Lesson Plan by: Joanna Sajda

Lesson: The Water Cycle  
Length: 30-45 min (5-10 min observations)

Age or Grade Intended: 5th

Academic Standards:
5.2.4: Keep a notebook to record observations and be able to distinguish inferences from actual observations.
5.3.4: Investigate that when liquid water disappears it turns into a gas (vapor) mixed into the air and can reappear as a liquid when cooked or as a solid in cooled below the freezing point.

Performance Objectives:
1. The students will observe and inferences in two separate columns in a notebook that is called their water cycle journal which will be graded upon completion.
2. The students will create their own terrarium in groups to connect concepts of precipitation, condensation, and evaporation and will be graded upon completion and cooperation.

Teacher Preparation:
The teacher will have to have all of the following supplies ready for the students to use: 5 jars or containers, potting soil, small gravel, water seeds, plastic wrap, rubber bands, funnel, and a water cycle notebook for every student. The teacher will already have the groups established ahead of time.

Procedure:
Introduction/Motivation: (Engagement) 
This lesson will begin by the teacher introducing just the title “The Water Cycle.” Then the teacher will ask some questions to get the students thinking such as, where does rain go after it falls? (Knowledge) What happens to puddles after it rains? (Knowledge) Explain condensation, precipitation, and evaporation. (Application) These questions will get the students thinking about those key words and the students will be eager to learn what the connection is between those words and the water cycle. The teacher will then hand out the students’ Water Cycle Journal, and explains what the students will have to write in the journals. In the journals the students will have to define condensation, evaporation, and precipitation. The will make one column of inferences and one of observations so they know the differences between them. Lastly they will draw a picture of the water cycle in their journal. Throughout the week the students keep observations in their journal.

Step-by-step Plan:
Exploration:
- The teacher will divide the class into five groups.
- Then materials will be handed out to the students.
- The students will get to explore all the materials before they are told what to do with the materials.

**Explanation:**
- The students led by the teacher will assemble their terrariums.
- Once the terrariums are put together, the teacher will ask, how they think it works. Allow students to make inferences and observations and write them both down in their journals.
- The teacher will then explain how the terrarium works, explaining the entire water cycle in depth so the students fully understand the process.

**Elaboration:**
- Once the students understand the water cycle it is time to go a step further.
- Place one of the terrariums in the shade and one in the sunlight.
- Have students make inferences about what they think will happen and record.
- Observe the differences, if any. Have students record the differences or similarities.
- Ask the students why they think each acted the way it did.
- Explain why the sun terrarium was the way it was and the same with the shade terrarium.

**Closure:** Explain to the students that they will be observing their terrariums every day and recording changes in them in their journals. Students will need to look for: what are the seeds doing? Where in the terrarium do they see water? Is there anything new happening in the terrarium today? At the end of the week the students will remove the top of the terrarium and feel the soil. The teacher will ask why the soil is moist. Did it ever rain in your terrarium and how do you know? Where did the water go? These questions should be answered in full by the students if they understood the experiment. This activity used several of Gardner’s multiple intelligences such as linguistic by keeping journals, naturalistic by working with the water cycle and interpersonal by working in groups to build and manage the terrariums.

**Evaluation:** Collect the students’ journals after the week to make sure that all the parts are completed. The students will be assessed on the completion of their journal. They will also be assessed on their terrariums and how well they followed directions and worked together to make their terrariums in their groups. During this activity the teacher should be constantly observing and facilitating which aides in the assessing process.

**Adaptations/Enrichment:** Because this activity is done in groups the teacher can decide which students go together and can put students that need help in a group with cooperative students. An aid can also be brought in to help with the construction of the terrariums. Otherwise this activity can be done by all children.

**Self-Reflection:** To determine the success of this activity I would ask myself several questions at the end of the activity. I would ask myself if the adaptations that I provided were helpful to the students. Was the time allotted too long, too short, or just right? Did the student enjoy the activity and learn more about the water cycle from doing this
activity? Was there anything that I could have changed to make this activity more effective? I can also ask how well did the students work together? Did the students use their journal like they were suppose to? Was I able to manage the class closely?