

# The Water Cycle

Read the text carefully before answering the questions below. Remember to answer in full sentences, and use evidence to support your answers.

1. What is hydrology?
2. What percentage of water on Earth is salt water?
3. What states of matter does water move between?
4. Name the six stages of the water cycle, and give a brief explanation of what each stage is.
5. Why do you think water from reservoirs need to be sent to Welsh Water before coming through your taps?
6. Name 3 places where fresh water is located, but cannot be accessed for drinking.
7. Do you think trees are useful in the water cycle? Why?
8. Where does evaporation occur?
9. Why do you think it says that water is “very precious”?
10. Why do you think it is referred to as a cycle?
11. Draw and label what you think the water cycle looks like using the six stages mentioned in the text.

# The Water Cycle

Water can be found throughout the Earth, both in living things and in the physical environment. About 60% of our bodies are made up of water, it is in the bodies of animals and insects, and within all plants. Most of the water on Earth is contained in our oceans, which means approximately 97% of all water on Earth is salt water. The remaining 3% of water is fresh water, which we can drink. This is found in rivers, lakes, and reservoirs, and in less accessible places such as clouds, ice and underground.

Water is constantly on the move; above, below and on the surface of the Earth, as it changes states between solid, liquid, and gas. This movement of water is known as the water cycle. This cycle has been taking place for millions of years, and there is more or less the same amount of water on earth today, as when the Earth was formed. This means that we are drinking the same water that the dinosaurs were drinking! Water is very precious so it is important that we look after the water on Earth. People have devoted their lives to studying water, known as hydrology which looks at the movement and distribution of water on Earth.

## The water cycle can be broken down into six main parts.

As the water cycle is a continuous process, there is no real start and end point, however most scientists agree that evaporation is the first stage of the water cycle. Evaporation occurs when the sun heats water in seas, ponds, rivers and reservoirs, and the water changes from a liquid to a gas, called water vapor.



## As the water vapor rises, it cools down in the atmosphere and condenses, turning into water droplets.

This appears to us as clouds. Over time, clouds gather more water vapor, until they eventually become saturated with water. Precipitation then occurs, where the cloud gets rid of the water, and it falls back to earth. Precipitation is the term used for any form of water falling from the sky: rain, hail, snow and sleet.

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**Much of the water that returns to Earth as precipitation runs off the surface of the land and flows downhill into streams, rivers, ponds and lakes.**

Some of the rain water is "caught" in reservoirs ready to be sent to Welsh Water's Clean Treatment Works to be filtered, treated, tested and pumped to houses, schools and businesses all over Wales.

**Some of the rain water soaks into the ground and moves through the soil adding to the ground water table.**

This is known as infiltration. Some of the water will eventually seep back into the water cycle via streams and rivers, either above or below ground. Water in streams and rivers then makes its way back to the sea where the whole process starts again.

Some of the water in the ground table will be sucked up into trees and plants, where they will use it to produce food. On average, an oak tree will soak up approximately 200 litres of water. Any water which is not used for food will evaporate through the trees leaves, this process is called transpiration.

