

## EARTH SCIENCE RESOURCES

As Earth Science Week 2020 winds down for this year, we'd like to wrap up by leaving you with a few Earth science tidbits, a fun scavenger hunt, and helpful resources for further geoscience explorations.

Remember that Earth Science Week is celebrated each year during the third week in October. Please join us again next year for Earth Science Week 2021!



"Geoscience is the study of the Earth - its oceans, atmosphere, rivers and lakes, ice sheets and glaciers, soils, its complex surface, rocky interior, and metallic core. This includes many aspects of how living things, including humans, interact with the Earth." (from the American Geosciences Institute)



"Geoscientists study and work with minerals, soils, energy resources, fossils, oceans and freshwater, the atmosphere, weather, environmental chemistry and biology, natural hazards and more. They even study rocks on our moon and other planets in our solar system." (from the United States Geological Survey)



Examples of geoscience jobs: geologist, paleontologist, seismologist, meteorologist, volcanologist, hydrologist, oceanographer, geochemist, petrologist, sedimentologist, and more!



While high schools don't usually offer dedicated geology courses, many schools have closely relevant courses:

- ◇ Earth science or environmental science
- ◇ Biology, chemistry and physics
- ◇ Computer courses to prepare for sample analysis and information processing
- ◇ Outdoor or environmental clubs to learn how to function in natural or wilderness settings

### **ACTIVITY: Earth Science Week 2020 Scavenger Hunt**

For our budding geoscientists, we want you to keep the learning process going. See if you can follow along by participating in the hunt, and find the answers to our questions. Have fun!




Join a virtual geology field trip to learn more about Earth science in Nevada.


Visit the Nevada Bureau of Mines and Geology (NBMG) [blog](#) for details about their upcoming virtual field trip in celebration of Earth Science Week 2020! (Note that field trip details will not be posted sometime around October 17, 2020)

*"Due to the coronavirus, NBMG will not lead a physical field trip for 2020 but will instead post a virtual field trip and story map on the Hot Springs Mountains northeast of Fernley, NV. Topics will include the geology and natural history of the area, mining activities, and hot springs and geothermal energy."*




 Find **topographic maps** of Nevada for your next hiking trip. (A **topographic map** shows the physical features, or shape, of an area and is useful for planning hiking and camping trips. This type of map shows landforms such as mountains and rivers, as well as elevation changes.)


Visit NBMG's [Topographic Map Index](#) to see our region of the western United States, then zoom in on your area of interest, and print out a copy of the map.

 Select a national park that you'd like to visit one day and learn about its geology.

The United States Geological Survey (USGS) website is a great place to start. The [Geology and Ecology of National Parks](#) page lets you take a look at our national parks, monuments, historical sites, and recreation areas through photos and descriptions of the geology and ecology of the landscapes.

 View an episode of "Mineral Monday" produced by the W. M. Keck Earth Science and Mineral Engineering Museum.


Curator Garrett Barmore hosts "[Mineral Monday](#)" each week and explores the cases of minerals, fossils and historic objects inside the museum and even heads into the great Nevada wilderness to some of the most unique geological sites in the country! Located in the Mackay School of Mines Building on the UNR campus, the Keck Museum houses an outstanding collection of minerals, ores, fossil specimens and photographs, in addition to mining related relics. It is also home to some of the spectacular Mackay Silver Collection, created by Tiffany & Co., for John Mackay and completed in 1878.

 Take a look at some satellite imagery and examine a few scenes side-by-side for changes in the landscape. See if you can identify the differences between the two images.

Check out these [images](#), courtesy of the Earth Resources Observation and Science (EROS) Center. Scientists at EROS study land change and produce land change data products used by researchers, resource managers, and policy makers across the nation and around the world. They also operate the Landsat satellite program with NASA and maintain the largest civilian collection of images of the Earth's land surface in existence, including tens of millions of satellite images.


 Explore old maps of Nevada. Can you find a Nevada highway map that was printed before 1965?

The UNR Libraries host a number of online digital collections, including [Historic Maps of Nevada and the Great Basin](#).

 Find a reliable source for earthquake information, including real-time reports of quakes in your area.


Check out the [Nevada Seismological Lab's](#) website and sign up for earthquake alerts!






Examine historical aerial photography of the Reno and Carson City areas, and see if you can find photos of the Reno airport being built.

*These [photos](#) are part of the NBMG historic air photo collection. They were scanned at original size, some were 9" by 9" prints and others were enlargements. (HINT: This [aerial photo](#) from 1962 covers the area of the airport.)*




Learn about the history of mining for minerals in Nevada.

*The State of Nevada Commission on Mineral Resources, Division of Minerals manages the [Abandoned Mine Lands \(AML\) program](#). Staff created an educational **story map** (a visual presentation that integrates maps, legends, text, photos, and video that helps users explore the content) about the AML program. Can you find it? (HINT: Here is the direct [link](#).)*



Find a geologic map of Nevada. What do you notice about it? Does it look different from other types of maps that you've seen?

*The NBMG created a series of [geologic maps](#) that are both informative and beautiful to look at. (HINT: Here is the direct [link](#). You can zoom in on different parts of the map for more detail.*



Participate in another scavenger hunt with questions on the topic of **Earth materials**. (**Earth materials** include minerals, rocks, soil, and water. These are the naturally occurring materials found on Earth that constitute the raw materials upon which our global society exists. They are vital resources that provide the basic components for life, agriculture and industry.)

*The USGS has a terrific scavenger hunt posted on their [website](#)! Search for everyday items inside your home and discover where the materials they are built of came from.*

#### ADDITIONAL RESOURCES FOR GENERAL EARTH SCIENCE INFORMATION:

Materials available from the Washoe County Library System

[Bill Nye the Science Guy: Rocks & Soil](#) [DVD videorecording] by Walt Disney Productions

[Geology](#) by Tim Clifford

[Geology: The Study of Rocks](#) by Susan Heinrichs Gray

[Planet Earth: Continents, Oceans, Climate, Geology: With 19 Easy-to-Do Experiments and 250 Exciting Pictures](#) by John Farndon

[Rock Collecting for Kids : An Introduction to Geology](#) by Dan R. Lynch

[Science Kids: Earth's Materials and Systems](#) [DVD videorecording] by Wonderscape Entertainment



## Videos

[A Day in a Geologist's Shoes](#)

[Geology in a Minute - What is Geology?](#)

[View the World Through the Eyes of a Geoscientist - Imagine the Possibilities](#)

## Websites

[The Geological Society, Teaching Resources](#)

[Mineralogical Society of America, Mineralogy4Kids](#)

[National Geographic Kids, Geology 101](#)

[The Smithsonian Institution, The National Museum of Natural History: David H. Koch Hall of Fossils - Deep Time](#)

## SELECTED RESOURCES FOR EARTH SCIENCE INFORMATION ABOUT NEVADA AND BEYOND:

[Nevada Bureau of Mines and Geology](#)

The Nevada Bureau of Mines and Geology (NBMG) is a research and public service unit of the University of Nevada and is the state geological survey. NBMG scientists conduct research and publish reports on mineral resources, engineering geology, environmental geology, hydrogeology, geologic hazards, and geologic mapping.

We are involved in earth science education and outreach and compose guidebooks for nonprofessionals, teachers, and students. Bureau staff often present lectures and short courses, and participate in Earth Science Teacher Workshops in northern and southern Nevada. Many of our faculty and staff also participate in Earth Science Week every October by leading field trips for the public to geologically significant locations in Nevada.

[Video overview of the agency](#)

[Web maps, mining districts, MyHazards, and more](#)

[DeLaMare Science and Engineering Library](#), UNR Libraries, University of Nevada, Reno (UNR)

The DeLaMare Science and Engineering Library is a dynamic and technology-rich environment that provides innovative, user-centered services, and active learning spaces. The library houses physical materials related to the STEM disciplines, including journals, books, and reference materials, as well as a makerspace, Mary Ansari Map Library, and GIS Depot.



[Mary B. Ansari Map Library](#) - Located in the DeLaMare Science & Engineering Library, the collection contains over 200,000 maps including topographic maps and earth science themes, for local, state, national and around the world. Search in the library catalog or come on in to see what we have. Many of the maps are not represented in the catalog, so come on in and see us. We are happy to help you find what you are looking for.

[W.M. Keck Earth Sciences & Mining Research](#) - The Keck Repository was created from a joint effort between the Nevada Bureau of Mines and Geology and the DeLaMare Library. It provides a centralized location where users can explore, access, and download data related to earth sciences, mining, imagery, elevation, transportation, agriculture, cadastral, Mackay theses, and historical maps throughout the state of Nevada.

### [Nevada Seismological Lab](#)

The Nevada Seismological Laboratory is a research division within the College of Science at the University of Nevada, Reno. The Laboratory has overall responsibility for instrumental studies of earthquakes in the Nevada region. The lab operates a statewide network of seismographic stations and investigates the sizes, frequencies of occurrence, and distribution of earthquakes in the region, and other problems related to seismic risk in Nevada.

### [Nevada Division of Minerals](#), State of Nevada Commission on Mineral Resources

The Division is responsible for permitting, inspecting, and monitoring all oil, gas, and geothermal drilling activities on both public and private lands in Nevada. Staff also monitors production of oil, gas, and geothermal resources to ensure proper management and conservation.

### [United States Geological Survey \(USGS\)](#)

Created by an act of Congress in 1879, the U.S. Geological Survey (USGS) has evolved over the ensuing 125 years, matching its talent and knowledge to the progress of science and technology. The USGS is the sole science agency for the Department of the Interior. It is sought out by thousands of partners and customers for its natural science expertise and its vast earth and biological data holdings.

We provide science about the natural hazards that threaten lives and livelihoods, the water, energy, minerals, and other natural resources we rely on, the health of our ecosystems and environment, and the impacts of climate and land-use change. Our scientists develop new methods and tools to enable timely, relevant, and useful information about the Earth and its processes.

### [USGS Earth Resources Observation and Science Center](#)

### [Youth and Education in Science: Teachers, Learners, and Kids](#)



## [American Geosciences Institute](#)

The Institute represents and serves the geoscience community by providing collaborative leadership and information to connect Earth, science, and people. AGI was founded in 1948, under a directive of the National Academy of Sciences, as a network of associations representing geoscientists with a diverse array of skills and knowledge of our planet. The Institute provides information services to geoscientists, serves as a voice of shared interests in our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society's use of resources, resilience to natural hazards, and the health of the environment.

### [For Students and Educators](#)

### [For the Public](#)

Since 1998, the American Geosciences Institute (AGI) has organized [Earth Science Week](#) to promote understanding of Earth science and encourage stewardship of the Earth.

