



Dominican International School

COURSE SYLLABUS

GRADE LEVEL: 7

SCHOOL YEAR: 2023-24

TEACHER: Ms. Bing Racadio

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COURSE DESCRIPTION:

The focus of the Grade 7 Science is an integrated science course that explores the scientific method through the study and experimentation of topics in Physical Science, Life Science and Earth & Space Science. Students will investigate and draw conclusions from learning activities that are designed to foster critical thinking and inquiry.

The teaching session consists of 5 periods (45 minutes) per week, running from August till May. The nature of the subject relates to explanation, comprehension, comparison, analysis and application of the learned knowledge.

Science projects will be carried out for the science fair, where pupils create their own experiments/investigations, and present their science inquiry via both poster and oral presentation. Scientific thinking and step-wise guidance will be introduced to help pupils understand the nature of science.

COURSE OBJECTIVES:

The Science curriculum adapts the US Next Generation Science Standards (NGSS). In Grade 7 students continue working towards the achievement of the Middle School NGSS Standards. The standards for each sub- topic are described in narrative form below:

Middle School Physical Sciences

Students in middle school continue to develop understanding of four core ideas in the physical science. The middle school performance expectations in the Physical Sciences build on the K-5 ideas and capabilities to allow learners to explain phenomena central to the physical sciences but also to the life sciences and earth and space science. The performance expectations in physical science blend the core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge to explain real world phenomena in the physical, biological, and earth and space sciences. In the physical sciences, performance expectations at the middle school level focus on students developing understanding of several scientific practices. These include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, and constructing explanations;

and to use these practices to demonstrate understanding of the core ideas. Students are also expected to demonstrate understanding of several of engineering practices including design and evaluation.

Middle School Life Sciences

Students in middle school develop understanding of key concepts to help them make sense of the life science. These ideas build upon students' science understanding from earlier grades and from the disciplinary core ideas, science and engineering practices, and crosscutting concepts of other experiences with physical and earth sciences. There are five life science topics in middle school: 1) Structure, Function, and Information Processing, 2) Growth, Development, and Reproduction of Organisms, 3) Matter and Energy in Organisms and Ecosystems, 4) Interdependent Relationships in Ecosystems, and 5) Natural Selection and Adaptations. The performance expectations in middle school blend core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge across the science disciplines. While the performance expectations in middle school life science couple particular practices with specific disciplinary core ideas, instructional decisions should include use of many science and engineering practices integrated in the performance expectations. The concepts and practices in the performance expectations are based on the grade-band endpoints described in A Framework for K-12 Science Education (NRC, 2012).

Middle School Earth and Space Sciences (ESS)

Students in middle school develop understanding of a wide range of topics in Earth and space science that build upon science concepts from elementary school through more advanced content, practice, and crosscutting themes. There are six ESS standard topics in middle school: Space Systems, History of Earth, Earth's Interior Systems, Earth's Surface Systems, Weather and Climate, and Human Impacts. The content of the performance expectations is based on current community-based geoscience literacy efforts such as the Earth Science Literacy Principles (Wyssession et al., 2012), and is presented with a greater emphasis on an Earth Systems Science approach. The performance expectations strongly reflect the many societally relevant aspects of ESS (resources, hazards, environmental impacts) as well as related connections to engineering and technology.

ASSESSMENT:

Assessment is an essential component of the learning process. It is also the key to unlock what students have actually learned. Classroom formative assessment will be given to students throughout the year to collect feedback on how well they are learning. Students also will be assigned online classroom homework. Section or chapter tests will be given to students to evaluate their knowledge and ability to apply science concepts, and to cultivate critical thinking. Summative exams conducted quarterly aim to assess students' learning and to structure their academic efforts.

Assessment strategies include participation (10%), homework and classwork (30%), chapter tests (30%), and quarter exam (30%). All formative and summative assessments, including reports, essays, presentations or projects would be accompanied with written or oral feedback. Multiple assessments address different learning styles with the results aligned to NGSS to evaluate pupil's progress, wherever applicable. All the students' grades are carefully recorded and data is promptly entered in the school gradebook system for tracking and evaluation.

PRIMARY TEXTBOOK & OTHER RESOURCES

Michelle Anderson, Julie Berwals, et al. *Integrated iScience Course 2*. Columbus, Ohio. Glencoe/ McGraw Hill, Copyright 2017.

Google Classroom offers the web-based platform for effective instructional communications and formative feedbacks. It is accessible not only for pupils, but also for parents and the school. Video clips, interactive learning programs, and web-based learning tools, such as eScience and PHET are also used to facilitate and stimulate learning.

ADDITIONAL INFORMATION – Please see Google Classroom for more information.

Bl. Jordan of Saxony - Science G7
Class code: **whhy3s2**

St. Thomas of Aquinas - Science G7
Class Code: **6agle3mf**

References:

McGraw Hill Education (2017), *Integrated iScience2, Teacher Ed. Vol. 1*, Columbus, OH. ISBN: 978-0-07-677351-0

National Research Council. (2012) *A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas*. Committee on a Conceptual Framework for New K-12 Science Education Standards. Board on Science Education, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Wyssession, M. E. *et al.* (2012) Developing and applying a set of earth science literacy principles. *J. Geosci. Educ.*, 60(2), pp. 95–99.

Copying (plagiarism) is a serious offense and a form of theft. In certain cases, it is also a criminal offense. It is defined as taking words, phrasing, sentence structure, or any other element of the expression of another person's ideas, and using them as if they were your own. Plagiarism is a violation of another person's rights, whether the material stolen is great or small – it is not a matter of degree or intent. Plagiarism has serious consequences.

Any act of plagiarism will result in an automatic zero on the entire assignment

Academic Dishonesty means employing a method or technique or engaging in conduct in an academic endeavor that contravenes the standards of ethical integrity expected at DIS. Academic dishonesty includes but is not limited to, the following:

1. Purposely incorporating the ideas, words of sentences, paragraphs, or parts thereof without appropriate acknowledgment and representing the product as one's own work; and
1. Representing another's intellectual work such as photographs, paintings, drawings, sculpture, or research or the like as one's own, including failure to attribute content to an AI.
2. Employing a tutor, making use of Artificial Intelligence without acknowledgement, getting a parent to write a paper or do an assignment, paying for an essay to be written by someone else and presented as the student's own work.
3. Committing any act that a reasonable person would conclude, when informed of the evidence, to be a dishonest means of obtaining or attempting to obtain credit for academic work.

Any act of academic dishonesty will result in an automatic zero on the entire assignment

SUBJECT: 1st QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	Topic / Projects / Assessments
Week 1 Aug 10th to 11th <u>Only 2 School Days</u> <i>10 ~ First Day / Orientation Day</i>	Course introduction, Scientific Explanations Wednesday – Orientation M/H School regular class after Orientation Introduction – Teacher, Subjects, Expectations, Topics
Week 2 Aug 14th to 18th <i>15 ~ Opening Mass</i>	<u>Ch1: Classifying and Exploring Life</u> Lesson 1 Characteristics of Life
Week 3 Aug 21st to 25th	<u>Ch2: Cell Structure and Function</u> Lesson 1 Cells and Life Lesson 2 The Cell
Week 4 Aug 28th to Sep 1st	<u>Ch2: Cell Structure and Function</u> Lesson 3 Moving Cellular Material
Week 5 Sep 4th to 8th <i>8 ~ Holy Mass & VIP Induction</i>	<u>Ch2: Cell Structure and Function</u> Lesson 4 Cells and Energy
Week 6 Sep 11th to 15th <i>12-14 ~ Pre-Exam Days</i>	<u>Ch3: From a cell to an organism</u> Lesson 1 The cell cycle and the cell division
Week 7 Sep 18th to 22nd	<u>Ch3: From a cell to an organism</u> Lesson 2 Levels of organization
Week 8 Sep 25th to 29th <u>No Classes</u> <i>25-28 ~Teacher's Conference</i> <i>29 – Moon Festival Holiday</i>	<u>Ch3: From a cell to an organism</u> Lesson 2 Levels of organization 1 st Quarter Exam
Week 9 Oct 2nd to 6th <u>3 Days of Class</u> <i>5-6 ~Q1 Exams</i>	1st Quarter Exam

2nd QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	Topic / Projects / Assessments
Week 1 (10) Oct 9th to 13th <u>3 Days of Class</u> <i>9-10 – Double 10 Holiday</i>	Review Quarter Exam <u>Ch4: Reproduction of Organisms</u> Lesson 1 Sexual Reproduction and Meiosis
Week 2 (11) Oct 16th to 20th	<u>Ch4: Reproduction of Organisms</u> Lesson 1 Sexual Reproduction and Meiosis Lesson 2 Asexual Reproduction
Week 3 (12) Oct 23rd to 27th	<u>Ch5: Genetics</u> Lesson 1 Mendel and his Peas Lesson 2 Understanding Inheritance
Week 4 (13) Oct 30th to Nov 3rd <i>1 - All Saint's Day Mass</i>	<u>Ch5: Genetics</u> Lesson 3 DNA and Genetics
Week 5 (14) Nov 6th to 10th	<u>Ch6: The Environment and Change Over Time</u> Lesson 1 Fossil evidence of evolution Lesson 2 Theory of evolution by natural selection
Week 6 (15) Nov 13th to 17th	<u>Ch6: The Environment and Change Over Time</u> Lesson 3 Biological evidence of evolution
Week 7 (16) Nov 20th to 24th	<u>Ch 7: Human body system</u> Lesson 1 Transport and Defense Lesson 2 Structure Movement and Control
Week 8 (17) Nov 27th to Dec 1st	<u>Ch 7: Human body system</u> Lesson 1 Transport and Defense Lesson 2 Structure Movement and Control
Week 9 (18) Dec 4th to 8th <i>8 - Foundation Day Celebrations</i>	<u>Ch8: Plant Processes and Reproduction</u> Lesson 1 Energy Processing in Plants Lesson 3 Plant Reproduction
Week 10 (19) Dec 11th to 15th <u>3 Days of Class</u> <i>14-15 ~ Q2 Exams</i>	2nd Quarter Exam
Dec 18th to Jan 1st	Christmas Break

3rd QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	Topic / Projects / Assessments
Week 1 (20) Jan 3rd to 5th <u>3 Days of Class</u> <i>4 ~ New Year Mass</i>	Review Quarter Exam <u>Ch10: Foundations of Chemistry</u> Lesson 1 Classifying Matter
Week 2 (21) Jan 8th to 12th	<u>Ch10: Foundations of Chemistry</u> Lesson 2 Physical Properties
Week 3 (22) Jan 15th to 19th	<u>Ch10: Foundations of Chemistry</u> Lesson 3 Physical Changes
Week 4 (23) Jan 22nd to 26th	<u>Ch10: Foundations of Chemistry</u> Lesson 4 Chemical Properties and Changes
Week 5 (24) Jan 29th to Feb 2nd	<u>Ch10: Foundations of Chemistry</u> Lesson 4 Chemical Properties and Changes
Week 6 (25) Feb 5th to 9th <u>3 Days of Class</u> <i>8-9 ~ CNY</i>	<u>Ch19: Motion, Forces and Newton's Laws</u> Lesson 1 Describing Motion
Feb 8th to 16th	CHINESE NEW YEAR
Week 7 (26) Feb 19th to 23rd <i>19 ~ Lenten Mass</i> <i>21-23 ~ Pre-Exam Days</i>	<u>Ch19: Motion, Forces and Newton's Laws</u> Lesson 2 Forces
Week 8 (27) Feb 26th to March 1st <u>4 Days of Class</u> <i>28 ~ 228 Memorial Day Holiday</i>	<u>Ch19: Motion, Forces and Newton's Laws</u> Lesson 3 Newton's Laws of Motion
Week 9 (28) March 4th to 8th <u>4 Days of Class</u> <i>8 ~ Q3 Exams</i>	<u>Ch20: The Sun, Earth, Moon System</u> Lesson 1 Earth's Motion, Eclipses and Tides Lesson 2 Earth's Moon Lesson 3 Eclipses and Tides 3rd Quarter Exam

4th QUARTER – TENTATIVE COURSE CONTENT

(NB: Depending on time and interest, the teacher may delete and/or add other selections.)	
Week / Date	Topic / Projects / Assessments
Week 1 (29) March 11th to 15th <u>4 Days of Class</u> <i>11 ~ Q3 Exams</i> <i>12 ~ Q4 Begins</i>	<u>Review</u> <u>Ch14: Earth's Changing Surface</u> Lesson 1 Plate Tectonics
Week 2 (30) March 18th to 22nd <i>18-21 ~ Fire Drill</i>	<u>Ch14: Earth's Changing Surface</u> Lesson 2 Earthquakes and Volcanoes
March 25th to Apr 5th	SPRING/ LENTEN BREAK
Week 3 (31) Apr 8th to 12th <i>10 ~ Easter Mass</i>	<u>Ch14: Earth's Changing Surface</u> Lesson 3 Weathering, Erosion and Deposition
Week 4 (33) Apr 15th to 19th	<u>Ch14: Earth's Changing Surface</u> Lesson 3 Weathering, Erosion and Deposition
Week 5 (34) Apr 22th to 26th <i>22-26 ~ AP Mock Exams</i>	<u>Ch16: Earth's Atmosphere</u> Lesson 1 Describing Earth's Atmosphere Lesson 2 Energy Transfer in the Atmosphere
Week 6 (35) Apr 29th to May 3rd <i>1-2 ~ Pre-Exam</i> <i>1-10~ Final Exams (K, 5, 8, 12 only)</i> <i>4/29 – 5/10 ~ AP Exams</i>	<u>Ch16: Earth's Atmosphere</u> Lesson 3 Air Currents
Week 7 (36) May 6th to 10th <i>1-10~ Final Exams (K, 5, 8, 12 only)</i> <i>4/29 – 5/10 ~ AP Exams</i>	<u>Ch 17: Weather</u> Lesson 1 Describing Weather Lesson 2 Weather Patterns
Week 8 (37) May 13th to 17th <u>2 Days of Class</u> <i>15-16 ~ Q4 Exams</i> <i>17 ~ Record Day</i>	<u>Ch 18: Climate</u> Lesson 1 Climates of Earth Lesson 2 Climate Cycles Quarter Exams
Week 9 (38) May 20th to 24th <u>ACTIVITIES:</u> Double check the school calendar and emails from the administration.	----- <i>20-24 ~ Student Clearance Days</i> <i>21 ~ Baccalaureate Mass for Graduating classes</i> <i>22 & 23 ~ Middle & High School Sports Day</i> <i>23 ~ Pre-Kindergarten & Gr. 1 - 4 Recognition/Kindergarten Graduation/Gr. 5 Promotion</i> <i>24 ~ Gr. 6 – 7 Recognition and Gr. 8 Graduation</i> <i>24 ~ Lower School Sports Day</i>
Week 10 (39) May 27th to 31st <u>ACTIVITIES:</u> Double check the school calendar and emails from the administration.	----- <i>27 ~ House Culminating Activity</i> <i>28 ~ Gr. 9-11 Recognition and Gr. 12 Graduation</i> <i>29 ~ Class Party</i> <i>30 ~ Last Day of School & Report Card Distribution (half day)</i> <i>31 ~ Teachers/Staff Meeting</i>