

Discover Geology

LEARN ABOUT SOME BASIC GEOLOGY AND LEARN TO IDENTIFY COMMON ROCKS & MINERALS. INTENDED FOR AGES 7 & UP.

WHAT IS GEOLOGY?

Geology is the study of what the earth is made of. Geologists also study events that have changed and shaped the Earth over time. They basically tell us the Earth's story dating back billions of years. Geologists study the rocks, minerals, fossils, landforms and the layers of the Earth's surface.

ROCKS VS. MINERALS

Minerals have a specific chemical structure that is the same throughout the entire mineral. **Rocks**, on the other hand, are composed of a combination of different minerals and do not have the same structure all the way through.

Some minerals, like quartz or feldspar, are very common, but others are more rare, such as diamonds.

DIFFERENT TYPES OF ROCKS

There are 3 main types of rocks. Those types are igneous, sedimentary, and metamorphic.

Igneous rocks are formed by the cooling and solidification of molten material, such as magma or lava. Washington, with all of its volcanoes, has a ton of igneous rocks.

Sedimentary rocks are formed when small sediment particles collect over time and are then compressed together on the floor of oceans or other bodies of water.

Metamorphic rocks happen when rocks of one type are transformed. The word "metamorphism" means 'change in form.' Rocks may be changed physically or chemically when they are introduced to extreme heat or pressure.

Can you find a way to simulate how these rocks form at home? Below are some ideas.

Try making salt dough creations to simulate the forming of sedimentary rocks. You can then shape your dough and put it in the oven to harden it. This simulates a metamorphic process. Tutorial:
<https://www.allrecipes.com/recipe/240641/salt-dough/>

Try melting some crayons to mimic the process igneous rocks undergo. Tutorial: <https://artfulparent.com/melted-crayon-rocks/>

Rock & Mineral Hunt

GO OUTSIDE AND TRY TO FIND THE ROCKS & MINERALS LISTED. WHEN YOU FIND ONE, PLACE IT OVER THE CORRECT SQUARE. SOME WILL BE EASIER TO FIND THAN OTHERS. SEE HOW MANY SPACES YOU CAN COVER!



QUARTZ



GRANITE



GNEISS



BASALT



AGATE



FELDSPAR



PETRIFIED
WOOD



CALCITE



JASPER



PUMICE



SHALE



SANDSTONE

WASHINGTON STATE GEOLOGIC POINTS OF INTEREST

Geology shapes the world around us! This is a brief list of some interesting geologic sites around Washington. Consider doing some research on these, and other locations around the state to uncover their geologic history! Even plan a trip to one or more locations!

Snoqualmie Falls- Snoqualmie, WA

- Snoqualmie Falls – which is located near an extinct twenty million year old volcano - is a 268-foot waterfall on the Snoqualmie River. The Snoqualmie Falls were formed by ice and glacial debris flow over 10,000 years ago. The water plunges 268 feet over a granite cliff and into a 65-foot deep pool.

Mima Mounds Natural Area Preserve- Thurston County, WA

- The site is famous for mounds eight to ten feet high and twenty to thirty feet in diameter spread across miles of meadows. Once thought to be ancient burial chambers or rodent dens, they now are believed to be the result of Ice Age freeze-thaw patterns or glaciation.

Ginkgo Petrified State Forest-Vantage, WA

- The park was set aside as a historic preserve when remains of a fossil forest were unearthed during highway construction in the 1930s. Petrified wood from many different trees is common in the area, but specimens of petrified Ginkgo are rare. Most petrified forests are found buried in mud or volcanic ash. This petrified forest, however, is embedded in basalt. To explain the fact that the trees were not charred and consumed in the lava flow, the trees likely were downed logs that probably were submerged in the waters of a prehistoric lake or swamp. The petrified logs are embedded in six to fifteen layers of soil and rock. Occasional specimens lie on the surface and some specimens occur in ancient peat bogs amid tangles of roots, stumps, and empty tree molds. Many of the fossils are an opal formation and are clearly and beautifully grained.

Mt. St. Helens National Monument

- Mount St. Helens erupted in 1980 and devastated approximately 230 square miles of forestland. Visitors can spot all sorts of pumice, evidence of lahars (floods caused by eruptions), and solidified lava from the flows. Visitors can even walk through the Ape Cave lava tube, which is over 1 mile in length!

Dry Falls- Glacial Lake Missoula Flood

- Dry Falls is believed to be the greatest known waterfall that ever existed. It is a three and a half mile-long scalloped precipice that is ten times the size of Niagara Falls. At the end of the last ice age, when the ice dam holding back glacial Lake Missoula broke, catastrophic flooding channeled water at 65 miles per hour through the Upper Grand Coulee and over this 400-foot rock face.