

**Stockton Collegiate International Schools**  
**MYP Science: Chemistry**  
**Level 5, Grade 10**

**1. Course Description**

Stockton Collegiate’s science courses are designed to help our students grow as inquirers as they develop their scientific literacy. As we practice scientific methods of investigation through exploration of relevant issues, our students will develop their analytical and critical thinking. They will learn to use the language of science and its appropriate communication formats as they share their discoveries. They will have the opportunity to demonstrate their scientific knowledge by using this knowledge to solve problems in familiar and unfamiliar situations. They will discover how scientific thought has developed over time and how it is being added to with contributions from scientists all over the world. Students will be taught how to be good stewards of our local and global environments, and will be made aware of how our individual actions and attitudes affect our surroundings. They will also be expected to grow in all attributes of the IB Learner Profile: inquirers, knowledgeable, thinkers, communicators, principled, open-minded, caring, risk-takers, balanced and reflective. Development of these attributes will enhance the students’ study of the sciences.

**II. State Standards and MYP Objectives**

<b>MYP Objectives</b>	<b>California State Standards</b>
<b>One world:</b> This objective refers to enabling students to understand the interdependence between science and society.	<b>Cell Biology:</b> All living organisms are composed of cells, from just one to many trillions, whose details usually are visible only through a microscope. All living things can be classified into two cell types.
<b>Communication in science:</b> This objective refers to enabling students to develop their communication skills in science.	<b>Genetics:</b> A typical cell of any organism contains genetic instructions that specify its traits. Those traits may be modified by environmental influences and are inherited from parent to offspring.
<b>Knowledge and understanding of science:</b> This objective refers to enabling students to understand the main ideas and concepts of science and to apply them to solve problems in familiar and unfamiliar situations.	<b>Evolution:</b> Biological evolution accounts for the diversity of species developed through gradual processes over many generations. Periodic extinctions have occurred due to radical environmental changes.
<b>Scientific inquiry:</b> This objective refers to enabling students to develop scientific inquiry skills to design and carry out scientific investigations.	<b>Earth and Life History:</b> Evidence from rocks allows us to understand the evolution of life on Earth.
<b>Processing data:</b> This objective refers to enabling students to record, organize and process data.	<b>Structure and Function in Living Systems:</b> The anatomy and physiology of plants and animals illustrate the complementary nature of structure and function.
	<b>Physical Principles in Living Systems:</b> Physical principles underlie biological structures and functions.
	<b>Investigation and Experimentation:</b> Scientific progress is made by asking meaningful questions and conducting careful investigations.

### III. Areas of Interaction

In MYP Science we will be using a variety of lenses through which students will view and learn about science. These lenses or Areas of Interaction include approaches to learning (ATL), community and service, health and social education, environments and human ingenuity. Central to the learning experience is understanding how one learns; Approaches to Learning will be addressed throughout the course. Students must be able to understand and evaluate their learning style before they can gain complete mastery. In science, community and service might be used to answer these questions, “How can I use science to help my community and the world? How is science communicated across time and cultures?” Health and social education may seek to answer the questions such as, “How can science be used to influence people and societies?” With the lens of environments students will examine questions like, “How do my scientific understanding and skills enable me to understand different environments?” Human ingenuity can approach questions in science such as, “What is science? Where does science come from? How has science evolved over time?”

### IV. Texts and Resources

The main text for Science 1 will be *Issues and Life Science* published by Lab-Aids®. Other resources include University of the Pacific, IB OCC, the Internet, newspapers, magazines, related guest speakers, field trips and teacher’s personal resources.

### V. Methodology

MYP Science is an inquiry-based program with the goal of students experiencing the process of science and gaining foundational knowledge. Students will work individually and in variable sized groups. In order to build both a foundation of scientific knowledge and a comprehensive understanding of how that knowledge is obtained, students will learn through: direct teaching, demonstrations, lab activities, group work, projects, field trips, model building, research and experimentation. Our science course is an inquiry-based, student-centered program. Students will work individually and in groups of varying size. Students will be able to communicate their discoveries in written, oral and model-based ways to a variety of audiences. Students will have multiple opportunities for hands-on learning both inside and outside the classroom.

### VI. Methods of Assessment

The single most important aim of assessment at Stockton Collegiate is to support and encourage student learning. Teachers will use formative assessments to guide their instruction day-by-day. These assessments are generally not included in the students’ final grades. Summative assessments are the students’ opportunity to demonstrate their level of achievement at the end of a unit and are included as part of a final grade. The MYP approach to assessment recognizes the importance of the processes of learning as well as the products of learning. The MYP assessment model is criterion-related, meaning that it is based upon pre-determined criteria to which all students (and parents) have access.

Many types of assessment, both formative and summative, will be used and might include tests, quizzes, lab reports, presentations, research reports, models, debates and reflections. We know that each student learns differently, and our goal is to ensure that students have an opportunity through their assessments to demonstrate what they have learned.

The following objectives will guide instruction and form the basis of assessment.

- A. One World
- B. Communication in Science
- C. Knowledge and understanding of science
- D. Scientific inquiry
- E. Processing data
- F. Attitudes in science

Name of Unit	Unit Question	Assessment
Muir-Whitney		

**VII. Grading Policy**

Grades will be determined using a combination of MYP marks and more traditional assessments. These grades will be combined to produce a composite mark of A, B, C, D, or F at the end of each semester according to traditional percentage guidelines (90-100: A; 80-89: B; 70-79: C; 60-69: D). Heavy emphasis will be given to a student's level of competency at the end of the grading period.