

S3 The Water Cycle

What is the Water Cycle?

Have you ever thought about how water moves around the Earth? It never stops and it does not have a beginning or an end. It is more like a circle. Let's start with water that is on land. Heat from the sun evaporates water from oceans, lakes etc. The water turns into water vapour and goes up into the atmosphere. A lot of water vapour gathers and forms clouds. The weather moves clouds around and when they are full of water, they drop water back to earth. Water falls as rain, snow, sleet, or hail. This water could fall back into the ocean, or feed trees in a forest, or cover a mountain with snow. This water will eventually evaporate and start the cycle again.

How does water go from land to vapour in the atmosphere?

There are three main ways that water on land turns into vapor:

Evaporation - This is the main way water goes from the ground to vapour in the atmosphere. Around 90% of the water vapour in the atmosphere got there through evaporation. Evaporation happens on the surface of the water. The Sun's heat creates energy for the water to evaporate. Hot water evaporates more easily than cold water.

Sublimation - This is when water moves directly to vapour from ice or snow without ever melting into water. This happens best in cold conditions when it is both windy and sunny.

Transpiration - This is when plants release water onto their leaves that then evaporates into vapour. Plants release a lot of water as they grow. Around 10% of the water vapor in the atmosphere comes from transpiration.

Water in the atmosphere

We see water in the atmosphere in the form of clouds. There is a small amount of water even in clear skies, but clouds are where water has started to condense.

Condensation is the process of water vapour becoming liquid water. Condensation is a major step in the water cycle. The atmosphere helps to move water around the world. It takes water that evaporated from the ocean and moves it over land where clouds and storms form to water plants with rain.

Precipitation

Precipitation is when water falls from the atmosphere back to land. Once enough water gathers in a cloud, droplets of water will form and fall to the earth. Depending on the temperature and weather this could be rain, snow, sleet, or even hail.

Water storage

A lot of the Earth's water does not take part in the water cycle very often. Most of it is stored in the ocean, around 96%. Luckily for us, freshwater is stored in lakes, rivers, glaciers etc.