

Annual Teaching Plan - TERM ONE (10 weeks) - 46 DAYS (17 Jan – 20 March)

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMENT		% Curriculum Coverage	SMT Signature and Date	FORMAL ASSESSMENT - SBA
			ACTIVITIES/TASKS /INFORMAL TESTS	TICK			
Week 1 (19/01) 3 days		<p>DNA: THE CODE OF LIFE (National Examination Guideline p5)</p> <p>Core Concepts, Skills and Values DNA: Location, chromosomes, genes and extra-nuclear DNA and discovery of DNA</p> <p>Requisite Pre-Knowledge Grade 10: Revise cell structure with emphasis on the ribosome, cytoplasm and parts of the nucleus, nucleic acids</p> <p>Resources (other than textbook) to enhance learning PowerPoint, Slides and Videos of DNA and RNA structure, replication and protein synthesis, Past examination papers</p>	<p>Activities</p> <ul style="list-style-type: none"> Identify location of the DNA in the diagram of an animal cell. Including extra-nuclear DNA. Provide names and the role each scientist played in the discovery of DNA. 	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	7		<p>TASK 1: PRACTICAL (Minimum 30 marks)</p> <p>SBA Year Weighting: 10% Term Weighting – 25%</p>
Week 2 (26/01) 5 days		<p>Core Concepts, Skills and Values Structure, role and replication of DNA, DNA profiling (Extract DNA and observe and examine the threads)</p> <p>Requisite Pre-Knowledge Grade 10: Revise mitosis and cell structure with emphasis on parts of the nucleus, the centrosome and the cytoplasm</p> <p>Resources (other than textbook) to enhance learning Power Point, slides and videos of DNA and RNA structure, replication and protein synthesis, Past examination papers</p>	<p>Activities</p> <ul style="list-style-type: none"> Label/draw diagrams of DNA Describe DNA replication and its significance Use diagrams to interpret DNA profiling 	<p><input type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	18.6		<p>TASK 2: CONTROLLED TEST (Minimum 50 marks – 1 HOUR)</p> <p>SBA Year Weighting: 15% Term Weighting – 75%</p>

Week 3 (02/02) 5 days	Core Concepts, Skills and Values RNA: Types, location, structure Genetic code Protein synthesis (transcription and translation) Requisite Pre-Knowledge Grade 10: Revise cell structure with emphasis on the ribosome, cytoplasm and parts of the nucleus, nucleic acids Resources (other than textbook) to enhance learning Video on protein synthesis and mutations at: https://bit.ly/2kl_83C	Activities <ul style="list-style-type: none"> • Draw and label diagrams of RNA <input type="checkbox"/> • Tabulate differences and similarities between DNA and RNA. <input type="checkbox"/> • Describe process of transcription, translation and gene mutation <input type="checkbox"/> • Use diagrams to identify the different events in transcription and translation <input type="checkbox"/> INFORMAL TEST: DNA- Code of Life <input type="checkbox"/>	 30.2		
Week 4 (09/02) 5 days	MEIOSIS (National Examination Guideline p6) Core Concepts, Skills and Values Structure of a chromosome and associated terminology, process of meiosis, importance of meiosis (Observe diagrams/micrographs of cells in selected stages of meiotic division) Requisite Pre-Knowledge Grade 10: Revise mitosis and cell structure with emphasis on parts of the nucleus, the centrosome and the cytoplasm Resources (other than textbook) to enhance learning Mind the Gap, Past examination papers Diagrams of different stages of meiosis	Activities <ul style="list-style-type: none"> • Explain the significance of meiosis <input type="checkbox"/> • Identify, with reasons, for the various phases of meiosis from diagrams. <input type="checkbox"/> • Tabulate the differences between Meiosis I and Meiosis II <input type="checkbox"/> 	 41.8		
Week 5 (16/02) 5 days	Core Concepts, Skills and Values Abnormal meiosis and consequences, similarities and differences between meiosis and mitosis Requisite Pre-Knowledge Grade 10: Revise mitosis and cell structure with emphasis on parts of the nucleus, the centrosome and the cytoplasm Resources (other than textbook) to enhance learning Watch Telematics video on Meiosis at: https://bit.ly/2k1X05k	Activities <ul style="list-style-type: none"> • Describe the consequences of non-disjunction during meiosis. <input type="checkbox"/> • Tabulate the differences between meiosis and mitosis. <input type="checkbox"/> • Analyse and interpret karyotype diagrams <input type="checkbox"/> INFORMAL TEST: MEIOSIS <input type="checkbox"/>	 53.4		

<p>Week 6 (23/02) 5 days</p>		<p>REPRODUCTION IN VERTEBRATES (National Examination guideline p7)</p> <p>Core Concepts, Skills and Values Diversity of reproductive strategies</p> <p>Requisite Pre-Knowledge (Grade 9) reproductive system, Meiosis (Grade 12)</p> <p>Resources (other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and power points</p>	<p>Activities</p> <ul style="list-style-type: none"> Using relevant examples, describe how the following reproductive strategies maximise reproductive success in different environment: <ul style="list-style-type: none"> ✓ External and internal fertilisation. <input type="checkbox"/> ✓ Ovipary, ovovivipary and vivipary <input type="checkbox"/> ✓ Amniotic egg. <input type="checkbox"/> ✓ Precocial and altricial development. <input type="checkbox"/> ✓ Parental care. <input type="checkbox"/> <p>INFORMAL TEST: REPRODUCTION IN VERTEBRATES <input type="checkbox"/></p>		65		
<p>Week 7 (01/03) 5 days</p>		<p>HUMAN REPRODUCTION (National Examination Guideline p8)</p> <p>Core Concepts, Skills and Values Structure of male and female reproductive systems, Puberty, gametogenesis</p> <p>Requisite Pre-Knowledge (Grade 9) reproductive system, Meiosis (Grade 12)</p> <p>Resources (other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and power points</p>	<p>Activities</p> <ul style="list-style-type: none"> Identify and state functions of parts of the male and female reproductive system. <input type="checkbox"/> Draw a labelled diagram of a sperm cell <input type="checkbox"/> Draw a labelled diagram of an ovum. <input type="checkbox"/> Describe the process of spermatogenesis and oogenesis. <input type="checkbox"/> 		76.6		
<p>Week 8 (08/03) 5 days</p>		<p>Core Concepts, Skills and Values</p> <ul style="list-style-type: none"> Menstrual cycle, fertilisation and development of zygote to blastocyst Implantation, gestation and the role of the placenta <p>Requisite Pre-Knowledge (Grade 9) reproductive system, Meiosis (Grade 12)</p> <p>Resources (other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and power points</p>	<p>Activities</p> <ul style="list-style-type: none"> Interpret graphs showing the menstrual cycle and role of hormones in the menstrual cycle. <input type="checkbox"/> Identify and state the functions of the different parts associated with the development of the foetus in the uterus. <input type="checkbox"/> Draw graphs using data relating to reproduction <input type="checkbox"/> <p>INFORMAL TEST: HUMAN REPRODUCTION <input type="checkbox"/></p>		100		

Week 9 (15/03) 5 days	Revision and Controlled Test	Revision and Controlled Test				
Wk 10 (20/03) 3 days Term Ends	Revision and Controlled Test	Revision and Controlled Test				

Annual Teaching Plan - TERM TWO (11 weeks) - 52 DAYS (03 April – 14 June)

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMENT		% Curriculum Coverage	SMT Signature and Date	FORMAL ASSESSMENT - SBA
			ACTIVITIES/TASKS /INFORMAL TESTS	TICK			
Week 1 (05/04) 3 days		GENETICS AND INHERITANCE (National Examination Guideline p9) Core Concepts,Skills and Values Concepts of inheritance, Monohybrid crosses, sex determination, sex-linked inheritance Requisite Pre-Knowledge Revise cell structure and differentiate between chromatin and chromosomes, genes and alleles Resources (other than textbook) to enhance learning Mind the Gap, Genetic crosses, past examination papers	Activities <ul style="list-style-type: none"> Solve monohybrid genetic problems Solve genetic problems on sex-linked characteristics 	<input type="checkbox"/> <input type="checkbox"/>	7.5		TASK 3: PRACTICAL (Minimum 30 marks) SBA Year Weighting: 10% Term Weighting – 50% TASK 4: JUNE EXAMINATION (Minimum 150 marks – 2½ HOURS) SBA Year Weighting: 15% Term Weighting – 50%
Week 2 (12/04) 5 days		Core Concepts,Skills and Values Dihybrid crosses, and Blood grouping Requisite Pre-Knowledge Revise format of genetic cross diagrams Resources (other than textbook) to enhance learning Past examination papers	Activities <ul style="list-style-type: none"> Solve genetics problems on dihybrid crosses Solve genetic problems on blood grouping 	<input type="checkbox"/> <input type="checkbox"/>	20		
Week 3 (19/04) 5 days		Core Concepts,Skills and Values Genetic lineages/pedigree diagrams, mutations Genetic engineering, paternity testing and genetic links Requisite Pre-Knowledge Interpreting pedigree diagrams Grade 10: revise stem cell research and cloning Resources (other than textbook) to enhance learning Past examination papers videos and power points on genetic engineering	Activities <ul style="list-style-type: none"> Describe types of mutation and their examples Interpret pedigree diagrams. Describe cloning, stem cell research and genetic modification as examples of genetic engineering INFORMAL TEST: GENETICS AND INHERITANCE	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	27.5		

<p>Week 4 (26/04)</p> <p>5 days</p>	<p>RESPONDING TO THE ENVIRONMENT (HUMANS) (National Examination Guideline p10)</p> <p>Core Concepts, Skills and Values Human nervous system – central, peripheral and autonomic, nerve, reflex arc, disorders</p> <p>Requisite Pre-Knowledge Human nervous system (Grade 9)</p> <p>Resources(other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and powerpoints, models of the brain and spinal cord</p>	<p>Activities</p> <ul style="list-style-type: none"> • Label and give functions of parts of the brain and spinal cord. <input type="checkbox"/> • Make a labelled drawing of a sensory or motor neuron. <input type="checkbox"/> • Describe an example of a reflex action. <input type="checkbox"/> • Describe location and functions of autonomic nervous system. <input type="checkbox"/> <p>INFORMAL TEST: HUMAN NERVOUS SYSTEM <input type="checkbox"/></p>		<p>37.5</p>		
<p>Week 5 (03/05)</p> <p>4 days</p>	<p>Core Concepts, Skills and Values Human eye</p> <p>Requisite Pre-Knowledge Grade 12: Revise nervous system</p> <p>Resources(other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and powerpoints, model human eye Watch Telematics video on sense organs at: https://bit.ly/2IkTLv2</p>	<p>Activities</p> <ul style="list-style-type: none"> • Label and give functions of parts of the eye <input type="checkbox"/> • Use diagrams to describe accommodation <input type="checkbox"/> • Use diagrams to describe the pupillary mechanism. <input type="checkbox"/> • Draw/interpret graphs using data related to the eye. <input type="checkbox"/> • Describe the nature and treatment of 4 prescribed visual defects using diagrams <input type="checkbox"/> 		<p>50</p>		
<p>Week 6 (10/05)</p> <p>5 days</p>	<p>Core Concepts, Skills and Values Human ear</p> <p>Requisite Pre-Knowledge Grade 12: Revise nervous system</p> <p>Resources(other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and powerpoints, model human ear Watch Telematics video on sense organs at: https://bit.ly/2IkTLv2</p>	<p>Activities</p> <ul style="list-style-type: none"> • Label and give functions of parts of the ear. <input type="checkbox"/> • Describe the functioning of the human ear in: <ul style="list-style-type: none"> ✓ hearing and <input type="checkbox"/> ✓ balance <input type="checkbox"/> • Describe the nature and treatment of middle ear infection and deafness. <input type="checkbox"/> <p>INFORMAL TEST: HUMAN EYE AND EAR <input type="checkbox"/></p>		<p>62.5</p>		

Week 7 (17/05) 5 days	HUMAN ENDOCRINE SYSTEM AND HOMEOSTASIS IN HUMANS (National Examination Guideline p12) Core Concepts,Skills and Values Endocrine and exocrine glands, glands, hormones and functions of hormones, Negative feedback mechanism involving TSH and thyroxin (and the result of an imbalance: thyroid disorders), Insulin and glucagon (and the result of an imbalance: diabetes mellitus) Requisite Pre-Knowledge Grade 12: Revise Human reproduction Grade 11: Revise animal nutrition Resources (other than textbook) to enhance learning Mind the Gap StudyGuide, past examination papers, videos and power points	Activities <ul style="list-style-type: none"> Identify from the diagrams the location of various endocrine glands <input type="checkbox"/> Name and state the function/s of the hormones that they secrete. <input type="checkbox"/> Describe how a negative feedback mechanism occurs in the following hormones: <ul style="list-style-type: none"> ✓ TSH and thyroxin <input type="checkbox"/> ✓ Insulin and glucagon <input type="checkbox"/> 		75		
Week 8 (24/05) 5 days	Core Concepts,Skills and Values Homeostasis: Negative feedback mechanisms – glucose, carbon dioxide, water, salts Requisite Pre-Knowledge Homeostatic control in nutrition,gaseous exchange and excretion (Gr 11) Hormones(Gr 12) Resources (other than textbook) to enhance learning Mind the Gap StudyGuide, past examination papers, videos and power points	Activities <ul style="list-style-type: none"> Describe the negative feedback mechanism: <ul style="list-style-type: none"> ✓ glucose <input type="checkbox"/> ✓ carbon dioxide <input type="checkbox"/> ✓ water and <input type="checkbox"/> ✓ salt <input type="checkbox"/> 		87.5		
Week 9 (31/05) 5 days	Core Concepts,Skills and Values Thermoregulation: Using a diagram of the skin, describe the role of the sweat gland and blood vessels in maintaining a constant body temperature Requisite Pre-Knowledge Homeostatic control in nutrition,gaseous exchange and excretion (Gr 11) Resources (other than textbook) to enhance learning Mind the Gap StudyGuide, past examination papers, videos and power points	Activities <ul style="list-style-type: none"> Describe the negative feedback mechanism: <ul style="list-style-type: none"> ✓ thermoregulation. <input type="checkbox"/> Using a diagram of the skin, describe the role of the sweat gland and blood vessels in maintaining a constant body temperature <input type="checkbox"/> INFORMAL TEST: ENDOCRINE SYSTEM AND HOMEOSTASIS <input type="checkbox"/>		100		
Wk 10 (07/06) 3 days	Revision and June Examination	Revision and June Examination				

Wk 11 (14/06) 5 days		Revision and June Examination	Revision and June Examination				
Term Ends							

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Annual Teaching Plan - TERM THREE (11 weeks) - 53 DAYS (09 July – 20 September)

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMENT		% Curriculum Coverage	SMT Signature and Date	FORMAL ASSESSMENT - SBA
			ACTIVITIES/TASKS /INFORMAL TESTS	TICK			
Week 1 (12/07) 4 days		RESPONDING TO THE ENVIRONMENT (PLANTS) (National Examination Guideline p13) Core Concepts,Skills and Values Plant hormones,Tropisms, Plant defense mechanisms Resources (other than textbook) to enhance learning Watch Telematics video on homeostasis at: https://bit.ly/2IkTLv2	Activities <ul style="list-style-type: none"> State and give functions of each growth substance involved in this chapter. Describe the role of auxin in in phototropism and geotropism. Analyse scientific investigation with regard to growth substances. Analyse and interpret diagrams and graphs with regard to geotropism and phototropism INFORMAL TEST: RESPONDING TO THE ENVIRONMENT (PLANTS)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	17		TASK 5: ASSIGNMENT (Minimum 50 marks Time: 1-1 ½ HOURS) SBA Year Weighting: 20% Term Weighting – 25% TASK 6: PREPARATORY EXAMINATION Paper 1 Marks: 150 Time: 2½ HOURS Paper 2 Marks: 150 Time: 2½ HOURS SBA Year Weighting: 30% Term Weighting
Week 2 (19/07) 5 days		EVOLUTION (National Examination Guideline p13) Core Concepts,Skills and Values Introduction to evolution e.g. biological evolution, hypothesis, theory, evidence for evolution and variation Requisite Pre-Knowledge Revise fossil record and biogeography(Grade 10), Genetics (Grade 12) Resources (other than textbook) to enhance learning Past examination papers, videos and power points on an introduction to evolution	Activities <ul style="list-style-type: none"> List various sources of variation. Describe different lines of evidence for evolution 	<input type="checkbox"/> <input type="checkbox"/>	39		

<p>Week 3 (26/07)</p> <p>5 days</p>	<p>Core Concepts, Skills and Values Lamarckism, Darwinism and Punctuated equilibrium Artificial selection and speciation</p> <p>Requisite Pre-Knowledge Revise genetics and variation (Grade 12). Human skeleton (Grade 10)</p> <p>Resources (other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and power points Watch Telematics video on natural selection, punctuated equilibrium and speciation at: https://bit.ly/2lq6LzI</p>	<p>Activities</p> <ul style="list-style-type: none"> Describe: <ul style="list-style-type: none"> ✓ Lamarckism, ✓ Natural Selection ✓ and Punctuated equilibrium State the benefits of artificial selection Describe how speciation occurs 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>61</p>	
<p>Week 4 (02/08)</p> <p>5 days</p>	<p>Core Concepts, Skills and Values Reproductive isolation mechanisms evolution in present times</p> <p>Requisite Pre-Knowledge Revise genetics and variation (Grade 12). Human skeleton (Grade 10)</p> <p>Resources (other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and power points Watch Telematics video on natural selection, punctuated equilibrium and speciation at: https://bit.ly/2lq6LzI</p>	<p>Activities</p> <ul style="list-style-type: none"> List reproductive isolating mechanisms that keep species separate. Describe one example of evolution in current times. <p>INFORMAL TEST: GENERAL EVOLUTION</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>83</p>	
<p>Week 5 (08/08)</p> <p>4 days</p>	<p>Core Concepts, Skills and Values Evidence of common ancestors for living hominids, including humans. Out of Africa hypothesis</p> <p>Requisite Pre-Knowledge Revise genetics and variation (Grade 12). Human skeleton (Grade 10)</p> <p>Resources (other than textbook) to enhance learning Mind the Gap Study Guide, past examination papers, videos and power points</p>	<p>Activities</p> <ul style="list-style-type: none"> List similarities and tabulate differences between Humans and the African apes Interpret diagrams/phylogenetic trees to show progressive evolution using fossil evidence. Describe the Out of Africa" hypothesis using fossil evidence <p>INFORMAL TEST: HUMAN EVOLUTION</p>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>100</p>	
<p>Week 6 (16/08)</p> <p>5 days</p>	<p>Revision</p>	<p>Activities</p> <p>Data response questions, case studies, questions from past papers Revision-Mind the Gap Study Guide, past examination papers, videos and power points</p>			

Week 7 (23/08) 5 days	Revision	Activities Data response questions, case studies, questions from past papers Revision-Mind theGap Study Guide, past examination papers, videos and power points				
Week 8 (30/08) 5 days	PREPARATORY EXAMINATION	PREPARATORY EXAMINATION				
Week 9 (06/09) 5 days	PREPARATORY EXAMINATION	PREPARATORY EXAMINATION				
Wk 10 (13/09) 5 days	PREPARATORY EXAMINATION	PREPARATORY EXAMINATION				
Wk 11 (20/09) 5 days Term Ends	PREPARATORY EXAMINATION	PREPARATORY EXAMINATION				

Annual Teaching Plan - TERM FOUR (11 weeks) - 52 DAYS (01 October – 13 December)

Week Number (Week Ending)	Completion Date	Topic for the week	INFORMAL ASSESSMENT		% Curriculum Coverage	SMT Signature and Date	FORMAL ASSESSMENT - SBA
			ACTIVITIES/TASKS /INFORMAL TESTS	TICK			
Week 1 (04/10) 4 days		Revision Mind the Gap Study Guide,past examination papers, videos and power points Data response questions, case studies, questions from past papers					
Week 2 (11/10) 5 days		Revision Mind the Gap Study Guide,past examination papers, videos and power points Data response questions, case studies, questions from past papers					
Week 3 (18/10) 5 days		Revision Mind the Gap Study Guide,past examination papers, videos and power points Data response questions, case studies, questions from past papers					
Week 4 (25/10) 5 days		Revision Mind the Gap Study Guide,past examination papers, videos and power points Data response questions, case studies, questions from past papers					

Week 5 (01/11)	FINAL NSC EXAMINATION			
	Paper 1		Paper 2	
5 days	Marks: 150		Marks: 150	
	Time: 2½ hours		Time: 2½ hours.	
	Topic	Marks	Topic	Marks
	Reproduction in vertebrates	8	DNA: Code of life	17
	Human reproduction	41	Meiosis	21
	Responding to the environment (humans)	54	Genetics and inheritance	48
	Human endocrine system and Homeostasis	34	Evolution	54
	Responding to the environment (plants)	13		
Cognitive levels:				
Knowing science - 40%;				
Understanding science - 25%;				
Applying scientific knowledge - 20%;				
Evaluating, analysing and synthesising science knowledge - 15%				
Degrees of difficulty for examination and test questions:				
Easy - 30%;				
Moderate - 40%;				
Difficult - 25%;				
Very difficult - 5%				
PREPARATION FOR FINAL NSC EXAMINATION				
SBA WEIGHTING: 25%				
FINAL NSC EXAMINATION: 75%				

Informal Assessment

A minimum of three informal tasks should be done per week. These tasks can be marked by learners or teachers.

NB:

- It is recommended that a consolidation task/informal test is completed at the end of a concept/topic.
- It is vital that practical skills are taught and assessed in an integrated way in the context of theoretical concepts.
- Collectively, the informal tasks must reflect all degrees of difficulty and cognitive levels.