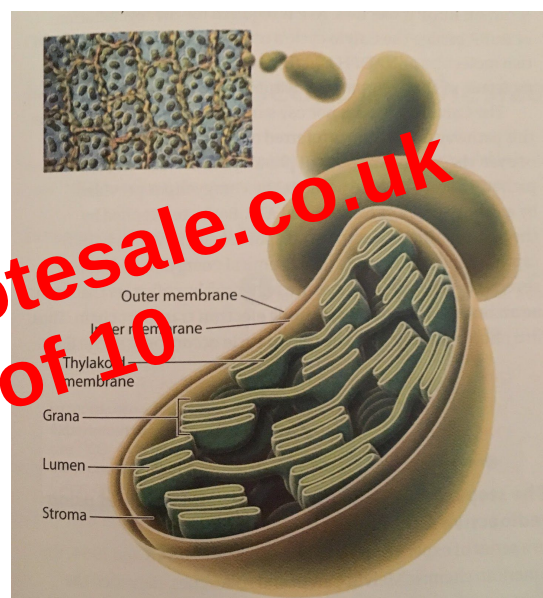
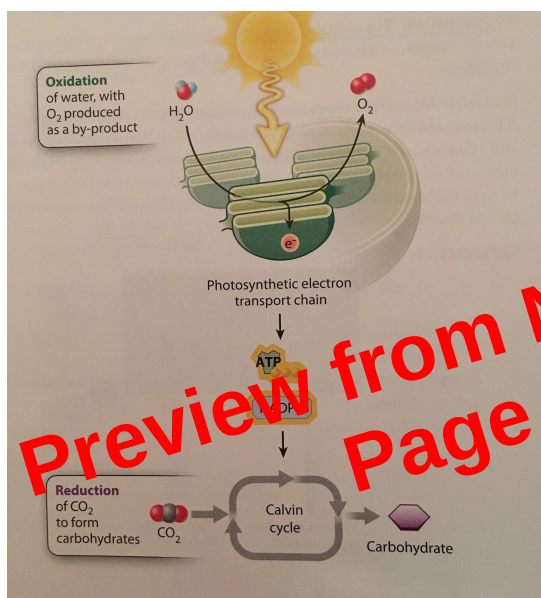


Surface Area to Volume Ratio

- Smaller cells have a larger SA:V ratio, which allows for more diffusion
- Affects heat exchange (ex. elephant's big ears)

Photosynthesis

- Photic zone- place where sunlight can penetrate to enable photosynthesis
- Pigment absorbs sunlight → sunlight energy drives e⁻ through transport chain → produce ATP and NADPH → synthesize carbs using CO₂ (Calvin cycle)



- Photosynthetic e⁻ transport chain is located in the thylakoid membrane
 - Grana- sacs connected by membrane bridges
 - Lumen- an enclosed compartment surrounded by the grana
 - Stroma- “cytoplasm” of the chloroplast
-
- Photosynthetic organisms need a constant supply of ATP to meet each cell's energy requirements
-
- Calvin cycle consists of 15 chemical reactions that synthesize carbs from CO₂
 - 1) Carboxylation- CO₂ is added to a 5-carbon molecule
 - 2) Reduction- energy and e⁻ transferred to the compounds formed in step 1
 - 3) Regeneration of the 5-carbon molecule