

## Mineral Spotlight: Fluorite

Fluorite, a calcium fluoride mineral ( $\text{CaF}_2$ ) is the Mineral of the Week. It exhibits an isometric crystal system, forming crystals in cubes, dodecahedrons, and octahedrons. Fluorite has an uncommonly wide range of colors, with impurities and replacement of calcium with yttrium and cerium turning the mineral almost any color of the rainbow. More common colors are deep purple and aqua-green.

The property of fluorescence was first observed and recorded in the mineral fluorite, hence the property's name. Fluorescence occurs when a material absorbs energy from light, usually ultraviolet light, which causes electrons to move around more than normal. Then, as the light is taken away, the energy is emitted from the specimen as light at a lower wavelength, which can be in the visible light spectrum.

Fluorite itself is named after the Latin *fluere* meaning "to flow" because of its effectiveness as a flux in steel smelting. Fluxes are used to increase fluidity and remove impurities by creating effective slag. Fluorite is also used as a fluorine ore, which is used in fluoridated water and toothpaste to promote tooth health. Grand Rapids was the first city to implement water fluoridation!

The mineral usually is formed from hydrothermal processes and is frequently found among sedimentary rocks. It can also form in slow-cooling granitic pegmatites. It may be able to deposit out of very saline water as an evaporite mineral.

This feature was posted on Dice Museum social media by Museum intern Josian Aardema on 7/17/2023.

