

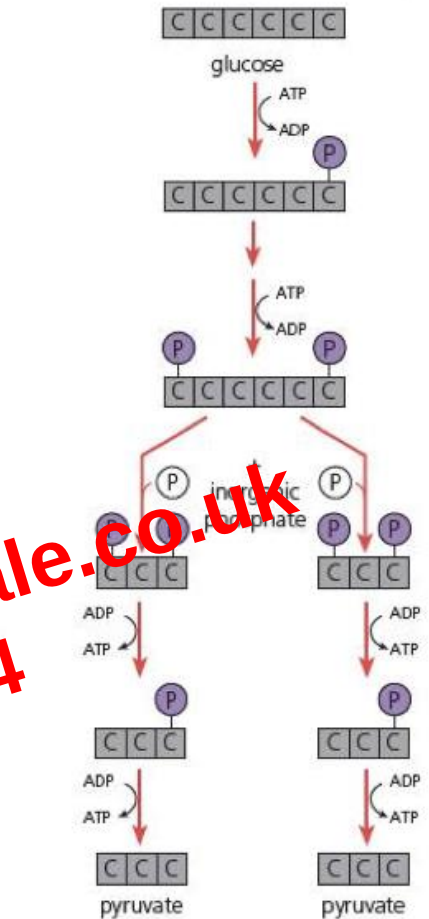
An oxidized substance is lower in energy stored within when compared to reduced substances (eg: CH_4 has more energy stored within than CO_2)

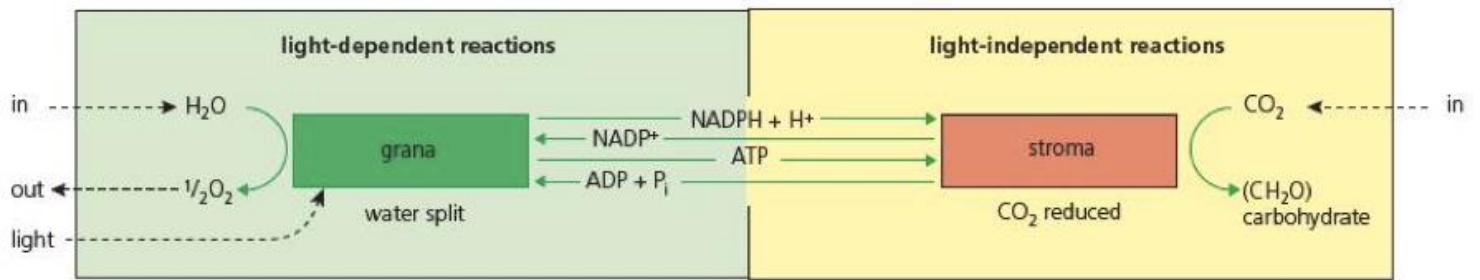
Overall Oxidation Involves: Adding oxygen, losing electrons, giving off energy, and removing hydrogen

Overall Reduction Involves: Removing oxygen, gaining electrons, taking in energy, and gaining hydrogen

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(2x triose phosphate)
 P_i
 $2 \times NAD^+$
 $2 \times NADH + H^+$
 hydrogens are removed and transferred to the hydrogen acceptor – the energy released is used to form ATP
 $4 \times ATP$
 3-6 non-sugar phosphate molecules are converted to pyruvate





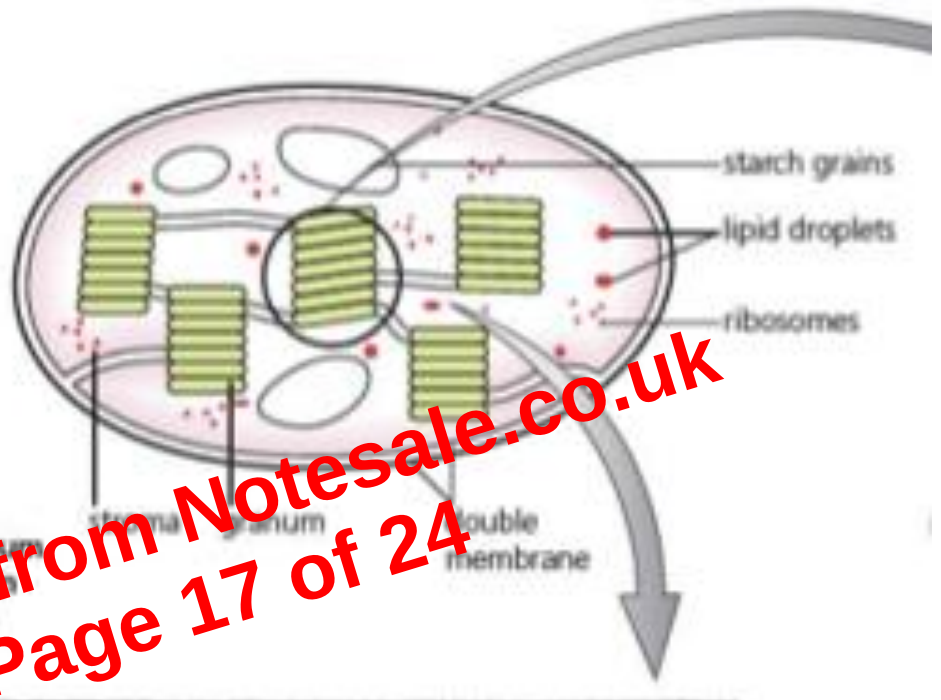
aerobic cell respiration.

■ Figure 8.16

The ultrastructure of a chloroplast

chloroplast (diagrammatic view)

electron micrograph of the grana showing thylakoid membranes in which chlorophyll pigments are held (x38 000)



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In Light independent reactions, the carbon dioxide is transformed into the carbohydrates, they occur in the stroma

The pathways of this occurring was investigated by a method called feeding experiments, in this experiment, the radioactively labeled carbon dioxide was fed to cells

It is taken up the same way and fixed the same way to produce products

A brief pulse of radioactive CO₂ was introduced and its progress monitored; the intermediates and products contained radioactive markers

Chromatography was used to isolate these compounds from the sampled cells

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