

ONLINE

ELA Classroom Activity

Effects of Water

The Classroom Activity introduces students to the context of a performance task, so they are not disadvantaged in demonstrating the skills the task intends to assess. Contextual elements include: an understanding of the setting or situation in which the task is placed, potentially unfamiliar concepts that are associated with the scenario; and **key terms** or vocabulary students will need to understand in order to meaningfully engage with and complete the performance task. The Classroom Activity is also intended to generate student interest in further exploration of the key idea(s). The Classroom Activity should be easy to implement with clear instructions.

Please read through the entire Classroom Activity before beginning the activity with students to ensure any classroom preparation can be completed in advance.

Throughout the activity it is permissible to pause and ask students if they have any questions.

Resources Needed:

- Some method of displaying ancillary materials¹ (Figure 1 and Figure 2)

Learning Goal:

- Students will understand the context of these key ideas related to the topic:
 - Water has been around since the beginning of time.
 - Water is always on the move.
 - During the water cycle, water evaporates, condenses, falls as precipitation, and then collects to start the water cycle all over again.
 - The water cycle continues over and over again.

Students will understand these key terms:

- **water cycle:** the process of water evaporating, condensing, falling as precipitation, and collecting over and over again
- **evaporation:** the process of water turning into vapor or steam and rising into the air
- **condensation:** water vapor rising into the air, getting cold, and turning back to liquid
- **precipitation:** water collecting in the air until it becomes heavy and falls back to Earth as rain, snow, hail, or sleet
- **collection:** water gathering in rivers, lakes, streams, and oceans

Note: Definitions are provided here for the convenience of the facilitator. Students are expected to understand these key terms in the context of the task, not memorize the definitions.

¹ Facilitators can decide whether they want to display ancillary materials using an overhead projector or computer/Smartboard, or whether they want to produce them as a handout for students.

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[Purpose: The facilitator's goal is to review the stages of the water cycle with students to ensure that they have a basic understanding of the process. The activity will engage students while helping them to understand the water cycle. This task will allow students to be active participants as they explore the concept of the water cycle in the context of the performance assessment they will complete in the coming days.]

Facilitator says: "Today we will get ready for the Effects of Water Performance Task by reviewing the water cycle. Water has been around for many, many years. If a raindrop fell from the sky today, it could have been part of a lake or stream at one time. And that same raindrop could still be around millions of years from now. It's all part of the water cycle."

[The facilitator displays or hands out **Figure 1: The Water Cycle**. Note: For students who are visually impaired, read the description below the diagram.]

Facilitator says: "Have you ever noticed how many puddles there are after it rains? And how they disappear when the sun comes out again? They didn't really disappear. The water turned into vapor or steam and rose into the air. This is called evaporation."

[The facilitator shows the students where evaporation is occurring on **Figure 1: The Water Cycle**.]

Facilitator says: "When the water vapor rises into the air, it gets cold and turns back into a liquid. This is called condensation. What does the condensation form in the sky?"

[The facilitator shows the students where condensation is taking place on the diagram. The facilitator leads the students to the understanding that the condensation may form clouds in the sky.]

Facilitator says: "Soon, so much water condenses in the clouds that it becomes heavy. The air cannot hold the water anymore. What do you think happens next?"

[The facilitator shows the students where precipitation is falling on the diagram. The facilitator leads the students to the understanding that the water falls back to Earth as rain, snow, hail, or sleet. This is called precipitation.]

Facilitator says: "What do you think happens to the water that falls back to Earth?"

[The facilitator shows the student where this is happening on the diagram. The facilitator leads the students to the understanding that the water that fell to the earth collects in rivers, lakes, streams, and oceans.

Facilitator says: "The sun heats up the water and the cycle starts all over again. Does anyone have any questions about what happens during the water cycle?"

Note: The following section can be modified to accommodate various teacher-student interaction types such as a teacher-led, teacher-student for remote locations with a single student, or small groups. For the Reader's Theater presentation, many students can read the parts together, the

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students can be broken into groups to do the reading, or for very small learning situations the teacher and student can simply take turns reading parts.

Facilitator says: “Now that we have reviewed the water cycle, we are going to read a Reader’s Theater script of the events that could take place while a drop of water moves through the water cycle.”

[The facilitator displays or hands out **Figure 2: The Water Cycle—Reader’s Theater.**]

[The facilitator assigns students or groups of students to read each part. The class reads through The Water Cycle—Reader’s Theater. As the students read through the Reader’s Theater script, draw their attention back to what is happening in relation to the water cycle diagram.] [Section 2 should take approximately 10 minutes to complete.]

Note: This part of the Classroom Activity should be a full class discussion about the events in The Water Cycle—Reader’s Theater.

Facilitator says: “How did humans become involved in the water cycle in the Reader’s Theater script?”

[Lead the students to the understanding that when humans use water it is taken out of nature’s water cycle for a period of time, but it ends up back in nature’s water cycle later.]

Facilitator says: “Why was the water drop stuck in a glacier for so long?”

[Lead students to the understanding that glaciers can be frozen for thousands of years and the water is not moving through the water cycle when it is frozen in a glacier.]

Facilitator says: “Why were the rocks smooth, and a new cave formed after 2,000 years?”

[Lead students to the understanding that water is always moving and over time it changes Earth.]

Facilitator says: “Why would it be more difficult for water to be cleaned in nature than it would be in a sewage processing plant?”

[Lead students to the understanding that water would need to be filtered through the ground to be cleaned.]

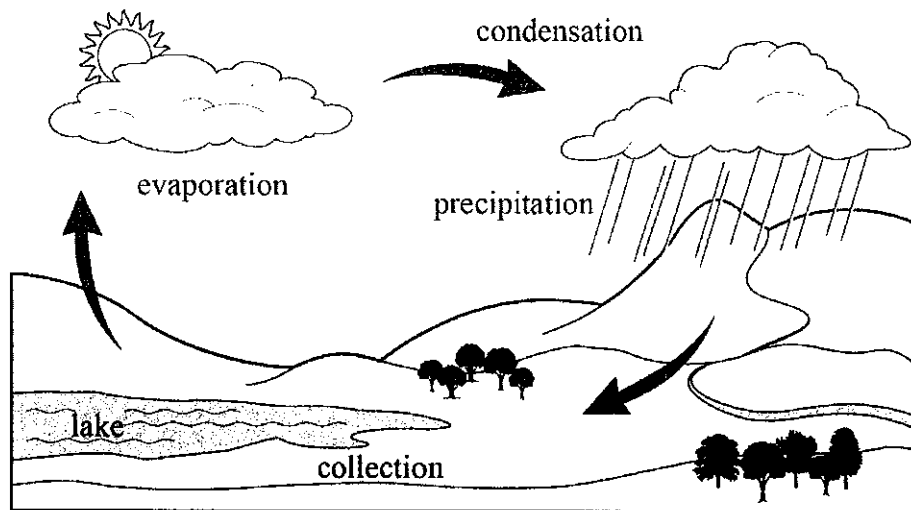
Facilitator says: “What is happening to the Ocean Water Drop(s) at the end?”

[Lead students to the understanding that the Ocean Water Drop(s) are about to evaporate and start the water cycle process all over again.]

Ancillary Material

Figure 1

The Water Cycle



Picture Description: This is a diagram of the water cycle. In the diagram, the Sun is partially covered by a cloud in the top left corner. There is an arrow with the word "condensation" written above it pointing toward the right top corner. In the top right corner there is a cloud with rain coming down from it. The word "precipitation" is written beside the rain. There are mountains below the cloud on the right, and trees in the foreground of the bottom right corner. There is another arrow that is pointing toward the lake that is located in the bottom left corner. The word "collection" is written to the left of this arrow. The lake has the word "lake" on it. There is an arrow pointing up from the lake toward the Sun and cloud that is in the top left corner. The word "evaporation" is written below the cloud.

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Ancillary Material

Figure 1

The Water Cycle—Reader's Theater Script

Characters:

Narrator

Sun

Ocean Water Drop 1

Ocean Water Drop 2

River Water Drop 1

River Water Drop 2

Water Vapor Drop 1

Water Vapor Drop 2

Snow Flake 1

Snow Flake 2

Stream Water Drop 1

Stream Water Drop 2

Reservoir water Drop 1

Reservoir water Drop 2

Tap Water Drop 1

Tap Water Drop 2

Drain Pipe Water Drop 1

Drain Pipe Water Drop 2

Sewage Processing Plant

Ocean Water Drop 1: What a beautiful day! The Sun is shining and the fish are jumping.

Ocean Water Drop 2: It is fun riding the waves.

Sun: Hello! How is the Ocean Water doing on this fine day?

Ocean Water Drop 1: Just riding the waves and enjoying the sunshine. It is getting very hot!

Ocean Water Drop 2: We are beginning to float, evaporate, and turn into Water Vapor!

Sun: Enjoy the rest of your journey!

Water Vapor Drop 1: It is fun floating around in the air.

Water Vapor Drop 2: Let's see how high up in the sky we can get!

Narrator: Two days later.

Water Vapor Drop 1: Wow! It is cold up here! Let's join together and form a cloud.

Narrator: One day later.

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Water Vapor Drop 2: With all of us so close together we are getting heavy!

Snow Flake 1: We have cooled and condensed and turned from Water Vapor into snow! Yeah! We are on our way back to Earth. I hope the kids are out playing today. I would like to be part of a snowman.

Snow Flake 2: Ahhhhhhhhhhh! Falling as precipitation is a little bit scary! Wow, that wind was strong. We have ended up on a glacier in a very cold place! We are probably going to be stuck here for a while.

Narrator: 2,000 years later.

Sun: How long has it been since we have seen each other? You have not changed a bit!

Stream Water Drop 1: We were stuck in a glacier for many years. It feels great to be moving again!

Stream Water Drop 2: It is nice to see the rocks and trees again. The rocks have changed a lot since we last saw them. They are smoother and have a different shape.

River Water Drop 1: It seems like yesterday we were floating down a stream and here we are roaring down a river.

River Water Drop 2: I hope I get to go down a waterfall. Everyone says that is a lot of fun!

Reservoir Water Drop 1: Deep underground it sure is dark. There is a new cave since we were here last.

Reservoir Water Drop 2: When drops of water work together we sure can make some changes! Look, there is a pipe over there. Let's check it out.

Tap Water Drop 1: Here is the light at the end of the tunnel. We get to help clean the dishes.

Tap Water Drop 2: This part is no fun. So many pieces of food get stuck to us! It is no fun carrying all that food around!

Drain Pipe Water Drop 1: These pipes stink! Hopefully we will be clean again soon. Can someone remind us to stay out of the pipes in the future?

Drain Pipe Water Drop 2: It has been about 3,000 years since we did this before. Hopefully we do not have to do it again soon.

Sewage Processing Plant: Do not worry! You will get cleaned up here! You will be clean and back outside in no time. At least when you are dirty and end up here you do not have to work as hard to get rid of all the dirt as you do if you were to do it on your own. Jump in the bath and we will clean you up!

Narrator: A couple of days later.

Ocean Water Drop 1: Ahhh! It is so nice to be back in the ocean. The Sun is shining, and the kids are having fun on the beach. The birds are flying in the sky, and the fish are swimming.



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Grade **5**

Ocean Water Drop 2: What other adventures have our water drop friends been on? They will be happy to see us after all these years. Being stuck in that glacier was a nice rest, but it is good to be back on the move. It is getting awfully hot out here!