

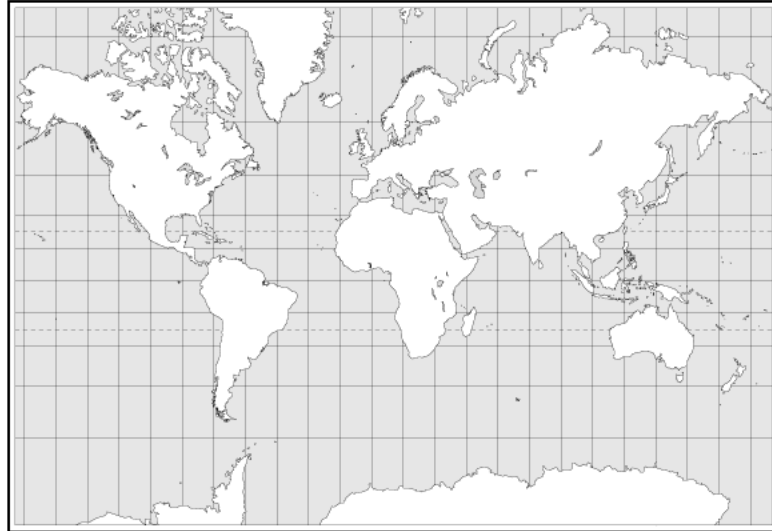
Teacher Trail Guides

Trail Guide Earth Observatory: 7.3 Geological Forces

THE PLANET EARTH GALLERY

Visit Earth Observatory

Look at the globe. Choose “Plates and Quakes” and write small e’s on the map below the areas where most occur. Now choose “Active Volcanoes” and write small v’s.



Is there a pattern? Describe it.

Teacher Notes:

- This globe displays images and animations of global phenomena. Displays are changed by the use of a touch screen.

Concepts:

- Movement along plate boundaries may cause earthquakes and volcanoes.

Framework activity: Have students observe where volcanic and earthquake activity occurs. Is there a pattern?

This exhibit addresses CINQ 5 and 8 and Content Standard 7.3 with Expected Performance C 8 and 9.

Additional concepts:

- How has the size and number of glaciers changed?

Trail Guide Geologic Connecticut: 7.3 Geological Forces

THE PLANET EARTH GALLERY

Visit: Geologic Connecticut

Choose a rock. Make observations using the lens and other tools.

Do you see breaks or lines on the rock?

- Describe what might have happened to make those lines or break the rock.
- Would it take a lot of force to mark the rock?

Are the lines all in the same direction? Why?

Teacher Notes:

Students will examine the fossils and artifacts to make discoveries about Connecticut's past climates and inhabitants. Encourage the students to use the available tools to make observations. Some specimens are tagged and will display questions, challenges and discovery tips on the monitor.

Concepts: Geologists use the rocks and landforms around them to tell the stories of Connecticut's past. They observe, ask questions, measure and collect data about their surroundings. They observe colors, textures, shapes, composition. They measure size, chemical composition, and angles of the formation.

Framework activity: Have each student choose an artifact. They should draw the object and record their observations. Each student should ask a question that may be answered through the discovery.

This exhibit addresses CINC 5 and 8 and Content Standard 7.3 with Expected Performance C 8 and 9

Trail Guide Standing Atop a Timeline: 7.3 Landforms

THE PLANET EARTH GALLERY

Visit: *Standing Atop a Timeline*

Observe the ocean core.

Describe the different layers that you see.

How can scientists tell that the oceans have become warmer over a period of 100,000 years? Describe the evidence that would show this.

Teacher Notes:

This exhibit shows a split ocean core. Students can view magnified layers of the core. Some sections will be highly magnified and the students may view the remains of microscope organisms.

Concepts: Earth and ice cores are records of the Earth's past. Ocean cores can give us information from the past 20 million years. Similar to a tree's rings, the thickness of the layer and the type of material in the layer can indicate past plant and animal populations, and major earth events such as earthquakes and uprisings.

Framework activity: The oceans have changed over a long period of time. Have students observe the different layers and note the shells and the varying sand and soil layers. Wide layers containing shells or dark peat would indicate more plant and animal life, and generally a warmer climate.

This exhibit addresses CINQ 5,8 and 9 and Content Standard 7.3 with Expected Performances C 7 and 8

Trail Guide Driving by Mountains of Data: 7.3 Landforms

THE PLANET EARTH GALLERY

Visit: *Driving by Mountains of Data*

Find a road cut near your town.

List the type(s) of rock that can be found in the geological formation.

What is the geological history of the area?

Teacher Notes:

Driving by Mountains of Data

Actual Connecticut road cuts are displayed on the large screen monitor. Behind the opposite wall are rock samples. These rock samples include:

- Gneiss/schist to introduce ancient mountain ranges
- Granites to introduce cycles of melting and fractioning
- Sandstone to introduce large river systems
- Basalt to introduce tectonic rifting patterns.

Concepts: “Crunch and Crack” can be used to describe Connecticut’s geological history. Connecticut formed approximately 350 million years ago when several plates came together, or crunched. One hundred million years later the plates began to move apart, and Connecticut “cracked”. Heat and pressure from plate movement and Earth’s forces caused different types of rocks to form.

Framework activity: Have students locate a road cut close to their town. List the types of rocks that can be found in the road cut. Have them describe what type of earth processes might have helped to form the rock.

This exhibit addresses CINC 5,8 and 9 and Content Standard 7.3 with Expected Performance C 7

Trail Guide Remaking Earth: The Rock Cycle: 7.3 Landforms

THE PLANET EARTH GALLERY

Visit: Remaking Earth: The Rock Cycle

Look at the landforms of Connecticut.

List 3 events that have changed the shape of Connecticut's landforms.

1.

2.

3.

Will the landscape change in the future? What will make it change?

Teacher Notes:

Remaking Earth

The geology wall has four sections.

Part 1 is the rock cycle. The formation of sedimentary, igneous, and metamorphic rocks is described.

Part 2 shows Connecticut's bedrock, and how it is formed from many types of rock.

Part 3 describes the major forces of plate tectonics, and what occurs as the plates move.

Part 4 shows Connecticut's landscape as it exists today. This is nature's work in progress, and it will continue to change.

Concepts: Major ideas and vocabulary are shown along the wall.

Framework Activity: Review the forces and events that have helped to shape Connecticut. This would also be a good place to review geology vocabulary.

This exhibit addresses CINQ 5,8 and 9 and Content Standard 7.3 with Expected Performances C 7,8, and 9

Trail Guide River of Yesterday: 7.3 Landforms

A RIVER OF LIFE GALLERY

Visit: *The River of Yesterday*

Choose two time periods. List five changes that have occurred due to nature. List five changes that have occurred due to man.

	Nature		Man
1.		1.	
2.		2.	
3.		3.	
4.		4.	
5.		5.	

Teacher Notes:

A River of Life Exhibit Area

This exhibit area explores the Connecticut River and its watershed. The exhibits explain the watershed area, how it has changed over time, and the diverse species that inhabit the area.

- Water moving across and through earth materials carries with it the products of human activities.
- Explain how human activity may impact water resources in Connecticut, such as ponds, rivers, and the Long Island Sound ecosystem.

Concepts: Water systems do affect the topography of the land through erosion. This exhibit shows the impact of the Connecticut River.

Framework Activity: Both man and nature cause erosion to occur. Have students compare the effects of both.

This exhibit addresses CINQ 5,8 and 9 and Content Standard 7.3 with Expected Performance C 8

Trail Guide Home on the River: 7.3 Landforms

A RIVER OF LIFE GALLERY

Visit : Home on the River

Talk to a Gallery Scientist! Describe three (3) animals and two (2) plants that live in the Connecticut watershed area.

Animals:

- 1.
- 2.
- 3.

Plants:

- 1.
- 2.

What is the water quality of the Connecticut River?

	Water quality
Description	
Temperature	
pH	
Salinity	

Teacher notes:

Many species live on and along the river. The “wet lab” allows students to see many of these species and examine the water quality factors that are needed to support these species.

Concepts: Temperature, salinity, pH, and cleanliness, in addition to other factors, affect the number of diverse species that will live in the water. It is important to keep the correct balance of plant and animal life living in the water.

Framework Activity: Have students describe three animals and two plants that live in the watershed area. Have them record the temperature, salinity, and pH of the water and describe how the water looks to them.

This exhibit addresses CINQ 5,8 and 9 and Content Standard 7.3 with Expected Performance C 8

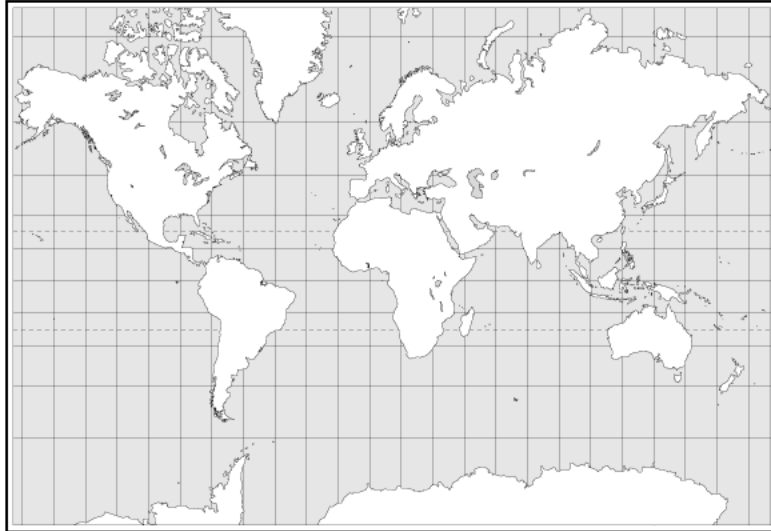
Student Trail Guides

Trail Guide Earth Observatory: 7.3 Geological Forces

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A RIVER OF LIFE GALLERY

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- | Nature | Man |
|--------|-----|
| 6. | 1. |
| 7. | 2. |
| 8. | 3. |
| 9. | 4. |
| 10. | 5. |

Trail Guide Home on the River: 7.3 Landforms

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