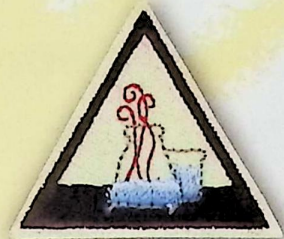


# Science Wonders



Try these activities to see how wonderful science is. The changes seem like magic, but a scientist can make them happen. And you get to be the scientist!

## 1. Home-Grown Crystals

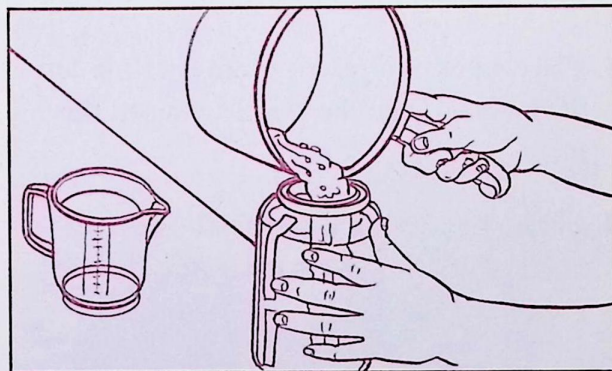
Crystals are minerals that are clear and sparkly. Some crystals have colors, too! Ice, salt, and diamonds are all crystals. So is rock candy! Try growing some of your own crystals with this experiment.

You will need:

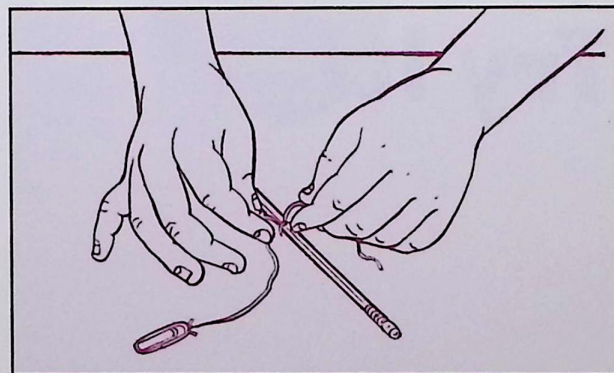
- Jar.
- Water brought to a boil.
- A saucepan.
- 1 cup of sugar.
- Clean string.
- Pencil.
- Paper clip.
- Plastic wrap.
- Magnifying glass (if you have one).

1. With the help of an adult, bring the water to a boil in the saucepan. Turn off the heat.

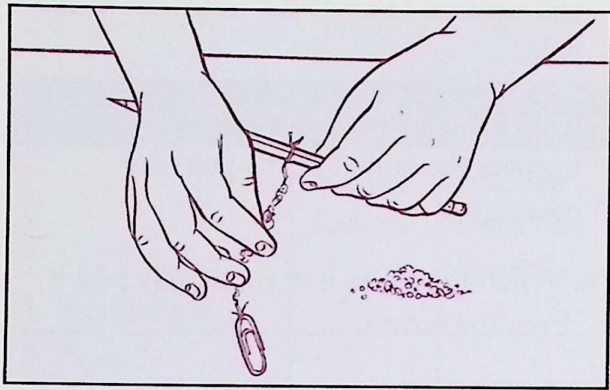
2. Add the sugar to the hot water a little at a time until no more sugar dissolves into the water. Stir a little bit each time you add the sugar.
3. When the sugar water cools a bit, pour it into the jar.



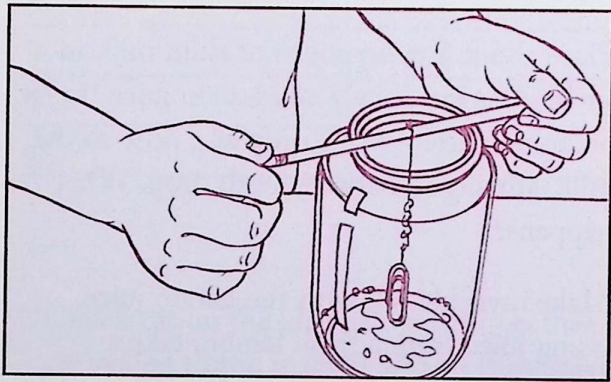
4. Tie one end of the string to the middle of the pencil. Attach the paper clip to the other end—this will keep the string hanging straight in the jar.



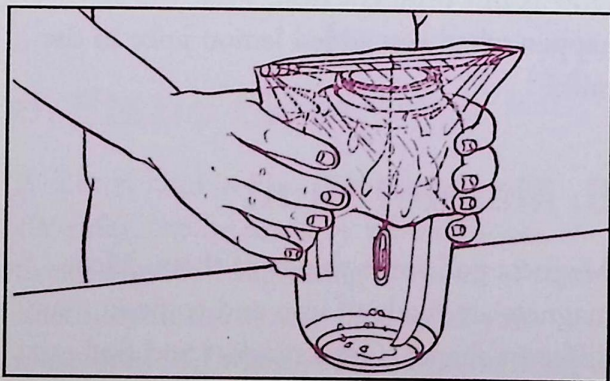
5. Wet the string with a little water, and then rub some sugar along the string.



6. Place the pencil on the jar so that the string hangs down the middle of the jar. If the paper clip touches the bottom, make the string shorter.



7. Place a piece of plastic wrap on top of the pencil and over the opening of the jar so that no dirt will fall into it.



8. Put the jar in a place where no one will disturb it for a few days or weeks.

9. Take a close look at the sugar crystals that form on the string. Use a magnifying glass if you have one.

Do all of the crystals have the same shape? After you finish your observations, you can eat your crystals-on-a-string!

## 2. Bubbles

You can make some special bubbles. Try this mix:

- 1 gallon of water.
- 40 drops of glycerine.
- 1/2 cup dishwashing liquid.

Mix everything together in a large flat pan. Stir slowly. If you can, let it set for at least one day. The glycerine will make stronger bubbles if you do this.

For your bubble maker, have an adult help you shape a metal hanger. Dip your bubble maker into the pan and then gently wave it in the air. Try other shapes for your bubble makers.

# Try It!

### 3. Homemade Recycled Paper

A fun way to recycle is by making your own paper. You can use this special paper to make note cards, books, collages, and many other things.

You will need:

- A large mixing bowl.
- An eggbeater.
- A cup.
- A big spoon.
- An old newspaper.
- Water.
- A screen about 3" square or bigger.
- A flat pan a little larger than the screen.
- Starch.

1. Tear a half-page of newspaper into very small pieces. Put the paper in a large mixing bowl full of water.
2. Let the paper soak for one hour.
3. Beat the paper with an eggbeater for 10 minutes. The paper should be soft and mushy. It is now called *pulp*.
4. Mix 2 tablespoons of starch in 1 cup of water. Add this to the pulp. Stir well. The starch makes the paper pulp strong.
5. Pour the pulp into the flat pan.
6. Slide the screen under the pulp. Carefully move the pan back and forth to form an even layer of pulp on top of the screen.
7. With two hands, lift the screen straight up (horizontally) out of the water. Place it on one half of the remaining newspaper.

8. Fold the other half of the newspaper over the screen and press down very hard. This will squeeze some of the water out of the pulp.
9. Carefully peel back the newspaper to uncover the pulp. Let the pulp dry overnight.
10. When the paper is dry, carefully peel it from the screen.

Try making paper out of other things, such as paper bags and gift wrap. Add lint from the clothes dryer, pieces of thread, tissue paper, or leaves for a special look.

### 4. Presto Change-O

Place about 5 tablespoons of skim milk in a small glass jar. Slowly add lemon juice (fresh or from concentrate) a drop at a time to the milk, stirring in between each drop. What happens?

Make invisible ink with the lemon juice. Using juice from a fresh lemon, take a toothpick and wet the tip in the lemon juice. Use the toothpick as a pen and the lemon juice as the ink. Let the paper dry. Warm the paper over a lamp bulb. What happens?

How is this different from what you saw happen when you added lemon juice to the milk?

### 5. Magnet Hunt

Magnets pull some things to them. Most magnets are made of iron and come in many different shapes. Get a magnet and find out what will stick to it.

1. Take your magnet and touch it to as many different things as you can find. See the chart below.

Magnet Hunt		
	Magnet Attracts	Magnet Does Not Attract
1. Straight pin		
2. Paper		
3. Aluminum foil		
4. Popsicle stick		
5. Penny		
6. Bean		
7. Paper clip		
8. Nut		
9.		
10.		
11.		

2. Check off on the chart all the things that are pulled to the magnet and all those that are not.
3. Touch the magnet to some other things. Add them to the blank spaces in your chart.

## 6. Static Electricity

A special kind of electricity, called *static electricity*, can be made by rubbing some things together. Lightning is a kind of static electricity in the clouds. The spark you sometimes feel when you touch something after walking on a rug is static electricity. You

can try making your own *static electricity* with these activities.

You will need:

- Balloons.
- String.
- Very small pieces of paper.
- Wool cloth.

1. With an adult, blow up the balloons and tie the ends.
2. Rub a balloon very quickly on a wool cloth or your hair.
3. Hold the balloon over the very small pieces of paper. What happens?
4. Take two more balloons and tie a piece of string to each one.
5. Rub the balloons on the wool cloth.
6. Hold the balloons by the string and try to make them touch.
7. Rub another balloon on the wool cloth.
8. Hold the balloon next to a thin stream of water from a faucet. What happens?
9. Hold the same balloon to the wall. If it has enough static electricity, it will stick. Rub the balloon on the wool cloth again to give it more static charges.

# Try It!