

## **Course Outline Science MYP Level 2**

### **I Course description**

The year two science program includes units that focus on:

- characteristics of life, classification of living things, and structure, function, and processes of plants.
- the periodic table, atomic structure, and chemical reactions.
- structure of the Earth, processes that change Earth, and the history of Earth.
- interdependent relationships and energy in ecosystems, natural selection and adaptations, and environmental issues and human impacts

Throughout the year science also focuses on scientific investigative skills and also scientific tool use and measurement.

Holistic learning is encouraged on a daily basis as students use skills from many curricular areas to explore scientific concepts locally, nationally and globally. It fosters intercultural awareness in students by having them apply learned concepts to global problems to understand different perspectives and needs. Students will use multiple forms of communication to express their ideas and show evidence of their learning about real-world concepts and issues including written lab reports, graphs, data tables, oral reports, technology-based presentations, and a written research paper.

Teaching and studying of sciences through the IB Learner Profile lens will encourage and enable students to:

- Develop inquiring minds and curiosity about science and the natural world.
- Acquire knowledge, conceptual understanding and skills to solve problems and make informed decisions in scientific and other contexts.
- Develop skills of scientific inquiry to design and carry out scientific investigations and evaluate scientific evidence to draw conclusions.
- Communicate scientific ideas, arguments, and practical experiences accurately in a variety of ways.
- Think analytically, critically, and creatively to solve problems, judge arguments, and make decisions in scientific and other contexts.
- Appreciate the benefits and limitations of science and its application in technological developments.
- Understand the international nature of science and the interdependence of science, technology and society, including the benefits, limitations and implications imposed by social, economic, political, environmental, cultural, and ethical factors.
- Demonstrate attitudes and develop values of honesty and respect for themselves, others, and their shared environment.

### **II. Aims and objectives**

Please refer to Merrill's website to view the MYP objectives.

The aims of the teaching and study of MYP sciences are to encourage and enable students to:

- develop curiosity, interest and enjoyment towards science and its methods of inquiry
- acquire scientific knowledge and understanding
- communicate scientific ideas, arguments and practical experiences effectively in a variety of ways
- develop experimental and investigative skills to design and carry out scientific investigations and to evaluate evidence to draw a conclusion
- develop critical, creative and inquiring minds that pose questions, solve problems, construct explanations, and make informed decisions in scientific and other contexts
- develop awareness of the possibilities and limitations of science and appreciate that scientific knowledge is evolving through collaborative activity locally and internationally

- appreciate the relationship between science and technology and their role in society
- develop awareness of the moral, ethical, social, economic, political, cultural and environmental implications of the practice and use of science and technology
- observe safety rules and practices to ensure a safe working environment during scientific activities
- engender an awareness of the need for and the value of effective collaboration during scientific activities.

The content standards and objectives of this course are aligned with the Iowa Core Curriculum.

### **III. Global Contexts**

In our highly interconnected and rapidly changing world, IB programmes aim to develop international-mindedness in a global context. The terms “international” and “global” describe that world from different points of view.

- “International” refers to the perspective of the world’s constituent parts, nation states and their relationships with each other.
- “Global” refers to the perspective of the planet as a whole.

Each unit will include a unit question and global context focus. These will provide a framework and give our classroom a context for learning while also helping students make connections to their own life, to other subject areas, and to the world. The area of interaction called Approaches to Learning is part of every unit.

### **IV. Texts and Resources**

Reference materials used in the class include the Holt Science and Technology series: Books A, E, F, and L, the FOSS Populations and Ecosystems kit, newspapers, magazines, internet, books, educational videos/clips, guest speakers and other applicable teacher resources.

### **V. Methodology**

Students will be actively involved in their own learning. A variety of engaging experiences will include: partner laboratories, inquiry based lessons, cooperative learning, direct teaching, projects, small and large group discussions, and research.

### **VI. Methods of Assessment**

Formative assessments will include homework, class work, class discussions, group work, teacher observation, rubrics, and quizzes.

Summative assessments will include projects, reflections, presentations, rubrics, teacher created tests and district assessments.

For IB assessment, student work is evaluated on the following IB assessment criteria:

- Criterion A: Knowing and Understanding (max 8)
- Criterion B: Inquiring and Designing (max 8)
- Criterion C: Processing and Evaluating (max 8)
- Criterion D: Reflecting on the Impacts of Science (max 8)

### **VII. Grading Policy, including the use of MYP Criteria**

All summative tasks will be assessed using MYP rubrics, and students will receive a copy of the rubrics to take home. Further, teachers will post each student’s level of achievement on Infinite Campus.