

# The water cycle

The **water cycle** describes the movement of 500 trillion tons of water around the Earth every year. Water on Earth is present as all three **states of matter** – **solid, liquid** and **gas** – and is continually going through physical state changes including **evaporation, condensation, freezing** and **melting**.

Without the water cycle, we wouldn't have water to drink, food to eat or materials to build our homes.

**Did you know ...?**  
**Solid water** can be found on Earth as **ice** and **snow**, mainly at the planet's poles, and at the top of mountains.

**Precipitation** – when the water droplets are large enough, they fall back to the **Earth's surface** as **rain, sleet** or **snow**.

**Condensation** – as the warm moist air rises through the cooler denser air above, the **water vapour** condenses, forming tiny water droplets which eventually form **clouds**.

**Transpiration** – water is absorbed by **plants** via their roots, and can be released as **water vapour** via their leaves, adding to the water vapour directly evaporating from the **oceans**.

**Evaporation** – the **Earth's surface** absorbs energy from the **Sun**, causing an increase in the rate of evaporation of surface water forming **water vapour**.

**Runoff** – some of the water will run over the **Earth's surface**, via **streams** and **rivers**, back to the **sea**.

**Percolation** – some water will percolate through the **soil** and **rocks**. It can remain as **groundwater**, transport back to the **oceans**, or be absorbed by **plants**.

**Did you know ...?**  
There is about 1.4 billion km<sup>3</sup> of water on Earth, mostly found as a **liquid** in the **oceans** and other **bodies of water** (98.2%).

**Did you know ...?**  
Water also transfers into the mantle when tectonic plates get pushed under each other. This water will eventually re-emerge when **volcanoes** erupt!