The Amazing Water Cycle - How Water Travels Around Earth

The water cycle is like a giant recycling system that moves water all around our planet. The same water that falls as rain today might have been in the ocean last week, in a cloud yesterday, and could be in a river tomorrow!

The water cycle has four main steps: evaporation, condensation, precipitation, and collection. These steps happen over and over again, moving water from the oceans to the sky, then back to the land and oceans.

Evaporation happens when the Sun heats up water in oceans, rivers, and lakes. The heat turns the liquid water into invisible water vapor that rises up into the air. It's like when you see steam coming from a hot cup of cocoa!

Plants also help with evaporation through a process called transpiration. Plants drink water through their roots and then release water vapor through tiny holes in their leaves. A large tree can release hundreds of gallons of water into the air each day!

As water vapor rises high into the sky, it gets colder. When it gets cold enough, the water vapor turns back into tiny water droplets. This process is called condensation, and it's how clouds form in the sky.

Clouds are made of billions of tiny water droplets floating in the air. These droplets are so small and light that they can float, just like how dust particles float in a sunbeam. Different types of clouds form at different heights in the sky.

When the water droplets in clouds get bigger and heavier, they fall back to Earth as precipitation. Precipitation can be rain, snow, sleet, or hail, depending on how cold it is in the atmosphere.

Rain happens when water droplets in clouds bump into each other and stick together until they become heavy enough to fall. A single raindrop contains millions of the tiny droplets that were floating in the cloud!

Snow forms when water vapor freezes directly into ice crystals in very cold clouds. Each snowflake has a unique, beautiful pattern. No two snowflakes are exactly alike, even though billions and billions have fallen throughout history!

After precipitation falls to Earth, it collects in different places. Some rain soaks into the ground and becomes groundwater. Some flows into streams and rivers that carry it back to the ocean. Some falls directly into lakes and ponds.

Groundwater is water that soaks into the soil and rocks underground. This water can stay underground for a very long time, slowly moving through tiny spaces in rocks and soil. Wells are dug to bring this groundwater up for people to use.

Rivers and streams carry water from high places like mountains down to lower places like valleys and eventually to the ocean. Along the way, this flowing water carves valleys, moves rocks and soil, and provides homes for fish and other animals.

The water cycle is powered by energy from the Sun. Without the Sun's heat, water wouldn't evaporate, clouds wouldn't form, and rain wouldn't fall. The Sun is like the engine that keeps the water cycle running all the time.

The water cycle helps keep Earth's temperature comfortable for living things. When water evaporates, it takes heat energy with it, which helps cool the surface. When water vapor condenses into clouds, it releases that heat energy back into the atmosphere.

All living things depend on the water cycle. Plants need water to grow, animals need water to drink, and people use water for drinking, cooking, cleaning, and many other activities. Without the water cycle, life on Earth would not be possible.

The water cycle has been happening for billions of years, long before there were any people on Earth. The water you drink today might have once been part of a dinosaur, fallen as rain in ancient forests, or flowed in rivers that no longer exist. Water truly connects all life on our amazing planet!