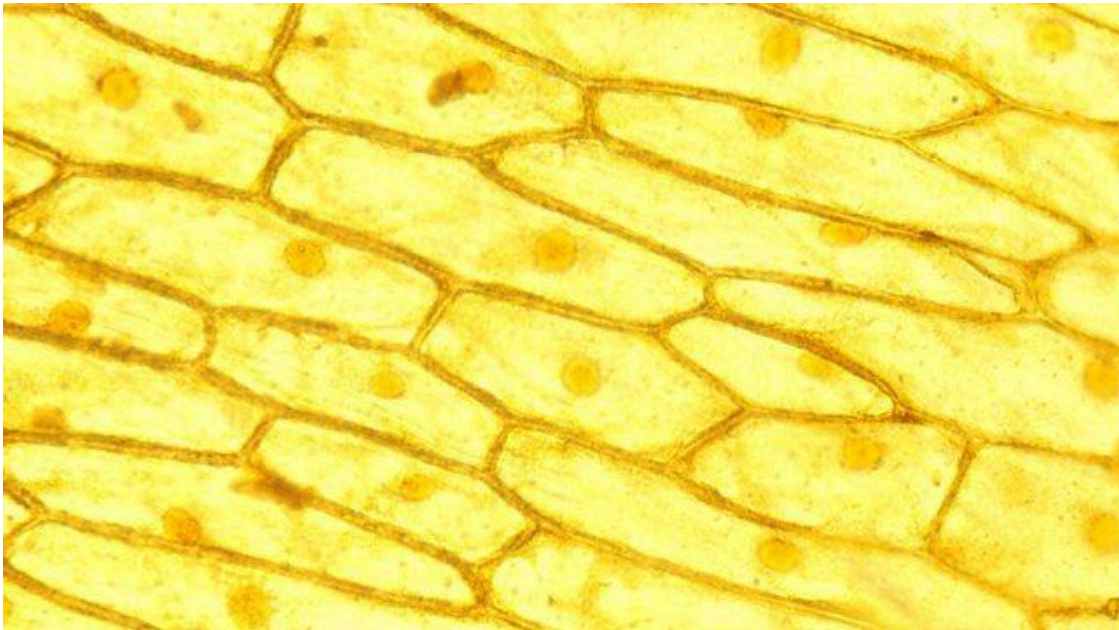






GCSE (9-1) Combined Science (Biology)

Key Concepts in Biology

Specification/Revision Checklist



Reference	Description	I understand this 	I need to check this 	I need help with this 	Revised 
1.1	Explain how the sub-cellular structures of eukaryotic and prokaryotic cells are related to their functions, including: (a) animal cells – nucleus, cell membrane, mitochondria and ribosomes (b) plant cells – nucleus, cell membrane, cell wall, chloroplasts, mitochondria and ribosomes (c) bacteria – chromosomal DNA, plasmid DNA, cell membrane, ribosomes and flagella.				
1.2	Describe how specialised cells are adapted to their function, including (a) sperm cells – acrosome, haploid nucleus, mitochondria and tail, (b) egg cells – nutrients in the cytoplasm, haploid nucleus and changes in the cell membrane after fertilisation, (c) ciliated epithelial cells.				
1.3	Explain how changes in microscope technology, including electron microscopy, have enabled us to see cell structures and organelles with more clarity and detail than in the past and increased our understanding of the role sub-cellular structures.				
1.4	Demonstrate an understanding of number, size and scale, including the use of estimations and explain when they should be used.				
1.5	Demonstrate an understanding of the relationship between quantitative units, including: (a) milli (10 ⁻³), (b) micro (10 ⁻⁶), (c) nano (10 ⁻⁹), (d) pico (10 ⁻¹²) (e) calculations with numbers written in standard form				
1.6	<i>Core Practical: Investigate biological specimens using microscopes, including magnification calculations and labelled scientific drawings from observations.</i>				

Checklist. I can

1.7	Explain the mechanism of enzyme action including the active site and enzyme specificity				
1.8	Explain how enzymes can be denatured due to changes in the shape of the active site.				
1.9	Explain the effects of temperature, substrate concentration and pH on enzyme activity.				
1.10	<i>Core Practical: Investigate the factors that affect enzyme activity.</i>				
1.11	Demonstrate an understanding of rate calculations for enzyme activity.				
1.12	Explain the importance of enzymes as biological catalysts in the synthesis of carbohydrates, proteins and lipids and their breakdown into sugars, amino acids and fatty acids and glycerol				
1.15	Explain how substances are transported by diffusion, osmosis and active transport.				
1.16	<i>Core Practical: Investigate osmosis in potatoes.</i>				
1.17	Calculate percentage loss of mass in osmosis				