

Science: Year 1

IB Unit Plan	Materials	<u>Key Concept</u>	<u>Related concept(s)</u>	<u>Global Context</u>	<u>Statement of Inquiry</u>	<u>MYP Science Objectives</u>	<u>ATL skills</u>	<u>Content (topics, knowledge, skills)</u>
1- Microbiome	1- Microbiome Folder	Systems	Form Models	Orientation in Space and Time	Systems can be modeled so that the involved forms can be oriented in space and scale.	A C D	Thinking Researching Self-Management	antibiotics, bacteria, cells, infection, microbiome, microorganism, microscopic, organisms, population, scale
2- Metabolism	2- Metabolism Folder	Change	Balance Function Patterns	Identities and Relationships	Scientific and technological advances enable societies to use, control and transform the function of organisms and biological models	A B C D	Communication Research	amino acids, carbon dioxide, cellular respiration, chemical reaction, circulatory system, digestive system, energy, glucose, metabolism, molecule, oxygen, proteins, respiratory system, starch, system
3- Traits and Reproduction	3- Traits and Reproduction Folder	Change	Patterns Development	Identities and Relationships	Models can represent the structural and functional relationship between genes and inherited traits	A B C D	Research Thinking	Chromosome, DNA, feature, fertilization, function, gene, gene version, heterozygous, homozygous, inherit, mutation, non functional protein, nucleus, offspring, protein molecule, ribosomes, sexual reproduction, structure, trait, variation

IB Unit Plan	Materials	Key Concept	Related concept(s)	Global Context	Statement of Inquiry	MYP Science Objective s	ATL skills	Content (topics, knowledge, skills)
SF- Science Fair	SF- Science Fair Folder	Relationships	Patterns Evidence Models	Scientific and Technical Innovation	Relationships can be observed and tracked through patterns in order to make scientific arguments	A B C D	Communication Research Self- Management	Hypothesis Questioning Procedures Discussions + Conclusions
4-Thermal Energy	4- Thermal Energy Folder	Systems	Function Form Models Movement	Orientation in space and time	The form of a system affects the movement and function of energy contained within	A B C D	Social Communication Thinking	average, bacteria, change, collision, energy, equilibrium, groundwater, infer, kinetic energy, matter, molecule, pasteurize, sample, stability, system, temperature, transfer, water heater
5- Ocean, Atmosphere, and Climate	5- Ocean, Atmosphere, and Climate Folder	Relationships	Environment Movement Energy Transformation	Personal and cultural expression	The relationships between people and the environment is affected by the movement of energy through the earth's atmosphere.	A B C D	Social Self- management Communication	climate, climatology, El Niño, energy, gyre, ocean current, prevailing winds, scientific community, solar, surface, temperature, transfer, upwelling
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						<u>Objective s</u>		
6- Weather Patterns	6- Weather Patterns Folder	Systems	Balance Environment Interactions Energy	Globalization and Sustainability	Earth's systems are a balance between interactions and energy transfers at multiple levels	A B C D	Social Research	air parcel, air pressure, atmosphere, change, cloud, condensation, energy, evaporation, factor, forensics, humidity, meteorology, pattern, precipitation, source, stability, temperature, transfer, troposphere, water vapor, weather, wind
7- Earth's Changing Climate	7- Earth's Changing Climate Folder	Change	Evidence Interaction Energy Transformation	Fairness and development	Evidence shows Earth's system changing as interaction between energy and the system transform	A B C D	Social Communication	absorb, atmosphere, carbon dioxide, climate, climate change, combustion, deforestation, eruption, fluctuation, human activities, lux, methane, Earth system, volcano
8- Changing Climate Engineering Internship	8- Changing Climate Engineering Internship Folder	Communities	Development Function Environment Balance	Globalization and Sustainability	The development of functional communities can be done in a sustainable way	A B C D	Social Thinking Self- Management	absorb, albedo, carbon dioxide, CEO, climate change, climate impact, combustion, convert, deliverable, dossier, energy, engineer, historic value, interns, internship coordinator, iterate, model, modification, optimize, outcome, project director, proposal, request for proposals, solar, temperature, tradeoff, variable

Science: Year 2

Unit Title	Key Concept	Related concept(s)	Global Context	Statement of Inquiry	MYP subject-group objectives	ATL skills	Content (topics, knowledge, skills)
<u>Unit 1</u> Phase change	Change	Energy Models	Scientific and Technical Innovation	Change is driven by energy and can be modeled to explain systems and processes within scientific and technical innovation.	C	Communication	Change, energy, scale, molecular attraction, evaporation, CER writing
<u>Unit 2</u> Chemical Reactions 'r Us	Change	Patterns Models Interactions	Personal and cultural expression	Change should be observed through patterns, models and interactions in order to creatively communicate with our community	A C D	Communication Self Management	Atom, chemical reaction, chemical equation, synthetic materials, energy, exothermic, endothermic
<u>Unit 3</u> Science Fair	Relationships	Patterns	Scientific and Technical Innovation	Relationships can be observed and tracked through patterns in order to make scientific arguments	A B C D	Communication	Hypothesis Questioning Procedures Discussions + Conclusions
<u>Unit 4</u> Metabolism	Change	Balance Function Patterns	Identities and Relationships	Scientific and technological advances enable societies to use, control and transform the function of	A B C D	Communication Research	amino acids, carbon dioxide, cellular respiration, chemical reaction, circulatory system, digestive system,

				organisms and biological models			energy, glucose, metabolism, molecule, oxygen, proteins, respiratory system, starch, system
<u>Unit 5</u> Populations and Resources	Relationships	Balance Function Patterns	Identities and Relationships	Relationship between function and patterns help students understand the relationship that populations have to their environment	A C	Informational literacy	abiotic/biotic matter Respiration, decomposer, producer, consumer, ecosystem, system
<u>Unit 6</u> Matter and Energy in Ecosystems	Systems	Models Patterns Energy	Identities and relationships	Systems can be modeled in order to find patterns in energy transfer, thus showing relationships in ecosystems.	A C	Informational Literacy	Change, competition, ecosystem, food web, population, stability

Science: Year 3**Science: Year 3**

Unit Title	Key Concept	Related concept(s)	Global Context	Statement of Inquiry	MYP subject-group objectives	ATL skills	Content (topics, knowledge, skills)
<u>Unit 1</u> Harnessing Human Energy	Change	Transformation Energy	Scientific and Technical Innovation	Humans use models to demonstrate their understanding of the change and	D	Self-management Thinking	energy, kinetic energy, potential energy, system, convert, transfer, CER writing

				transformation of energy.			
<u>Unit 2</u> Force and motion	Systems	Movement Interaction	Orientation in space and time	Scientific principles of force and movement can help humans understand how object interact.	D	Communicate through interaction Collaboration Skills	Motion, acceleration, force, Newton's Laws 1, 2, and 3, Friction, Mass, Kinetic energy
<u>SF- Science Fair Folder</u>	Relationships	Patterns Evidence Models	Scientific and Technical Innovation	Relationships can be observed and tracked through patterns in order to make scientific arguments	A B C D	Communication Research Self-Management	Hypothesis Questioning Procedures Discussions + Conclusions
<u>Unit 3</u> Magnetic Fields	Systems	Interaction Energy	Globalization and Sustainability	Interactions between magnetic forces has the power to affect energy systems to make them more or less useful.	C D	Communicate through interaction Collaboration Skills	Magnetic fields, Magnets, repelling force, attractive force, poles, kinetic energy, potential energy
<u>Unit 4</u> Light Waves	Relationships	Interaction and Energy	Orientation in Space and Time	Humans interact with light energy in many ways and this relationship can greatly affect how we live our lives.	A C D	Communication skills and Collaboration Skills	Light Energy, Light Sources, Wave model of light, wavelength and types of light, spectrum, frequency, amplitude, wave particle duality, absorption, reflection, transmission, melanin, ozone
<u>Unit 5</u> Phase Change (Chapter 1-3)	Change	Transformation , Form	Scientific and Technological Innovation	Substances can change form through different types of transformations based on varying molecular interactions.	A C D	Communication skills and Collaboration Skills, Creative thinking skills	Molecules, Substances, phases of matter, phase change, kinetic energy, phase
<u>Unit 6</u> Chemical reactions	Change	Interaction, form	Scientific and Technological Innovation	Interactions between different chemicals may result in a change in their form.	A C D	Communication skills and Collaboration Skills, Creative	Atoms, Elements, Molecules, Chemical Formulas, substances,, properties of

						thinking skills	substances, conservation of matter, limiting reactants
<u>Unit 7</u> Earth, Moon, and Sun	Relationships	Movement, Patterns	Orientation in space in time	Patterns of the moon are the result of the relationships between the movement of the sun, moon, and earth.	A C D	Communication skills and Collaboration Skills, Critical-thinking skills	Appearance of the moon, illumination of the moon, lunar eclipses, solar eclipses, waning and waxing,
<u>Unit 8</u> Force and Motion Engineering Internship (if time permits)	Systems	Movement, Models	Scientific and Technological Innovation	Models can predict the success of a model within a given system.	B	Communication skills, Collaboration skills, Reflective skills, creative thinking skills and, critical thinking skills	Motion, acceleration, force, mass, newton's laws 1,2, and 3, collisions, gravity
<u>Unit 9</u> Natural selection (if time permits)	Relationships	Environment, transformation	Scientific and Technological Innovation	A living organisms relationship to its environment can lead to various transformations over time that create many unique organisms.	A C D	Communication skills, Collaboration skills, Reflective skills, creative thinking skills and, critical thinking skills	Population variation, histograms, natural selection, adaptive traits and the environment, inheritance of genes, reproduction and death relationship, mutation,