

science weekly™

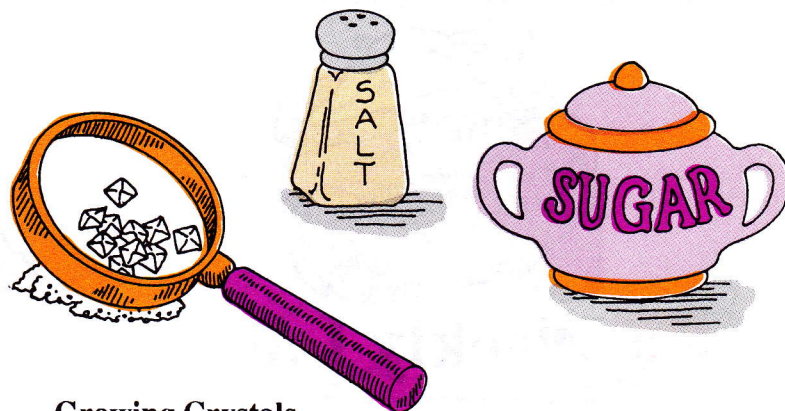
"Put a little science in your week"

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Crystals

LEVEL E

What do diamonds, snowflakes, sugar, and salt all have in common? They are all **crystals**. Crystals are all around us. They are usually very, very small. We can often identify crystals by their **regular shapes**, their beauty, and their sparkle. Crystals come in a variety of different shapes. Some may be shaped like stars or flowers. Others may look like **miniature** boxes, tall **spikes**, or pointy **pyramids**. Some crystals **sparkle**, especially jewels like diamonds and rubies.



Tiny Building Blocks

Like everything else on Earth, crystals are made of tiny, tiny particles called **atoms**. These atoms combine together to form **molecules**. Crystals can be made up of millions and millions of molecules. Most molecules are far too small to see, even with a **microscope**. So why are the atoms and molecules in crystals so special? It's because they *always* arrange themselves in neat and tidy rows. They do this over and over and over. If you could see the atoms and molecules in a crystal, they would look like **complicated** repeating rows, set in neatly stacked piles. These **orderly patterns** are what give crystals their beautiful sparkle and special shapes.

Growing Crystals

Many useful and beautiful crystals are found in nature. Some can be found deep in caves. Scientists can also grow crystals in laboratories. Studying laboratory grown crystals are helping scientists to learn more about the shape of molecules. This information will hopefully lead to developing new medicines and to a better understanding of diseases.

Astronauts also grow crystals on board the Space Shuttle. Crystals grow better and bigger in outer space. They are able to form more perfect shapes in lower gravity than they can on Earth. These "purer" space-grown crystals can help computers run faster, process more information, and cost less money.

Crystals - Hard at Work

Diamonds are beautiful crystals. They are also the *hardest* known natural material in the world. In fact, diamonds are so hard they are sometimes used as cutting tools. They can cut through rock, metal, and even other crystals. Crystals are used to do a variety of jobs. They are an important part of **transistors**, which are used in many **electronic** devices. Crystals are also used in TVs, radios, computers, and in most watches. You use crystals all the time, without even knowing it!

