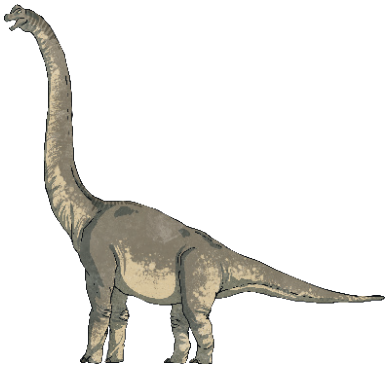
The Water Cycle

You drink and use water every day, but have you ever wondered where that water has come from or how old it is? The Earth has a specific amount of water that goes through a constant cycle. The water in your glass today could have been the same water a dinosaur took a bath in millions of years ago. The water cycle, also called the hydrologic cycle, is vital to life on Earth. There are four main stages of the water cycle, but it is important to remember that the most important factor in the water cycle is the Sun.

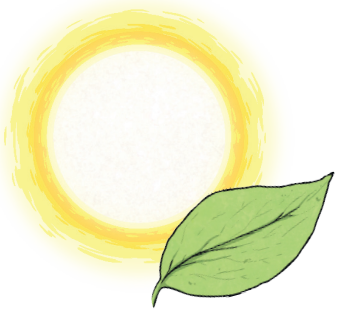


Accumulation

The first stage of the water cycle is water accumulation. Water accumulation refers to water that is stored on Earth's surface. This can be in rivers, lakes, and oceans. The largest water accumulations are in oceans, which hold nearly 97 percent of the Earth's water. Accumulation can also refer to groundwater, which is water that seeps into the Earth's surface, and is absorbed by roots to help plants grow.

Evaporation

As the Sun shines down on accumulated water, the water begins to heat up, until it turns into water vapour. The water vapour then rises into Earth's atmosphere. When the Sun changes water from a liquid to a gas, the process is called evaporation.

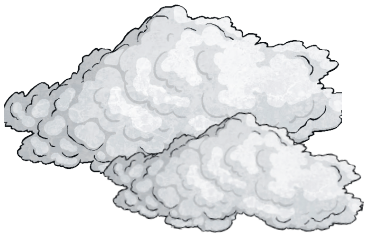


Water can also evaporate from plants. This is called transpiration. Plants that live in the desert develop special adaptations to trap water inside their leaves.

You can easily observe water evaporating by finding a puddle near your school or home after a rainstorm. Throughout the day, you will notice that the puddle is getting smaller. This is because the water is evaporating, and turning to water vapour.

Condensation

After water vapour enters the atmosphere, it begins to cool. As it cools, it condenses and forms back into a liquid. Groups of water droplets come together to form clouds. When water changes from a gas to a liquid, this process is called condensation.



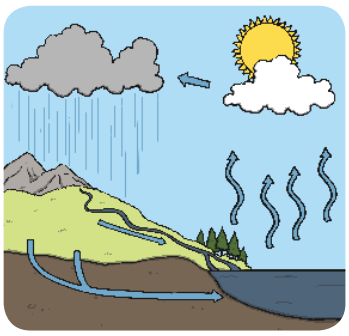
Even in a cloudless and clear blue sky, there is still water in the atmosphere. The atmosphere acts as a road for water because it moves water all around the Earth. However, clouds aren't the only place to observe condensation. On a hot day, you may take an ice-cold glass of water with you outside. Then you notice that the outside of the glass is wet. Is your cup leaking? No, it is actually water vapour condensing when it cools on the side of your glass.

Precipitation

As more and more water condenses, it becomes too heavy for the air to hold. The water will fall back to Earth as rain, hail, sleet, or snow. This process is

known as precipitation and it is important because it allows the water in the atmosphere to return back to Earth's surface.

When the water returns to the Earth's surface, it provides water for plants and animals. Water that does not get absorbed into the soil will experience an additional stage of the water cycle called run-off. Run-off is when water is forced by gravity to move across Earth's surface towards larger water accumulations.



Once the water cycle is complete, it repeats over and over again. While this explains the different stages, each water molecule will travel on a unique and varied journey during its involvement in each stage of the water cycle. Water molecules may be kept in a container, drunk, carried and excreted by an animal, stored by a plant, used to boil pasta, or stay in the ocean or your neighborhood pool for a long period of time before they evaporate and begin the next stage of the water cycle.

Questions

1. Does the amount of water on Earth change? Explain your answer.

2. Why is the Sun important to the water cycle?

3. Which is the largest accumulation of water, and how much of Earth's water does it hold?

4. Complete the table by writing a description of each stage of the water cycle.

Stage	Description
Accumulation	
Evaporation	
Condensation	
Precipitation	

5. Describe an example of condensation you might see in everyday life.

6. What happens when water returns to the Earth's surface? Describe two things that might happen.

7. On a clear day, is there water in the atmosphere? Explain your answer.

8. Describe an example of evaporation you might see in everyday life.

9. Find and copy another name for the water cycle.

Answers

1. Does the amount of water on Earth change? Explain your answer.
   The amount of water on Earth doesn't change. The earth has a specific amount of water that goes through a constant cycle.

2. Why is the Sun important to the water cycle?
   The Sun helps in the water cycle by heating water so that it becomes water vapour, which helps the cycle continue moving.

3. Which is the largest accumulation of water, and how much of Earth's water does it hold?
   The largest water accumulations are in oceans, which hold nearly 97 percent of the Earth's water.

4. Complete the table by writing a description of each stage of the water cycle.

Stage	Description
Accumulation	**Water accumulation refers to water that is stored on Earth's surface. It can also refer to ground water.**
Evaporation	**When the Sun heats water, it becomes a gas called water vapour and rises into the Earth's atmosphere.**
Condensation	**After water vapour enters the atmosphere, it begins to cool. As it cools, it condenses and forms back into a liquid.**
Precipitation	**As water condenses in the air it becomes too heavy and falls back to Earth as rain, hail, sleet or snow.**

5. Describe an example of condensation you might see in everyday life.
   On a hot day, you may take an ice-cold glass of water with you outside. Then you notice that the outside of the glass is wet. This is water vapour condensing when it cools on the side of your glass.

6. What happens when water returns to the Earth's surface? Describe two things that might happen.
   When the water returns to the Earth's surface, it provides water for plants and animals. Water that does not

7. On a clear day, is there water in the atmosphere? Explain your answer.
   The water in the atmosphere isn't just in the clouds. The atmosphere acts as a road for water because it moves water all around the Earth.

8. Describe an example of evaporation you might see in everyday life.
   You can easily observe water evaporating by finding a puddle near your school or home after a rainstorm. Throughout the day, you will notice that the puddle is getting smaller. This is because the water is evaporating, and turning to water vapour.

9. Find and copy another name for the water cycle.
   Hydrologic cycle.