

GRADE 12 BIOLOGY

EASTER TERM PLAN

2023 – 2024

TERM TWO: JANUARY 8– APRIL 16

JANUARY			
January 8-16	WEEK 1	NUCLEIC ACIDS <ul style="list-style-type: none">● DNA structure and function● DNA Replication● Protein synthesis<ul style="list-style-type: none">○ Genetic code○ Transcription○ Translation	LAB – <ul style="list-style-type: none">● Enzymes – substrate concentration, temperature
January 15-19	WEEK 2	NUCLEIC ACIDS <ul style="list-style-type: none">● Protein synthesis cont'd<ul style="list-style-type: none">○ Genetic code○ Transcription○ Translation	
January 24-26	WEEK 3	MITOSIS <ul style="list-style-type: none">● Review stages of mitosis● DNA replication and genetic stability● Importance of mitosis – growth, repair and asexual reproduction MEIOSIS <ul style="list-style-type: none">● Definition – homologous chromosomes, haploid, diploid● Stages of meiosis● Importance of meiosis to heritable behaviour PATTERNS OF INHERITANCE <ul style="list-style-type: none">● Define terms – gene, allele, dominant, recessive, codominant, homozygous and heterozygous● Monohybrid cross review; genetic problems● Dihybrid cross Monohybrid cross review	LAB - Drawing of mitotic cells in onion root tip

FEBRUARY			
January 29- February 4	WEEK 4	PATTERNS OF INHERITANCE <ul style="list-style-type: none"> • Dihybrid cross • Genetic crosses – sex linkages, codominance, multiple alleles, dominant epistasis • Chi-square test • Applying chi-square test to genetic crosses ASPECTS OF GENETIC ENGINEERING <ul style="list-style-type: none"> • Principles of genetic engineering – recombinant DNA technology • Benefits and hazards of gene therapy 	LAB - Drawing of meiotic cells in onion root tip Aspects of Genetic Engineering Project – Group presentation on genetic engineering. Duration:3weeks
February 5-9	WEEK 5	Test Week	Nucleic Acids and Mitosis and Meiosis
February 12-16	WEEK 6	VARIATION AND NATURAL SELECTION <ul style="list-style-type: none"> • Gene and chromosome mutations • Gene mutation – Sickle cell anemia • Mutation bringing about genetic variation • Selection – <ul style="list-style-type: none"> ○ Environmental factors influencing natural selection ○ Natural selection as an agency of change Natural selection and evolution	

February 19-23	WEEK 7	ASEXUAL REPRODUCTION AND VEGETATIVE PROPAGATION <ul style="list-style-type: none"> • Explain asexual reproduction • Examples • Advantages and disadvantages of asexual reproduction 	FEBRUARY 20- JAMAICA DAY Group should present their project MID-TERM BREAK February 21-23
-----------------------	---------------	---	---

MARCH			
February 26- March 1	WEEK 8	ASEXUAL REPRODUCTION AND VEGETATIVE PROPAGATION <ul style="list-style-type: none"> Principles and importance of vegetative propagation Genetic consequences of asexual reproduction REPRODUCTION IN PLANTS <ul style="list-style-type: none"> Review floral structure and function Structure of anther and pollen grain formation Structure of ovule and embryo sac formation 	LAB – 2 sessions <ul style="list-style-type: none"> Human traits
March 4-8	WEEK 9	REPRODUCTION IN PLANTS <ul style="list-style-type: none"> Pollination – self pollination Factors promoting cross pollination Pollination to fertilization Importance of double fertilization Development of fruit and seed 	MARCH 6- Interhouse Competition
March 11-22	WEEK 10	MOCK EXAMS	
March 25-29	WEEK 11	REPRODUCTION IN ANIMALS <ul style="list-style-type: none"> Structure and function of the male and female reproductive system Gametogenesis <ul style="list-style-type: none"> Oogenesis Spermatogenesis 	

		<p>Importance of hormones to gametogenesis</p> <ul style="list-style-type: none"> ● Importance of hormones to gametogenesis ● Menstrual cycle <p>Importance of hormones in cycle</p>	
APRIL			
April 1-5	WEEK 12	<p>REPRODUCTION IN ANIMALS</p> <ul style="list-style-type: none"> ● Menstrual cycle cont'd ● Importance of hormones in cycle ● Fertilization ● Implantation ● Contraceptives in relation to anatomy and physiology ● Structure and function of the placenta ● Function of the amnion ● Effects of maternal behaviour on fetal development ● 	<p>LAB – 3 sessions</p> <ul style="list-style-type: none"> ● Selection pressure – 20% and 100% <p>EASTER BREAK- APRIL 6-14</p>
April 15-19	WEEK 13	<p>REPRODUCTION IN ANIMALS</p> <ul style="list-style-type: none"> ● Role of alcohol abuse, nutrition, illegal and illicit drugs, cigarette smoking ● Effects of maternal behaviour on fetal development cont'd ● PAST PAPER REVIEW 	<p>LAB – 2 sessions</p> <ul style="list-style-type: none"> ● Drawing of anther and pollen grains