GRADE 13 BIOLOGY TERM TWO PLAN

TERM TWO: JANUARY 11– March 28, 2024

		THEORY	LABS/QUIZ/TESTS
JANUARY			
January 8-12 ***No classes on the 8th and 9th due to parent consultation***	**WEEK 1**	**CIRCULATORY SYSTEM OF MAMMALS** ● Need for a circulatory system. ● Open and close systems ● Blood vessels cont'd ● Structure of the heart ● Cardiac cycle ● Maintaining the heart's rhythmic beat	**Assign Topics for Health and Disease Presentations**
January 16-20	**WEEK 2**	**CIRCULATORY SYSTEM OF MAMMALS** ● Definitions – pulse, blood pressure ● Factors affecting blood pressure ● Nervous and hormonal control of heart rate ● Role of haemoglobin in oxygen transport ● Nervous and hormonal control of heart rate ● The Bohr Effect	**Lab:** **Heart Drawing** **Blood Vessels Drawing** **Blood Cells Drawing** **Worksheet on transport in animals**

January 23-26	**WEEK 3**	**IMMUNOLOGY** ● The Immune Response ● Humoral and Cell mediated Response ● The origin, maturation and role of T and B memory cells. ● The action of Phagocytes/phagocytosis ● The structure of a typical antibody molecule (Y-shaped structure) ● Monoclonal antibodies in diagnosis and treatment (The anticancer drug, Mab Thera; details required of the use of monoclonal antibodies in pregnancy testing. ● Active and passive immunity/Artificial and natural immunity ● The role of vaccinations in immunity	**Worksheet on Immunology**

Jan. 23-Feb. 2	**WEEK 4**	**HOMEOSTASIS AND HORMONAL CONTROL** ● Concept of homeostasis – receptors, effectors, feedback mechanism etc. ● General principles of hormonal action in animals – ductless glands, target cells and receptors ● Insulin and glucagon function in relation to blood glucose concentration ● Effect of ethylene on fruit ripening ● Commercial use of ethylene to supply market-ready fruit	**Online quiz**
FEBRUARY			
February 5-9	**WEEK 5**	**KIDNEY, EXCRETION AND OSMOREGULATION** ● Need to remove nitrogenous and other metabolic waste products ● Structure of the kidney and nephrons ● Function of the kidney – excretion, Osmoregulation, role of ADH ● Clinical significance of glucose and protein in urine	**LAB –** ● **Drawing of the longitudinal section of the kidney** ● **Drawing of the transverse section of kidney tubules**

February 12-14	**WEEK 6**	**MID-TERM BREAK**	
February 15-16 ***Classes only held on 15 &16. 12-14 midterm break***	**WEEK 6**	**NERVOUS COORDINATION** ● Structure of motor and sensory neurons ● Nerve cell membranes in establishing and maintaining resting potential ● Conduction of an action potential along the nerve membrane – speed of transmissions ● Synaptic transmission – structure of cholinergic synapse	**Worksheet on nervous coordination**
February 19-23	**WEEK 7**	**NERVOUS COORDINATION** ● Role of synapse	
Feb. 26-Mar. 1	**WEEK 8**	**HEALTH AND DISEASE** ● Define health – physical, mental, social ● Categories of disease or illness – physical, mental, social, chronic, infection, degenerate, inherited, self-inflicted, deficiency; examples of each. ● Regional distribution of AIDS, diabetes and cancer – discuss reasons ● **(Presentations by Students)**	**LAB** ● **Investigating the effects of exercise on the body**

MARCH			
March 4-8	**WEEK 9**	**SOCIAL AND PREVENTATIVE MEDICINE** ● Causative relationship among diet, obesity and diabetes – concept of balanced diet, BMI, Type 1 and 2 diabetes ● Effects of fats on the cardiovascular system – atherosclerosis, coronary heart disease, hypertension, stroke ● Effects of exercise and maintaining a physically fit body – long-term and short-term consequences, VO_2 max, cardiac efficiency	**Group presentations on diabetes and obesity, dengue, cancer, HIV/AIDS communicable and non-communicable diseases.**
March 11-15	**WEEK 11**	**MOCK EXAMS**	
March 18-22	**WEEK 12**	**MOCK EXAMS**	

March 26-28	**WEEK 13**	**SOCIAL AND PREVENTATIVE MEDICINE** ● AIDS and Dengue fever – mechanisms of infection, causative agent, transmission, social and economic impact regionally and the social, economic and biological factors in their prevention and control	
Mar 28-April 5	**WEEK 15**	**EASTER HOLIDAY**	