INTERNATIONAL SCHOOL OF MONTEREY

8th Grade Science

Instructor

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Course Description

In 8th-grade science, students learn about physical science: scientific writing, waves, genetics and mutations, density, astronomy, motion, forces, and energy. All units are designed with the MYP IB aims in mind. Units explore different concepts through the lenses of the different areas of interaction and incorporate approaches to learning and learner profiles. All students will become virtual scientists and demonstrate their knowledge and understanding of what it means to be an inquirer in science through various labs throughout the year.

The International Baccalaureate Middle Years Program gives this course a framework through which ISM teachers can incorporate the California State Content Standards (where applicable), the Common Core State Standards, and the Next Generation Science Standards.

This course meets three times a week.

MYP Aims

The aims of any MYP subject state what the teacher may expect to teach or do and the student may expect to experience or learn. In addition, they suggest how the learning experience may change the student.

MYP Sciences aim to encourage and enable students to:

- understand and appreciate science and its implications
- Consider science as a human endeavor with benefits and limitations
- cultivate analytical, inquiring, and flexible minds that pose questions, solve problems, construct explanations, and judge arguments
- develop skills to design and perform investigations, evaluate evidence, and reach conclusions
- Build an awareness of the need to collaborate and communicate effectively
- apply language skills and knowledge in a variety of real life contexts
- develop sensitivity towards the living and nonliving environments
- reflect on learning experiences and make informed choices.

MYP 8th Grade Objectives

A Knowing and Understanding:

i. describe scientific knowledge

ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations

iii. analyze information to make scientifically supported judgments.

B Inquiring and Designing:

i. describe a problem or question to be tested by a scientific investigation

ii. outline a testable hypothesis and explain it using scientific reasoning

iii. describe how to manipulate the variables, and describe how data will be collected

iv. design scientific investigations.

C Processing and Evaluating

i. present collected and transformed data

ii. interpret data and describe results using scientific reasoning

iii. discuss the validity of a hypothesis based on the outcome of the scientific investigation

iv. discuss the validity of the method

v. describe improvements or extensions to the method.

D Reflecting on the Impacts of Science

i. describes how science is applied and used to address a specific problem or issue

ii. discuss and analyze the various implications of using science and its application in solving a specific problem or issue

iii. apply scientific language effectively

iv. document the work of others and sources of information used.

Units of Inquiry

These are the anticipated units of inquiry for this year. These units continue to be a work in progress as ISM teachers continue to make adaptations to meet the guidelines for the MYP. Changes to these units might take place throughout the year as students and teachers reflect on what is needed to prepare students for the next level of learning. Teachers will be in contact with families to keep them

informed about the current units of study.

8th Grade Science Units of Inquiry

Science Unit Title	Key Concept	Related Concepts	Global Context	Statement of Inquiry	Criteria Assessed
Scientific Writing 8/19/25-10/3/25	Systems	Form Patterns	Scientific and Technical Innovation	Data can be communicated by asking questions and following a systematic process.	A, D
Motion and Force 10/13/25-12/19/25	Relationships	Function Movement	Orientation in Space and Time	Movement and its functions demonstrate the nature of relationships.	B, C
Genetics and Heredity 1/7/26-3/13/26	Relationships	Evidence Patterns	Fairness and Development	Our relationships depend on patterns, with evidence to understand our rights and civic responsibility.	A, D
Astronomy 3/30/26-5/22/26	Systems	Evidence Movement	Orientation in Space and Time	Evidence proves movement occurs within systems regardless of scale.	B, C

Assessment

Assessment in the MYP follows a criterion related approach. All assessment in the MYP is conducted by teachers who rely on professional expertise in making qualitative judgments. This means that students' work is assessed against defined assessment criteria and not against the work of other students. When assessing student work, teachers read the descriptors outlined within rubrics, looking for the highest achievement level that a student has demonstrated in their work.

Before summative assessment tasks are given, teachers work to clarify the expectations of the task with students by using any of the following:

- Task specific rubrics
- Oral discussion of the expectations
- A task sheet that explains the expectations

At the end of each term, students will receive a grade for each of the criteria within that subject. All MYP subjects have four criteria, and the maximum points for each criterion is 8. The chart below outlines the criteria for the sciences:

- Criteria: A Knowing and Understanding, a maximum of 8
- Criteria: B Inquiring and Designing, a maximum of 8
- Criteria C: Processing and Evaluating, a maximum of 8

- Criteria D: Reflecting on the Impacts of Science, a maximum of 8

Subject-Specific Grade Boundaries

To determine a student's final grade, teachers assess where each student is most consistently performing concerning each criterion. Students' final criterion grade is determined using all assessments and evidence collected from that criterion. However, grades are not an average of all work completed. Rather, grades indicate where a student's most current knowledge and abilities most consistently fall at that time. Teachers use the "best fit" approach and professional judgment to determine a final grade for each criterion based on the evidence they have collected. These grades will be reported to students and parents at the end of each term on report cards. Students will also receive written comments that highlight strengths and areas of continued development.

Teachers add together all the criteria achievement levels for that subject. Teachers use the grade boundaries, determined by IB, to determine the MYP grade of 1-7. All MYP courses have the same grade boundaries.

MYP Grade Boundaries	MYP Grade
28-32	7
24-27	6
19-23	5
15-18	4
10-14	3
6-9	2
1-5	1