Citizen Science Saturday- The Water Cycle

Background Information:

The States of Water: Water in a puddle is **liquid**. When the sun dries it, the water becomes water vapor- a **gas**. When it gets cold and freezes, the water becomes ice, a s**olid**.

The Water Cycle: Water is constantly changing and moving. It forms clouds, falls to the earth, and returns to the clouds again. It's the same water, and it's reused over and over again.

The 3 stages of the Water Cycle:

1. **Evaporation**: Water is warmed and becomes water vapor and rises to the clouds.
2. **Condensation**: Water vapor cools as it raises and becomes a cloud of water droplets.
3. **Precipitation**: Water droplets stick together until they get so big and heavy that they fall as rain, snow, hail, or sleet.

Read: See 2 Water Droplets' journeys through the water cycle in the book <u>Pitter and Patter</u> by Martha Sullivan. (recommended for children ages 4 to 8) Watch video of an educator reading the book [Pitter and Patter](.).

Activities:

- <u>Water Cycle Bag</u>

  Materials: Sealable baggie, Sharpie marker, Water, Tape and Blue Food Coloring (Optional)

  Take your baggie and draw a cloud and sun at the top. Then draw some lines to represent water towards the bottom of the bag, about an inch high. (See picture) Fill your baggie with water up to the water line you drew. You can add a couple of drops of blue food coloring at this point. It just looks cool and makes the water easier to see. Seal the baggie well and tape it to a sunny window. Now you wait.

  This is an activity you set up and leave for a bit. It takes a little time for the water to evaporate, but you can check back on it throughout the day and see the different parts of the cycle.

The sun will cause the water to evaporate. You can see it start to condense in the clouds you drew. As the condensation builds up it will slide down the sides of the bag back to the water at the bottom. You made rain!

Citizen Science Projects:

- **Stream Selfie**- Visit at SciStarter.org https://scistarter.org/form/stream-selfie

  Project Description: What's in YOUR water? We all have the right to know if the streams running through our backyards and neighborhood parks are safe. But there is an alarming lack of up-to-date information about water quality across the country. Stream Selfie is here to bridge that information gap. Stream Selfie connects you with thousands of other citizen scientists to paint a picture of streams across America. Simply snap a pic of your local stream and share it here. Your photo is step one in our effort to check the health of every stream in the country – far more streams than state and local agencies have the resources to check! Thousands of people are working toward a common goal: clean water. Will you join us?

- **Globe Observer: Clouds**- Visit website https://observer.globe.gov/

  Project Description: GLOBE Observer is an international citizen science initiative to understand our global environment. Your observations help scientists track changes in clouds in support of climate research. Scientists also use your data to verify NASA satellite data. And by submitting your observations, you can help students of all ages do real scientific research as part of the GLOBE Program. To participate, just download the app, go outside and follow the prompts in the app to observe your environment. Photograph clouds, record sky observations and compare them with NASA satellite images to help scientists understand the sky from above and below.

- **Creek Critters**- Visit the Audubon Naturalist Society website https://anshome.org/creek-critters/

  Project Description: Check out the cool critters that live in your stream and learn what they tell you about stream health. The CREEK CRITTERS app walks you through finding and identifying the small organisms (macroinvertebrates) that live in freshwater streams, and generating stream health reports based your findings. You can submit your data and share it through IWLA's national monitoring database, the Clean Water Hub. No prior training is required. The app is easy to use alone or with groups.