Nutrient Cycles Notes

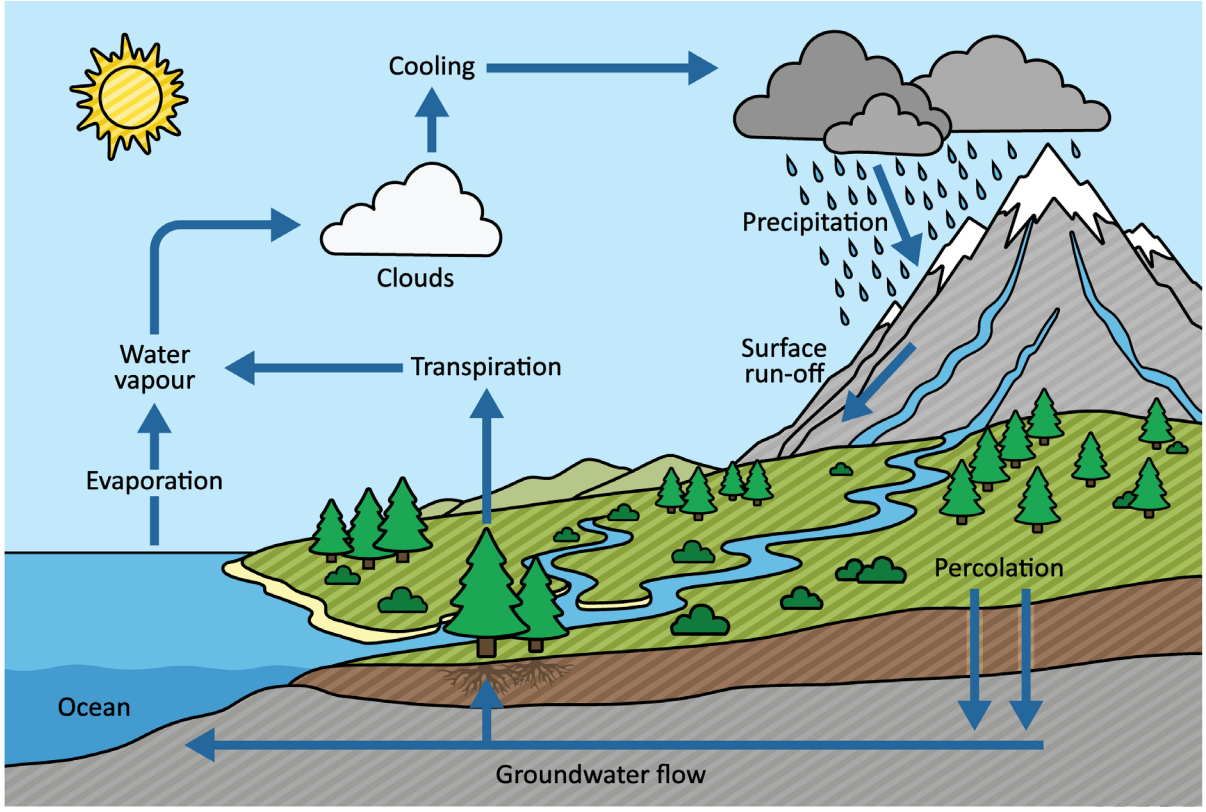
Science Exams Sorted www.scienceexamssorted.co.uk

For the OCR A GCSE Biology specification we are required to know **two** nutrient cycles. The **water cycle** and the **carbon cycle**. The water cycle is also covered in Geography so if you do Geography that's a help here.

Let's get straight into them 😊

The Water Cycle

The **water cycle** which is also known as the **hydrological cycle** describes how water moves on, above, or just below the surface of the planet.



What do we need to know about the water cycle?

1. **How water enters the atmosphere.**

- **Evaporation** – energy from the sun heats the liquid water turning some into water vapour.

  This rises and cools forming clouds.

- **Transpiration** – is the loss of water from the plants. This water rises as vapour and cools to form clouds.

2. **How water leaves the atmosphere.**

- **Precipitation** – the tiny water droplets in the clouds join together. When they become too heavy, they fall to the ground as precipitation (rain, snow, or hail).

  The precipitation (rain) provides fresh water for plants and animals on land before draining into the seas

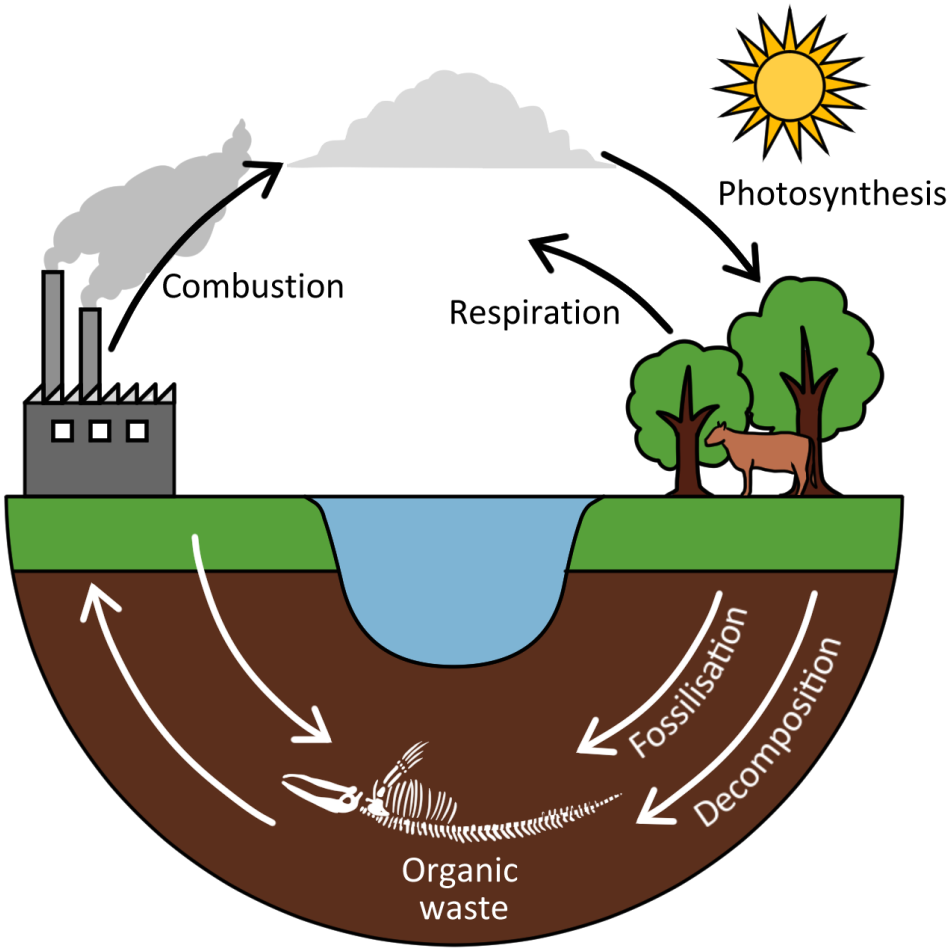
- This liquid water enters a body of water and at some point, it evaporates again and the cycle repeats.

The Carbon Cycle

The carbon cycle: the process in which carbon is cycled in the atmosphere, the earth, plants and animals.

Carbon moves from the atmosphere, as carbon dioxide, to plants and other photosynthetic organisms. It is then passed from one organism to the next in complex molecules such as glucose, and returned to the atmosphere as carbon dioxide again. This is known as the carbon cycle. This cycle is really straightforward!

Note: Two processes (**combustion** and **respiration**) put CO_2 into the atmosphere, one process (**photosynthesis**) removes it.



What do we need to know about the carbon cycle?

1. **How CO_2 enters the atmosphere.**

- **Combustion** – <u>any burning will put CO_2 back into the atmosphere</u>.

- **Respiration** – <u>all living organisms respire</u>. <u>Respiration releases CO_2 into the atmosphere</u>.

Note: remember decomposers respire!

2. **How CO_2 leaves the atmosphere.**

- **Photosynthesis** – <u>is the only process that removes CO_2 for the atmosphere</u>.

Feeding (assimilation): animals get their carbon by eating plants (or other animals). They digest the carbon compounds (like carbohydrates) and build them into their own bodies as fats and proteins.