# IB Biology Y2 - MHS Subject Group Overview

<table>
<thead>
<tr>
<th>Unit Name</th>
<th>Internal Assessment (IA)</th>
<th>Unit 3 Genetics</th>
<th>Unit 4 Evolution &amp; Biodiversity</th>
<th>Unit 5 Interactions &amp; Interdependence</th>
<th>Unit 6 Responding to the Environment</th>
<th>Exams/Review</th>
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<tbody>
<tr>
<td>Time</td>
<td>3 Weeks, Ongoing Due to IB March 2023</td>
<td>7 Weeks</td>
<td>7 Weeks</td>
<td>6 Weeks</td>
<td>6 Weeks</td>
<td>5 weeks May 2023 IB Exam</td>
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<tr>
<td>IB Topics</td>
<td>Objectives 1, 2, 3, 4, 2.4, 2.7, 3.1, 3.4, 3.5, 5.3-5.4</td>
<td>5.1-5.4</td>
<td>4.1-4.4, C.1, C.2</td>
<td>6.2, 6.3, 6.5, 6.6</td>
<td>1.1-6.6</td>
<td>Review all Topics Unit summative assessments &amp; IB Exam</td>
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<td>Internal Assessment Components Set by IB Biology Guide</td>
<td>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. Student work is internally assessed by the teacher and externally moderated by the IB.</td>
<td>Statement of Inquiry: Advancements in biotechnology supports complex research into the inheritance patterns and genetics of all living things. Phenomenon: Somatic Cell Cloning—Dolly the sheep was a highly-publicized and successful mammalian clone from an adult cell. Crosscutting Concepts: Systems and System models Patterns Stability and Change</td>
<td>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. Phenomenon: Bacteria can evolve to survive in conditions where they would normally not survive. Crosscutting Concepts: Patterns Stability and Change Scale, Proportion, and Quantity</td>
<td>Statement of Inquiry: In recent years, the underlying biochemical unity of all plants, animals and microbes has become increasingly apparent. 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. Crosscutting Concepts: Interactions and Equilibrium</td>
<td>Statement of Inquiry: The physiology of the Immune, endocrine, and nervous systems allow humans to maintain homeostasis in a changing environment. Phenomenon: Zika virus and Microcephaly—An arbovirus as an emerging threat to developmental neurobiology and reproductive endocrinology. Crosscutting Concepts: Cause and Effect Structure and Function Systems and System models</td>
<td></td>
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Resources, materials, assessments not linked to SGO or unit planner will be reviewed at the local school level.
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<tr>
<th>Duration: 10 hours</th>
<th>Weighting: 20%</th>
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<tbody>
<tr>
<td><strong>IA Criteria:</strong></td>
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<tr>
<td>Personal Engagement 8%</td>
<td>Exploration 25%</td>
</tr>
<tr>
<td><strong>Core Ideas:</strong></td>
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<tr>
<td>Mendel and Inheritance, Chromosomal Inheritance Patterns and Abnormalities, Regulation of Gene expression, Biotechnology Applications</td>
<td>Evidence for evolution, Natural Selection, Classification of Biodiversity, Cladistics</td>
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<td><strong>SEP:</strong> Asking Questions &amp; Defining Problems Constructing Explanations Carry out Investigations</td>
<td><strong>SEP:</strong> Analyzing and Interpreting data, Constructing Explanations, Making Models, Carry out an Investigation</td>
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| Assessments/ Major Projects | Design Lab: Survival of the black fin icefish and antifreeze proteins | Constructing a Dichotomous Key Classifying Across the Kingdoms Lab Kingsom Project | Design Lab: Quadrat study and chi-square analysis to determine biodiversity Practicum: Designing a mesocosm experiment | Virtual labs and in class labs - respiration and activity |
|-----------------------------|-------------------------------------------------|------------------------------------------------|------------------------------------------------|------------------------------------------------|---|
| Internal Assessment Final Report | Group 4 Project The Group 4 project is a collaborative interdisciplinary activity carried out by all IB senior science students. | | | | |

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<tr>
<th>Level Specific Differentiation: ALL UNITS</th>
<th>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.</th>
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*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.*