PRECIPITATION POWERS

4-H STEM

Precipitation Powers

OVERVIEW

Weather is more than just rain, snow, sun, and wind- there is science behind what causes each phenomenon to occur. When it rains, water evaporates into the sky and begins to form rain droplets in the clouds through condensation. The water droplets within the clouds continue to grow. When the water droplets get too heavy, they fall as precipitation such as rain and then accumulate in lakes, oceans, rivers, and other waterways. Thus, the water cycle begins all over again.

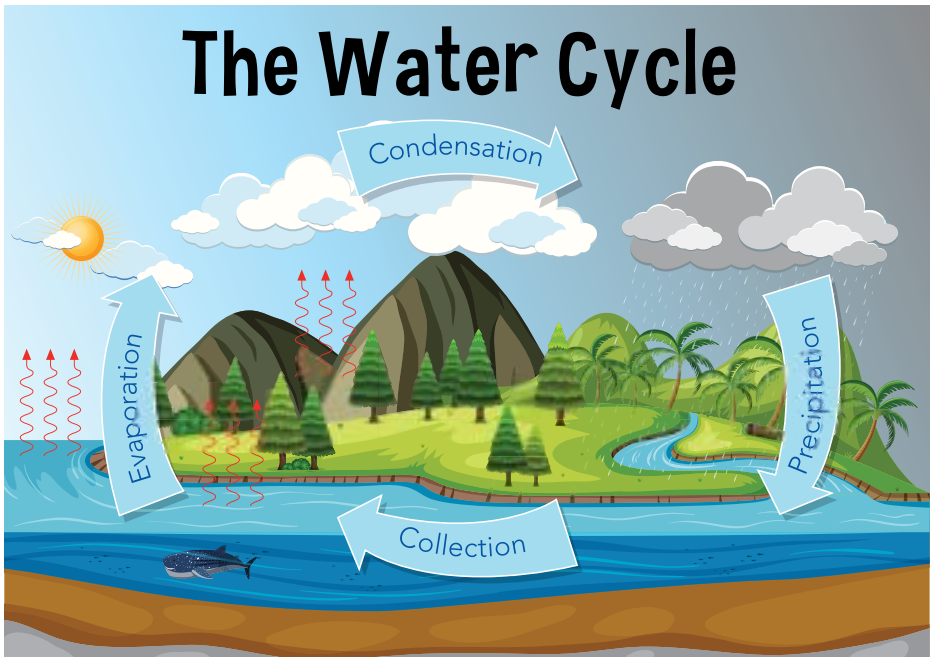
Precipitation- falling products of condensation in the atmosphere as rain, snow, or hail

Evaporation- to change from a liquid or solid state into a vapor

Atmosphere- the gaseous envelope surrounding the earth; what we think of as air

Condensation- process by which water vapor is changed back into liquid water

Water Vapor- produced from the evaporation or boiling of liquid water or from the sublimation of ice



Cloud- a visible mass of condensed water vapor floating in the atmosphere, typically high above the ground

Gravity- the force that attracts a body toward the center of the earth, or toward any otherphysical body having mass

Water Cycle- the process by which water circulates between the earth's oceans, atmosphere, and land, involving precipitation as rain and snow, drainage in streams and rivers, and the return to the atmosphere by evaporation and transpiration.

Temperature- the degree or intensity of heat present in a substance or object, especially as expressed according to a comparative scale and shown by a thermometer or perceived by touch

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ACTIVITY

SUGGESTED MATERIALS

- Large clear glass or clear plastic cup
- Food coloring (blue preferably)
- Shaving cream (foam not gel)
- Pipettes
- Eye droppers or straws
- Water

STEPS

Predict what you think will happen to our "cloud" once we add the water droplets.

Step 1: Mix blue food coloring with a small amount of water and fill your clear, glass cup nearly to the top with water

Step 2: Add shaving cream to the top of your jar or cup to create your cloud. Let it stand for three minutes before moving on to step 3

Step 3: Slowly add the food coloring in droplets to the cloud using your eye dropper or pipette. Continue to add droplets to the cloud

Step 4: Observe what happens

After a few minutes you should see the droplets seeping through the cloud and into your water. This is your rain.

We now know that rain is not random. It is a part of the water cycle and occurs when clouds become too saturated with water droplets.

Next time it rains, think about how many water droplets the clouds must have held before precipitation was formed.

Resources: Water Cycle for Kids- What Causes Rain? and Beyond the Playroom

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