Downloaded from Stanmorephysics.com Life Sciences - Grade 11 – CAPS (2024)

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

Number (g)	Completion Date	Topic for the week	INFORMAL ASSESSMENT		Curriculum Coverage	SMT Signature	FORMAL ASSESSMENT - SBA
Week Nu (Week Ending)	Com		ACTIVITY /TASK/ INFORMAL TESTS	тіск	% Cur	Sign	
Week 1 3 days (17/01)	8 1	Baseline assessment based on Grade 10 topics needed for Term 1 e.g. classification schemes, the nitrogen cycle. Revise scientific skills.			7.89 %		Task 1: Practical (Minimum 30 marks) Term Weighting –25%
Week 2 5 days (24/01)		Micro- organisms: basic structure and general characteristics of the following groups: viruses bacteria Protista fungi. The roles that these groups play in maintaining balance in the environment and web of life.	Activity Table on micro- organisms: names, basic structures, characteristics and diagrams. INFORMAL TEST: Life Sciences skills, values, investigations		21.05%		Task 2: March Controlled Test (1 hour - 50 marks) Term weighting – 75%
Week 3 5 days (31/01)		Symbiotic relationships of bacteria such as nitrogen fixing bacteria in plants and <i>E. coli</i> in the human intestine. The effect and management of one disease from each of the four groups: - viruses (rabies, HIV/AIDS, influenza) bacteria (blight, cholera, tuberculosis, anthrax) protists (malaria) - fungi (rust, thrush, ringworm, athlete's foot). INVESTIGATION Growing cultures on agar plates, or bread-mould (fungus) on bread.	Activity Symbiotic relationships of nitrogen fixing bacteria in plants and <i>E. coli</i> in the human intestine Activity A table of ONE disease from each group indicating effect and management.		% 34.21		Tom Hoighting 170%

Week 4	Immunity, including plants and animals' immune	Activity		
5 days Down (07/02)	chepenses against the infecting micro diganisms. The use of drugs e.g., antibiotics; effect on micro-Organisms. Vaccinations (discuss briefly). The use of micro- organisms to produce medicines (e.g., insulin and antibiotics). Traditional technology to produce, e.g., beer, wine and cheese.	Activity Effect of antibiotics on micro- organisms; use of micro- organisms to produce medicine; traditional technology to produce e.g. beer, wine and cheese. INFORMAL TEST: Biodiversity and classification of micro-organisms	47.37%	
Week 5 5 days (14/02)	Grouping of Bryophytes and Pteridophytes Grouping of Gymnosperms and Angiosperms. Use simple diagrams to identify an example of each group and a comparative table to demonstrate the presence /absence of following in the four groups: vascular tissue (xylem and phloem), true leaves and roots, seeds or spores fruit, decreasing dependence on water for reproduction from Bryophytes to Angiosperms. Asexual and sexual reproduction, name advantages and disadvantages of each	Activity Phylogenetic trees and cladograms showing the evolutionary history of the four plant groups and major structural changes in their history of development. Activity Table indicating the differences between Bryophytes, Pteridophytes, Gymnosperms and Angiosperms in terms of vascular tissue, leaves and roots, seeds or spores and fruit also including drawings of the macroscopic parts: Bryophytes: moss plant Pteridophytes: rhizome, frond with sori gymnosperms: needles, cones and seeds; and Angiosperms: flower, fruit and seeds. Activity Table indicating the differences between asexual and sexual reproduction showing advantages and disadvantages INFORMAL TEST: Biodiversity of Plants	60.53%	
Week 6 5 days	Flowers as reproductive structures Adaptations for pollination through (different pollinators) wind, insects and birds (South	INFORMAL TEST: Flowers as reproductive		
(21/02)	African examples only) differences and similarities INVESTIGATION Dissect an example of each of the following types of flowers: wind pollinated, insect pollinated and bird pollinated. Record observations in comparative Table	structures	73.69%	

Week 10 4 days	Revision and Assessment nloaded from Stanmorephysics.com	
20/06		
Week 11	Revision and Assessment	
5 days		
(28/03)		
Term End		

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Annual Teaching Plan - TERM TWO (11 weeks) - 52 DAYS (08 April – 27 June)

Week Number (Week Ending) Completion Date		Topic for the week	INFORMAL ASSESSMENT		Curriculum Coverage	SMT Signature and Date	FORMAL ASSESSMENT - SBA
Week (Week Endin Com	Com		ACTIVITY /TASK/ INFORMAL TESTS	тіск	Co Co	Sig	
Week 1 4 days (11/04)		Revise basic cell structure with focus on the chloroplast, leaf structure, mitochondria and plant and animal tissues from grade 9 and grade 10. Revise basic photosynthesis and respiration from grade 8.	Activity Draw and label diagrams of the leaf. Indicate the functions.		7.14%		Task 4: Assignment (Minimum 50 marks) Term Weighting –
Week 2 4 days (17/04)		Process of photosynthesis using words and symbols: The intake of raw materials, trapping and storing of energy, formation of food in chloroplasts and its storage. The release of oxygen. Mention only of light and dark phase (no biochemical detail of light and dark phases are required). Importance of photosynthesis: release of oxygen, uptake of carbon dioxide from atmosphere, food production (trapping energy)	Activity Use a diagram of a plant indicating the intake of raw materials, trapping and storing of energy, formation of food in chloroplasts and its storage and the release of Oxygen. Activity Draw a diagram of chloroplast. Indicate the location in the chloroplast where the light and dark phase take place. INFORMAL TEST: Plant organs: The leaf Plant organelle: The Chloroplast		19.04%		Task 5: June exam (2 ½ hours – 150 marks) Term weighting – 75%
Week 3 4 days (25/04)		Effects of variable amounts of light, carbon dioxide and temperature on the rate of photosynthesis. Improve crop yields in greenhouse systems, role of ATP as energy carrier in the cell. ONE investigation to explain the principles of the Scientific process: Light is necessary for photosynthesis (Infuse investigation throughout the topic)	Activity Use graphs to show effects of variable amounts of light, carbon dioxide and temperature on the rate of photosynthesis. Activity Case study on the role of carbon enrichment, optimum light and optimum temperatures in greenhouse systems to improve crop yield.		30.95%		

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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		Curriculum	SMT Signature and Date	FORMAL ASSESSMENT - SBA
Week (Week Endin	S .		ACTIVITY /TASK/ INFORMAL TESTS	тіск	Con	Sig	
Week 1 4 days (11/04)		Revise basic cell structure with focus on the chloroplast, leaf structure, mitochondria and plant and animal tissues from grade 9 and grade 10. Revise basic photosynthesis and respiration from grade 8.	Activity Draw and label diagrams of the leaf. Indicate the functions.		10.81%		Task 4: Assignment (Minimum 50 marks) Term Weighting –
Week 2 4 days (17/04)		Process of photosynthesis using words and symbols: The intake of raw materials, trapping and storing of energy, formation of food in chloroplasts and its storage. The release of oxygen. Mention only of light and dark phase (no biochemical detail of light and dark phases are required). Importance of photosynthesis: release of oxygen, uptake of carbon dioxide from atmosphere, food production (trapping energy)	Activity Use a diagram of a plant indicating the intake of raw materials, trapping and storing of energy, formation of food in chloroplasts and its storage and the release of Oxygen. Activity Draw a diagram of chloroplast. Indicate the location in the chloroplast where the light and dark phase take place. INFORMAL TEST: Plant organs: The leaf Plant organelle: The Chloroplast		21.62%		Term Weighting – 25% Task 5: June exam (2 ½ hours – 150 marks) Term weighting – 75%
Week 3 4 days (25/04)		Effects of variable amounts of light, carbon dioxide and temperature on the rate of photosynthesis. Improve crop yields in greenhouse systems, role of ATP as energy carrier in the cell. ONE investigation to explain the principles of the Scientific process: Light is necessary for photosynthesis (Infuse investigation throughout the topic)	Activity Use graphs to show effects of variable amounts of light, carbon dioxide and temperature on the rate of photosynthesis. Activity Case study on the role of carbon enrichment, optimum light and optimum temperatures in greenhouse systems to improve crop yield.		32.43%		

Week 4	Process of respiration:	Activity	i i	
5 days Downloade	Aerobic respiration: in cytoplasm and mitochondria; use words and symbols: glycolysis, Krebs cycle and	Diagram of a cell with cytoplasm and mitochondria. Use words and symbols indicating glycolysis, Krebs cycle and		
(09/05)	oxidative phosphorylation (no biochemical detail is required) INVESTIGATION Basic scientific investigation skills with demonstrations or data interpretation on: Investigate respiration by showing that CO ₂ is produced by living organisms during respiration	oxidative phosphorylation. Activity The process of anaerobic respiration and the role it plays in the food industry. (Suggested as an investigation) INFORMAL TEST: Energy transformation to sustain life: Cellular Respiration.	45.94%	
Week 5 5 days (16/05)	Anaerobic respiration: production of lactic acid in muscles during exercise; words and symbols (no biochemical detail of process is required): The role of anaerobic respiration in the industry, e.g., beer brewing and bread making. Comparison between aerobic and anaerobic respiration. TWO investigations to explain the principles of the Scientific process:		59.45%	
	- Ô₂ is required by respiration - CO₂ is produced by living organisms during respiration (Infuse investigations throughout the topic) INVESTIGATION Explain the principles of the Scientific process: CO₂ is produced by living organisms during respiration.	.com		

Week 6 5 days (23/05)	The differences in dentition for herbivorous, carrivereus and conjugate lifestyles in terms of nutritional requirements and energy relationships (link with ecology – food chains) Human nutrition The macro- structure of the alimentary canal and associated organs and the functions of the different parts. INVESTIGATION Obtain intestines of a sheep from a butcher and trace the passage that food will take. Cut open the stomach, portion of the small intestine and a portion of the large intestine to compare the structure of the wall in each.	Activity Table with the differences in dentition for herbivores, carnivores and omnivores' lifestyles in terms of nutritional requirement and energy relationships with diagrams.	72.96%	
Week 7 5 days (30/05)	The process of ingestion, digestion, absorption, assimilation and egestion and the significance of each: Mechanical or physical digestion: types and functions of different kinds of teeth, processes of chewing. Peristalsis. Chemical digestion: Enzymes: functions of carbohydrates, proteases and lipases: where produced; substrate, pH and end-products (Specific enzymes need not be named – link to enzyme activity)	Activity Diagram of the human digestive system with labels and functions of each part. Include mechanical and chemical digestion. Activity Diagram of small intestine and villi to show adaptations for absorption of digested food.	86.47%	

W			320	615	
Week 8 5 days (06/06)	Absorption: small intestine as a region of most absorption of digested food adaptations to increase m surface area. Structure (to tissue level) and significance of villi. Importance of hepatic portal system in the transport of absorbed food to the liver and then through hepatic vein to the rest of the body. Assimilation: incorporation of glucose and amino acids, and the breakdown of alcohol, drugs and hormones. Egestion Homeostatic control, which involves the hormonal control of blood sugar levels. (Links with Gr 12	Activity Diagram of hepatic portal system explaining assimilation of products of digestion and breakdown of relevant substances. Activity Schematic representation of the control of blood sugar Levels. INFORMAL TEST: Animal Nutrition and Homeostatic Control	100%		
Week 9	Revision and assessment				
5 days					
(13/06)					
Week10	Revision and Assessment				
4 days					
20/06					
Week 11	Revision and Assessment				
5 days					
(27/06)					
END OF TERM					

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Life Sciences - Grade 11 - CAPS (2024)

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

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMEN	INFORMAL ASSESSMENT VITY /TASK/ INFORMAL		Signature and Date	FORMAL ASSESSMENT - SBA
	Comi		ACTIVITY /TASK/ INFORMAL TESTS	тіск	% Curriculu Coverage	Sign	
Week 1 4 days (25/07)		Revise relevant body systems from Grade 9 and ecology from Grade 8			10.25%		Task 5: Practical (Minimum 30 marks) Term Weighting –25%
Week 2 5 days (01/08)		Gaseous exchange: Distinguish between cellular respiration, breathing and gas exchange. Require-ments of efficient gas exchange organs: Large surface area, thin, moist, well ventilated, protected, transport system INVESTIGATION Observe and investigate the structure of the lungs, diaphragm, associated pulmonary blood vessels and the heart of a pig or a sheep obtained from a butcher.	Activity Tabulate the differences between cellular respiration, breathing and gas exchange. Activity Requirements of efficient gas exchange organs.		23.07%		Task 6: September Controlled Test (1 hour - 50 marks) Term weighting – 75%

Week 5	Urinary system	Activity	ľ		
5 days Download	de the structure of the dring yestern vsics.com Position of kidneys, ureters, bladder, urethra.	Diagram of the urinary system of the human with labels and functions.			
(22/08)	Kidney: structure and functioning, removal of urea and excess water and salts, re-absorption of glucose and some salts. Nephron: structure and functioning, Ultra-filtration, re-absorption, tubular excretion, pH control, formation of urine. Homeostatic control of water and salts: Role of ADH and Aldosterone. (Links with Gr 12)	Activity Longitudinal section through the kidney. Label and Functions. Activity Diagram of nephron with labels and functions. Use arrows to indicate the direction of urine production. Activity Homeostatic control of water and salts: role of ADH and aldosterone. INFORMAL TEST: Excretion in Humans and Homeostatic control.		61.53%	
Week 6	Population size influenced by: Immigration,	Activity	82	\vdash	
5 days (29/08)	emigration, mortality, natality, fluctuations and limiting factors, carrying capacity. Logistic and geometric growth curves with phases. INVESTIGATION Determine the size of a population by quadrant or simple sampling; simulated mark/recapture. Collect and record data, interpret data. Calculate/ estimate the	Case study: Rationale for culling, e.g., elephants in the Kruger National Park as an example of an application of estimating population size. INFORMAL TEST: Factors influencing population size, Growth		74.35%	
	population size.	curves		\vdash	
Week 7 5 days	Interactions in the environment: Predation: Two South African examples of predator- prey relationships: graphs	Activity Population size including graphs on logistic and geometric growth.			
(05/09)	Competition: Interspecific: for light, space, water, shelter and food Intraspecific: for food, access to mates, water, space, and shelter; survival is determined by access to the above, ecological niches.	Activity Tabulate interactions in the Environment INFORMAL TEST: - Predation		87.17%	
	Specialisation: Competitive exclusion and resource partitioning; discuss one example of co-existence in animals and one example in plants.	- Predation - Competition - Specialisation			

Week 8	Parasitism:	Activity	ľ		
5 days Downl	oade dwoferendes Stanth Office physics.com	Draw a life cycle of the bilharzia parasite or tapeworm (Simplify larval stages)			
(12/09)	Mutualism: Two examples from South Africa; both species benefit. Commensalism: Two examples from South Africa. Human Population: Reasons for exponential growth: Age and gender distributions for different countries including South Africa. Forecast of South Africa's population growth over the next twenty years and predict possible consequences for the environment	INFORMAL TEST: Symbiotic relationships Activity Human population.		100%	
Week 9	. Revision and Assessment				
5 days					
(19/09)					
Week 10	Revision and Assessment				
4 days					
(26/09)					
Week 11	Revision and Assessment				
5 days					
(03/10)					
END OF TERM					

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

Week Number (Week Ending) Completion		Topic for the week	INFORMAL ASSESSMENT		Curriculum	SMT Signature and Date	FORMAL ASSESSMENT - SBA
Week (Wee Endii	ACTIVITY /TASK/ INFORMAL TESTS		тіск	ວິວິ	a Ši		
Week 1 5 days (17/10)		Causes and consequences of the following (relate to conditions and circumstances in South Africa): The atmosphere and climate change Carbon dioxide emissions Concept of 'carbon footprint' and the need to reduce the carbon footprint Deforestation, Greenhouse effect, enhanced greenhouse effect and global warming: desertification, drought and floods Methane emissions, Ozone depletion.			28.57%		Task 7: Final Examinations Paper 1 (2 ½ hours - 150 marks)
Week 2 5 days (24/10)		Water Availability: Construction of dams, Destruction of wetlands, Poor farming practices, Droughts and floods, Exotic plantations and depletion of water table, Boreholes and effects on aquifers, Wastage, Cost of water. Quality: Water for domestic use, industry, agriculture and mining: pollution, diseases, eutrophication and algal bloom, The effect of mining on quality of water, Thermal pollution, The need for water purification and recycling, Alien plants e.g., Eichhornia. Food security (link with population ecology dynamics) Human exponential population growth, Droughts and floods climate change). Poor farming practices: monoculture; pest control; loss of topsoil and the need for fertilizers,	Activity Case study on Rhino poaching and suggestions on how it can be prevented		64.23%		Paper 2 (2 ½ hours - 150 marks)
		Alien plants and reduction of agricultural land. The loss of wild varieties: impact on gene pools Genetically engineered foods; Wastage.					

Downle	INVESTIGATION On denalyse the solid waste generated in the beusehold in mone week, including paper, metals and plastic. Estimate the percentage that could be recycled or reused.			
Week 3 5 days (31/10)	Loss of Biodiversity (the sixth extinction) Habitat destruction: farming methods, e.g. overgrazing and monoculture, golf estates, mining, urbanisation, deforestation; loss of wetlands and grasslands Poaching, e.g., for rhino horn, ivory and 'bush meat'; Alien plant invasions: control using mechanical, chemical and biological methods; and Indigenous knowledge systems and the sustainable use of the environment e.g., devils' claw, rooibos, fynbos, the African potato (Hypoxis) and Hoodia.	INFORMAL TEST: -Climate change -Water availability and quality -Loss of biodiversity	100%	
Week 4 5 days (07/11)	Revision paper 1 and 2			