

The Water Cycle

Cross-Curricular Focus: Earth Science



Water on Earth can be found in three different forms, or states. These states are solid, liquid and gas. When it is frozen, it is solid ice. When it is liquid, it is liquid water. When it is a gas, it is water vapor. The water cycle is the set of processes that water goes through as it changes from one state to another.

When the heat of the sun shines on the water in oceans, lakes, rivers and streams, the water evaporates, rising up into the air as water vapor. As it moves higher into the sky, it cools. The cooled water vapor begins to form liquid drops, which gather together as clouds. This process is called condensation. Little by little, more microscopic drops of water join together in the cloud. Finally, the cloud becomes so heavy that the drops start to fall. Any form of water that falls from the sky is called precipitation.

Precipitation will take on different forms. The form depends on the conditions that exist inside the clouds and the condition of the air the water travels through on its way to the ground. Drops of liquid water fall as rain, the most common form of precipitation. If the drops of water fall through air that is warmer than water's freezing point, they will remain as rain. Sometimes cold temperatures inside clouds produce ice crystals that melt in warmer air on their way down, ending up as rain as well.

If raindrops fall through air that is below the freezing point of water, they form tiny frozen drops known as sleet. If the air inside the cloud and the air on the way down are both below the freezing point, ice crystals will form and fall as snowflakes. There is a lot of variation in snow, depending on how cold it is when it falls. Warmer temperatures mean "wetter" snow, while colder temperatures mean drier, fluffier snow.

Perhaps the most interesting form of precipitation is hail. Hail forms when windy conditions combine with freezing temperatures. Drops of frozen rain begin to fall, and are then repeatedly caught up by the wind and pushed back up through the clouds where they gather more and more layers of ice. When they become too heavy for the wind to lift, they fall to the ground as hail.

No matter what form the precipitation takes, much of it will become runoff and find its way back to the sea. Most of the rest will join surface water in lakes and streams or soak into the ground and become groundwater. Some will spend some time atop tall mountains as ice and snow.

All water awaits its turn to participate once again in each state of the water cycle. Water continually changes from one state to another. The water cycle never ends.

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) How does the water cycle ensure that we have water?

2) What are the three stages of the water cycle? _____

3) Describe the conditions that are necessary for snow to fall.

4) How does precipitation return to the water cycle? _____

5) What is your favorite form of precipitation? Why? _____

The Water Cycle

Cross-Curricular Focus: Earth Science



Water on Earth can be found in three different forms, or states. These states are solid, liquid and gas. When it is frozen, it is solid ice. When it is liquid, it is liquid water. When it is a gas, it is water vapor. The water cycle is the set of processes that water goes through as it changes from one state to another.

When the heat of the sun shines on the water in oceans, lakes, rivers and streams, the water evaporates, rising up into the air as water vapor. As it moves higher into the sky, it cools. The cooled water vapor begins to form liquid drops, which gather together as clouds. This process is called condensation. Little by little, more microscopic drops of water join together in the cloud. Finally, the cloud becomes so heavy that the drops start to fall. Any form of water that falls from the sky is called precipitation.

Precipitation will take on different forms. The form depends on the conditions that exist inside the clouds and the condition of the air the water travels through on its way to the ground. Drops of liquid water fall as rain, the most common form of precipitation. If the drops of water fall through air that is warmer than water's freezing point, they will remain as rain. Sometimes cold temperatures inside clouds produce ice crystals that melt in warmer air on their way down, ending up as rain as well.

If raindrops fall through air that is below the freezing point of water, they form tiny frozen drops known as sleet. If the air inside the cloud and the air on the way down are both below the freezing point, ice crystals will form and fall as snowflakes. There is a lot of variation in snow, depending on how cold it is when it falls. Warmer temperatures mean "wetter" snow, while colder temperatures mean drier, fluffier snow.

Perhaps the most interesting form of precipitation is hail. Hail forms when windy conditions combine with freezing temperatures. Drops of frozen rain begin to fall, and are then repeatedly caught up by the wind and pushed back up through the clouds where they gather more and more layers of ice. When they become too heavy for the wind to lift, they fall to the ground as hail.

No matter what form the precipitation takes, much of it will become runoff and find its way back to the sea. Most of the rest will join surface water in lakes and streams or soak into the ground and become groundwater. Some will spend some time atop tall mountains as ice and snow.

All water awaits its turn to participate once again in each state of the water cycle. Water continually changes from one state to another. The water cycle never ends.

Name: Key

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

Actual wording of answers may vary.

1) How does the water cycle ensure that we have water?

because water eventually changes into precipitation

2) What are the three stages of the water cycle? **The air inside the**

cloud and the air on the way down are below freezing.

3) Describe the conditions that are necessary for snow to fall.

evaporation, condensation and precipitation

4) How does precipitation return to the water cycle? **It evaporates into**

a vapor.

5) What is your favorite form of precipitation? Why? _____

student's choice