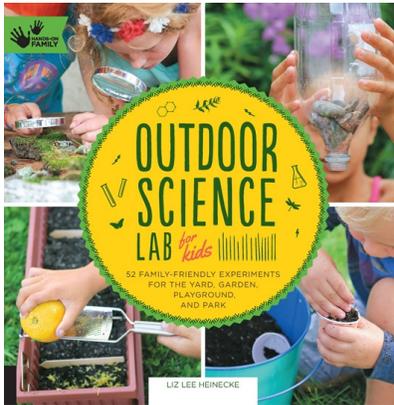
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Liz Lee Heinecke has loved science since she was old enough to inspect her first butterfly. After working in molecular biology research for 10 years and earning her master's degree, she left the lab to kick off a new chapter in her life as a stay-at-home mom. Soon, she found herself sharing her love of science with her three kids as they grew, chronicling their science adventures on her **KitchenPantryScientist** website. Her desire to share her enthusiasm for science led to a regular segment on her local NBC affiliate, an opportunity to serve as an Earth Ambassador for NASA, and the creation of an iPhone app. Her goal is to make it simple for parents to do science with kids of all ages, and for kids to experiment safely on their own. Liz graduated from Luther College and received her master's degree in bacteriology from the University of Wisconsin, Madison. She is also the co-author of **Star Wars Maker Lab** from DK Children.



Learn more at bit.ly/LizHeinecke