



IB Biology Y2 - MHS Subject Group Overview

Unit Name	Internal Assessment (IA)	Unit 3 Genetics	Unit 4 Evolution & Biodiversity	Unit 5 Interactions & Interdependence	Unit 6 Responding to the Environment	Exams/ Review
Time	3 Weeks, Ongoing Due to IB March 2023	7 Weeks	7 Weeks	6 Weeks	6 Weeks	5 weeks May 2023 IB Exam
IB Topics	Objectives 1, 2, 3, 4,	2.4, 2.7, 3.1, 3.4, 3.5, 5.3-5.4	5.1-5.4	4.1-4.4, C.1, C.2	6.2, 6.3, 6.5, 6.6	1.1-6.6
	<p>Scientific investigation The internal assessment, worth 20% of the final assessment, consists of one scientific investigation. This individual investigation will cover a topic that is commensurate with the level of the course of study.</p> <p>Student work is internally assessed by the teacher and externally moderated by the IB.</p> <p>Internal Assessment Components Set by IB Biology Guide</p>	<p>Statement of Inquiry: Advancements in biotechnology supports complex research into the inheritance patterns and genetics of all living things.</p> <p>Phenomenon: Somatic Cell Cloning –Dolly the sheep was a highly-publicized and successful mammalian clone from an adult cell.</p> <p>Crosscutting Concepts:  Systems and System models  Patterns Stability and Change</p>	<p>Statement of Inquiry: The diversity of life on earth is a result of evolution by natural selection in species which is supported by scientific evidence.</p> <p>Phenomenon: Bacteria can evolve to survive in conditions where they would normally not survive.</p> <p>Crosscutting Concepts: Patterns Stability and Change Scale, Proportion, and Quantity</p>	<p>Statement of Inquiry: In recent years, the underlying biochemical unity of all plants, animals and microbes has become increasingly apparent.</p> <p>Phenomenon: The Great Barrier Reef as a microcosm of the diversity of life—Organisms adapt to changing conditions and are sensitive to stress imposed by humans.</p> <p>Crosscutting Concepts: Interactions and Equilibrium</p>	<p>Statement of Inquiry: The physiology of the Immune, endocrine, and nervous systems allow humans to maintain homeostasis in a changing environment.</p> <p>Phenomenon: Zika virus and Microcephaly—An arbovirus as an emerging threat to developmental neurobiology and reproductive endocrinology.</p> <p>Crosscutting Concepts: Cause and Effect Structure and Function Systems and System models</p>	<p>Review all Topics</p> <p>Unit summative assessments & IB Exam</p>

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	<p>Duration: 10 hours</p> <p>Weighting: 20%</p> <ul style="list-style-type: none"> Individual Investigations <p>IA Criteria:</p> <ul style="list-style-type: none"> Personal Engagement 8% Exploration 25% Analysis 25% Evaluation 25% Communication 17% 	<p>Core Ideas: Mendel and Inheritance, Chromosomal Inheritance Patterns and Abnormalities, Regulation of Gene expression, Biotechnology Applications</p> <p>SEP: Asking Questions & Defining Problems Constructing Explanations Carry out Investigations</p>	<p>Core Ideas: Evidence for evolution, Natural Selection, Classification of Biodiversity, Cladistics</p> <p>SEP: Analyzing and Interpreting data, Constructing Explanations, Making Models, Carry out an Investigation</p>	<p>Patterns</p> <p>Core Ideas: Ecosystem Structure and function, Nutrient Cycling and Energy Flow, Community Ecology, Climate change and Human Impact</p> <p>SEP: Asking Questions and Defining Problems Developing & Using Models Constructing Explanations Carry out Investigations</p>	<p>Core Ideas: Cell Signaling and Regulation, Hormones, Nervous System and impulses, Immune System, Clotting</p> <p>SEP:</p> <ul style="list-style-type: none"> Asking Questions and Defining Problems Constructing Explanations Carry Out Investigations 	
Assessments/ Major Projects	Internal Assessment Final Report	<p>Design Lab: Survival of the black fin icefish and antifreeze proteins</p> <p>Group 4 Project The Group 4 project is a collaborative interdisciplinary activity carried out by all IB senior science students.</p>	<p>Constructing a Dichotomous Key</p> <p>Classifying Across the Kingdoms Lab</p> <p>Kingdoms Project</p>	<p>Design Lab: Quadrat study and chi-square analysis to determine biodiversity</p> <p>Practicum: Designing a mesocosm experiment</p>	Virtual labs and in class labs - respiration and activity	

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Level Specific Differentiation ALL UNITS	Marietta City Schools teachers provide specific differentiation of learning experiences for all students. Details for differentiation for learning experiences are included on the district unit planners.
Resources	<p>Damon, A.; McGonegal, R.; Tosto, P.; Ward, W. <i>Standard level biology</i>; Pearson Education Limited: Harlow, Essex, 2014, Greenwood, T.; Pryor, K.; Bainbridge-Smith, L.; Allan, R. Environmental science: student workbook; Biozone International: Hamilton, New Zealand, 2013</p> <p>Van de Lagemaat, R. www.inthinking.net: Andorra la Vella, Andorra, 2019</p> <p>IB Biology Schoology Course</p> <p>Hodder Study and Revision Guide for IB Biology</p> <p>Hodder IA Textbook Internal Assessment for Biology (Purchased 2020-2021)</p> <p>Campbell Biology Savvas Online Textbook (Purchased 2021-2022)</p> <p>Discovery Education District Purchased Resources – Life Science and Chemistry Resources</p>

Note: Units 1 & 2 were taught in the IB Biology Year 1 course. As this is a 2 year course, those units are not duplicated in this document.