



WATER CYCLE

Narrative



BIG IDEAS:

- Water is constantly changing form and moving through the earth system.
- Water changes states as it moves through the water cycle by evaporation, condensation, precipitation, melting, and freezing.
- The water cycle is not just a big circle.

MATERIALS:

9 cubes
9 bead holders
9 different colored beads
Bead Color Key

9 station signs with PVC stands
Suede string knotted at one end
Flip chart with bold marker

Q & A — Water Cycle – 2 Minutes.



At this station, you will get to role play as water molecules traveling in the water cycle. Have students pair-share with a partner: **What do you know about the water cycle? What is the picture that comes to mind?** (Students will probably think about the cloud over the ocean with the arrow pointing up and then raining down on the land).

ENGAGE — Water Movement – 2 Minutes.



How does water move from the ocean or lake to the clouds? Does it move as a liquid? What are the processes that move water from one place to another within the water cycle? As students generate the different ways that water moves, introduce the various hand motions:

Precipitate: move hands from above your head down, wiggling fingers like rain.

Evaporate: Like precipitate, but move your hands up instead of down.

Condensate: spread hands out and bring together to make fists.

Flow: move hands across body in a flowing motion.

Percolate: Reach hands down to the ground.

In this activity, we are going to expand our picture of the water cycle.

Q & A — Water Places List – 3 Minutes.



Now that we know how water moves and changes form. Where can water go in the Earth system? You are looking for the titles in bold below. If other words are suggested, write them down and then write the word that you were looking for next

to it. The words in parentheses represent some of the words that may be suggested).

River (streams)
Lake (ponds)
Ocean
Groundwater
Soil

Glacier (icecaps)
Cloud (air)
Plant
Animal

Try to have students come up with all the places water can go in the earth system. If they cannot guess, ask them questions like: **Where do we see water in our community or state? What other forms of water are there, other than liquid?** Water can be found as a solid, gas (vapor) or liquid.

Q & A — Where Can You Go From Each Place? – 5 Minutes.


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Tell the students, “**You will be demonstrating water’s movement from one location to another**” while passing out a piece of suede string knotted at the end to each student. For instance, from ocean water can only evaporate into clouds. Count off students by 9s. Write numbers 1-9 next to your water places list. Go through each place where you find water and ask students that are at that station to identify where they could go from where they are (eg: **Where might water go from the clouds?**). Have them use hand motions to show how water would move. Ask students: **What conditions would cause water to move? Where in the water cycle do students think water molecules would stay the longest?**

ENGAGE — Incredible Journey Game – 10 Minutes.


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Explain the game and tell them: **Every time you roll the die take a bead.** Once all of the students are lined up at their station, the student first in line will roll the die, take a bead and go where it dictates. If they roll STAY, they will still take a bead from that station and go to the end of the line. As you walk around, remind them: **Every time you roll the die take a bead. Ask: Why do you think there is a line at the ocean? What does it mean in the earth system if there is a line at the clouds? Don’t answer the questions for them; just keep posing the questions.** Students may end up staying at certain areas a long time and most won’t get to all the stations. What matters is their individual journey.

Play the game until most students have about 7 or 8 beads each, or until you have about ten minutes remaining. Call the students back to the place where they were first sitting.

EXPLANATION — Wrap Up – 8 Minutes.


Put up the poster board key showing the places water can go in the earth system with the bead color that represents that station.

River = baby blue

Lake = royal blue

Cloud = white

Ocean = turquoise

Groundwater = orange

Plant = green

Soil = brown

Glacier = clear

Animal = red

Have students tie their water journey record into a bracelet. Ask students to hold up their bracelets and look around at everyone's bracelet. **Are any of the water journey's recorded in beads exactly the same as yours?** Have one student at a time stand up and recite their water journey using the journey key. While each student recites her journey, chart their path using the laminated recorder. Encourage students to use hand motions from the warm-up to follow along with each journey by asking questions: **How did you move from the cloud to the ground?** Precipitation! And do the hand motions for precipitation.

Below are some questions you can ask the students:

- Did each water molecule (student) follow the same path?
- Where were the places you got stuck? Where were you the most?
- Why do you think you stayed longer in this area? (97% of the Earth's water is in the oceans and seas. It makes sense for many water molecules to get "stuck" in these areas)
- Did any of you go from the ocean to the clouds and back to the ocean for more than one roll? (this is called cycling)
- Did some of you get stuck in the groundwater? (Water takes longer to move through the ground than it does to move over the land surface.)
- What does it mean in the earth system if there is a line at the clouds? Clouds are building up but maybe no rain is coming down ... this happens in Arizona a lot of times.
- Take a look at each student's journey key – did they travel in a perfect circle? Why not?

Big Ideas to Review:

- Is water constantly changing form and moving through the earth system?
- What two forces act on water to change its different states through the water cycle? How does water change states as it moves through the water cycle?
- Is the water cycle just a big circle?