



Have you ever wondered why one rock is shiny and another one is not? Have you ever found a rock with a design or imprint on it that looks like a leaf or animal? Through Geology, you can discover more about these special rocks!



## Exploring 4-H Geology

### Spark Activity: Fake Fossils

Geology is the study of rocks:

- Igneous rocks are typically formed by hot magma or lava in or from deep in the earth
- Metamorphic rocks are formed under high heat and pressure inside the earth
- Sedimentary rocks are formed on or near the earth's surface (including underwater) when larger rocks are weathered, creating sediment

Fossils are a remnant, impression or trace of once-living things typically preserved in sedimentary rocks. Fossils are preserved remains from at least 10,000 years ago and show us the long history of life on earth.

In nature, fossils are created only with perfect conditions - so it is pretty rare for fossils to form. We can, however, use some common items at home to make fake fossils. Make a salt dough to represent your rocks.

- Mix 1 part salt and 2 parts flour
- Add water (just a little at a time) - mix until you have the consistency of dough; knead for several minutes

Next, decide what you would like to fossilize - maybe a toy animal, a leaf, a shell or a coin. Take a small amount of your dough and flatten it to about 1/4 inch thick on a work surface. Press your original item into the dough to make an impression. Repeat the process with several different items to see how many different "fossils" you can make.

To preserve your fossils, you can let them air dry for several days or bake them at 200 degrees Fahrenheit for two hours. Share your fossils with others and ask them to guess what original item was used to make the impression. Learn more about scientists who specialize in fossils - paleontologists, anthropologists, and geologists are a few.



## 4-H Project Levels and Goals

### Beginner

- Learn the difference between a rock, mineral and fossil
- Learn how rocks are used in everyday life
- Collect, clean, identify and label rocks, minerals and fossils
- Learn about planet Earth

### Intermediate

- Learn to identify types of rocks such as igneous, metamorphic, and sedimentary
- Learn where different types of rocks are found
- Learn different tests to identify minerals by hardness and shape
- Discover the types of tools geologists use

### Advanced

- Learn how to date rocks
- Learn to read a topographic map
- Learn to test chemical properties of minerals
- Explore new ways to display your collection
- Connect with other rock hounds
- Learn about geology careers

## Put Your Project Into Action

### Show Your Skills

- Exhibit your rock collection at your local 4-H show or at a school science fair or community event
- Create a poster of the rock cycle
- Create a display featuring mineral characteristics
- Develop a poster of types of rocks
- Design an exhibit showcasing the impacts of weather on rock

### Service and Leadership

- Demonstrate a crystal making process
- Show and explain your rock collection to others
- Educate community members on the importance of mineral conservation
- Organize a club hike to a geological structure
- Help younger members start a rock collection
- Lead a craft with your club members making painted rocks - use them to create a "rock hunt" in your community

### Entrepreneurship

- Design, make and sell jewelry made from rocks
- Design and sell decorative items made from rocks or minerals
- Learn to collect and sell unique rocks in your area (know the laws and regulations involved)

### Technology Connection

- Rock and mineral identifier apps
- Online markets for buying and selling rocks
- The Field Museum in Chicago is home to a world-renowned geology exhibit and research program

### Connecting with a Mentor

- Visit a rock shop in your area
- Talk with docents or staff at a local museum which features a geology display or at a local or state park with significant geological formations
- Connect with rock clubs in your community
- Connect with the USGS (United States Geological Survey) virtually or via a field office in your region

### Events

- 4-H show
- County fair
- Local rock and mineral shows



### Careers for People Interested in Geology

Paleontologist  
Gem Sales  
Environmental Law

Geologist  
Agrogeologist  
Hydrogeologist

## Start a Conversation

What types of rocks can we find in our community?  
Where can we find large rock formations in our area?  
What is a type of rock that you would like to find?  
How many different rocks can you add to your collection this year?

## Want to learn more?

[go.illinois.edu/4Hgeology](https://go.illinois.edu/4Hgeology)

## Explore more at Illinois 4-H!

[4-h.extension.illinois.edu](https://4-h.extension.illinois.edu)



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