

## Rock & Mineral Field Guide

The Rock & Mineral Field Guide was designed to be carried in backpacks or as an ebook on some electronic device when you look for rocks. This book includes a number of keys and charts to aid in the identification of unknown rocks and minerals.

### Rockhounding Kit

You can create a kit that can be used at home or in the field to identify rocks and minerals that you collect. The kit includes a number of items that are easy to carry in a backpack.

- Small hand lens to look at crystals or mineral grains.
- A copper penny, a steel file or washer, a glass marble, and index paper to field-test your rocks for hardness.
- A streak plate to test a rock or mineral's streak.
- An acid bottle to hold vinegar. (All kinds of vinegar will work, but I prefer distilled white vinegar.)
- A magnet or small compass to test for magnetism.
- A small piece of red brick used to test minerals to determine if they are harder or softer than 5.0 on the Mohs hardness scale
- Common minerals such as talc, calcite, apatite, feldspar and quartz to test for hardness



Rock hounding kit to go in your backpack

### Looking for minerals in rocks

Rocks can be formed from one or more minerals. Granite is an example of a rock made up of a variety of minerals. The surface of granite is dotted with different colors. Each color is a different mineral that crystallized when the rock was molten and began to cool underground.

Sulfur crystallizing in and around hot springs or fumaroles is an example of a single mineral that is a rock.



Metamorphic Rock Schist



Mineral Hematite

### The first three sections cover the rock cycle.

- **Igneous rocks** were originally molten rock that cooled and crystallized. All volcanic rocks that formed during volcanic eruptions are igneous rocks.
- **Sedimentary rocks** are rocks made from layers of sediments, structures built by living creatures, and minerals that crystallized as water evaporated. The sediments can be pieces of older rocks that broke apart or the remains of plants and animals that have died.
- **Metamorphic rocks** have changed their structure due to heat, pressure and/or fluids without melting. Metamorphic rocks form deep underground at plate boundaries, beneath deep layers of sediment, or when hot magma heats surrounding rock.

### Minerals in rocks

Minerals is the fourth section of this book and it covers common minerals on our planet. There are over 3,000 named minerals.

### **Identifying minerals using their properties**

- Testing for Luster
- Testing for Hardness
- Testing a Mineral's Streak
- Testing Specific Gravity/Density
- Testing for Magnetic Properties
- Testing for Cleavage & Fracture
- Testing for Calcite
- Looking at Color

Places to find good specimens of rocks are road cuts, rock quarries, and the base of cliffs. Minerals can be found in holes or cracks in rocks. Rock clubs also can give you information about localities where you can go to collect specific rocks.

The Rock and Mineral Field Guide was written originally as a companion to our identification books on the rock cycle and minerals.

### **Identification books on rocks and minerals**

- ID Igneous Rocks
- ID Sedimentary Rocks
- ID Metamorphic Rocks
- ID Minerals

The books in this series contain 12 chapters with specific information related to each type of rock in the rock cycle. The chapter in the mineral book contains information about how to use each of the keys to identifying minerals using the process of elimination.

Each of these books has a set of rocks that can be purchased that are used to guide a reader on how to identify rocks in the rocks cycle. The set of minerals are common minerals are used to show how luster, fracture, cleavage and the other keys you can be used in identifying minerals.

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