The Journey of Water

Grade(s): 2nd – 5th	**Topic:** The Water Cycle	**Time Frame:** 3-4 Days

Lesson Description: During this lesson, students will discover how water travels on Earth. They will also identify and describe the steps of the water cycle.

Specific Learning Outcomes:

- Describe the water cycle process
- Identify and label the various parts of the water cycle
- Explain the importance of the water cycle in our life

Resources Needed:

1. Markers
2. Labels for cubes
3. 7 cube shaped boxes
4. Timer
5. Globe
6. Pipe cleaners
7. Beads- yellow, blue, green, clear, white
8. Recording sheet for The Journey of Water
9. Bill Nye Video – Water Cycle (http://www.youtube.com/watch?v=hehXEYkDq_Y&safe=active)

Activity Standards

TN Science Standards	Next Generation Science Standard Practices	Common Core Standards
GLE 0307.8.3 Identify cloud types associated with particular atmospheric conditions.	Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods. • Obtain and combine information from books and other reliable media to explain phenomena. (3-ESS2-2)	CCSS.ELA-Literacy.RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2–3 text complexity band independently and proficiently
GLE 0207.8.1 Associate temperature patterns with seasonal changes	Developing and Using Models Modeling in 3–5 builds on K–2 experiences and progresses to building and revising simple models and using models to represent events and design solutions. • Develop a model using an example to describe a scientific principle. (5-ESS2-1)	CCSS.ELA-Literacy.RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
GLE 0407.8.1 Recognize the major components of the water cycle.		CCSS.ELA-Literacy.RI.4.4 Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a *grade 4 topic or subject area*.
GLE 0507.8.1 Analyze and predict how major landforms and bodies of water affect atmospheric conditions.		CCSS.ELA-Literacy.RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a *grade 5 topic or subject area*.

Guiding Questions

Also known as your essential questions. What do you want the students to be able to answer by the end of this lesson

1.What is the water cycle?

2. How do we obtain the water that we use in our everyday lives?

3. How does water change from a gas, a liquid, or solid during the water cycle?

Possible Preconceptions/Misconceptions

1. New water can be made.
2. The water cycle only includes rain and snow.
3. Water only gets evaporated from the ocean or lakes.

Activities/Task

What learning experiences will students engage in?

Day 1. Introduction

Ask students where most of the water on Earth is found? Using a globe, show students how much of the Earth is covered with water. Discuss how they think water traveled to the ocean. Introduce the term water cycle. Show students Bill Nye the Science Guy®: Water Cycle – Video. Discuss the vocabulary terms related to the water cycle. Create Frayer Model or analogies to expand vocabulary.

Vocabulary: transpiration, evaporation, condensation, precipitation, groundwater

Day 2. The Water Cycle Game

Summary:

Students will travel through the water cycle as a drop of water.

-- Lesson was adapted from www.extension.usu.edu/waterquality

Background:

The water cycle is a process that consists of evaporation, condensation, precipitation, and transpiration. Water is evaporated because of heat from the Sun. When water is evaporated it becomes a gas. The changing of a gas to a liquid is called condensation. Condensation forms clouds. The clouds eventually become too heavy with water droplets and falls to the Earth as precipitation. Transpiration releases water into the air through plants and grass. Water moves through the Earth in various forms.

Procedure:

1. Label the 7 stations around the room- cloud, mountain, stream, ocean, groundwater, plant, animal
2. Cut out the labels provided and paste them onto the sides of the cube. The station is listed at the top of the page with the labels that should be attached to the cube for that station.
3. Divide students into equal groups and assign them to a station. This is where their journey starts.
4. Students will roll the die to determine where the water goes. They will move to where the die indicates. If they roll a stay, they wait until everyone else in their group rolls and roll again. If they roll stay a 2nd time they automatically move to the clouds.
5. As students move throughout the water cycle, they should record their journey on the worksheet. *Please note that stays should be recorded as well.*
6. Use a timer to indicate when students begin and end the game. The game can be completed in about 15 minutes.

Closure:

Ask students where they spent most of their journey. Did anyone visit all seven stations? Do you think every drop of water goes to every place (stream, mountain, ocean, etc.)? Explain. Where can water from a plant go?

Extend and Refine:

- Write a story about your adventure as a drop of water traveling through the water cycle. Use vocabulary throughout your writing.

Day 3. Reading Task

Students will read a grade level passage about the water cycle. As they read, the will make notations about the text using a highlighter to identify the main idea and supporting details in the passage. They will write a summary of what they learned.

- We Need Water, Grade 2, www.readworks.org
- The Water Cycle, Lexile Level 680
- The Water Cycle, www.abcteach.com

- The Water Cycle, Grade 5, www.readworks.org
- Water, Water, Everywhere, www.readworks.org

Day 4. Water Cycle Bracelet

Instruct students on how to create a Water Cycle Bracelet.

1. Use 3 beads of each color.
2. Thread beads onto the pipe cleaner. Twist pipe cleaner around the wrist when all of the beads have been added.
    - Yellow beads- the heat from the sun provides the energy needed for the water cycle.
    - Clear beads, evaporation- the sun's energy causes water to evaporate
    - White beads, condensation- water condenses into the clouds
    - Blue beads, precipitation- water can fall to the Earth as rain, sleet, snow, or hail
    - Green beads, transpiration,- trees and plants release water into the air
    - Brown beads, groundwater- some precipitation is soaked into the ground
3. Record the bead colors onto recording sheet and explain their meaning

Reading Task One of the literacy shifts in common core is for students to focus on more complex, non-fiction literature.	**Writing Task** In science students are responsible for writing either an explanatory or argumentative piece. Below simply type the writing prompt in which students will dive into.
Students will read a grade level passage about the water cycle. As they read, the will make notations about the text using a highlighter to identify the main idea and supporting details in the passage. They will write a summary of what they learned.	Write a story of the water cycle using your data recording sheet from the activity. Where did you fall? What happened next? Tell the story from the water's point of view! Be sure to use the vocabulary words; evaporation, condensation, and precipitation in your story.

Assessment

How will your students be assessed? How will you use the above learning experiences as formative assessment opportunities? (If activity is several days long, please specify the day with the activity/reading task)

- Students will be required to correctly label a diagram of the water cycle (formal)
- The writing assignment will also be used to assess students understanding of the water cycle.
- Additionally students will be assessed informally through observation during activities.

Modification/Accommodations:

What curriculum modifications and/or classroom accommodations can be made for students with disabilities in a class

Students will work in groups during the activities; therefore students with disabilities will be grouped with students who are able to assist with activities. The water cycle assessment will be modified for LD students. The students will have the same diagram however; only a few terms will be missing from the diagram. Students who have an IEP will receive the necessary accommodations for the reading task assignments.