



Subject: Earth Science

Grade Level: Middle School

DI Strategy: Learning Choices

Water and Rock Cycle Learning Choices Lesson

The learning choices assignment below was used as a review in an earth science class. Five “choices” were provided to students. The north and south options reviewed the water cycle, while the east and west options reviewed the rock cycle. In the middle was the earth science webquest. This webquest was required to be completed by all students as it was an overview of the topics discussed during our earth science review. During the webquest, students took notes and answered questions using a variety of games, videos, and online readings. For the directional choices, one of each of the choices was a reading and the other an online activity. The reading and associated activity covered material in a more thorough manner, reteaching what we had already discussed about the rock and water cycles. The online activity provided a review of the material.

Before completing the assignment, students did a ticket out the door one day prior to measure what they remembered about each of these scientific processes. After checking these tickets I looked for the area that they were the most deficient, whether that was the water cycle or the rock cycle. Based on that information, students were assigned one of the reading choices from the learning choices (West or South). To indicate which, I circled the choice on their worksheet for them. I assigned the reading rather than the online activity since the reading contained more information, rather than the online activity which was more of a review. Students then tested their knowledge at the end of the reading to show that they had mastered the topic.

Students then had a choice for the for their 3rd activity. They could stay with the same cycle or switch to the other. They could do the other reading activity or switch to the online activity. The classes as a whole were split about 50-50 for students choosing the reading or online activity. I did notice that my students who tend to enjoy reading opted more for the reading assignment rather than the online one.

Overall, students did a nice job on all of the activities. We completed a Kahoot at the end as a review and a majority of students got 2 or fewer questions wrong. Those students who received reinforcement in their area of struggle did better on the questions that they had previously gotten wrong on the ticket (I used those in the Kahoot). When checking their work, I noticed that students did an excellent job with completing all of the assignments to the best of their abilities. I asked them how they liked doing the choices, and many students responded positively. Most often they said that they liked being able to choose one of the learning styles that worked for them. Since each section took about the same amount of time to complete, no students felt like they had too much or too little work to work on.

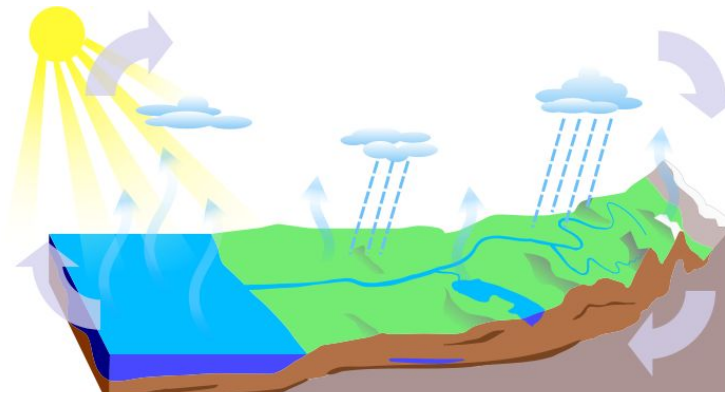


Ticket Out- Given the day before learning choices

Name: _____ Period: _____
Earth and Space Science

1. The surface of Earth is covered by a relatively thin layer of water called the
 - a. Crust
 - b. Mantle
 - c. Hydrosphere
 - d. Atmosphere

2. Which title best describes the processes shown in the diagram below?



- a. The Rock Cycle
 - b. The Water Cycle
 - c. Plate Tectonics
 - d. Chemical Changes
3. Label the diagram in question 2 using words from the list below:
Condensation
Evaporation
Precipitation
Runoff

4. As altitude increases, air pressure
 - a. Decreases
 - b. Increases
 - c. Remains the same
5. Which statement best describes how the Sun and Earth are related?
 - a. The Earth revolves around the Sun
 - b. The Sun revolves around the Earth
 - c. The Earth rotates around the Sun
 - d. The Earth Rotates on its axis



6. Which of these makes up most of Earth's water?
 - a. Rivers
 - b. Streams
 - c. Oceans
 - d. Glaciers

7. The surface of Earth is mostly covered by
 - a. Solid rock
 - b. Molten rock
 - c. Ice
 - d. Water

8. How are models of the weather, such as maps, used by scientists to solve problems? They can
 - a. Be used to determine distances for travel
 - b. Be used to show the history of an area
 - c. Provide ideas for other models
 - d. Provide information to predict weather



Learning Choices- Either the West or South activity was circled for each student

Name: _____ Period: _____

Learning Choices

Below are your learning choices for the earth science review. You must do the activity in the middle of the compass. You may choose between the north and south activity as well as between the east and west activity. You will be completing a total of three activities.

Please circle your choices below:

1. **North or South**
2. **East or West**

This will be due on _____.

North		
<p>-Watch the water cycle video posted on my website.</p> <p>-Label the water cycle diagram in the Earth and Space Science Review Packet</p> <p>-Indicate the state of matter that water is in for each label. If the label indicates a phase change, indicate the phases water is changing from and to (for example- condensation would be gas to liquid).</p> <p>-When you finish, answer the review questions in the packet.</p>		
West	Required:	East
<p>-Pick up a rock cycle reading from the teacher.</p> <p>-Read through the information and fill in Earth and Space Science Review packet pages.</p>	Earth Science Webquest	<p>-Use the Rock Cycle interactive posted on my website to fill in the graphic organizer.</p>
South		
<p>-Read and highlight key information about the rock cycle in Earth and Space Science Review packet.</p> <p>-When you finish, answer the review questions in the packet.</p>		



Post Test- Some of the Kahoot Questions

1. In which type of rock are fossils generally found?
 - a. Igneous
 - b. Metamorphic
 - c. Sedimentary
 - d. Volcanic

2. All rocks are composed of
 - a. Fossils
 - b. Cells
 - c. Metals
 - d. Minerals

3. Weathering and erosion of Earth's crust are primarily caused by
 - a. Gravity
 - b. Volcanic activity
 - c. Evaporation
 - d. Sedimentation

4. A scientist is studying fossils in rocks from Pennsylvania. What is the scientist least likely trying to learn?
 - a. What the climate in Pennsylvania was like in the past
 - b. How large the insects that lived in Pennsylvania in the past were
 - c. What color the flowers that grew in Pennsylvania in the past were
 - d. How different ancient Pennsylvanian animals were from animals today

5. Which two processes could result in the formation of high mountains with well-rounded peaks?
 - a. Volcanic eruptions and global warming
 - b. Earthquakes and tidal activity
 - c. Collision of crustal plates and erosion
 - d. Production of greenhouse gasses and weathering