Teacher Trail Guides

Trail Guide Geologic Connecticut: 4.3 Erosion

PLANET EARTH GALLERY

Geologic Connecticut

Think about the rocks as you are sorting them. Work in a group to make your predictions for the following questions. Let your partners know what information you are using to determine the answers.

1. Which rocks are conglomerates?

2. How do you think they were formed?

3. What do you think causes weathering and erosion?

4. What do you think these rocks are made of and why?

Use your science notebook to record your thinking.

Teacher Notes:
Conglomerates are sedimentary rocks and are made up of large sediments like sand and pebbles that are cemented together with dissolved minerals. They are usually found along ancient rivers or beaches. But they are also often found much higher than the current ocean or lake levels. Weathering broke rocks into small parts and erosion carried those pieces away. As the smaller pebbles mixed with sand and were exposed to pressure, they cemented together with minerals that were dissolved in ground water.

Trail Guide Stream Table A: 4.3 Erosion

THE RIVER OF LIFE GALLERY

A Geologic Time Machine (Stream Table)

Predict what will happen when you change the flow of the stream table by damming up the water. Write your prediction in your science notebook.

Write what actually happens on the stream table to the sediment when you do this.

Record your answers in your science notebook.

Teacher Notes:
Focus the students on the fact that the amount of erosion and the type of earth material that is moved are affected by the amount of moving water and the speed of the water.

Trail Guide Stream Table B: 4.3 Erosion

THE RIVER OF LIFE GALLERY

A Geologic Time Machine (Stream Table)

Turn and talk with a partner about how you think adding structures like dams and bridges can change the river.

How does that happen in real life?

What happens on the stream table when you do this?

Write your thoughts in your science notebook.

Teacher Notes:
Remind the students that how much vegetation covers an area can affect the amount of erosion that occurs in a place. Structures can be used to divert or channel water to lessen the possibility of erosion.

Trail Guide Stream Table C: 4.3 Erosion

THE RIVER OF LIFE GALLERY

A Geologic Time Machine (Stream Table)

Predict what kind of pellets (sediment) will travel the furthest. Try it on the stream table.

How accurate was your prediction?

What pellets (sediment) stay near the beginning of the stream table? Observe the stream table to determine this. Why do you think this happens?

Talk with a partner and write your thoughts in your science notebook.

Teacher Notes:
The speed of a river's flow affects the amount of earth material that is pushed/pulled along or left behind. Have the students focus on the size of the material that remains behind. The larger, heavier material will not move as far as the smaller, finer material. This is one of the reasons that in areas that erosion may occur, people have placed larger rocks so that the water flows through, rather than eroding away, smaller particles.

Trail Guide Habitat Junction: 4.3 Erosion

THE RIVER OF LIFE GALLERY

Habitat Junction

If the flow of the CT River changed, how do you think the animals of the many ecosystems could be affected?

What could be done to prevent those problems?

Discuss your ideas with a classmate and write your ideas in your science notebook.

Teacher Notes:
Remind the students that the living and non-living things in an ecosystem depend on each other in order to exist. If an animal's habitat were to have more or less water, the living things may not be able to survive if they could not adapt.

Trail Guide Overlook Balcony A: 4.3 Erosion

THE RIVER OF LIFE GALLERY

Overlook Balcony

As you observe the CT River, think about the following:

1. What do you think is happening to the sediment under the water?

2. What type of sediment is being moved? Where is it going?

3. What would happen to the flow of water if a dam was built here?

Talk with a classmate about these questions and then write what you discussed in your notebook.

Teacher Notes:

Students should be able to identify that sediment is moving under the water. The smaller the sediment is, the faster it is moving downstream. The larger sediments are not moving as much, if at all.

If a dam were built here, it would hold back the water and stop the movement of the sediment.

Trail Guide Overlook Balcony B: 4.3 Erosion

THE RIVER OF LIFE GALLERY

Overlook Balcony

As you watch the movement of the Ct River, what evidence do you see of erosion right now?

Discuss what you are observing with a partner. Illustrate in your science notebook.

Teacher Notes:
Have the students notice the banks of the river. Is the moving water reshaping the sides? Is the vegetation being encroached upon? Ask the students to note the color of the water-does it look a bit brownish indicating sediment mixed in?

Trail Guide Monitoring the Flow: 4.3 Erosion

THE RIVER OF LIFE GALLERY

Monitoring the Flow

1. What could we do to slow down the speed of the water?

2. What could we do to change the direction of the flow of water?

Discuss your ideas with the class and then illustrate your thoughts about the two questions in your science notebook. Be prepared to explain your answers.

Teacher Notes:
The students should be able to discuss that the use of structures like dams, barriers, or pipes would help slow down the water flow and would help slow down the erosion of sediment. These structures would also change the direction of the flow of water and could redirect the erosion process.

Trail Guide CT River Watershed: 4.3 Erosion

THE RIVER OF LIFE GALLERY

The Connecticut River Watershed

1. What do you think brings pollutants down to Long Island Sound?

2. What must the slope of the land be like?

3. What about the rivers and their flow of water?

Discuss these questions with a partner and write the ideas discussed in your science notebook.

Teacher Notes:
All of Connecticut is considered a watershed area. That means that all the rivers, streams, and runoff eventually make their way into Long Island Sound carrying the water, sediments and pollutants in them. The slope makes the water, and therefore the pollutants travel faster downstream.

Student Trail Guides

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Trail Guide Stream Table B: 4.3 Erosion

THE RIVER OF LIFE GALLERY

A Geologic Time Machine (Stream Table)

Turn and talk with a partner about how you think adding structures like dams and bridges can change the river.

How does that happen in real life?

What happens on the stream table when you do this?

Write your thoughts in your science notebook.

Trail Guide Stream Table C: 4.3 Erosion

THE RIVER OF LIFE GALLERY

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THE RIVER OF LIFE GALLERY

Overlook Balcony

As you observe the CT River, think about the following:

4. What do you think is happening to the sediment under the water?

5. What type of sediment is being moved? Where is it going?

6. What would happen to the flow of water if a dam was built here?

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THE RIVER OF LIFE GALLERY

Overlook Balcony

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Trail Guide Monitoring the Flow: 4.3 Erosion

THE RIVER OF LIFE GALLERY

Monitoring the Flow

3. What could we do to slow down the speed of the water?

4. What could we do to change the direction of the flow of water?

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