



Grade 6 Science

Dominican International School

Course Syllabus

School Year 2026–27



Mr. Springer
Grade 6 Science

jspringer@dishs.tp.edu.tw

COURSE DESCRIPTION:

This 6th Grade Science course provides students with a comprehensive exploration of fundamental scientific concepts across life science, physical science, and earth science. Through inquiry-based investigations, model development, data analysis, and argumentation, students will deepen their understanding of cells, body systems, reproduction of organisms, energy transfer, the water cycle, weather, climate, and human impact on the environment. The course emphasizes scientific literacy, critical thinking, problem-solving, and effective communication of scientific ideas.

COURSE OBJECTIVES: By the end of the semester/school year, students will be able to:

Life Science:

- **Cells & Body Systems:** Understand the relationship between cells and life, identify cell parts and functions, and explain how cells organize into interacting subsystems (tissues, organs, organ systems) to support life functions in multicellular organisms.
- **Reproduction:** Explain how organisms reproduce (sexually and asexually), how traits are passed from one generation to the next, and how genetic and environmental factors affect growth and reproduction in plants and animals.

Physical Science:

- **Energy & Matter:** Investigate methods of thermal energy transfer, analyze factors affecting these transfers, and understand how energy determines the state of matter.

Earth Science:

- **Water Cycle & Climate:** Explore how water cycles among Earth's systems, analyze the energy and forces driving this cycle, and investigate the causes of global circulation and its effects on weather and regional climates.
- **Human Impact:** Analyze how human activities impact Earth's land, water, atmosphere, and climate, and propose solutions to minimize these impacts.

Scientific Practices:

- **Investigation & Modeling:** Plan and carry out investigations, develop and use models to represent scientific phenomena, and collect and analyze data.
- **Explanation & Argumentation:** Construct explanations for scientific relationships, engage in arguments from evidence, and obtain, evaluate, and communicate scientific information effectively.
- **Critical Thinking:** Apply scientific reasoning to support or refute claims and design solutions to scientific problems.

PRIMARY TEXTBOOKS AND OTHER RESOURCES:

- Grade 6 Science Textbook (*Inspire Science: Integrated G6*)
- Notebook - Must have in class every day.
- Laptop/iPad - Bring every day (most assignments will be on Google Classroom, though not used daily).
- Pencils, pens (white-out optional), colored pencils, scissors.
- Google Classroom for assignments, announcements, and resources.

Class Notes Policy

- **Notes are essential** – Almost all quiz, test, and exam questions will come from class notes.
- **Bring your notebook every day** – We will take notes often, and unfinished notes become homework.
- **Efficient note-taking saves time** – Write key ideas, use abbreviations, and stay on pace.

Textbook Use

- Primarily for homework/supplemental readings.

GRADING SYSTEM/ASSESSMENT:

Student performance will be assessed through a variety of methods, including:

- **Quizzes & Tests:** (e.g., module quizzes, unit tests)
- **Models & Presentations:** (e.g., cell models, water cycle diagrams, project presentations)
- **Notebook Checks & Classwork:** (e.g., structured notes, activity responses, exit tickets)
- **Participation & Discussion:** (e.g., Think & Share activities, small group and whole class discussions)

Grading Breakdown:

Tests/Quizzes/Projects: 30%

Classwork/Homework: 30%

Exam: 30%

Department: 10%

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 of 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.

WEEKLY SCHEDULE

FIRST QUARTER TENTATIVE COURSE CONTENT

Week & Date	Holidays/School Activities	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	Unit 5: Module 1 (Land and Water Resources) • Course Introduction & Expectations • Lesson 1: Land Use and Habitat Impact (Urbanization, Deforestation)
Week 2 Aug 17 - 21		Unit 5: Module 1 • Lesson 2: Solid Waste and Land Protection (Landfills, 3 Rs, Composting) • Group Project: Sustainable City Design Challenge (Assigned)
Week 3 Aug 24 - 28		Unit 5: Module 1 & Module 2 • Lesson 3: Sources of Water Pollution (Point vs. Non-Point source, Aquifers) • Quiz 1: Land and Water Resources • Lesson 4: Air Pollution and Atmosphere (Smog, AQI, Stratospheric Ozone Layer)
Week 4 Aug 31 - Sep 4		Unit 5: Module 3 (Global Climate Systems) • Lesson 5: Human Causes of Global Warming (Fossil fuels, Methane, Carbon Sinks) • Lesson 6: Impacts of Climate Change (Cryosphere, Sea level rise, Extreme weather)

Week 5 Sep 7 - 11		Unit 5: Module 4 (Solutions and Synthesis) • Quiz 2: Global Climate Systems • Lesson 7: Solutions to Human Impact (Renewable energy, Carbon footprint) • Essay: The Renewable Energy Debate (Assigned)
Week 6 Sep 14 - 18		Unit 1: Module 1 (Cells and Life) • Lesson 1: Living vs. Nonliving (Biotic vs. Abiotic, Needs of Life) • Lesson 2: Characteristics of Living Things (The 6 Characteristics) • Individual Project: Astrobiology Mission Report (Assigned)
Week 7 Sep 21 - 25	T-W-Th: Pre-Exam Days Friday: Moon Festival ~ Public Holiday	Unit 1: Module 1 • Lesson 3: Discovery of Cells & Cell Theory (Microscopes, 3 Tenets) • Q1 Review & Pre-Exam Prep
Week 8 Sep 28 - Oct 2	Monday: Confucius' Birthday ~ Public Holiday Thursday: Major Exams Day 1 Friday: Major Exams Day 2	Unit 1 Review & Assessment • Quiz 1: Cells and Life • First Quarter Major Exams
Week 9 Oct 5 - 9	Monday: Record Day ~ Student Holiday T-W-Th: Teachers Conference ~ Student Holiday Friday: Double 10 Day ~ Public Holiday	<i>(No Classes — Teacher Conference & Public Holidays)</i>

SECOND QUARTER TENTATIVE COURSE CONTENT

Week & Date	Holidays/School Activities	Topics / Projects / Assessments
Week 1 (10) Oct 12 - 16		Unit 1: Module 2 (Cell Structure and Function) • Lesson 4: Introduction to Cells (Prokaryotic vs. Eukaryotic, Hierarchy) • Individual Essay: The Scientific Revolution of Cell Theory (Assigned) • Lesson 5: Core Cell Organelles (Animal cell focus)
Week 2 (11) Oct 19 - 23		Unit 1: Module 2 • Lesson 6: The Plant Cell (Cell Wall, Chloroplasts, Vacuole) • Group Project: The Cellular Blueprint / Analogy Script (Assigned) • Lesson 7: Basic Cellular Transport (Semi-permeable, Diffusion, Osmosis)
Week 3 (12) Oct 26 - 30	Monday: Retrocession Day ~ Public Holiday	Unit 1: Module 2 Synthesis • Individual Project: Cellular Transport Intelligence Brief (Assigned) • Quiz 2: Cell Structure and Transport • Lesson 8 & 9: Modeling the Cell & Unit 1 Review
Week 4 (13) Nov 2 - 6		Unit 2: Module 1 (Organization of Life) • Lesson 1: From Cells to Systems (Cells -> Tissues --> Organs --> Systems) • Lesson 2: Specialization and Systems (Body as a Machine) • Quiz 1: Hierarchy and Specialization • Individual Project: Cellular Hierarchy & Specialization Brief (Assigned)

Week 5 (14) Nov 9 - 13		Unit 2: Module 2 (Structure, Support, and Movement) • Lesson 3: The Skeletal System (Protection, Support, Marrow) • Lesson 4: Muscular System & Movement (Opposing pairs, Contraction) • Quiz 2: Skeletal and Muscular Systems • Individual Essay: The Mechanics of Movement (Assigned)
Week 6 (15) Nov 16 - 20		Unit 2: Module 3 (Processing Nutrients and Waste) • Lesson 5: Digestive System Tract (Path, Absorption) • Lesson 6: Mechanical vs. Chemical Breakdown • Lesson 7: Excretory System (Kidneys, Lungs, Skin) • Quiz 3: Digestion and Excretion
Week 7 (16) Nov 23 - 27	T-W-Th: Pre-Exam Days Friday: Grade 12 Exams	Unit 2: Module 4 (Gas Exchange and Transport) • Lesson 8: Respiratory System (Trachea, Lungs, Alveoli, Diaphragm) • Pre-Exam Review
Week 8 (17) Nov 30 - Dec 4	Monday: Grade 12 Exams	Unit 2: Module 4 • Lesson 9: Circulatory System (Heart, Arteries, Veins, Capillaries) • Lesson 10: System Interaction (Blood and Breath integration) • Group Project: The Blood and Breath Integration Report (Assigned)

Week 9 (18) Dec 7 - Dec 11	Monday: TBD Tuesday: Foundation Day Mass 9:00, Cutting of Cake, Christmas Fair Wednesday: TBD Thursday: Major Final Exams half day Friday: Major Final Exams half day	Q2 Review & Assessment • Systems Integration Review • Second Quarter Major Final Exams
<i>Dec 14 to Jan 1</i>	<i>Christmas Break</i>	

THIRD QUARTER TENTATIVE COURSE CONTENT

Week & Date	Holidays/School Activities	Topics / Projects / Assessments
Week 1 (19) Jan 4 - Jan 8	Monday: Record Day ~ Student Holiday Friday: New Year Mass at 8:00	Unit 2: Module 5 (Control and Response) • Lesson 11: Nervous System (CNS, PNS, Neurons) • Quiz 4: Control and Response • Lesson 12: Unit 2 Review & "Body System Defense" Activity
Week 2 (20) Jan 11 - Jan 15		Unit 3: Module 1 (Inheritance and Variation) • Lesson 1: Introduction to Heredity (DNA, Traits, Chromosomes) • Activity: Identifying Inherited vs. Acquired Traits (Gallery Walk) • Lesson 2: Genes and Alleles (Dominant, Recessive, Genotype vs. Phenotype)

Week 3 (21) Jan 18 - Jan 22		Unit 3: Module 1 • Lesson 3: Punnett Squares (Probability calculations) • Lesson 4: Genetic Variation (Mutations, allele combinations) • Group Project: The Genetic Lottery: Predicting Traits (Assigned) • Quiz 1: Genetics and Inheritance
Week 4 (22) Jan 25 - Jan 29		Unit 3: Module 2 (Modes of Reproduction) • Lesson 5: Asexual Reproduction (Binary fission, Budding, Regeneration) • Lesson 6: Sexual Reproduction (Gametes, Fertilization, Zygote)
Week 5 (23) Feb 1 - Feb 5	Thursday: Little New Year's Eve ~ Public Holiday Friday: Lunar New Year ~ Public Holiday	Unit 3: Module 2 • Lesson 7: Comparing Reproduction Strategies (Pros/Cons, Diversity) • Quiz 2: Strategies for Reproduction
<i>Feb 8 to 12</i>	<i>Chinese New Year Holiday</i>	
Week 6 (24) Feb 15 - Feb 19		Unit 3: Module 3 (Animal Behavior and Growth) • Lesson 8: Reproductive Behaviors (Courtship, Competition, Sensory stimuli) • Group Project: Animal Success: Mating and Parenting (Assigned) • Lesson 9: Parenting and Survival (Parental investment strategies)

Week 7 (25) Feb 22 - Feb 26	22 - 26: IOWA Assessments	Unit 3: Module 3 • Lesson 10: Factors Affecting Animal Growth (Genetic vs. Environmental) • Unit 3: Module 4 (Plant Reproduction and Growth) • Lesson 11: Sexual Reproduction in Plants (Flower anatomy, Pollination)
Week 8 (26) Mar 1 - Mar 5	Monday: Memorial Day ~ Public Holiday T-W-Th: Pre-Exam Days	Unit 3: Module 4 • Group Project: The Pollination Network (Assigned) • Pre-Exam Review
Week 9 (27) Mar 8 - Mar 12		Unit 3: Module 4 • Lesson 12: Seed Dispersal & Germination • Group Project: Engineering the Great Escape: Seed Dispersal • Lesson 13: Asexual Reproduction in Plants (Vegetative propagation)
Week 10 (28) Mar 15 - Mar 19		Unit 3: Module 4 & Module 5 • Lesson 14: Factors Affecting Plant Growth & Tropisms • Activity: Analyzing Factors of Growth and Tropisms (Gallery Walk) • Quiz 3: Growth, Behavior, and Environment
Week 11 (29) Mar 22 - Mar 26	Tuesday: Major Final Exams half day Wednesday: Major Final Exams half day Thurs - Fri: Easter Break ~ Public Holiday	Q3 Review & Assessment • Unit 3 Synthesis & Pre-Exam Review • Third Quarter Major Final Exams
<i>Mar 25 to Apr 2</i>	<i>Easter & Spring Break</i>	

FOURTH QUARTER TENTATIVE COURSE CONTENT

Week & Date	Holidays/School Activities	Topics / Projects / Assessments
Week 1 (30) Apr 5 - Apr 9	Monday: Tomb Sweeping Day ~ Public Holiday Tuesday: Children's Day ~ Public Holiday	Unit 3 Capstone • Lesson 15 / Capstone Project: Design an Organism (Assigned/Presented)
Week 2 (31) Apr 12 - Apr 16		Unit 4: Module 1 (Energy and Matter) • Lesson 1: Temperature and Thermal Energy (Kinetic energy, Heat vs. Temp) • Lesson 2: States of Matter and Energy (Phase changes, Latent heat)
Week 3 (32) Apr 19 - Apr 23	19 - 23: AP Mock Exams	Unit 4: Module 1 & Module 2 • Lesson 3: Heat Flow and Transfer Methods (Conduction, Convection, Radiation) • Lesson 4: Material Properties and Thermal Energy (Conductors, Insulators, Specific Heat) • Quiz 1: Thermodynamics and Heat Transfer • Lesson 5: Water entering Atmosphere (Latent heat, Transpiration, Humidity)

Week 4 (33) Apr 26 - Apr 30	T-W-Th: Pre-Exam Days Friday: Labor Day ~ Public Holiday	Unit 4: Module 2 (The Water Cycle) • Essay: The Greenhouse Blanket (Assigned) • Lesson 6: Water in Atmosphere & Surface (Cloud nuclei, Latent heat release, Runoff) • Video & Reflection: Bill Nye Water Cycle • Quiz 2: The Water Cycle and Energy Drivers
Week 5 (34) May 3 - May 7	3 - 7: Final Exams (K, Gr. 5, 8, & 12 Only) 3 - 14: AP Exams	Unit 4: Module 3 (Weather and Climate) • Lesson 7: Solar Energy and Atmosphere (Albedo, Greenhouse Effect) • Lesson 8: Global Circulation and Winds (Coriolis Effect, Pressure Gradients) • Project: Thermodynamics Survival (Assigned)
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: Module 3 & Final Exam • Lesson 9: Ocean Currents (Surface vs. Deep currents, Heat transport) • Lesson 10: Air Masses and Fronts (Cold, Warm, Stationary, Occluded) • Quiz 3: Atmospheric Circulation and Weather Drivers • Fourth Quarter Major Final Exams

Week 7 (36) May 17 - May 21	Monday: Gr. 12 Recollection (AM) / Baccalaureate Mass (PM) Wednesday: House Sports Day Thursday: High School Field Trip Friday: House Culminating Activity All Week: Student Clearance Days & Special Events	Unit 4: Module 3 Synthesis • Lesson 11: Regional Climates (Latitude, Altitude, Rain shadow) • Lesson 13: Unit 4 Review & Synthesis
Week 8 (37) May 24 - May 28	Monday: MS & HS Sports Day / LS Field Trip Tuesday: Kindergarten Grad / Gr. 5 Promotion Wednesday: Gr. 8 Grad & Gr. 12 Grad Thursday: Pre-K & Gr. 1–4, 6–7, 9–11 Recognition Friday: Last Day of School for Students	Course Wrap-Up & End-of-Year Reflection