

What Are Minerals?

Minerals are all around. Do you like to build sand castles at the beach? When you play with sand, you're playing with minerals!



Do you sprinkle salt on your food to make it taste better? Those grains of salt are minerals too!



Minerals Come in Different Colors

Have you ever seen a rock with lots of tiny specks in it, like the granite rock below?

Those specks are different kinds of minerals. These minerals make up the rock. You can tell the different minerals apart by their different colors. How many colors do you see in this rock?



Minerals Come in Different Sizes

The minerals in the granite rock are tiny. But minerals come in all different sizes. Some are as small as a grain of sand.



Others can be even taller than you! (Look at these giant minerals inside a cave. Do you see the person there?)



Minerals Come in Different Shapes

All minerals form in shapes called crystals. That's part of what makes a mineral a mineral. All minerals are natural. They are not made by people. And they are solid.

Each type of mineral can only form in certain crystal shapes. Why do they form in those shapes? And why are the shapes different?

Everything in the universe is made out of teeny, tiny bits called atoms. (You are, too!) But there's something different about the atoms in minerals. When minerals are forming, the atoms line up in patterns. The patterns determine the mineral's crystal shape. The specimen below contains different minerals. See how each one has a different shape?



Mineral Properties

There are many kinds of minerals. How do scientists tell minerals apart? Think about how you tell birds apart. Birds have different traits, like their shape, size, and color. In the same way, minerals have different properties. Some properties of minerals are color, hardness, and shape. Scientists use their senses and other tools to determine these properties.

Now let's take a closer look at three different minerals and their properties.

Quartz

Quartz is a hard mineral. It is hard enough to scratch glass! Quartz crystals are often long and thin. Some have sharp points. Most quartz crystals are clear like glass or white and cloudy. They also come in different colors. They can be light pink, dark purple, and even black. Look at the quartz crystals below. What colors, shapes, and sizes do you see?



Pyrite

Pyrite is a shiny, gold-colored mineral. It looks so much like gold, people have called it “fool’s gold.” Pyrite crystals are shaped like little boxes. This mineral is very heavy. It is also hard. But it is not as hard as quartz.

Look at the pyrite crystals below. What colors, shapes, and sizes do you see?



Talc

Talc is a very soft mineral. It's so soft, you could leave a scratch on a piece of a talc with your fingernail. Talc crystals are usually too small to see. Together, these tiny crystals form chunks that can range from white to green. They are not very shiny.

Look at the talc crystals below. They are larger than most other talc crystals. What colors, shapes, and sizes do you see?



PHOTO CREDITS: sand castle, photo by [Phil Hearing](#) on Unsplash; sprinkling salt, photo by [Fedor](#) on Unsplash; granite rock, © [Ser Amantio di Nicolao](#) / Wikimedia Commons / CC BY 2.0; girl playing with sand, photo by [Mi Pham](#) on Unsplash; cave of crystals © [Alexander Van Driessche](#) / Wikimedia Commons / CC BY 3.0; pyrite, © [Ronald Werner](#) / Wikimedia Commons / CC BY-SA 3.0; talc, © [Rob Lavinsky](#) / Wikimedia Commons / CC BY-SA 3.0; all other photos, © AMNH / D.Finnin