DINTHILL TECHNICAL HIGH SCHOOL

SYLLABUS OUTLINE

GRADE 9

DEPARTMENT: NATURAL SCIENCE **YEAR:** 2026-2027

COURSE OF STUDY: BIOLOGY

PRE-REQUISITES: GENERAL SCIENCE

Teachers	**Mrs Nelson-Bell**
Teacher's contact information	**jeannet.nelson@moeschools.edu.jm**

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.

COURSE SCHEDULE

Duration	Unit Topic	Areas to be covered/ Objectives	Methodology	Resources	Specific objectives (referred to syllabus)	Assignments & Tests
TERM ONE (1) (September to December)						
2 Weeks **(Sept 7-18)**	**An introduction to living organism** • Living and Non-living • Classification of animals and plants	• Recognize the characteristics of living organism • Observe living organisms in your environment • Group living organisms according to observed similarities and differences • Classify organisms into taxonomic groups based on physical similarities	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 A 1.1-1.2	Homework Classwork Presentation Quiz Test
2 Weeks **(Sept 21-Oct -2)**	**Living organisms and their environment** • Ecology • Abiotic and biotic factors • Niche and habitat • Population and community	• Carry out simple ecological study using the most appropriate collecting sampling methods • Distinguish between important ecological terms	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology, CXC	Section A 2.1-2.3	Homework Classwork Presentation Practical Activity Quiz

	• Species and population	(a) Abiotic and biotic factors (b) Niche and habitat (c) Population and community (d) Species and population Discuss the impact of abiotic factors on living things		Biology syllabus, lab apparatus and materials		Test
2 Weeks **(Oct 5-16)**	**Interrelationships between living relationships** • Food chain and food web • Producers and consumers • Herbivore, carnivores and omnivores • Predator and prey • Symbiosis	• Identify the relative positions of producer and consumers in a food chain • Identify from each habitat a food chain containing at least four organisms • Identify from each habitat the different feeding relationships • Construct a food web to include different trophic levels • Explain the role of decomposers • Explain energy flow within a food chain or web • Assess the special relationships among organisms	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 A 3.1-3.7 4.1	Homework Classwork Presentation Practical Activity Quiz Test

3 Weeks **(Oct 26 –Nov-13)**	**The cycling of nutrients** • Biogeochemical cycles • The carbon cycle • The nitrogen cycle	• Explain, with examples the impact of the continual re-use of materials in nature • Discuss the importance of and difficulties encountered in recycling manufactured materials • Describe the impact of human activities on natural resources • Explain the negative impact of human activity on the environment. • Assess the implications of pollution of marine and wetland environments • Discuss current and future trends regarding climate change.	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 A 5.1-5.2 6.1-6.5 7.1	Homework Classwork Presentation Quiz Test
3 Weeks (Nov 16-Dec- 4)	**Cells** • Plant and Animal Cell Specialization • Osmosis and Diffusion	• Compare the structure of the plant and animal cells, and selected microbes • Distinguish between cell wall and cell membrane; mitochondrion and chloroplast	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC Biology,	Section B 1.1-1.7	Homework Classwork Presentation Practical Activity

		• Relate the structure of organelles to their functions • Differentiate between plant and animal cells • Explain the importance of cell specialization in multi cellular organisms • Explain the processes of diffusion and osmosis • Discuss the importance of diffusion, osmosis and active transport in living systems		CXC Biology syllabus, lab apparatus and materials		Quiz Test
TERM TWO (2) (January to March)						
8 Weeks (Jan 4-Feb 26)	**Nutrition** • Heterotrophic, Autotrophic and Saprophytic nutrition • Leaf structure • Photosynthesis • Minerals in Plants • Food Tests • Digestion • Enzymes • Diet- Minerals and vitamins	• Distinguish among heterotrophic, autotrophic and saprophytic nutrition • Describe the process of photosynthesis in green plants • Relate the structure of the leaf of a flowering plant to its function in photosynthesis • Explain how environmental factors affect the rate of photosynthesis	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 2.1-2.11	Homework Classwork Presentation Practical Activity Quiz Test

		• Discuss the importance of minerals in plants nutrition using nitrogen and magnesium as examples • Perform tests to distinguish among food substances • Relate the structures of the human alimentary canal to their functions • Explain the role and importance of enzymes • Investigate the effect of temperature and Ph on the activity of the enzymes catalase or amylase • Describe what happens to the products of digestion after their absorption • Discuss the importance of a balanced diet in human				
2 Weeks (Mar 01-Mar12)	**Respiration** • Aerobic and anaerobic respiration • Role of ATP and ADP in energy transfer	• Describe the process of aerobic respiration • Distinguish between aerobic and anaerobic respiration	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course	Section B 3.1-3.2	Homework Classwork Presentation

	• Laboratory activities			CSEC Biology, CXC Biology syllabus, lab apparatus and materials		Practical Activity Quiz Test
2 Weeks (Mar 15-Mar 26)	**Respiratory System** • Breathing in humans and Gaseous exchange • Characteristic of gaseous exchange surface • Effects of smoking	• Describe the mechanism of breathing in humans and gaseous exchange in flowering plants • Identify characteristics common to gaseous exchange surfaces • Identify characteristics common to gaseous exchange surfaces • Discuss the effect of smoking	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 3.3-3.5	Homework Classwork Presentation Practical Activity Quiz Test
TERM THREE (3) (April- June)						
9 Weeks (April 5-June 11)	**Transport** • Transport system in multi-cellular organisms • The circulatory system in humans • Blood	• Explain the need for transport systems in multi-cellular organisms • Identify the materials which need to be transported in animals and plants	Discussion, demonstration, presentation, brainstorm, assignment, class work and experiments	CXC Biology, Biology for CXC, Concise Revision Course CSEC	Section B 4.1- 4.11	Homework Classwork Presentation Practical Activity

	• The role of blood in defending against disease • Immunity • Transpiration • External factors affecting rate of transpiration • Conservation of water • Structure of xylem and phloem • Storage in plants and animals • Importance of food storage in living organism	• 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 • 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 • 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		Biology, CXC Biology syllabus, lab apparatus and materials		Quiz Test

		animals and the sites of storage • Discuss the importance of food storage in living organism				

ASSESSMENT MODE:

	Assessment	**Grade percentage**
Course Work	Classwork	10%
	Homework	10%
	Class Participation	5%
	Test	15%
	Total	**40%**
Exam	Paper 1 &/ or Paper 2	**60%**
Total		**100%**