

Science Grade 4



Dominican International School

Science Syllabus

School Year 2026–27



Mr Ruttan/G4 Science Teacher

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COURSE DESCRIPTION: The Science course for Fourth Grade has been developed to reflect real-world situations through the use of hands-on opportunities for learning. Learning science at this stage is not necessarily about “right answers” but rather the process of asking questions, solving problems, making models, and making decisions based on the information gathered. The aim of the course is to lay a helpful foundation for the correct interpretation of results based upon scientific observations. Students gain a deeper understanding of scientific concepts as they engage in student-directed and multimodal learning. Lessons immerse students in the wonders of their world, encouraging them to think like scientists and helping them build STEM skills. Hands-on activities and experiments motivate students, giving them a deeper understanding of scientific concepts. Encourage student-directed learning through an integrated blend of print and multimedia components, including simulations and videos, to enhance understanding of critical scientific concepts.

COURSE OBJECTIVES: Students will learn how to use an engineering design process to help them find a good solution to problems. Students will learn how to learn more about problems by asking questions and doing research. Students will learn how to self-assess the efficacy of their models and redo or adjust them as necessary based on new information acquired.

Additionally, the students will be able to meet the following standards:

3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

3-5-ETS1-3. Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.

4-LS1-1. Construct an argument that plants and animals have that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-LS1-2. Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

4-PS4-2. Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

4-PS3-1. Use evidence to construct an explanation relating the speed of an object to the energy of that object.

4-PS3-2: Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.

4-PS3-3. Ask questions and predict outcomes about the changes in energy that occur when objects collide.

4-PS3-4: Energy Conversion Device · Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

4-PS4-1. Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.

4-PS4-3. Generate and compare multiple solutions that use patterns to transfer information.

3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.

3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

4-ESS2-1. Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

4-ESS2-2. Analyze and interpret data from maps to describe patterns of Earth's features.

4-ESS3-1. Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

4-ESS3-2: Generate and compare multiple solutions to reduce the impacts of natural earth processes on humans.

4-PS3-4: Energy Conversion Device · Apply scientific ideas to design, test, and refine a device that converts energy from one form to another

3-5-ETS1-2: Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem.

PRIMARY TEXTBOOKS AND OTHER RESOURCES:

- ❖ TEXT: DiSpezio, M., Frank, M., et, al. (2021) *Into Science Grade 4*. Houghton Mifflin Harcourt Publishing Company. Florida, USA.

❖ LINKS:

1. Our school website: <http://www.dishs.tp.edu.tw/>
2. Publisher's website: <https://www.hmhco.com/programs/hmh-into-science>

GRADING SYSTEM/ASSESSMENT:

The quarterly grade will be awarded for all student work based on the following criteria:

- 1) **Class participation, Homework, Journals (notebook)**, (30% of quarterly grade)
- 2) **Quizzes and Tests** (30% of quarterly grade)
- 3) **Quarterly Exams** (30% of quarterly grade)
- 4) **Department/D'Torch** (10% of quarterly grade)

ADDITIONAL INFORMATION:

Please always check Google Classroom for homework and announcements.

ACADEMIC DISHONESTY:

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:

- Purposely incorporating the ideas, words, sentences, paragraphs, or parts thereof without appropriate acknowledgment and representing the product as one's work;
- Representing another's intellectual work, such as photographs, paintings, drawings, sculpture, research, or the like, as one's own, including failure to attribute content to an AI.
- Employing a tutor, using Artificial Intelligence without acknowledgment, getting a parent to write a paper or do an assignment, and paying for an essay to be written by someone else and presented as the student's work.
- 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/learning task.

WEEKLY SCHEDULE**First Quarter Tentative Course Content**

Week & Date	Topics / Projects / Assessments
Week 1 Aug 10 - 14	Monday Class Preparation ~ Student Holiday Tuesday Morning Assembly Friday Opening Mass & Assumption of Our Lady 8:00 Orientation and getting-to-know-each-other activities.
Week 2 Aug 17 - 21	Unit 1 Engineering and Technology Lesson 1 Engineering Design
Week 3 Aug 24 - 28	Unit 1 Engineering and Technology Lesson 1 Engineering Design
Week 4 Aug 31 - Sep 4	Unit 1 Review Unit 2 Plant and Animal Structure and Function

	Lesson 1 Plant Parts and How They Function
Week 5 Sep 7 - 11	Unit 2 Plant and Animal Structure and Function Lesson 1 Plant Parts and How They Function
Week 6 Sep 14 - 18	Unit 2 Plant and Animal Structure and Function Lesson 1 Plant Parts and How They Function Unit 2 Plant and Animal Structure and Function Lesson 2 Animal Parts and How They Function
Week 7 Sep 21 - 25	T-W-Th Pre-Exam Days Friday Moon Festival ~ Public Holiday Unit 2 Plant and Animal Structure and Function Lesson 2 Animal Parts and How They Function
Week 8 Sep 28 - Oct 2	Monday Confucius' Birthday ~ Public Holiday Thursday Major Exams Day 1 Friday Major Exams Day 2 Unit 2 Plant and Animal Structure and Function Lesson 2 Animal Parts and How They Function Quarter review and reflection Review Quarter 1 Exams
Week 9 Oct 5 - 9	Monday Record Day ~ Student Holiday T-W-Th Teachers Conference ~ Student Holiday Friday Double 10 Day ~ Public Holiday

Second Quarter Tentative Course Content

Week & Date	Topics / Projects / Assessments
Week 1 (10) Oct 12 - 16	Unit 5 Earth's Features and Resources Lesson 1 Patterns on Earth
Week 2 (11) Oct 19 - 23	Unit 5 Earth's Features and Resources Lesson 1 Patterns on Earth
Week 3 (12)	Monday Retrocession Day ~ Public Holiday

Oct 26 - 30	Unit 5 Earth's Features and Resources Lesson 2 Reducing the Impacts of Natural Hazards
Week 4 (13) Nov 2 - 6	Unit 5 Earth's Features and Resources Lesson 2 Reducing the Impacts of Natural Hazards
Week 5 (14) Nov 9 - 13	Unit 5 Earth's Features and Resources Lesson 3 Resources
Week 6 (15) Nov 16 - 20	Quarter 2 Exam = science fair project (completed in class) Unit 5 Earth's Features and Resources Lesson 3 Resources
Week 7 (16) Nov 23 - 27	T-W-Th Pre-Exam Days Friday November 27th Science Fair Unit 5 Earth's Features and Resources Lesson 3 Resources
Week 8 (17) Nov 30 - Dec 4	Review Unit 2 Plant and Animal Structure and Function Lesson 3 How Senses Work
Week 9 (18) Dec 7 - Dec 11	Monday TBD Tuesday Foundation Day Mass 9:00, Cutting of the Cake Ceremony, Christmas Fair, (Whole day) Wednesday TBD Thursday Major Final Exams half day Friday Major Final Exams half day Unit 2 Plant and Animals Structure and Function Lesson 3 How Senses Work
Dec 14 to Jan 1 Christmas Break	

Third Quarter Tentative Course Content

Week & Date	Topics / Projects / Assessments
Week 1 (19) Jan 4 - Jan 8	Monday Record Day ~ Student Holiday Friday New Year Mass at 8:00 Unit 3 Energy and Communication

	Lesson 1 - Energy Transfer and Transformation
Week 2 (20) Jan 11 - Jan 15	Unit 3 Energy and Communication Lesson 1 - Energy Transfer and Transformation
Week 3 (21) Jan 18 - Jan 22	Unit 3 Energy and Communication Lesson 1 - Energy Transfer and Transformation Lesson 2 - Collisions
Week 4 (22) Jan 25 - Jan 29	Unit 3 Energy and Communication Lesson 2 - Collisions
Week 5 (23) Feb 1 - Feb 5	Thursday Little New Year's Eve ~ Public Holiday Friday Lunar New Year ~ Public Holiday Unit 3 Energy and Communication Lesson 2 - Collisions
<i>February 8 to 12 Chinese New Year Holiday</i>	
Week 6 (24) Feb 15 - Feb 19	Unit 3 Energy and Communication Lesson 2 - Collisions Lesson 3 - Waves
Week 7 (25) Feb 22 - Feb 26	22-26 IOWA Assessments Unit 3 Energy and Communication Lesson 3 - Waves
Week 8 (26) Mar 1 - Mar 5	Monday Memorial Day ~ Public Holiday T-W-Th Pre-Exam Days Unit 3 Energy and Communication Lesson 3 - Waves
Week 9 (27) Mar 8 - Mar 12	Unit 3 Energy and Communication Lesson 3 - Waves Review Quarter 3 Exams
Week 10 (28) Mar 15 - Mar 19	Review Quarter 3 Exams Unit 4 Shaping Landscapes Lesson 1 Factors That Shape Earth's Surface

Week 11 (29) Mar 22- Mar 26	Tuesday Major Final Exams half day Wednesday Major Final Exams half day Thurs - Fri Easter Break (Spring Break) ~ Public Holiday Unit 4 Shaping Landscapes Lesson 1 Factors That Shape Earth's Surface
<i>March 25 to April 2 Easter & Spring Break</i>	

Fourth Quarter Tentative Course Content

Week & Date	Topics / Projects / Assessments
Week 1 (30) Apr 5 - Apr 9	Monday Tomb Sweeping Day ~ Public Holiday Tuesday Children's Day ~ Public Holiday Unit 4 Shaping Landscapes Lesson 1 Factors That Shape Earth's Surface
Week 2 (31) Apr 12 - Apr 16	Unit 4 Shaping Landscapes Lesson 2 Fast and Slow Changes
Week 3 (32) Apr 19 - Apr 23	19 - 23 AP Mock Exams Unit 4 Shaping Landscapes Lesson 2 Fast and Slow Changes
Week 4 (33) Apr 26 - Apr 30	T-W-Th Pre-Exam Days Friday Labor Day ~ Public Holiday Unit 4 Shaping Landscapes Lesson 2 Fast and Slow Changes
Week 5 (34) May 3 - May 7	3 - 7 Final Exams (K, Gr. 5, 8, & 12 Only) 3 - 14 AP Exams Unit 4 Shaping Landscapes Lesson 3 Rock Layers Record Landform Changes
Week 6 (35) May 10 - May 14	3 - 14 AP Exams Wednesday Major Final Exams Undergraduates half day Thursday Major Final Exams Undergraduates half day Friday Record Day ~ Student Holiday

	Unit 4 Shaping Landscapes Lesson 3 Rock Layers Record Landform Changes Q4 Exams
Week 7 (36) May 17 - May 21	Monday Gr. 12 Recollection (Morning) Monday Baccalaureate Mass (Afternoon, Schoolwide) Wednesday House Sports Day Thursday High School Field Trip Friday House Culminating Activity All Week Student Clearance Days & Special Events Unit 4 Shaping Landscapes Lesson 3 Rock Layers Record Landform Changes Activities and Review
Week 8 (37) May 24 - May 28	Monday Middle & High School Sports Day Monday LS Field Trip Tuesday Kindergarten Graduation/Gr. 5 Promotion Wednesday Gr. 8 Graduation and Gr. 12 Graduation Thursday Pre-Kindergarten & Gr. 1 - 4, 6 & 7, 9-11 Recognition Friday Last Day of School for Students Activities and Review