

Grow salt-crystal geodes

Why wait millions of years when you can grow your own crystals at home in just two days?

What you need

- 1 egg
- Washing-up liquid
- Heatproof container
- 500ml boiling water
- Jug
- Spoon
- About 200g salt
- Food colouring

MEET THE ELEMENTS

In this experiment you will learn about sodium and chlorine. When these substances react together they make salt.

11	Na	17	Cl
	Sodium		Chlorine

How does it work?

A geode is a rock that has a hollow, or cavity, with crystals inside it. As groundwater containing dissolved minerals flows through and around the rock, minerals are deposited inside the geodes as crystals. Over thousands of years, the crystals grow to form a beautiful crust around the inside of the cavity. In this experiment, the eggshell is the geode and the sodium chloride NaCl (table salt) is the mineral. As the water evaporates (turns from a liquid to a gas), the Na (sodium) and Cl (chlorine) atoms bond together, first as single molecules. Then these molecules also bond together to form crystals.

DID YOU KNOW?

The world's biggest amethyst geode is the Empress of Uruguay. It's three metres high and weighs 2.5 tonnes.



WARNING!
Wash your hands thoroughly after handling eggs.



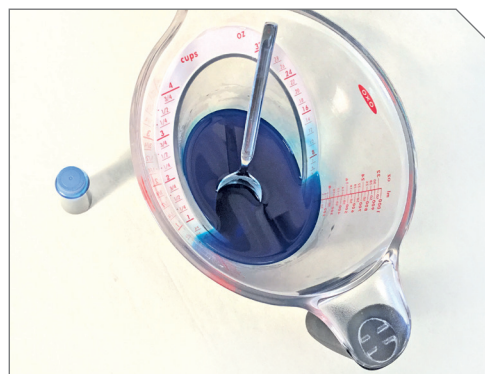
1 Crack open the egg, tip the white and yolk into a cup and set aside. Gently wash out the shell with washing-up liquid, rinse and leave to dry.



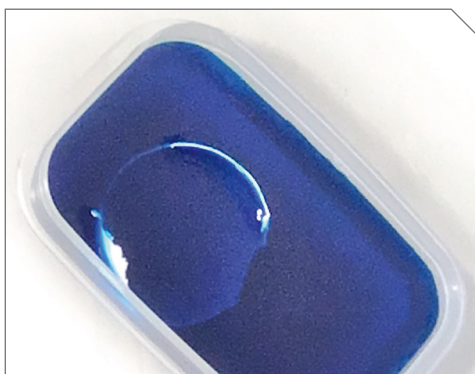
2 Find a small heatproof container (a bowl or a tub) that is big enough to hold one half of the eggshell. The sides should be taller than the shell.



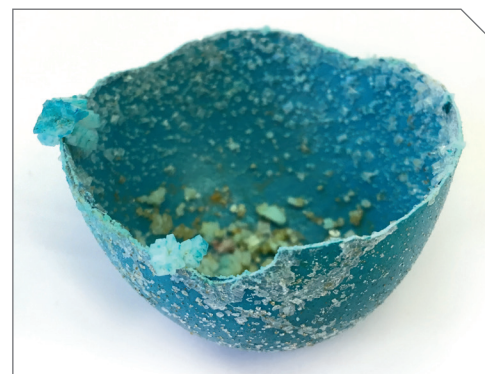
3 Ask an adult to boil a kettle of water, and pour 500ml into a jug. Make a saturated salt solution by stirring salt into the hot water.



4 Stop adding salt when no more can be dissolved and you can see salt crystals at the bottom of the jug. Stir in a few drops of food colouring.



5 Put one half of the shell into the container and pour the salt solution over it. Make sure the eggshell is completely covered.



6 Leave the shell in the salt solution for 24–48 hours, until it is covered with crystals. Carefully remove the eggshell. Let it dry then put it on display.