



# Welcome Teachers and Parents!

Welcome to **FIND Iowa**! We are so excited that you could join us on these adventures in our great state of Iowa. Iowa PBS's will take you and your student on expeditions to discover Iowa in brand new ways. You'll ask questions, wondering about our state's past, observe how our state has changed, and learn something new and unique about Iowa.

Teachers, Parents and learners in grades 2-5 will explore Iowa Core, standards aligned, Science and Social Studies virtual field trips having **Fun Investigating New Discoveries** in Iowa.

Every good explorer needs tools to make great discoveries. Each field trip will explore several locations across the state, using the following tools to help your learner discover Iowa:

- Overview video to activate prior knowledge and set the stage
- On-site videos related to each topic
- Interactive maps of Iowa locations,
- 360° videos and panoramic images

And, every good explorer needs a guide to help them learn what they do not know. To help you be that guide, each field trip will include:

- Iowa Social Studies and Science Core Standards alignments
- Discussion questions
- Suggested activities
- Additional resources

## FIND Iowa: Geology

When you picture the landscape of Iowa, you might think of lots of flat farmland and a few hills. Actually, Iowa's land has many different areas and features. Did you know there are fossils in Iowa? How about caves? Learn about Iowa's interesting geology and ancient past by virtually exploring various land features and fossilized creatures.

### Iowa Core Standards

Science (Grades 3 and 4)

- [4-ESS2-1](#) Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.
- [3-LS4-1](#) Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

## Discussion Questions

1. What does Iowa's surface look like?
2. Why does Iowa have the surface landform features that it has?
3. Do other places look the same or different from Iowa? What caused those places to look the way they do?
4. What are the geologic processes currently impacting Iowa's surface?
5. What will Iowa look like in the future?
6. What do the layers in the rock tell us about Iowa?
7. How do the fossils we find help us know what Iowa was like millions of years ago?

## Suggested Activities

- [Cartesian Diver Activity](#) (Iowa PBS): This activity serves as an extension of the materials on fossils and Iowa's geology. The trip to Graf, IA investigated a layer of fossils found in a rock outcrop. These unique fossils are known as nautiloid cephalopods and are ancient relatives to modern-day squid and nautilus.
- [Soil Erosion Demonstration](#) (USDA Natural Resources Conservation Service Soils): This hands-on activity demonstrates erosion.

## Additional Resources

### What is Geology?

- [Managing Carbon Dioxide: The Geologic Solution - Reservoir Geology 101 Fluid in the Rocks](#) (PBS LearningMedia) The basic components of geologic formations are described.
- [Geology: What Forces Shape Your World? | Science Trek](#) (PBS LearningMedia, IdahoPTV) Geology plays an essential part in our lives. Geologists help us with everyday things in our lives and they keep us safe by studying the land around us. Find out more in this geological adventure. This resource is part of the [Science Trek collection](#).
- [Rocks and Minerals | Science Trek](#) (PBS LearningMedia, IdahoPTV) There are three types of rocks—igneous, sedimentary, and metamorphic—that have formed over time in the Earth's different layers. A rock can begin as one type and can change many times. It can take thousands of years for rocks to weather and erode. This process of changing is called the rock cycle. This resource is part of the [Science Trek collection](#).

### The Geology of the United States

- [The Geology of Iowa's Gitchie Manitou State Preserve | Iowa Land and Sky](#) (PBS LearningMedia, Iowa PBS) Gitchie Manitou State Preserve, a small patch of natural prairie in northwest Iowa, is

home to Sioux quartzite outcroppings, the oldest surface bedrock in Iowa. This resource is part of [Iowa Land and Sky collection](#).

- [Geology and Mountains | Georgia Outdoors](#) (PBS LearningMedia, GBP) Meet with a geologist in the north Georgia mountains for a discussion of Pangea, the evolving formation of earth's continents, and the layering of rock as a result of continents colliding, in In this excerpt from *Georgia Outdoors*.

## Products Made with Minerals

- [Geology: The Connection Between Geology and Toothpaste | Science Trek](#) (PBS LearningMedia, IdahoPTV) We see the work of geologists all around us. They find the minerals that get used in products all around us. Find out how these scientists make a difference in our everyday life. This resource is part of the [Science Trek collection](#).

## Career

- [Planetary Geology | NASA Planetary Sciences](#) (PBS LearningMedia, NASA) Meet NASA scientist Lynn Carter, who studies the geology of planetary surfaces, in this video adapted from NASA's Goddard Space Science Center. Carter describes how scientists learn about Earth by studying other planets and moons. This resource is part of the [NASA Planetary Sciences Collection](#).
- Dana Ulmer-Scholle, Geologist (PBS LearningMedia, NM PBS) Dr. Dana Ulmer-Scholle is a Senior Research Scientist in Research & Economic Development at New Mexico Tech. She answers the question "Why did you become a scientist?" This resource is part of the [Why Did I Become a Scientist? Collection](#).
- Scientist Profile: Marine Geologist (PBS LearningMedia, TPT) This *DragonflyTV* segment introduces marine geologist Carol Reiss, who works for the U.S. Geological Survey (USGS). She studies tectonic plate movement in order to better understand earthquakes. Also available in Spanish. This resource is part of the [DragonflyTV Collection](#).