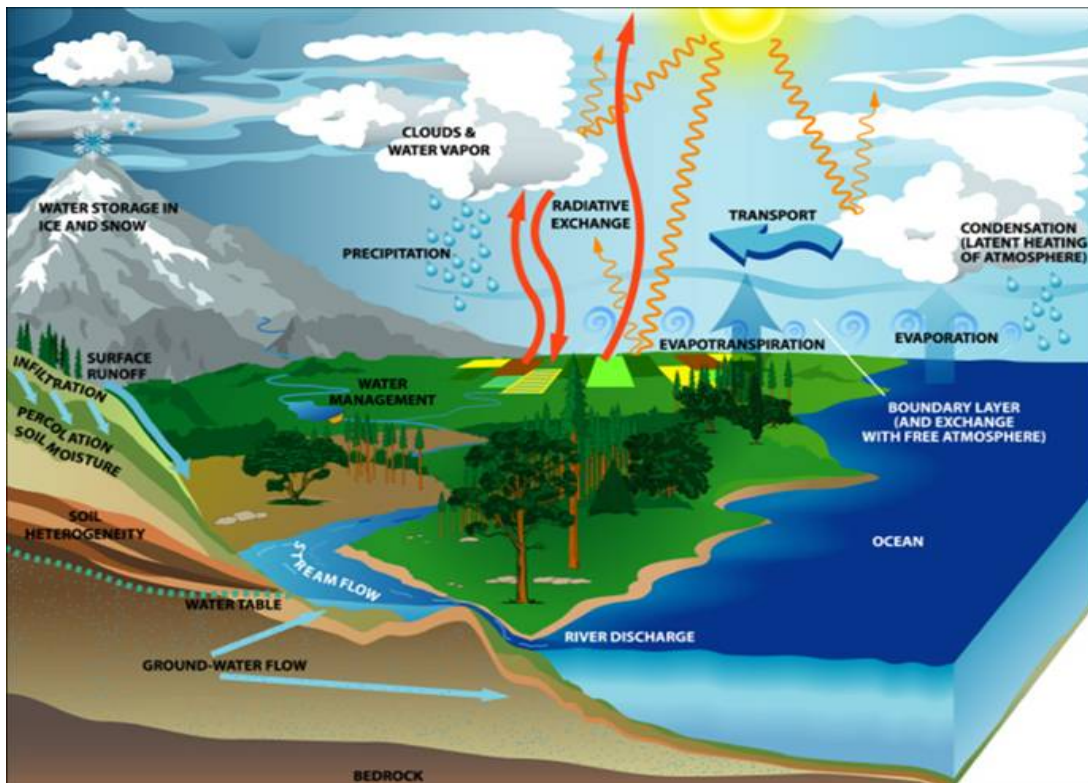


## THE NATURAL WATER CYCLE

The water cycle has no starting point. It goes around and around in a cycle, changing from one state to another. All the water in the world has existed for millions of years! There is approximately 1,397,918,500,000,000,000 litres of water on Earth. Where can most of it be found, and how does it go around in a cycle?



### Evaporation

Most of Earth's water, 97% of it, exists in the oceans. The sun which drives the water cycle, heats the water in the oceans. Some of the heated water evaporates as vapour into the air. Because water vapour is lighter than liquid water, it rises into the sky.

### Evapotranspiration

Some water can also evaporate off the land. Water on the ground and in the soil can heat up and turn into vapour. Transpiration is the process by which moisture (water) is released from the leaves of plants into the atmosphere. It has been estimated that 10% of the moisture found in the atmosphere is released by plants through transpiration.

### Condensation

Condensation is the opposite of evaporation. Remember that evaporation happens when water molecules heat up. Well, when water vapour cools down, the water molecules changes back into a liquid form! This is how clouds are formed; the water drops 'stick' together to form a cloud.

**Precipitation**

Precipitation is water released from clouds in the form of rain, hail, sleet or snow. Most precipitation falls on Earth as rain. For precipitation to happen, water drops must grow larger and heavier. To do this, water drops need to combine with each other, or to other particles in the air, like dust, salt or smoke particles.

**Water storage in ice and snow**

Almost 90% of the Earth's ice mass can be found in Antarctica. Ice is also found as glaciers on top of mountains. Glaciers cover approximately 10% of all land. Some researchers say that if all the glaciers melted today, the seas would rise by 70 metres!

**Surface runoff**

Water that has come down as precipitation on land can follow different journeys as part of the water cycle. Most of the water travels over the ground surface into waterways, such as streams and rivers. This is called surface runoff.

**Infiltration**

Some of the water that falls down as rain does not flow directly off the ground into a river. Instead the water can seep into the soil or rock, a process called infiltration. Some water that infiltrates may remain in the shallow soil layer, and might eventually flow into a stream or river. Water in the soil may also infiltrate deeper into the ground, recharging the groundwater aquifers. If the water table is shallow enough, people can dig wells to access the groundwater. Water can also reach the surface naturally, through springs for example.

There are many pathways that water can take in the water cycle, but most of the water will ultimately end in the oceans once again. How long do you think it takes for one drop to complete the cycle?