

Lesson Plan

Name Erika Stanley Date 2/10/2008 Grade/Subject 9th grade Earth Science
Time Allotment 90 min

Background Information:

- Many of my students show little interest in learning science, and many more struggle with grasping the basic concepts presented in the curriculum. In VA, we use a state mandated curriculum, the Standards of Learning, to determine if students are meeting standards. Soon, we will go to the lab to learn more about the water cycle. Prior to this, we learned about the many ways humans misuse water. It's really important that students build upon what we've learned already so they are prepared for our upcoming lesson.
- Students are in mixed ability groups. My hope is that some of the students who demonstrated mastery of the objectives will be able to support the students who are still striving to understand the concepts. I find that using groups allows for important peer-to-peer discourse so they are better able to critically discuss concepts. This allows them to deliberately think through their hypothesis and form more sound conclusions.
- Today, I am trying a different approach to engage my students by using lessons from the Mos Def H.E.L.P. workbook. Most of my students have a huge interest in HipHop, and though I am not a fan, I really want to connect with my students so they will allow me to share my love of science with them.
- My goal for today is to tailor cooperative learning lessons to meet the unique instructional circumstances and needs of the curricula, subject areas, and students.

Classroom Structure:

- Cooperative grouping arrangement

Context:

- Mini Unit – Lesson 6 of 7
- Concept expansion and reteach concept

Materials and Preparation:

- Overhead Projector

- Work book “HipHop Educational Literacy Program ”
- Teacher Guide
- Clear transparencies and overhead markers

Objective: The students will be able to explain dependency on freshwater resources and the effects of human usage on water quality by critically analyzing the use and misuse of water and illustrating the hydrologic cycle.

Lesson

Introduction: (10 minutes)

Anticipatory Set: : (pre-assess, review, present overview, arouse interest, state objectives and purpose)

- Say: Based on your exit cards yesterday, I’ve placed you into four groups to discuss the water cycle and ways human’s use and misuse water. We are also using the self-assessment you completed on Monday from the Mos Def H.E.L.P. teacher guide to determine your comfort level with the objectives for today’s lesson.
- Say: How many of you listen to Hip Hop? Maybe you can help me teach today’s lessons? Actually, you will do most of the talking today. By a show of hands, how many of you have heard of Mos Def, the hip Hop artist?
- Read the Bio of Mos Def:
- Listen to the lyrics of the song
- Ask students to underline words in the lyrics that they learned in science class or words they think others may not know that relate to science.

Checking for Understanding: (ask, observe, quiz, involve all students) (10 minutes)

- Say: Each of your tables has a strip of colored paper with your discussion question to activate your thinking. One person will read the question on the strip to your group. Going clockwise, each person in the group responds to the question. The person who read the question first has the last word.
 - Name some natural disasters caused by water. (Purple Group)
 - What is Mos Def’s opinion of those who sell and profit from natural resources? (Yellow group)

- What are the different ways we use and misuse water? (lime group)
- Do you drink bottled water? After hearing the song, would you consider drinking only tap water? (Orange Group)
- Share out answers from the groups.

Procedures: (40 minutes)

Presentation: (explain, model, and/or demonstrate)

- Say: Now that we've activate our thinking about today's lesson. Let's take some time to revisit the information covered over the last few days.

Overhead notes, instruct students to take notes. Define the underlined vocabulary words.

- Say: The oceans' resources are finite and should be utilized with care. Who knows what the word "finite" means? (Use wait time before calling on students).
- The impact of human activities, such as waste disposal, construction, and agriculture, affect the water quality within watershed systems and ultimately the ocean.
- The oceans are an important source of food and mineral resources as well as a venue for recreation and transportation.
- Pollution and over-fishing can harm or deplete valuable resources. Chemical pollution and sedimentation are great threats to the chemical and biological well-being of estuaries and oceans.

Place the diagram of the water cycle on overhead. Refer to the diagram while

- Say: Weather and climate are different. Please turn to your partner, partner A will define Weather and partner B will define Climate. (Ask for one pair to share out definitions).
- Clarify: Weather describes day-to-day changes in atmospheric conditions whereas climate describes the typical weather patterns for a given location over a period of many years.
- Now let's take a moment and look more closely at the process.
- Say: Earth's surface is much more efficiently heated by the sun than is the atmosphere. The amount of energy reaching any given point on Earth's surface is controlled by the angle of sunlight striking the surface and varies with the seasons.
- Winds are created by uneven heat distribution at Earth's surface and modified by the rotation of Earth.

- Energy transfer between Earth's surface and the atmosphere creates the weather. Both weather and climate are measurable and, to a certain extent, predictable.
- Convection is the major mechanism of energy transfer in the oceans, atmosphere, and Earth's interior. Convection in the atmosphere is a major cause of weather.
- Areas near the equator receive more of the sun's energy per unit area than areas nearer the poles.
- The Coriolis Effect causes deflections of the atmosphere due to the rotation of Earth. Global wind patterns result from the uneven heating of Earth by the sun and are influenced by the Coriolis Effect.
- Earth's major climatic zones are the polar, temperate, and tropical zones.
- Make sure all of the students have the correct definitions for the underlined words. Provide copies of notes for students who did not get all of the information.
- ***Guided Practice: (students apply skill/concepts, monitor and give feedback, assess each student) (15minutes)***

- Say: Now, let's return to our Mos Def workbook. We've just identified several terms and concepts that you will be responsible for knowing in order to go to the lab next week. Working in your groups, we will use the different Studios in each workbook to explore the concepts you will need to know.
- Say: Each of you has been given a role in your groups. If you have the number 1 on your desk, you are the group's recorder. # 2's are the timekeepers # 3 are the facilitators, you make sure everyone stays on task # 4's are the spokespersons, you will share your groups answers with the class.
- **Yellow Group:** Turn to studio C lesson 7 analyze the chart and answer the questions about bottled water sells and consumption
- **Purple Group:** Turn to Studio C Lesson 14 read the paragraph about the water cycle and draw a diagram
- **Lime Group:** Turn to Studio D Lesson 4 identify lines from the song that predict natural disasters.
- **Orange Group:** Turn to Studio D Lesson 7 construct group responses critically analyzing the use/misuse of water.

Checking for Understanding: (ask, observe, quiz, involve all students) (5minutes)

- One spokesperson from each group will share out answers with the class.

Closing:

Closure: (students review or summarize) (10 minutes)

- Say “**We have looked into the water cycle and the use and misuse of water a lot today. What kind of things did you learn? What was the most interesting to you?**”
- Give the students time to discuss and review what they learned.

Extension: (activities planned for students who finish early or for the whole class if time allows)

- Watch segment of “Inconvenient Truth.”

Student Assessment Results: From group discussions, share outs, feedback during notes

Self-Assessment: Mos Def Studio Self Assessment