

EPSOM SALT CRYSTALS

Safety Warning: Keep all chemicals used in this activity away from younger children. Avoid unnecessary contact, don't rub it in your eyes, and do not ingest. Adult supervision is required for this project.



During this project, you will help your kids dissolve Epsom salt, made up of magnesium sulfate, into hot water. You will use a 1:1 ratio of Epsom salt and hot water to create your saturated solution. You should notice your water turn cloudy, and you may see some Epsom salt crystals settle on the bottom of the pan.

As you cool your saturated solution, crystals will start to form. This occurs because the hot water can hold more of the salt than cold water, causing crystals to form as the salt 'falls' out of the solution. The hot water can hold more than the cold because the higher the temperature of the water, the more space between molecules, allowing more room for the salt.

Step 1 - Supplies:



Note: You only need a small amount of solution on the bottom of your container.

Step 2 - Procedure:

You and your kids have your supplies ready to go, now all you have left to do is follow the steps below and have fun!



Image 2.1



Image 2.2



Image 2.3

2.1 The first step to making some thin, needle-like crystals is for you and your kids to decide how much Epsom salt solution you want to make so you know how much hot water you need. You will be using equal parts water and Epsom salt for these crystals, so make sure you have enough Epsom salt on hand. Now heat your water. You want the water to be as hot as possible, without it boiling (**see Image 2.1**).

Note: You only need a small amount of solution at the bottom of your container, but you can have more. We filled one of our containers with around 2" of the solution, resulting in a nice red snowball. You may also want to fill several containers, have your kids place them in different environments, and see if they can predict how the crystals will grow in those environments.

2.2 Once the water is hot enough, help your kids add the same amount of Epsom salt as they did water, then stir the solution for about two minutes. Remember, you want this to be a 1:1 ratio of water and Epsom salt (**see Image 2.2**).

2.3 You can now have your kids add the food coloring to the solution and stir it one more time (**see Image 2.3**).



Image 2.4



Image 2.5



Image 2.6

2.4 Help your kids pour the solution into their container (see **Image 2.4**).

2.5 Place the container in the refrigerator to chill 4-5 hours (see **Image 2.5**).

2.6 Once your crystals have formed in the refrigerator for 4-5 hours, drain the excess solution out of the container, and let the crystals dry overnight (see **Image 2.6**).



Image 2.7

2.7 Hopefully, your Epsom salt crystals came out great (see **Image 2.7**).