

This is the **Foundation Separate** version — Higher Tier content has been removed.

Carbon cycles continuously between the atmosphere, living organisms, soil and oceans. The same carbon atoms have been recycled for billions of years.

- ONLY photosynthesis removes CO<sub>2</sub> from the atmosphere (fixes carbon into organic molecules).
- Respiration (all organisms): releases CO<sub>2</sub> back into the atmosphere.
- Decomposition: decomposers (bacteria and fungi) break down dead organisms → release CO<sub>2</sub> by respiration.
- Combustion (burning): releases stored carbon rapidly as CO<sub>2</sub> (wood, fossil fuels).
- Feeding: carbon passes along food chain as organisms eat one another.
- Fossil fuels: formed over millions of years from dead organisms. Burning releases ancient carbon not recently in the cycle.

### Key Terms

<b>Photosynthesis</b>	The ONLY process that removes CO <sub>2</sub> from the atmosphere — converts it to glucose
<b>Respiration</b>	Chemical process releasing CO <sub>2</sub> from organic molecules — in all living organisms
<b>Decomposition</b>	Breakdown of dead organic matter by decomposers — releases CO <sub>2</sub> and mineral ions
<b>Combustion</b>	Burning of organic material — rapidly releases stored carbon as CO <sub>2</sub>

■ **Exam Tip:** The most common mistake: saying that plants remove CO<sub>2</sub> from the atmosphere by respiration. NO — respiration ADDS CO<sub>2</sub>. Only PHOTOSYNTHESIS removes it. Also: decomposition and combustion are separate processes — both release CO<sub>2</sub>.