

High Tunstall College of Science Curriculum Intent

Subject: Separate Biology Year: 10

Thread 1—Cells and organisation Part 1



	Biology Thread 1	Progress		
Topic	Key ideas	R	A	G
Cells and organisation	I can review cells, giving names of organelles and their functions			
	I can describe how to use a microscope and can calculate magnification			
	I can explain factors that affect the rate of diffusion			
	I can describe cell differentiation and apply my understanding of cell specialisation to unfamiliar contexts			
	I can explain what chromosomes are			
	I can explain the process of mitosis			
	I can evaluate the use of stem cells			
	I can explain how we can grow microorganisms in the laboratory			

Lesson	Learning Focus	Assessment	Key Words
1	What can I remember about cells?	SOLO taxonomy tasks	Prokaryote, eukaryote, organelle, cell, nucleus, cell membrane, cytoplasm, cell wall, chloroplasts, vacuole
2—3	RPA microscopy	Completion or RPA and conclusions made	Microscope. Magnification , image size, actual size
4	What is diffusion and what affects it?	SOLO taxonomy tasks	Diffusion, temperature, surface area , concentration
5	What is cell differentiation and specialisation?	Explanation of cell differentiation and completion of application task looking at unfamiliar specialised cells	Differentiation , specialisation, sperm, ovum, muscle, neurone, palisade, root hair, red blood cell
6	How do cells divide?	Identifications of chromosomes and completion of mitosis task	Chromosome , DNA, nucleus, mitosis
7	What are stem cells and how could they be used?	Extended writing task summarising potential benefits and drawbacks of using Stem cells	Undifferentiated, stem cells
8	RPA Microorganisms	Completion of RPA and conclusion drawn	Microorganisms, sterile, agar

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Thread 1—Cells and organisation Part 2



	Biology Thread 1	Progress		
Topic	Key ideas	R	A	G
Cells and organisation	I can analyse and evaluate data regarding health issues			
	I can relate lifestyle choices to non-communicable disease			
	I can explain how to complete food tests			
	I can identify plant tissues and explain how the leaf is adapted to function			
	I can identify plant organ systems and their roles in the plant			
	I can explain how enzymes breakdown food			
	I can investigate factors that affect enzyme function			
	I can review the structure of the heart			
	I can compare and contrast arteries, veins and capillaries			
	I can identify components of the blood and give the importance of these			

Lesson	Learning Focus	Assessment	Key Words
9	What are different health issues?	Analysis of graphs considering different health issues and causal factors	Analysis , evaluate, trends, casual factors
10	How can life style choices affect health?	Bronze, silver, gold tasks looking at the relationship between lifestyle choices and non-communicable disease	Non-communicable, smoking, obesity, exercise, diet
11	RPA food tests	Completion of RPA and conclusions made	Starch, iodine, sugar, Benedicts, protein, biuret, fat, Sudan III, ethanol
12	What are plant tissues?	Extended writing looking at how the leaf is adapted	Leaf, chloroplasts , palisade cells, stomata, guard cells, epidermis
13	What are plant organs?	Completion of exam questions linked to plant organs	Xylem, phloem, transpiration, translocation
14	Why are enzymes important in digestion?	Completion of summary task reviewing the digestive system in full	Enzyme , active site, lock and key, denature
15	RPA enzymes	Completion of RPA and conclusions made	Enzyme, active site, lock and key, denature. optimal
16	Are all blood vessels the same?	Comparison of arteries, veins and capillaries	Vein, artery, capillary
17	What is blood made of?	Differentiated tasks looking at the blood and it's components	Red blood cells , white blood cells, plasma, platelets