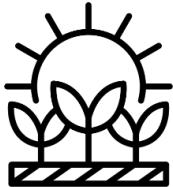


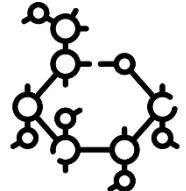
B15 Organisms and their environment

B15.1 Energy Flow

Energy source



- The **Sun** is the principal source of energy for all biological systems.
- Light energy from the Sun is captured by plants during **photosynthesis**.



Flow of energy through living organisms

- Producers (plants) convert light energy → **chemical energy** (in glucose).
- Consumers (animals) eat plants or other animals to gain this chemical energy.
- Decomposers (bacteria, fungi) break down dead material, releasing energy.
- At each stage, energy is lost as heat during **respiration**. Respiration is the process by which living cells release energy from food (mainly glucose) to power life processes.
- Respiration releases energy for growth, reproduction, movement of substances (e.g. water, minerals), and maintaining cells.
- Eventually, all energy is transferred to the environment as heat — it is not 'recycled'.

Energy flow summary

Sun (light energy) → Plants (photosynthesis + respiration) → Animals (feeding + respiration) → Decomposers (decay + respiration) → Environment (heat energy)