



# Minds in Motion

## Grow your own Crystals!

### Activity Rundown:

Crystals come in all different colours and forms, like diamonds, quartz, and fool's gold! In this activity, you will be making your own crystals at home with just a few easy-to-find ingredients. Using different colours and patterns, you can even start your own collection!

### You will need:

- + Epsom salts
- + Pebbles
- + Jar
- + Water
- + Food colouring
- + Measuring cups
- + Spoon

### Let's do it!

1. Pour 1 cup of epsom salts into a clean, empty jar.
2. Next, carefully add a cup of hot tap water into the jar.
3. Stir for 1-2 minutes until all the epsom salt has dissolved and is no longer visible in the water.
4. Add food colouring! We recommend doing a few different kinds of colours if you have multiple jars.
5. Drop a few small pebbles (or a small amount of sand) into the jar.
6. Place the jar in the refrigerator and let it sit overnight. For even better results, leave them in the fridge for longer to allow them to grow even more!
7. Pour out the water to reveal your beautiful crystals!
8. Make some observations about your crystals. Are they big or small? Thick or skinny? Shiny or dull? Do they smell? Do they break easily?

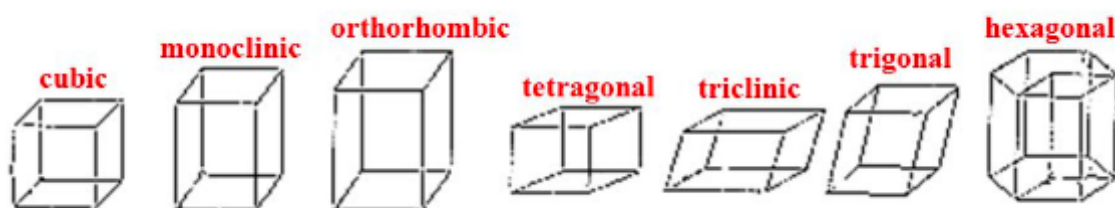


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\*Remember, epsom salt is not for eating! If you want to make an edible version of this experiment, try making sugar crystals. This website has all the instructions you'll need: <https://sciencenotes.org/how-to-make-rock-candy-or-sugar-crystals/>

## Background:

- Crystals are a type of material that is formed by **patterns of repeating molecules**. Molecules are when two or more atoms (building block of everything!) join together.
- There are **seven basic crystal shapes** (also called **lattices**) which are: cubic, trigonal, triclinic, orthorhombic, hexagonal, tetragonal, and monoclinic. These structures are usually best seen under a microscope.



- Unlike table salt, Epsom salts are derived from a naturally occurring **magnesium sulfate** mineral called **epsomite**, which contains the chemical components magnesium, sulfur, and oxygen.
- When hot water is added to the Epsom salt, the **heat increases the space** between the salt's molecules and allows them to dissolve into the water. Note that this isn't changing the chemical identity of the salt, just breaking it up into smaller pieces! When the salty water begins to cool, the **space between the molecules decreases** and the salt is slowly pushed out as a solid, which is also the beginning of crystal formation.

Try this experiment again with more or less salt, different temperatures of water, and even different kinds of salt. Remember to record your results like a proper scientist!



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## **Reach out!**

We would love to hear from you about all the amazing STEM projects you are doing at home! Show us your finished products on any of the following social media platforms by tagging us or by using the following hashtags. We hope these projects have brought some excitement to your day during these difficult times.

Let us know how we did! Please [click here](#) to fill out a short survey on how well we did and what you would like to see more of in the future. Thank you!

Twitter: **@MyMindsInMotion**

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**#ucalgarycamps #ucalgarytogether**