

The water cycle

Water moves between the atmosphere, land, rivers, lakes and oceans. Energy from the Sun and gravity drive different stages of this cycle.

Evaporation changes liquid water into water vapour. Solar energy warms water at the surface of oceans, lakes and rivers. Evaporation can happen below the boiling point. Transpiration releases water vapour from plants, mainly through tiny openings in leaves called stomata.

Condensation changes water vapour into liquid droplets as air cools. Clouds contain tiny liquid droplets, ice crystals, or both. When droplets or ice particles grow large enough to fall, water returns to the surface as precipitation: rain, snow, sleet or hail.

After precipitation, some water flows over the surface as runoff and reaches streams and rivers. Some infiltrates the soil. Water that moves deeper can recharge groundwater, which is stored in pores and cracks in rock and sediment. Gravity drives water downhill and through the ground.

The cycle has no fixed beginning or end. Water can remain in an ocean, glacier or underground reservoir for very different lengths of time. Paving land reduces infiltration and can increase surface runoff after rain. Plants return water to the air through transpiration, and their roots can help water enter soil.

Original teaching example created for Cuiz AI, 17 October 2026.

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