

External Standard: 2.4 Life Processes

Keywords	Success Criteria - I am able to:
Cell wall Cell membrane Phospholipid Chloroplast Cytoplasm Mitochondria Nucleus Vacuole Organelle Semi-permeable Passive transport Active transport Diffusion Facilitated diffusion Osmosis Channel proteins Carrier proteins SA : V ratio Concentration gradient Tonicity Hypotonic Isotonic Hypertonic Plasmolysed Turgid	Cell Structure & Transport 1. Draw and label each main organelle, and describe their function. 2. Communicate the similarities and differences between plant and animal cells. 3. Describe the composition of the cell membrane, and how it acts as a semipermeable barrier. 4. Discuss diffusion in the context of different cellular processes. 5. Describe the importance of a high SA : V ratio, in terms of cell processes. 6. Compare the similarities and differences between diffusion, facilitated diffusion, osmosis, and active transport. 7. Communicate different examples of cell transport in plants and animals.
Enzyme Substrate Product Denature Co-factor Co-enzyme Catalyst Active site Activation energy Lock & key model Induced fit model Limiting factor Inhibitor/poison Temperature pH Hydrogen bond Disulfide bridge Enzyme concentration Substrate concentration	Enzymes 8. Draw and explain the structural features of enzymes. 9. Communicate how enzymes speed up reactions. 10. Describe the 'Lock & Key' and 'Induced Fit' models in terms of function. 11. Discuss how certain factors affect enzyme activity. 12. Discuss how denaturation happens and its consequences on enzyme activity.
Grana Thylakoid Stroma Photosynthesis Light-dependent reaction Light-independent reaction Calvin cycle Glucose Chlorophyll NADPH ATP Stomata Palisade cells Spongy cells Waxy cuticle Cristae Matrix ATP NADH FADH₂ pyruvate Energy-carrying molecule Aerobic respiration Anaerobic respiration Glycolysis Krebs cycle Lactic acid Electron transport chain	Photosynthesis & Respiration 13. Explain the purpose of photosynthesis in words and equations. 14. Communicate where and how photosynthesis happens in chloroplasts, in terms of light-dependent and light-independent reactions. 15. Discuss how the internal structures of a leaf are adapted for photosynthesis. 16. Discuss the factors that affect the rate of photosynthesis. 17. Explain the purpose of cellular respiration in words and equations. 18. Communicate where and how aerobic and anaerobic respiration happens in terms of glycolysis, Krebs cycle, and electron transport chain. 19. Emphasise the difference between aerobic and anaerobic respiration. 20. Compare the number and structure of mitochondria in specialised cells. 21. Discuss the factors that affect the rate of respiration. 22. Describe the similarities and differences between photosynthesis and respiration.

Polymer Monomer Anti-parallel Leading strand Lagging strand Parent strand Daughter strand Semiconservative replication Interphase Okazaki fragment Mitosis Metaphase plate/Equator Chromatin Chromosome Sister chromatid Centromere Homologous Spindle fibres Centrosome Nuclear membrane Nuclear pore	The Cell Cycle (includes DNA Replication & Mitosis) 22. Communicate the key stages of the cell cycle in words and a diagram. 23. Discuss the importance of DNA replication to the overall functioning of cells and organisms. 24. Discuss DNA replication in terms of where, when, and how it occurs. 25. Discuss the factors affecting the rate of DNA replication. 26. Describe mitosis and its purpose. 27. Communicate the key stages of mitosis. 28. Explain how the type of cell affects the rate of mitosis. 29. Factors that affect the rate of mitosis.
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