

Grade Level: 6th Grade

Title of Lesson: Make a Mini Water Cycle

Performance Standard(s) Covered:

S6CS2. Students will use standard safety practices for all classroom laboratory and field investigations.

- b) Demonstrate appropriate techniques in all laboratory situations.

S6CS5. Students will use the ideas of system, model, change, and scale in exploring scientific and technological matters.

- a) Observe and explain how parts are related to other parts in systems such as weather systems, solar systems, and ocean systems including how the output from one part of a system (in the form of material, energy, or information) can become the input to other parts. (For example: El Nino's effect on weather)
- b) Identify several different models (such as physical replicas, pictures, and analogies) that could be used to represent the same thing, and evaluate their usefulness, taking into account such things as the model's purpose and complexity.

S6CS10. Students will enhance reading in all curriculum areas by:

- c) Building vocabulary knowledge
 - Explore understanding of new words found in subject area texts.

S6E3. Students will recognize the significant role of water in earth processes.

- a) Explain that a large portion of the Earth's surface is water, consisting of oceans, rivers, lakes, underground water, and ice.
- b) Relate various atmospheric conditions to stages of the water cycle.

Essential Question:

How does water move through the different phases of the water cycle?

Objective:

Students will explore and learn how water moves through the water cycle and how the different parts are linked together in a cycle.

Key Words and Terms:

- Water Cycle
- Clouds
- Evaporation
- Condensation
- Precipitation
- Density

Learning Activity**Abstract (limit 100 characters):**

Students will explore the water cycle using a miniature model that simulates evaporation, condensation, and precipitation.

Materials Needed:

- One large plastic bowl per group of ~5 students.
- One small cup for each group
- Super glue
- Warm water
- Clear plastic wrap
- One large rubber band for each group
- One marble for each group
- Piece of paper for each student

Safety Concerns:

Make sure to help the students when using the super glue to prevent any hands from being glued together.

Procedure:

- 1) Discuss the parts of the water cycle and ask the students how each part of the water cycle is connected.
- 2) Pass out a bowl and cup to each group.
- 3) Help the students attach the small cup in the center of the bowl's bottom with super glue.
- 4) After the super glue dries have each group place their bowl in a sunny spot outside the classroom (Heating lamps could be used as an alternative if weather isn't favorable for the project).
- 5) Have the students pour water into each bowl carefully without getting water into the cup in the middle of the bowl.
- 6) Have the students cover the bowls with plastic wrap and then secure the plastic wrap with the rubber band.
- 7) Once the plastic wrap is secured have each group place a marble on the plastic wrap directly over the small cup in the bowl.
- 8) Have the students predict what is going to happen in their mini water cycles.
- 9) Leave the bowls in the sun for 1-2 days allowing the students to check them periodically to observe what is happening.
- 10) After the mini water cycles have shown some water being collected in the smaller cups, have the students describe what actually happened and discuss why it happened and how their miniature models represent the actual water cycle that occurs on earth.

Notes and Tips:

Make sure that the weather forecast is sunny and warm for best results. If not use heat lamps as a stand in sun.

Make sure the groups stretch the plastic wrap tight over the top of the bowl.

References:

<http://thewaterproject.org/resources/lesson-plans/create-a-mini-water-cycle>