

Create your own Salt Crystals

What you need:

- Cup
- Hot water
- Table salt
- Cotton string
- Kebab stick or pencil
- Food colouring optional



Instructions:

1

You need to dissolve your salt in water. Make sure an adult helps with the hot water.

More salt dissolves in warmer water. This is a fun experiment in itself. Compare how many tablespoons of salt dissolve in a 250ml cup of cold water versus a 250ml cup of hot water.

2

Add salt to the cup of water, tablespoon by tablespoon. Stirring in between each tablespoon until they have dissolved. (It will probably take between 8 - 10 tablespoons). Keep doing this until the salt no longer dissolves and stays sitting on the bottom even when you are stirring.

You are making a saturated solution, this simply means that no more salt can dissolve in the water. If you keep adding more it will not dissolve. I think of trying to dry yourself with a wet towel, it cannot absorb any more water so will not work.



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Instructions:

3

Tie a knot on the bottom of the cotton string. (Cotton string is better than a polyester string as it absorbs the salt solution.) Tie this to the kebab stick. Dunk the string and hold it in the salt solution so that it is wet.



4

Optional. Add 5 drops of food colouring to the salt solution.

5

Place the kebab stick on top of the cup and place on a sunlit window sill.



6

Leave for 4 weeks or longer for the water to slowly evaporate out of the solution.

The longer the time for the water to slowly evaporate the better the crystals form.

7

Note: If crystals are not beginning to form it may mean your solution did not have enough salt, dissolve more salt in hot water and pour into your cup.

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Results:

This experiment takes time but you can gently pull the string out each day and watch the changes.

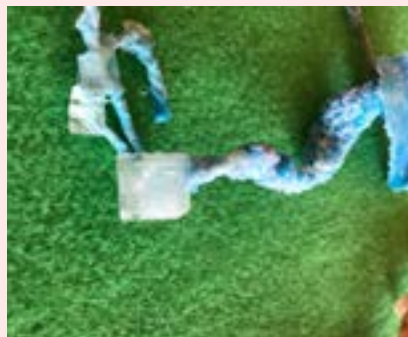
Can you **see** what is happening?

What shape are they forming?

Record how long it takes?

Check out these results. These sat on the window sill for 7 weeks until all the water in the cup had evaporated.

Read below to find out why they have this cool cube shape.



The Science Behind it:

What are crystals?

A crystal is an organised grouping of atoms or molecules. Each crystal has different properties and shapes, depending on what it is made of.

For example, sugar crystals are oblong and slanted at the ends; salt crystals are cubic. Some elements can make more than one crystalline form.

How do the salt crystals form?

When we dissolve the table salt in water we separate the two elements found in salt (Sodium Na and Chlorine Cl). In solution, the Na and Cl are

separated by water molecules (H_2O).

As the water evaporates (disappears from the solution as part of the water cycle), the Na and Cl atoms begin to bond together to form sodium chloride first as single molecules and then the molecules bond together, forming crystals.

Every molecule will form the same shape crystal each time it forms. The crystal shape for salt is a cube like a six-sided dice.

Act Like a Scientist:

Good scientists like to explore and ask more questions!

Repeat this experiment and watch the changes

- What would happen if you replaced salt with sugar? (Just watch for ants)

- Can you use Epsom salts?
- Compare which water produces the best crystals cold or hot.
- Can you re-dissolve the crystals you have made?
- Does the food colouring appear in the crystals?