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Soluble, stable without enzymes, cannot cross membranes freely, releases a useful amount of energy, rapidly regenerated.

A nucleotide: adenine, ribose and three phosphate groups. Full name: adenosine triphosphate.

Hydrolysis of ATP to ADP + phosphate releases energy; making ATP from ADP + phosphate requires energy.

Active transport, synthesis of macromolecules (anabolism), movement of cells or chromosomes.

Aerobic: glucose + oxygen → carbon dioxide + water. Anaerobic: glucose → lactate.

A system for producing ATP within the cell using energy released from carbon compounds, mainly glucose and fatty acids.

Alkali absorbs CO₂, so oxygen uptake moves a liquid drop; distance × tube area ÷ time ÷ mass gives rate.

Anaerobic: cytoplasm only. Aerobic: starts in the cytoplasm, then mitochondria (which are required).

Cell respiration

Variables affecting respiration rate

	Temperature, oxygen concentration, substrate availability, type and activity of organism.