



Universität  
Basel

Swiss Nanoscience Institute



EINE INITIATIVE DER UNIVERSITÄT BASEL  
UND DES KANTONS AARGAU

## Growing salt crystals

Growing crystals is very simple. You'll need a glass of water, salt and some string. And a little patience because it will take at least a week for you to see something really impressive.



### What you'll need:

- a clean glass
- a spoon for stirring
- some string
- a washer
- a pencil or wooden skewer
- 200 ml of water
- 40 g of cooking salt
- food coloring (optional)
- 



### Instructions:

1. Prepare a saturated solution: salt dissolves better in hot water but be careful not to burn yourself! Stir 40 g of cooking salt (sodium chloride) into water until the salt has completely dissolved. Carry on adding salt until it doesn't dissolve anymore. Now you've got a saturated solution, i.e. the water can't absorb anymore salt molecules.

2. Now, tie the washer to a piece of string so the string stays nice and straight and attach it to a pencil or something similar (see the picture on the left). Lay the pencil across the top of the glass with the salt solution and place the glass in a dry place where it won't be disturbed.

3. Now you'll need to be patient. Leave the glass undisturbed for at least a week and watch what happens.





### What happens?

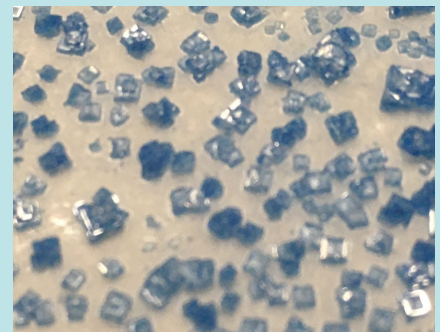
Water evaporates at room temperature. This means that water molecules are released into the air. You can see this from the level of water in the glass (draw a line on the glass to mark the water level so you can see how much water has evaporated). When the water evaporates, fewer salt components fit into the solution. So the salt particles join together again to form new crystals. The longer this goes on, the more water evaporates and the crystals continue to grow.



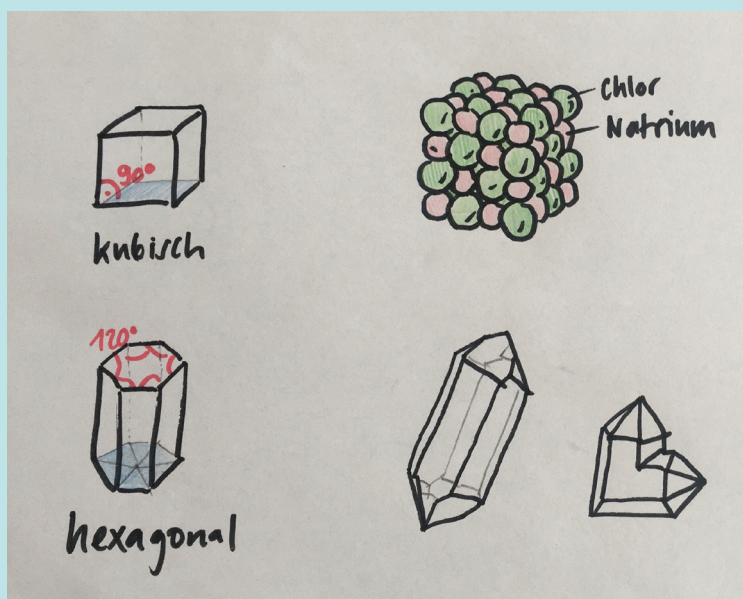
Alternatively, you can also grow your crystals on a pipe cleaner instead of a piece of string.

### What exactly are crystals?

A crystal is generally a solid material where the components (atoms) are organized into a regular structure. This structure is also known as a crystal lattice. Crystals come in different shapes depending on what they are made of: Quartz has a hexagonal structure, for instance. Snowflakes are different shapes depending on the temperature. And what about salt crystals? What shape are they? Exactly – salt is made of cubes!



## CRYSTAL SYSTEMS



*cooking salt = sodium chloride = NaCl*

*quartz*