Making Magical Crystal Flowers

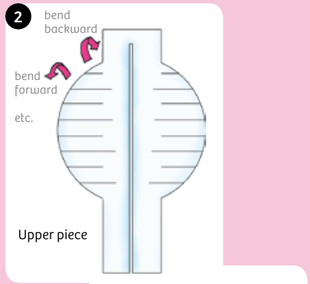
EXPERIMENT 2

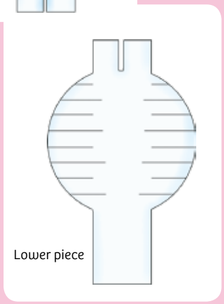
YOU WILL NEED (FOR ONE FLOWER):
› 2 filter paper pieces (choose the color you want to use), flower card, green growing dish, bag of magic water, *scissors, non-permanent felt-tip markers (optional)*

1. Find a level work surface in a quiet place inaccessible to small children and animals. Your work surface should be able to get a little messy.

Tip! The crystals will grow especially well in a cool room.

2. Fan out the cut sections of the two paper pieces (upper piece and lower piece) by bending them slightly forward and backward in alternation.

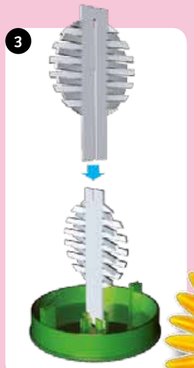




Tip! If you want different colors in the centers of your flowers, it's easy to change. Just color the white filter paper with a felt-tip marker in whatever color you like. As the liquid rises up the paper, it will take the color with it, and the crystal needles will become colored as well.

3. Then, push the lower piece into the cross-shaped mounting bracket in the green dish, hold it tight, and insert the upper piece onto it. Be careful not to bend the paper sections.

4. Set your selected flower card onto the paper structure and secure the flower's bottom petals in the holders on either side.



Making More Magic Water

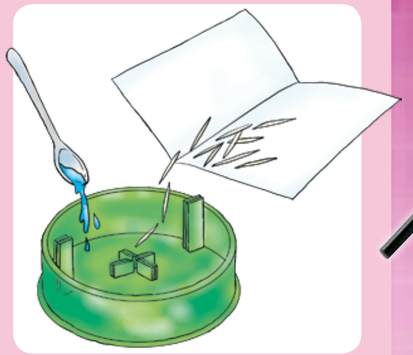
EXPERIMENT 3

YOU WILL NEED:
› Crystal animal, miniature bowl, *sheet of paper, old spoon, water*

1. Use the spoon to scrape as many of the needles as possible off the flower and collect them on a piece of paper that you have creased down the center. Then pour the crystals into the dish, using the crease to help guide them.

2. Next, fill water into the dish with your old spoon, and stir carefully until the crystals have dissolved again.

3. Use this solution to make another crystal flower.



NOTE! Always use scissors to cut open the magic water packets at one corner. Never use your teeth. Make sure the printing on the packet remains readable.

5. Place the dish on the surface you drew or painted. Use a pair of scissors to cut open a magic water packet at the corner. Carefully fill the dish with the liquid.

Now leave your animal alone and watch how it changes.

WHAT'S HAPPENING You won't need all that much patience, because you will start to see some changes pretty quickly. The liquid will first start to rise up the paper. You will see that the paper turns darker when it's wet. After a few hours, you will notice that all the liquid has disappeared from the dish. You will start to see a few fine needles at the edges of the paper tree, which will proceed to grow in size and number as time passes. Eventually, all the edges and some of the flat surfaces will be coated with a thick layer of white needles. Your flower has grown a pretty, glittering center.

Check It Out

WHAT DO SALT, SUGAR, AND SNOW HAVE IN COMMON?

You can find crystals all around you — salt and sugar both consist of crystals.

In winter, you can marvel over ice and snow crystals.

WHO DISCOVERED THE FIRST CRYSTALS?

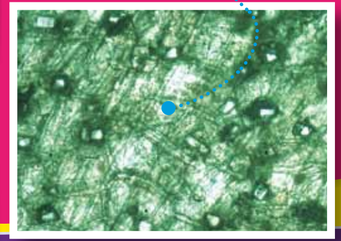
Certain remarkable rocks had already been discovered in Stone Age times, over 10,000 years ago. These rocks glittered with unusual colors. People couldn't explain what created these extraordinary stones.

So crystals were regarded as something very special — as they still are to this day. People associate them with mysteries, and attribute healing powers to them. They are also thought to bring good luck.

DO CRYSTALS "GROW?"

Crystals don't grow in the same sense of the word as plants grow. It is perhaps more appropriate to say that crystals "form," because growing implies that they are alive. Crystals are inorganic, meaning that they are not living things.

Crystals actually form naturally inside the living tissue of many plants. These crystals are called druse, and form when minerals crystallize inside plant cells. Some people think they help the plant fend off hungry animals that might otherwise eat the plant.



WHAT ARE CRYSTALS ANYWAY?

Some minerals possess a very special quality: They form cubes, sharp needles, crooked squares, octagons, or other complicated shapes with smooth faces that sparkle in the light. Some glow with a blue, green, or red color. Others are as colorless as ice, and just as clear. These regular shapes are called crystals. The most beautiful crystals are very sought-after and valuable. They have names like diamond, sapphire, ruby, and amethyst. They filled the treasure chests of conquerors and decorated the crowns of emperors and kings.

WHAT ARE THE DIFFERENT CRYSTAL SHAPES THAT EXIST?

Crystals feature clear geometrical shapes that are otherwise unusual in nature. They form when dissolved substances gradually turn hard again. They can harden in the shape of needles like the ones that you made. But there are also small cubes, such as in salt, or so-called octahedrons. The shape is determined by the type of substance involved.

HAVE YOU EVER SEEN ICE CRYSTALS ON PLANTS?

Frost crystals form on plants when the surface temperature of the plants drops below freezing. Water vapor freezes on the plants and forms tiny, fragile crystals that look like snowflakes. This is called hoar frost.

If you look closely at frost or snowflakes, you will see that it looks rather similar to the crystal structures you grew with this kit. However, the chemical composition is quite different.

WHAT ARE FROST FLOWERS?

In extremely cold parts of the ocean covered by smooth sheets of ice, you can sometimes find beautiful, delicate flowers made entirely of ice. This happens when the air is so cold, calm, and dry that it sucks water from the ice, and then deposits the water bit by bit in the form of fine ice crystals. Sometimes whole "meadows" of frost flowers cover large expanses of ice.