Just for Kids

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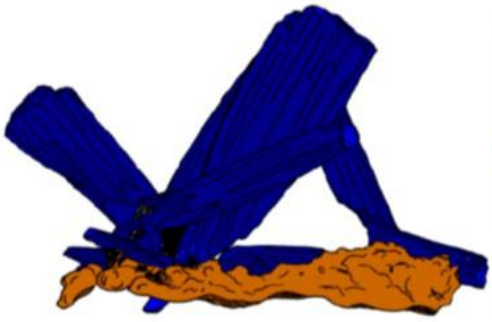
How Does "Color" Work?

Let's start with the light itself. Suppose you are outside and your mineral collection is laid out on the picnic table in the backyard. the light shining on your minerals is coming from the sun. The sun gives off (scientists would say "emits") white light. "White light" is light that has all of the different wavelengths of light that are visible to the human eye. Each wavelength is a different color of light!

The minerals on your table are able to soak up some of the wavelengths (colors). Scientists don't say "soak up;" they say "absorb." At the same time, some of the wavelengths (colors) bounce off of the minerals. Scientists don't say "bounce off;" they say "reflect."

When a mineral doesn't absorb any wavelength (color) of light, you will see it as white. This means that it reflects all of the wavelengths and your eye sees them all at once. Your brain takes this light information and mixes all the colors together and you see a white mineral specimen.



But say you have a dark blue azurite specimen on the table. The specimen absorbs (soaks up) all of the wavelengths (colors) of the sunlight EXCEPT dark blue. The blue bounces off of the specimen and goes to your eye. Your brain takes that wavelength (color) information and tells you, "What a pretty BLUE azurite specimen!"

Now you have a large SCHORL crystal on the table. For those who may have forgotten, SCHORL is the name for black tourmaline. Why is it black? Your eye sees it as black because it absorbs ALL of the light and reflects no wavelengths (colors) back to your eye. In other words, black is the absence of light! But you already knew that.

So, here to the right you have a SCHORL crystal with a green fluorite cube. Let's do a quick test: why is the fluorite green?

Wait for it.....wait for it.... wait for it....

Because it absorbed all wavelengths (colors) except green. The green bounced off of the crystal (reflected) and went to your eye and your eye sees it as green! Ta Da!

Now you know why your minerals have different colors.