

### Physical Factors

Physical Factor	How it affects living Organisms
Water	<ul style="list-style-type: none"> <li>Crucial for any organisms' survival</li> <li>More organisms are usually present in locations where water is readily available</li> </ul>
Air	<ul style="list-style-type: none"> <li>Plants need carbon dioxide from the air to photosynthesise</li> </ul>
Light	<ul style="list-style-type: none"> <li>Green plants use light to make food via photosynthesis</li> <li>Most animals use light to see and aid movement for finding food and escaping danger</li> </ul>
Temperature	<ul style="list-style-type: none"> <li>Affects the activities and functioning of organisms</li> </ul>
Minerals	<ul style="list-style-type: none"> <li>Minerals are compounds containing elements essential for healthy growth e.g. nitrogen, phosphorus and potassium</li> <li>Used to make key substances e.g. chlorophyll, proteins and vitamins</li> </ul>
Acidity/Alkalinity (pH)	<ul style="list-style-type: none"> <li>Most organisms cannot survive in environments that are too acidic or too alkaline</li> </ul>

### Types of Adaptations

Type of Adaptation	Definition
Structural	Physical features of organisms to help it survive
Behavioural	Ways organism act in order to survive

### Levels of Organisation

Level	Definition
(simplest to most complex)	
Organism	Individual living thing
<b>Population</b>	A group of organisms of the same species living together in a particular habitat
<b>Community</b>	A group of populations that live and interact with one another in a particular habitat
<b>Ecosystem</b>	A community of organisms interacting with one another and the abiotic environment
Biosphere	The part of Earth that contains all ecosystems. It interacts with the atmosphere, hydrosphere and lithosphere.

### Relationships between Organisms

Relationship	Definition
(most to least harmful)	
Predator-prey	An organism (predator) feeds on another organism (prey)
Parasite-host	An organism (parasite) depends on another organism (host) for food, harming it and possibly killing it
Commensalism	Relationship between 2 organisms in which one organism benefits without harming the other
Mutualism	Relationship between 2 organisms in which both organisms benefit



### Energy flow

Property	Definition
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Direction	Energy flows in one direction in a food chain
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Energy transfer	(10%) Energy is transferred to the next trophic level
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Energy lost	(90%) Energy is utilised by the organism for cellular processes/lost as heat (from respiration), waste products (excretion and egestion) and uneaten parts
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### Obtaining Energy (Nutrient Cycles)

Method	Definition
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Respiration	Refers to living organisms breaking down food consumed to release energy
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Respiration Word Equation	Glucose + Oxygen → Carbon dioxide + Water + energy
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### Releasing Energy (Nutrient Cycles)

Method	Definition
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Photosynthesis	<ul style="list-style-type: none"><li>Plants containing chlorophyll will absorb carbon dioxide to manufacture food in the presence of light</li><li>Word equation: Carbon dioxide + Water + Light energy → Glucose + Oxygen</li></ul>
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Decomposers	Organism that feed on and break down dead matter into simpler substances that is returned to the environment
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Scavengers	Animals that feed on and break up dead organisms into smaller pieces
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