**Weather & Climate**

**Lesson # 2 Water Cycle Stories**

**Essential Question:** How does weather affect our lives?

**Standards:**

Earth and Space Science: 3-5  Standard  10-  The Water Cycle

1)      Describe how water on earth cycles in different forms and in different locations, including underground and in the atmosphere.

Physical Science: States of Matter

1)      Describe how water can be changed from one state to another by adding or taking away heat.

Skills of Inquiry

·         Ask questions and make predictions that can be tested.

**Objective:**

Student will be able to…

1.      Explain how water moves through the water cycle.

**Assessmen**t: Science notebook responses, drawings, models of water cycle, water cycle bracelets

**WIDA Language Objectives:**

**Reading:**

Level 1: Using a word bank, insert word(s) to complete a top-down web about the water cycle.

Level 2: Identify the facts from the diagram of the water cycle.

**Writing:**

Level 1: Answer the following questions with a word from the word bank.

|  |
| --- |
| Precipitation        Condensation     Evaporation     Atmosphere  Collection |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is when water changes from a liquid to a gas

The gases the surround the earth are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is when water changes from a gas to a liquid.

Rain, hail, mist, sleet, or snow are all forms of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Collection is when precipitation comes together in bodies of water such as oceans, rivers, lakes, and streams.

**Vocabulary:**

Evaporation: water changes from a liquid to a gas; occurs more rapidly at warmer temperatures

Atmosphere: the gases the surround the earth

Condensation: water changes from a gas to a liquid; occurs when water vapor gets cold

Precipitation: water falling to the earth in the form of rain, hail, mist, sleet, or snow

Collection: water that falls as precipitation comes together in bodies of water such as oceans, rivers, lakes, and streams, or underground.

Once students have a conceptual understanding of the vocabulary word  they should create a 4-Square (Frayer Method from Key Vocabulary Routine) for the above words.

**Resources and Materials:**

|  |  |
| --- | --- |
| Item | Amount |
| Science Notebooks |  |
| Paper and supplies for coloring | (not provided in bins) |
| Beads (white, clear, blue, yellow) | at least 4 per student |
| Pipe Cleaner | 1 per student |

**Activator**:  Ask students to recall what they remember about the water cycle from their science lesson.  Tell students that you are going to test their memories before today’s activity.  For a useful mnemonic device, use hand gestures to review the different stages of the water cycle.

        Evaporation: moving hands up like steam rising

        Condensation: moving hands together in the shape of a puffy "cloud”

        Precipitation: moving hands down like rain

        Collection: form a ring with your arms to form a lake

*(Note: Teacher can also use a song to help students remember the water cycle if they would like. See songs in the Appendix)*

**Introduction**:   Once you have reviewed these steps and hand motions, play a game of cold calling where you call out a step of the water cycle and a student's name and they have to act out that stage of the water cycle.  Make sure to call on each student at least once.  If a student gets it wrong, give them another opportunity to try until they do get it right. Stop when you have called on every student and your class demonstrates an understanding of the water cycle.

**Activity**:

1)  Tell students to imagine that a spaceship has just landed outside on the playground. The aliens demand to speak to a human representative about water on your planet.  Even though they are from the planet Zorlax, they have learned to speak English.  However, they have not spent any time on Earth.  Using pictures or writing, explain to the alien how water moves around the earth.  Make sure to use terms that are easy to understand

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2)  Give students materials to create pictures or models of the water cycle if necessary.  Students may include writing as well.  If time allows, give students the opportunity to take turns being the human and the alien to see if the students’ explanations of the water cycle are clear enough for the alien to understand.  The teacher and teacher’s assistants may play the part of the alien as well.

**Bonus Activity** (if time allows):  Students can make water cycle bracelets using differently

colored beads strung on a piece of pipe cleaner.  Make a key on the board to indicate which color represents which different step of the water cycle.  Students should make sure to follow the proper pattern and be prepared to explain the order in which they placed their beads.  Have students double-check the order of their beads with the teacher before they string them.

|  |  |
| --- | --- |
| **Bead Color** | **What it Represents** |
| Yellow | Sun |
| Clear Bead | Evaporation |
| White Bead | Condensation (Clouds) |
| Blue Bead | Precipitation/ Collection |

**Closure**: Ask students to discuss what would happen to the water cycle if there was no evaporation (i.e. liquid water never turned into water vapor).  Help them understand that each step of the water cycle is dependent on one another, and they each have to go in order.

**Exit Ticket:** Ask the students how they think the water cycle relates to weather. Teacher can go through the relevant answers and add to the poster with the essential question to tie the end with the essential questions in the beginning.