DINTHILL TECHNICAL HIGH SCHOOL

UNIT PLAN GRADE 11

DEPARTMENT: NATURAL SCIENCE **YEAR:** 2025-2026

COURSE OF STUDY: BIOLOGY

PRE-REQUISITES: GRADE 10 BIOLOGY

Teacher	**Jeannet Nelson-Bell**
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COURSE DESCRIPTION: To develop an understanding of fundamental biological principles and concepts (such as structure and function relationships; unity in diversity), based upon practical and theoretical knowledge of living organisms and the environment.

Duration	Unit Topic	Areas to be covered/specific objectives	Methodology	Resources	Specific objectives (referred to syllabus)	Assignments & Tests
TERM ONE (1) September – December						
2 Weeks (Sept 7-18)	**Transport in animals** • The circulatory system in humans • Blood • The role of blood in defending against disease • Immunity	• Describe the structure and function of the circulatory system in humans • Relate the structure of the components of blood to their function • Describe the role of blood in defending the body against disease • Explain how the principles of immunization are used in control of communicable diseases	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section B 4.3-4.6	Homework Classwork Presentation Practical Activity Quiz Test
3 Weeks (Sept 21- Oct 9)	**Transport in Plants** • Transpiration • External factors affecting rate of transpiration • Conservation of water • Structure of xylem and phloem	• Explain how the structure of xylem vessels is suited for their function • Discuss the role of the process of transpiration in plants • Describe the effect of external factors on transpiration	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section B 4.7-4.13	Homework Classwork Presentation Practical Activity Test

	• Storage in plants and animals Importance of food storage in living organism	• Discuss adaptation in plants to conserve water • Explain how the structure of the phloem is suited to its function • Identify the products stored in plants and animals and the sites of storage • Discuss the importance of food storage in living organism				
3 weeks (Oct 12- Nov 06)	**Excretion** • Differentiate between egestion and excretion • Importance of excretion • Excretion in plants and animals • Kidney and excretion	• Distinguish between egestion and excretion • Discuss the importance of excretion in living organisms • State how metabolic wastes are excreted from plants and animals • Relate the kidney to its osmoregulatory and excretory functions	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section B 5.1-5.4	Homework Classwork Presentation Practical Activity Test

2 Weeks (Nov 9- Nov 20)	**Movement- Skeleton** • Growth movements in plants and animals • Structure of human skeleton • Importance of locomotion in animals • Mechanism of movement in a human fore limb.	• Distinguish between growth movements in plants and movement in animals • Relate the structure of the skeleton to its function in humans • Discuss the importance of locomotion in animals Describe the mechanism of movement in a human fore limb	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section B 6.1-6.4	Homework Classwork Quiz
2 Weeks (Nov 23- Dec 4)	**Irritability** • Stimulus and Response • Response in plants • Response in invertebrates • Receptor and effector • Importance of response • Relationship among the receptor, CNS & effector • Simple reflex action	• Define 'stimulus' and 'response' • Describe the response of: (a) green plants to stimuli (B) Invertebrates to variations in light intensity, temperature and moisture • Define receptor and effector • Explain why the response to stimuli is important for the survival of organisms • Explain the relationship among the receptor, the	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section B 7.1- 7.11	Homework Classwork Presentation Practical Activity Quiz Test

	• Functions of the brain • Effects of drug abuse • The structure of the human eye • Accommodation and sight defects and their corrections • Structure of the human skin	central nervous system and the effector • Explain a simple reflex action • Describe the functions of the main regions of the brain • Discuss the physiological, social and economic effects of drug abuse • Relate the structure of the human eye to its functions as a sense organ • Explain accommodation; sight defects and the corrections of each Relate structure of the human skin to its function in temperature regulation and protection				
TERM TWO (2) January- March						
2 Weeks (Jan 4-15)	**Reproduction in man** • Sexual and asexual reproduction	• Compare sexual and asexual reproduction • Describe the structure and function of the reproductive systems in humans	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab	Section B 9.1-9.6	Homework Classwork Presentation Practical Activity Test

	• Reproductive systems in humans • Menstrual Cycle • Pregnancy (ovulation, fertilization and implantation) • Development of the embryo • Advantages and disadvantages of birth control • Transmission and control of AIDS and gonorrhea	• Describe the menstrual cycle • Outline the mechanism for bringing gametes together, their fusion and the development of the embryo in humans • Discuss the transmission and control of Acquired Immune Deficiency Syndrome (AIDS) and gonorrhea		apparatus and materials		
2 Weeks (January 18-29)	**Reproduction in plants** • Plant/flower structure and functions • Pollination • Fruit and seed development • Fruit structure • Fruit and seed dispersal	• Relate the parts of a flower to their functions • Compare the structure of an insect pollinated flower and a wind pollinated flower • Distinguish between the processes of pollination and fertilization	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section B 9.7-9.10	Homework Classwork Presentation Practical Activity Quiz

		• Explain how fruit and seed formation occur after fertilization • Describe fruit structure including adaptations fruit and seed dispersal				
2 Weeks (February 1-12)	**Disease** • Types of diseases • Stages in the life cycle of a mosquito • Transmission of pathogenic diseases by mosquito • Methods of control of each stage of the life cycle of mosquito • Treatment and control of disease • Social, environmental and economic implications of disease	• Describe fruit structure including adaptations for fruit and seed dispersal • Distinguish among pathogenic, deficiency, hereditary and physiological diseases • Identify the stages in the life cycle of a mosquito • Discuss the role of the mosquito as a vector in the transmission of pathogenic diseases • Suggest appropriate methods of control of each stage of the life cycle of mosquito • Discuss the treatment and control of the four main groups of diseases	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section B 9.11-10.6	Homework Classwork Presentation Practical Activity Quiz

		• Discuss the social, environmental and economic implications of disease with reference to both plant and animal diseases				
3 Weeks (Feb 15- Mar 05)	**Cell division** • Definition: -DNA -Chromosomes -gene -allele -haploid -diploid • Mitosis- stages and development • Mitosis and asexual reproduction in plants • Meosis- stages and development	• Distinguish among DNA, chromosomes, genes and alleles • Describe the process of mitosis • Explain the role of mitosis in asexual reproduction • Explain why asexual reproduction gives rise to genetically identical offspring • Describe the process of meiosis • State the importance of halving of chromosome number in the formation of gametes • Explain the role of meiosis in the transmission of inheritable genetic characteristics	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section C 1.1-2.6	Homework Classwork Presentation Practical Activity Quiz

3 weeks (March 8-26)	**Inheritance** • Definitions : dominant, recessive, co-dominance, genotype, phenotype, homozygous, heterozygous • Inheritance of traits to include: -sickle cell anaemia -albinism • Monohybrid crosses to calculate phenotypic and genotypic ratio • Sex determination • Sex-linked characteristics (haemophilia and colour blindness)	• Explain the meaning of the following terms: dominant trait, recessive trait, codominance, genotype, phenotype, homozygous and heterozygous • Explain the inheritance of traits (dominant and recessive genes) • Predict the results of crosses involving one pair of alleles in the heterozygous, homozygous dominant and recessive conditions • Describe the mechanism of sex determination and inheritance of sex linked diseases in humans	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section C 2.7-2.10	Homework Classwork Presentation Practical Activity Quiz

1 Week (Mar 29- Apr 2)	**Variation** • Genetic causes of variation • Environmental causes of variation • The importance of variation • Types of variation	• Explain how genetic variation arises • Explain why genetic variation is important • Distinguish between continuous and discontinuous variation in populations	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section C 3.1- 3.3	Homework Classwork Presentation Practical Activity Quiz
3 Weeks (April 12- April 30)	**Species, selection and genetic engineering** • Definition of a species • The formation of new species- speciation • Extinction of species • Natural selection • Artificial selection • Genetic engineering • Advantages and disadvantages of genetic engineering • Implications of genetic engineering	• Define a species • Describe how new species are formed • Explain how natural selection plays a role in biological evolution • Distinguish between natural and artificial selection • Describe how genetic engineering can be used to change the traits of an organism • Discuss the possible advantages and disadvantages of genetic engineering	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC Biology syllabus, lab apparatus and materials	Section C 4.1-6.2	Homework Classwork Presentation Practical Activity Quiz

ASSESSMENT MODE:

	Assessment	**Grade percentage**
Course Work	Classwork	10%
	Homework	10%
	Test	20%
	Total	**40%**
Exam	Paper 1 & Paper 2	**60%**
Total		**100%**