Lesson: The Water Cycle

Florida Benchmark: **SC.5.E.7.1**: Create a model to explain the parts of the water cycle.

NGSS Standard: **5-ESS2-1**: Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and atmosphere interact.

A. GRADE LEVEL: 5th Grade
B. SUBJECT: STEM/Science
C. DATE: [Insert Date]
D. DURATION: 1 hour
E. LESSON FOCUS: Water Cycle and its processes (evaporation, condensation, precipitation)
F. MATERIALS:

- Clear, sealed container (like a glass jar or plastic bottle)
- Small cup of water
- Lamp (to provide heat)
- Small plastic wrap or cover
- PowerPoint presentation on the Water Cycle (for discussion)
- Whiteboard and markers

G. LESSON OBJECTIVES:
By the end of this lesson, students will be able to:

1. Identify the main stages of the water cycle: evaporation, condensation, and precipitation.
2. Create a simple model of the water cycle.
3. Explain the role of heat and condensation in the water cycle using their model.
4. Demonstrate how the water cycle is an essential Earth system process.

H. PROCEDURES:

1. INTRODUCTION:

- Begin by asking students what they know about the water cycle. Write their responses on the board.
- Show a **PowerPoint presentation** with diagrams and explanations of the water cycle. Include visuals to help students connect the terms to real-world examples.
- Explain that the water cycle is a continuous process that moves water through the Earth's systems: the atmosphere, land, and oceans.
- Introduce the key parts of the water cycle: evaporation, condensation, and precipitation.

2. EXPERIMENT:

- Show the students how to set up the mini water cycle:
  - Place a small cup of water inside the sealed container.
  - Cover the container with plastic wrap or a lid.
  - Position the lamp above the container to provide heat.
- Explain that the heat from the lamp will cause the water to **evaporate**, forming water vapor that will **condense** on the surface of the container. The condensed water will eventually **precipitate** back down, simulating the natural water cycle.

3. OBSERVATION:

- Have students observe the mini water cycle as it progresses. They should note the water vapor collecting on the inside of the container and the drops that "rain" back into the cup, mimicking precipitation.
- Discuss what they are seeing: How does the water cycle work in nature? What happens at each stage?

4. GENERALIZATION:

- Ask the students to connect the mini model to the larger Earth system. Discuss how the water cycle involves the atmosphere, hydrosphere, and geosphere.
- Encourage students to think about why the water cycle is important for life on Earth (e.g., water availability, climate patterns).
- Summarize the main stages of the water cycle and their significance.

5. ASSESSMENT:

- Ask students to draw their own version of the water cycle and label each stage (evaporation, condensation, precipitation).
- Have students write a short paragraph explaining how the mini water cycle model demonstrates real-life processes.
- Review students' drawings and explanations to ensure understanding.

Note 1: Safety
While performing the experiment, it is important that students handle the lamp carefully to avoid burns. Make sure the lamp is not too close to the container and that students are not touching the hot surface. Ensure students are seated and not standing close to the lamp during the experiment to maintain a safe distance. Students should be reminded not to remove the plastic wrap until the lamp is off and everything is cool.

Note 2: Accommodation for ELL, ESE, etc.
For English Language Learners (ELL), use visual aids and demonstrate the water cycle steps as you explain them. Encourage students to use their native language to write a brief

description of the water cycle and then help them translate key words into English. For students with Exceptional Student Education (ESE) needs, provide additional support through peer tutoring or having simpler, step-by-step instructions available. Allow for extended time on the assessment and ensure the language used in the PowerPoint is clear and concise.