



Science Unit: *The Earth Around Us: Air, Water & Soil*

Lesson 1: *Water Cycle*

School year: 2007/2008

Developed for: Carnarvon Elementary School, Vancouver School District

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Grade level: Presented to Grade 2; appropriate for grades 1 – 7 with age appropriate modifications.

Duration of lesson: 1 hour and 15 minutes

Notes: This lesson is a modification of Lesson 1 Water Cycle, from the Water science unit, Earth Science curriculum area, available from the Scientist in Residence Program website <http://www.scientistinresidence.ca>.

The lesson has been modified to fit into one class period and to make it more suitable for grade 2 students.

Students should already be familiar with the process of science see introductory activity “Thinking like a scientist.”

Changes to objectives

1. When delivering the lesson for this unit, remember that the goal is to link the water cycle to earth processes such as weathering and erosion that will be discussed in future lessons.

Background Information

See previously developed lesson on the Water Cycle (see Notes section above).

Changes to vocabulary

incubate This word will no longer be used

Changes to Materials

- Lamps, rulers and scissors will no longer be needed

In the Classroom

Introductory Discussion

1. Today we are going to learn about the water cycle. We are also going to do an experiment to observe the water cycle in action.
 - “Let’s start by drawing a picture of the water cycle.” Draw the ocean, a mountain and some land on the board and have the students provide the rest of the details.
2. Once the picture is complete ask the students questions to prompt discussion on the processes involved in the water cycle:
 - What happens when the sun shines on the water? (EVAPORATION). Discuss the phase change from liquid to gas.



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- Where does the water (steam) go? (it rises into the air). What does the air feel like when you are up really high, like on a mountain top? (it is cold). What happens when warm moist air gets cold? Hint, what do you see up high? (clouds – introduce vocabulary CONDENSATION)
 - What do clouds do? (rain – introduce vocabulary PRECIPITATION). What other forms of precipitation are there? (snow, hail, fog, sleet etc.)
 - Follow the water through the rest of the cycle in a similar fashion. Emphasize that eventually it all returns to the sea to begin the cycle again. There is no “new” water the existing water simply cycles around and around.
 - Can also introduce the concept of TRANSPIRATION at this point.
 - Why is the water cycle important? (returns water to earth, link to animals, plants etc.)
 - Emphasize the importance of the sun in driving the water cycle (this will be the focus of the experiment)
3. Briefly describe science experiment/activity.
 - The students will build terrariums in order to observe the water cycle in action.
 4. The students will focus on observing and recording their observations. The students will also pose an hypothesis.
 5. Briefly describe safety guidelines.
 - Be careful as the cut edges of the plastic bottles may be rough.

Changes to Science Activity

Activity Title: Building a Water Cycle Terrarium

Purpose of Activity: To observe the water cycle in action.

Methods and Instructions:

The activity will be performed as in the original lesson except that the activity will focus more on terrarium construction. The students will place their terrariums in the sun (on the windowsill) to emphasize the importance of the sun in driving the water cycle.

1. Students will work individually to construct a terrarium. They will go to stations (supervised by an adult) to obtain and place the appropriate materials in their terrarium.
2. Students will draw and label a picture of their terrarium on their worksheets.
3. Students will place their terrariums on the windowsill during recess. Observations will be recorded on student worksheets.
4. Follow up discussion will be conducted by the teacher or done at the beginning of the next lesson.

Closure Discussion

1. What happened when we put our terrarium in the sun?
2. How does rain form?
3. What do you think the most important part of the water cycle is?



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References

See the original Lesson 1 Water Cycle, from the Water science unit, Earth Science curriculum area, available from the Scientist in Residence Program website <http://www.scientistinresidence.ca>).