Downloaded from Stanmorephysics.com

Life Sciences - Grade 10 - CAPS (2025)

Annual Teaching Plan - TERM ONE (11 weeks) - 52 DAYS (15 Jan – 28 March)

Week Number (Week Ending)	Completion Date		INFORMAL ASSESSMENT	culum	Signature Date	FORMAL ASSESSMENT - SBA	
, <u>-</u> ,			TASK/ACTIVITY	тіск	% Curriculum Coverage	SMT Sig and	- JDA
Week 1 3 days		Orientation to Life Sciences: (Pre-Knowledge - SCIENTIFIC SKILLS LINKED TO GRADE 9)	Activity Draw, line graph, bar graph, histogram and pie charts Activity				Task 1: Practical (Minimum 30 marks)
(17/01)		How science works based on knowledge and scientific skills, careers and subject combinations Graphs, Calculations: Percentage, Percentage increase/decrease, Average Scientific method: Planning steps, identification of variables, ensuring validity and reliability.	Interpretation of graphs, identify trends/relationships between variables. Activity Identification of variables Activity Differentiate between the planning and conducting steps of the investigation. Activity		7%		Term Weighting – 25% Task 2: March Controlled Test (1 hour - Minimum 50 marks)
		Brief overview of the history of microscopy: Light and Electron microscope Scientific diagrams Calculations: Actual size, Magnification	Explain and demonstrate how a light microscope works using a diagram with labels and functions Activity Explain and demonstrate how a light microscope works using a diagram with labels and functions INFORMAL TEST: Life sciences Skills and Investigations	n	0.00706		Term weighting – 75%

Week 2 5 days (24/01)	nloaded f	(Pre-Knowledge - MOLECULES FROM NATURAL SCIENCES GRADES 8 AND 9) Molecules for life: Organic molecules • made up of C, H, O and N, P. • Cells are made up of proteins, carbohydrates, lipids, nucleic acids and vitamins. (Only basic structural detail required) Inorganic compounds • Water: 2H and 1O • Minerals: e.g. Na, K, Ca, P, Fe, I, nitrates, phosphates. Macro and micro elements. • Main functions and deficiency diseases Organic compounds • Carbohydrates- Monosaccharides (single sugars) e.g. glucose, fructose; disaccharides (double sugars) e.g. sucrose, maltose; polysaccharides (many sugars) e.g. starch, cellulose, glycogen	Activity Construct/ draw models of water using coloured paper, and functions of water and the role of fertilisers in eutrophication. Activity Construct/ draw models of simple and more complex molecules (organic compounds) using coloured paper. (Learners need to know only basic structural details.) Activity State building units (monomers) and functions of carbohydrates and lipids. Draw a table of glucose and starch food tests showing colour changes	21%	
		INVESTIGATIONS: Food tests for glucose and starch			

days characteristics of the state of the st	Activity State the building units (monomers) and functions of proteins. Activity Using data and interpreting graphs showing the influence of temperature and pH on enzyme action. Diagram explaining the lock- and key model Activity Tabulate the different vitamins, their functions, source and deficiency diseases. Activity Compare Recommended Daily Allowance (RDA) with usual diet of individual learners for one week. Draw a pie chart of the food types listed in learners' diet and discuss implications of the usual diet of learners. INFORMAL TEST: Chemistry of Life		34%			
--	--	--	-----	--	--	--

Week 4 5 days (07/02)	Cells: The Basic Unit of Life (Pre-Knowledge - CELL STRUCTURE FROM GRADE 9) Cell structure • Molecular make-up: • Cells are mostly made of proteins, carbohydrates, lipids, nucleic acids and water Cell structure and function: roles of organelles • Cell wall-support structure in plant cells only. • Cell membrane- boundaries and transport, movement across membranes: diffusion, osmosis and active transport INVESTIGATION Use a microscope or micrographs to observe and draw the structure of a: plant cell (wet mount of onion epidermis), and animal cell (cheek cells) Cell structure and function: Roles of organelles	Activity Calculate magnification of drawing by measuring the field of view under a microscope OR Calculate the size of specimen on a micrograph using the scale line provided. Activity Explain and demonstrate how a light microscope works using a diagram with labels and functions Activity Activity	47%	
Week 5 5 days (14/02)	Nucleus, chromatin material, nuclear membrane, nucleopores, nucleolus, the control centre, heredity. Differences between prokaryotes and eukaryotes Cytoplasm-storage, circulation of materials	Make labelled drawings of plant and animal cell. State the functions of the various cell components Activity		
	Mitochondria-release of energy during cell respiration. Ribosomes-protein synthesis Endoplasmic reticulum (rough and smooth) transport systems Golgi body-assemble secretion	Tabulate the different organelles indicating the location, structure (diagrams), and function.	60%	

Week 6 Downloaded 5 days (21/02)	Cell structure and function: roles of organelles One Planta reductive prints structure food regiments Vacuole, lysosomes, vesicles-storage, digestion, osmoregulation. Relate structure and location of organelles to their functions. Cells differ in size, shape and structure in order to carry out specialized functions (link to tissues) Differences between plant and animal cells INVESTIGATION Investigate diffusion and osmosis	Activity Compare the structure of plant and animal cells by using any visible example (e.g., a model, diagrams or poster including organelles). Activity Draw a table to indicate the differences between these cells INFORMAL TEST: Cells: Basic Unit of Life	73%	
Week 7 5 days (28/02)	Chromosomes: in nuclei of all cells, two chromatids, centromere Cell Division: Mitosis The Cell cycle including mitosis: Interphase, mitosis (with names of phases) cytokinesis, growth Role of mitosis: growth and repair. Reproduction in some simple organisms Continuous process of mitosis: the division of a cell to form two identical cells (Simple description with diagrams to show chromosome changes so that one parent cell forms two identical daughter cells) Difference in telophase between plant and animal cells	Activity Describe the events of the various phases of mitosis Make a labelled drawing of selected phases of mitosis Activity Interpret the phases and events of mitosis from given diagrams Activity Use micrographs to observe and draw the different phases with descriptions of each phase. Activity Indicate the difference in telophase between plant and animal cells. INFORMAL TEST: Cell Division: Mitosis	86%	

Week 8 5 days (07/03)	• Causes of cancer, Tre • Medical biotechnology e.g., radiotherapy, chemoth	patments of cancer	Activity Research and Present information on ONE of the cancers. This must include causes, prevalence and creatment.	100%	
Week 9 5 days (14/03)	Revision and Assessment	t A	Activities for Revision and Assessment		
Week 10 4 days (20/03)	Assessment				
Week 11 5 days (28/03)	Assessment				
Term Ends					

Downloaded from Stanmarephysics com - CAPS (2025)

Annual Teaching Plan - TERM TWO (11 weeks) - 51 DAYS (08 April – 27 June)

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMENT TASK/ACTIVITY	тіск	% Curr icul um Cov erag e	SMT Signatu re and Date	FORMAL ASSESSMENT - SBA
Week 1 4 days (11/04)		(CAPS P 26) Plant Tissues (Pre-knowledge: Plant Tissues, organelles, Movement across membranes) Introduce concept of a tissue as a group of similar cells adapted for a particular function: cell differentiation Plant tissues Emphasis on the relationship between basic structure and function. Differentiate between meristematic and permanent tissue Permanent tissue: epidermis (root hair, guard cells) parenchyma collenchyma sclerenchyma vascular tissue: xylem & phloem	Activity Examine and identify the following plant tissues: epidermis (root hair, guard cells) parenchyma, collenchyma and sclerenchyma using micrographs or posters. Activity Tabulate the different tissues by drawing the tissue to show specialised structure and functions		10%		Task 3: Assignment (Minimum 50 marks) Term Weighting – 25% Year Weighting – 20% Task 4: June exam (2 ½ hours – 150 marks) Term weighting – 75% Year weighting – 20%

Week 2 Downloaded	19459728Flentmersephysics.com	Activity		Ù.
4 days (17/04)	Anatomy of dicotyledonous plants: root and stem: distribution of different tissues structure of cells in different tissues (link to	Draw cross sections of root and stem (line diagram)		
	plant tissues) Organs consist of a number of tissues e.g., leaf structure. Leaf structure: • Cross section of a dicotyledonous leaf to demonstrate and • explain its structure in terms of its functions i.e., photosynthesis, gas exchange and transport. • Link with plant tissues, appropriate cell organelles, • movement across membranes and movement of molecules into, through and out of the leaf.	INFORMAL TEST: Plant Tissues, organelles, Movement across membranes Activity Observe and draw a section of a dicotyledonous leaf. Labels and functions. Options: use prepared slides of cross section of a leaf or use micrographs.	22%	
Week 3	(CAPS p 29)	Activity		
4 days (25/04)	Support and Transport systems in Plants Transpiration Relationship between water loss and leaf structure Factors that affect the rate of transpiration: temperature, light intensity, wind and humidity INVESTIGATION Design investigations to discover the effect of temperature, light intensity and humidity on transpiration rate (using a simple potometer).	Relationship between water loss and leaf structure Activity How to conduct a scientific investigation following the different steps. INFORMAL TEST: Diffusion and Osmosis, Plant Tissues	32%	

Week 4 5 days (09/05)	Downloaded	Uptake of water and minerals into xylem in from seanmore physics.com Transport of water and minerals to leaves; Translocation of manufactured food from leaves to other parts of plant. INVESTIGATION Investigate water uptake through the roots and the movement of water through the xylem. (Use Impatiens if possible)	Activity Describe the translocation of organic substances from the leaves to other parts of the plant. (Diagram) Activity Describe the uptake and movement of water through a plant. (Diagram) Activity Describe the translocation of organic substances from the leaves to other parts of the plant. (Diagram)		46%		
-----------------------------	------------	---	---	--	-----	--	--

Week 5 5 days (16/05)	(CAPS p 28) Animal Tissues Predigate Pasin Cell Stractuse) C.S. Com Animal tissues: 4 basic types Epithelial (squamous, cuboidal, columnar and ciliated) Connective (blood, cartilage, tendons, ligaments, bone) Muscle (skeletal, smooth and cardiac referring to voluntary and involuntary action) Nerve tissue (sensory-, motorand interneurons) Relationship between structure and function [No detail required – some tissues, e.g., blood and nerves in the reflex arc, will be covered in more detail in relevant sections]	Examine and identify the following animal tissues: Epithelial, connective, muscle, nerve tissue using micrographs or posters. Activity Tabulate different tissues by drawing the tissue to show specialised structure and functions.	59%	
Week 6 5 days (23/05)	Musculoskeletal system Gr 8, Animal Tissues Human skeleton: • the axial skeleton: mention of facial bones, cranium, foramen magnum, palate and jaws • appendicular skeleton The pectoral girdle and upper limbs The pelvic girdle and lower limbs Functions of skeleton: • Movement • Protection • Support • Storage of minerals • Hearing	Activity Observe and label the human skeleton with the main functions of the skeleton(model or photographs) Activity Different tissues by drawing the tissue to show specialised structure and functions. Activity Observe and draw a typical long bone: Longitudinal section INFORMAL TEST: Musculoskeletal system, Animal Tissues	72%	

Week 7 5 days (30/05)	(Pre-knowledge: Circulatory System Gr 9, Animal Tissues) Transport system/ circulatory system Blood circulation system Pulmonary and systemic (double, closed) circulatory systems • heart and associated blood vessels heart: • internal and external structure related to functioning, • cardiac cycle: • blood flow through the heart INVESTIGATION Dissection of mammal heart (sheep, cow or pig) obtained from a butchery, Identify chambers, valves, muscle, blood vessels. (Supported by worksheet.)	Activity Draw and label (OR give a diagram of) a blood circulatory system to indicate a double & closed system. Schematic representation of the pulmonary and systemic circulation. Activity The external structure of the heart including associated blood vessels with labels.	86%	
Week 8 5 days (06/06)	Direction of blood flow: difference between oxygenated and deoxygenated blood in different parts of the system (diagram or schematic drawing) lungs and pulmonary system, associated blood vessels major organs and systemic system: associated major blood vessels of brain, small intestine, liver and kidney Blood vessels: structure and functioning of arteries, veins with valves and capillaries. INVESTIGATION In pairs, measure the pulse of one learner before and after exercise. Record, interpret and explain data presented as a graph.	Activity The internal structure of the heart. Use different coloured arrows to indicate the flow of blood through the heart. Activity Use diagrams to identify the phases of the cardiac cycle (systole & diastole). Activity Tabulate and draw with labels and functions to indicate the different types of blood vessels and functions. INFORMAL TEST: Circulatory System, Animal Tissues	100%	

Week 9 5 days (13/06)	- Downloaded	Revision and Assessment physics.com	Activities for Revision and Assessment		
Week 10 4 days (20/06)		Revision and Assessment	Activities for Revision and Assessment		
Week 11 5 days (27/06) Term Ends		Assessment			

Downloaded from Stanmorephysics.com Life Sciences - Grade 10 - CAPS (2025)

Annual Teaching Plan - TERM THREE (11 weeks) - 53 DAYS (22 July - 03 October)

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMENT		ш	are and	FORMAL ASSESSMENT - SBA
	TASK/ACTIVITY	TICK	% Curriculum Coverage	SMT Signature Date			
Week 1 4 days (25/07)		(CAPS p 36) History of Life on Earth Life's history: Change throughout the history of life on Earth (Pre-knowledge: Biosphere and Diversity gr 7) Different representations of the history of life on earth. The relationship to Changes in the composition of the atmosphere (e.g., Increases in the levels of oxygen) Changes in the climate (e.g., Ice ages) Geological events (e.g., movements of continents) and their effect on the distribution	Provide the correct term for various phrases/definitions related to Diversity, Change and Continuity Describe factors that have led to changes in life forms that have existed over millions of years Activity Construct a timeline showing the history of life on Earth. The timeline should show all the key events from the emergence of the earliest life forms to the present day to emphasise the long history of life.		10%		Task 5: Practical (Minimum 30 marks) Term Weighting – 25%
		of living organisms (biogeography)					Task 6: September Controlled Test (1 hour - 50 marks) Term weighting – 75%

Week 2 5 days (01/08)	Downloaded	Geological timescale: Meaning and use of timescales (details not to be memorised) The three eras: Paleozoic, Mesozoic and Cenozoic. Each era divided into periods (Names of periods)	Activity Use a geological time scale to test the understanding of the three eras and the periods with emphasis on the Cambrian explosion		
		not to be memorised) Cambrian explosion: Origins of early forms of all animal groups. Life-forms have gradually changed to become present life forms. In the last four million years significant changes have occurred in species occurring in Africa (e.g., humans)	Activity Interpret various forms of the geological time scale and representations of the history of life on Earth INFORMAL TEST: History of Life on Earth	23%	

Week 3		Mass extinctions:	Activity	1		
5 days (08/08)	Downloaded	which are particularly important: • 250 mya (resulted in the extinction of about 90% of all life on Earth) and	Research the "missing link" between dinosaurs and birds (Archaeopteryx) Research the			
		 65 mya (resulted in the extinction of many species, including the dinosaurs). The rate of extinction on the Earth at present is higher than at any time in the past. The present time has been called the sixth extinction. 	"link" between fish and amphibians (Coelacanth). Present a verbal or written report. Activity Various hypotheses have been proposed for the extinction, 65 million years ago, such as the meteorite			
		Fossil formation and methods of dating e.g., radiometric dating and relative dating	impact theory and the volcanism (in India) theory. Select ONE of these hypotheses and describe the evidence scientists have gathered in support of it. (Nature of science Activity Describe fossil formation and interpretation of data based on methods of dating. Activity		36%	
			Examine fossils at a museum or fossil site or look at photographs of fossils. Optional: Use plaster of Paris to construct a "fossil".			

Downloaded from Stanmorephysics.com

Week 4	(CAPS p 33) Biosphere and Ecosystems Biosphere Concept of the biosphere. Inter-	Activity Draw a mind map to indicate the		
5 days	connectedness with and components of global ecosystem:	concept of the biosphere and the components of global ecosystems		
(15/08)	 hydrosphere, lithosphere, atmosphere Biomes	(spheres). Activity Use a map of Southern Africa to indicate the different terrestrial and		
	Terrestrial and aquatic biomes of southern Africa and	aquatic biomes.		
	 give a general description of how climate, soil and vegetation influence the organisms found in the Biomes. Location of the different biomes in South Africa 	Activity Indicate the location, climate, soil, and vegetation of each of the biomes and how climate influence vegetation in each biome. Activity	49%	
	Concept of environment to show human activities in and interactions	Provide the correct term for various phrases/definitions related to Environmental Studies		
	with the natural environment Abiotic and biotic factors: • effects on the community.	Activity Interpret data/draw graphs showing the effect of the abiotic factors on living		
	Ecosystems The concept of ecosystem, structure and ecosystem functioning:	organisms		

Week 7		Nutrient Cycles:	Activity		
5 days	Downloaded	Fipvoriarts the ration of the states com water	Describe nutrient cycles and give examples		
5 days (05/09)			give examples Activity Describe how water, oxygen, carbon and nitrogen is cycled through an ecosystem Activity Use flow charts to illustrate the 4 nutrient cycles Interpret flow diagrams based on the water, oxygen, carbon and nitrogen cycles Activity Define ecotourism. Describe positive and negative influences that humans may have on the environment Activity Describe the advantages and disadvantages of ecotourism INFORMAL TEST:	87%	
			Biosphere and Ecosystems		

5 days (12/09) Pasification sphemesine physics com a way of organising biodiversity. Brief history of classification: Scientists attempt to classify organisms based on shared features. As information increases classification changes. One of the currently accepted classification systems is the five kingdom system; Animalia, Plantae, Fungi, Profista and	Activity Describe Principles of classification. Grouping everyday objects on the basis of shared similarities. A simple nested hierarchy. Activity Classify a selection of familiar organisms into groups based on visible evidence. Use keys and identification guides. INFORMAL TEST: Biodiversity and Classification	100%	
---	--	------	--

Week 9 5 days (19/09)	Downloaded	Revision and Assessment from Stanmorephysics.com	Activities for Revision and Assessment	,	
Week 10 4 days (26/09)		Revision and Assessment	Activities for Revision and Assessment		
Week 11 5 days (03/10)		Assessment			

Downloaded from Stanmarephysics com - CAPS (2024)

Annual Teaching Plan - TERM FOUR (09 weeks) 43 - DAYS (13 October - 10 December)

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMENT		:ulum Je	SMT Signature and Date	FORMAL ASSESSMENT - SBA
; 0,			TASK/ACTIVITY	TICK	%Curriculum Coverage	SMT Sig and Dat	AGGEGOMENT - GBA
Week 1							
5 days (17/10)		CAPS p 35) Biodiversity and Classification Main groupings of living organisms are bacteria, protests, fungi, plants and animals.	Activity List the distinguishing characteristic of each of the five kingdoms. Use biological keys to identify various organisms		100%		Task 7: Final Examinations Paper 1 (2 ½ hours - 150 marks)
		Diagnostic features of each of the following:	Activity Explain the need for classification and describe the classification system used today INFORMAL TEST: Biodiversity and Classification		100%		Paper 2 (2 ½ - 150 marks) Exam weighting – 60% SBA Year weighting – 40%
Week 2		Revision Paper 1 and 2	Revision Paper 1& 2				
5 days (24/10)							
Week 3		Revision Paper 1 and 2	Revision Paper 1 & 2				1
5 days							
(31/10) Week 4		Revision Paper 1 and 2	Revision Paper 1 & 2	1			
5 days			· · · · · · · · · · · · · · · · · · ·				
(07/11)							1

Downloaded from Stanmorephysics.com

Week 5-10 31 days	FINAL EXAMINATION (Two Papers)	
(03/11– 11/12)	Cognitive levels: Knowing science - 40% Understanding science- 25% Applying scientific knowledge - 20% Evaluating, analysing and synthesising science knowledge.	owledge - 15%
	Degrees of difficulty for examination and test q Easy - 30% Moderate - 40% physics com Difficult - 25% Very difficult - 5%	uestions:
	PAPER 1 Marks: 150 Time: 2½ hours Learners must answer all 3 questions Topics and marks Chemistry of life – 33 Cells: Basic units of life- 19 Cell division (mitosis) – 19 Plant and animal tissues – 28 Plant organs – 9 Support and transport systems: Plants – 23 Support systems: Animals – 19	PAPER 2 Marks: 150 Time: 2½ hours Learners must answer all 3 questions Topics and marks: Transport systems in mammals – 32 Biosphere to ecosystems – 54 Biodiversity and classification – 21 History of life on earth – 43