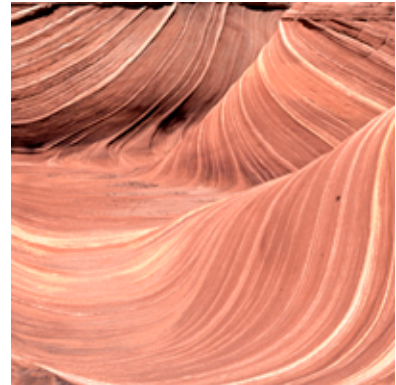


Earth: Inside and Out

Feel like you're standing on solid ground? In fact, the Earth and its atmosphere form a dynamic system in a state of constant flux. This seminar shows you the world through geologists' eyes. You'll see how geologists "read the rocks," delve into the geological events that shaped the planet over millions of years, and consider the interconnected systems that cause earthquakes, volcanoes, and major climate changes. A grasp of the scale and nature of geologic change helps you understand how the Earth supports life.



Key Science Concepts:

- **The present is the key to the past.** Studying current Earth processes helps scientists piece together the planet's geologic history.
- **The Earth can be viewed as a set of dynamic systems**—the atmosphere, hydrosphere, biosphere and geosphere—that interact with each other. The interactions of these systems through time have determined the character of the Earth.
- **Geologic time:** The processes that have governed the evolution of the Earth operate over time scales so much longer than human experience that they are difficult to comprehend.
- Nearly everything we know about the Earth—including the age of the planet and when life first appeared—has been learned from **evidence contained in rocks**.
- Interactions among rocks, the oceans and life have controlled the **evolution of Earth's atmosphere**.
- **Climate is a complex system** controlled by the interaction of the atmosphere, the oceans and the solid Earth. The climate system is affected by human activities.
- **The flow of solid rock in the Earth's mantle (convection) drives plate tectonics** and has shaped the planet's surface over millions of years.
- **A watery planet can support life.** At volcanic vents on the ocean floor, life thrives on the chemical energy created when superheated, mineral-rich water spews into the deep sea.

Authoring Scientists:

Dr. Ro Kinzler is the Director of the National Center for Science, Literacy, Education, and Technology at the American Museum of Natural History. She is also the Research Associate in the Division of Physical Sciences. Prior to joining the National Center, Ro was a Research Scientist in the Museum's department of Earth and Planetary Sciences where she studied igneous petrology (the origin of igneous rocks).



Dr. Ed Mathez, Curator in the Department of Earth and Planetary Sciences at the American Museum of Natural History, believes that informal educational experiences such as these help people to understand the Earth in a unique and more powerful way than more traditional methods; they give people a chance to use their imaginations. "Working at the Museum has provided me with the unique opportunity to describe my profession to the public."

