6th Science 5/22/19

EQ: How do rocks break down?

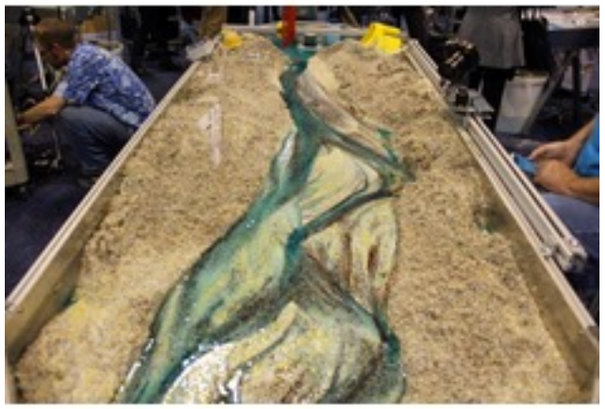
CW: Activity 8.1

HW: No HW
Learning set 1 and 2 Quiz on Friday (Lessons 1-6)

Agenda

1) Writing Prompt
2) Activity 7.1 Discussion
3) Reading 7.1

Open Ended Question



Write silently for three minutes: Why do scientists use stream tables? What can they help scientists learn?

Please enter your answer here.

Erosion

The movement of soil, rock, or dissolved material from one location to another

Deposition

The geological process in which sediments, soil and rocks are added to a landform or land mass.

Time To Climb

Example of a Real River: The Nile

Imagine that you are a geologist studying how the Nile River in Africa formed. The Egyptians depended on the Nile for food and transportation. Because the river was very wide in some places, it also offered protection. It would have been difficult for enemies to cross the wide river. The Nile is one of the longest rivers in the world. It flows north for more than 4,100 miles from its beginning in Kenya and Ethiopia until it empties into the Mediterranean Sea.

This map shows the two branches of the Nile River that join together to form one river that flows to the Mediterranean Sea. From the beginning of the Nile River in Kenya to the Mediterranean Sea is about 4,100 miles. Look at the map of the United States, which shows the distance from New York to California (A to B) and back to Colorado (B to C). That is about the same distance as the length of the Nile River.

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What might make studying the Nile River difficult?

pg. 61 - Take margin notes and answer questions

Using a Stream Table: Advantages

Rivers develop over a very long period of time. It might seem like all you need to form a river is a lot of water, but to form a river, water has to cut through the land. It has to move small pieces of rock and deposit them somewhere else. It can take millions of years for flowing water to make a river. Think about the pictures of the Grand Canyon that you have seen. This canyon took millions of years to form because the water had to move a lot of rock. If you were a geologist and you wanted to study a river, you would have to wait a very long time in order

pg. 62 - Take margin notes and answer questions

to collect important data about the river as it was forming. In addition, if a river has already formed, it is impossible to study what happened in the past. The stream table can help you recreate the same kinds of things that might have happened in the past.

pg. 62 - Take margin notes and answer questions

You would need to do a lot of traveling to study the river. There may be a lot of different things happening along the river. In some places the river might be wider than in other places. In some places, it might be deeper. There may be more dirt in some places while other places have more rock. A stream table can help people to study these changes without having to visit the real river. It is very helpful that the stream table is small and can be moved around. In class, a river formed quickly. It would take much longer for a river to form outdoors.

Why Study Rivers?

Some geologists study landforms on the surface of the earth and how they change over time. The picture shows a stream table used by scientists at Arizona State University. This stream table is nine meters long.

Scientists fill the stream table with different types of Earth materials to study how the materials move when water is added, just like you did in class. Other scientists might want to study how trees and plants affect the way sediments on the bank of a river move. This might be important for construction workers who build houses along a river. How far from the river must a house be built to protect it from flooding? What if the shape of the river changes over time? How might changes affect the buildings beside the river? How would changes affect the trees and other plants along the river? These are just some of the questions that geologists ask about rivers.

pg. 62 - Take margin notes and answer questions

What Are Some Limitations of Stream Tables as Models of a River?

Think about the Nile River and about the stream table model you created. Just like other models you have used this year, stream tables also have limitations. There are some things that a stream table cannot show.

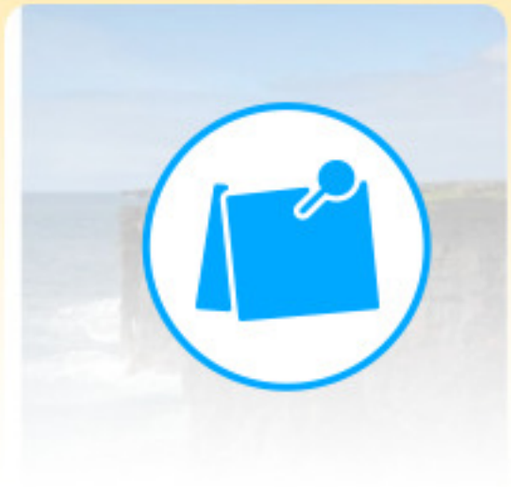
What are some of the limitations of using stream tables as models for rivers?

Collaborate!

What are some limitations of the stream table model?

Collaborate!

Were you able to see rock breaking apart on the stream table



Collaborate!

Why is this beach black?

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ACTIVITY 8.1 – HOW DO ROCKS BREAK DOWN?

What Will We Do?

We will investigate how rock is broken apart and changes over time.

Pg. 64 Record observations of the five "rocks" you have been given in the box labeled Initial Observation. Use your camera to take a picture of your "rocks"

Initial Observation: Draw the rocks	Describe what the rocks looked like.

2. Place the rocks into the tube.

3. Cover the ends of the tube so the rocks cannot fall out.

4. Rock the tube back and forth for two minutes. Have your partner count the number o times you move it back and forth.

5. Have your partner rock the tube for two minutes. Count the number of times your partner moves it back and forth.

6. Pour the rocks onto your paper plate.

7. Record your observations of the rocks in the box labeled Four Minute Observation.

8. Record the total number of times the tube went back and forth during the four minutes.

9. Pour the rocks back into the tube. Be sure to get all of the small pieces on the plate and cover the end of the tube.

10. Repeat Steps 4–6.

11. Record observations of the rocks in the box labeled Eight-Minute Observation.

Important tips

• Be careful when pouring the rocks out of the tube and onto the plate, so that you do not lose any of the small pieces.

• When pouring the rocks and pieces back into the tube, curl the paper plate (like a funnel), so that all of the pieces slide into the tube.

Four-minute observation: Draw the rocks	Describe what the rocks looked like.
Eight-minute observation: Draw the rocks	Describe what the rocks looked like.

Making Sense

1. Compare the rocks from the Initial Observation to the Eight-Minute Observation.

2. What do you think caused the changes in the rocks over this period of time?

3. What would happen to the rocks if you shook them for another four minutes? Explain.