MYP GEN SCIENCE

2020-2021

THE INTERNATIONAL SCHOOL

MYP YEAR 1 Sciences

Unit Title	Key Con.	Related Concept	Global Concept	Statement of Inquiry	MYP Crit.	ATL Skill	Unit Content
What do Scientists do?	Relationships	Evidence	Identities and relationships	To be a scientist means to gather evidence about similarity and differences in nature to to understand how things are related	B	**Social** (B.3) Collaboration Skills: Delegate and share responsibility for decision-making	Apparatus, Control, Experiment, Laboratory, Prediction, Understand, Variables, Conclusion
What Changes?	Change	Form	Fairness and development	Science enables us to change the form of matter into useful materials that can make the world a better place.	B	**Research** (D.2) Information Literacy Skills: Access information to be informed and to inform others	types of matter , natural v artificial matter , States of matter , Physical Changes , Changes in state of matter , Solution v suspension , Solute v Solvent , Chromatography ,Distillation , Oxidation v Decomposition
How do Living Things Work?	Relationships	Function	Globalization and sustainability	By understanding the relationship between the necessities of life and the specialized functions of living things, we can make decisions and take actions for healthier and more sustainable lifestyles.	A	**Communication** (A.1.13) Multiliteracy Skills: Organize and depict information logically	Characteristics, Complexities of life, DNA, Genetic materials, Reproduction, Specialized tissue, Stimulis v Response, Living organisms, Characteristics of Living Organisms, Needs of Living Organisms, Cell Structure, Cell Functions
What makes change happen?	Change	Energy	Globalization and sustainability	Through controlling energy we can make changes happen that have an impact on the way people live now and in the future	C	**Thinking** (E.2) SkillsCritical Thinking Skills: Gather and organize relevant information to formulate an argument	Conservation of energy, Potential energy, Energy transfer, Heat, Types of energy, Kinetic energy, Measuring Energy, Temperature, Energy v Climate Change

How can we study the living world?	Systems	Interac-tion	Scientific & Technological Innovation	Scientists have developed methods and tools to understand and maintain the interactions that keep ecosystems in balance.	C, D	**Thinking** (E2.8) Creative Thinking Skills: Apply existing knowledge to generate new ideas, products or processes	Diversity, Ecology, ,Environment, Sustainability, Ecosystems, Biomes, New Mexico Biome, Healthy Ecosystems
Where do we fit into the world	Systems	Models	Orientation in Time and Space	Models reflect what we have learned about our place in the system and its effect on life on the earth.	A,D	**Research** (D.3) Information Literacy Skills: Make connections between various sources of information	Orbit, Satellites, Probes, Rotation, Solar system, Planetary system, Biosphere, Hydrosphere, Earth Structure, Rock Structure, Fossils, Atmosphere, Convections and Thermals

MYP YEAR 2 Sciences

Unit Title	Key Concept	Related Concepts	MYP Global Context	Statement of Inquiry	MYP Crit.	ATL Skills	Unit Content
Where are we and where are we going?	Relation-ships	Models	Orientation in Space and Time	Through making models of the world we have understood how place and time relate to motion and we have made the world a smaller place.	A,D	**Self-Management** (C.3.9) Reflection Skills: Consider ethical, cultural and environmental implications	Balance, Force, Gradient, Motion, pollution , Slope, Transport, Effect of force on motion
How do we map matter?	Change	Patterns	Scientific and Technological Innovations	By changing matter we can identify patterns in properties that help us to make models and the models help us invent new kinds of materials	B,D	**Research** (D.6a) Information Literacy Skills: Collect and analyse data to identify solutions and make informed decisions	Atomic Theory, Atomic Structure, Ions, Periodic Table, Chemical Properties, Displacement, Extract, Metal, Product, react / reaction
Who are we?	Relation-ships	Evidence	Identities and Relationships	Because scientists understand the relationships between genes and inherited characteristics, we can use genetic patterns as evidence for identification and decision making	A, C	**Thinking** (E.3) Critical Thinking Skills: Recognize unstated assumptions and bias	Characteristics, Heredity, Inherit, Mutations, Inheritable diseases, Enzymes, Asexual v sexual reproductions, Mitosis, Meiosis, Dominant v recessive traits, Punnett Squares
What does a wave tells us?	Relation-ships	Form	Personal and Cultural Expression	Understanding the relationships between different forms of wave energy helps us better communicate and express our thoughts	C, D	**Thinking** (E.7) Critical Thinking Skills: Draw reasonable conclusions and generalizations	Transmit, Vibration, Waves, Seismic activity, Frequency, Amplitude, Wavelength, Light waves, Electromagnetism, Sound waves
How does our planet work?	Systems	Models	Globalization and Sustainability	Modelling interactions between Earth's systems allows us to understand patterns that we can use to secure or improve human experiences	C, D	**Thinking** (E.2.1) Creative Thinking Skills Use brainstorming and visual diagrams to generate new ideas and inquiries	Climate, Cycles on Earth, Earthquakes, Flow of energy, Properties, Tsunamis, Weather, Natural systems, Earth interactions, Climate, Natural Disasters

How do we respond to our world?	Change	Conseq uences	Scientific and Technological Innovations	Scientific innovations designed to enhance our ability to perceive and respond to change in our surroundings have consequences on our survival	B, C	**Thinking** (E.2.4) Creative Thinking Skills: Make unexpected or unusual connections between objects and/or ideas	Perceptions, Stimulus, Survival, Living organisms, Five senses, Nervous System, Response systems, Adaptation, Natural Selection

MYP YEAR 3 Sciences

Unit Title	Key Con.	Related Concept	MYP Global Context	Statement of Inquiry	MYP Crit.	ATL Skills	Unit Content
How do we make it work?	Change	Energy	Scientific and Technological Innovation	Machines have revolutionized life by making it easier to change energy from stored forms to movement and back again	A,D	**Self-Management** (C.8) Organizational Skill: Use appropriate strategies for organizing complex information	Work, Efficiency, Mechanism, Resource, Transform, How energy changes form and type, Law of conservation, Simple machines
How do humans impact the natural world?	Change	Environ-ment	Fairness and Development	The environment changes as a consequence of how we develop and manage natural resources around the world	B,D	**Research** (D.2) Information Literacy Skills: Access information to be informed and inform others	Work,Efficiency,Mechanism,Resource,Transform,How energy changes form and type,Law of conservation,Simple machines
What should I eat?	Relationships	Function	Scientific and Technological Innovation	Because what we consume is related to, and has consequences on how our bodies function and feel, we can choose what we eat and drink based on scientific principles and development	A, C	**Thinking** (E.1) Critical Thinking Skills: Practise observing carefully in order to recognize problems	Caloric energy, Diet, Fats, Proteins, Nutrition , Energy of life, Consumptive Molecules, Function of living organisms, Autotrophs v heterotrophs, Chemical v Physical Digestion, Anaerobic v aerobic respiration
How do we put electricity & magnetism to work	Relat-onship	Form	Orientation in Space and TIme	Electrical and magnetic forces fill spaces as fields; understanding their form and relationships allows us to transform energy in useful ways	C, D	**Thinking** (E.14) Critical Thinking Skills: Analyse complex concepts and projects into their constituent parts and synthesize them to create new understanding	Electricity, Magnetism, Attract v repel, Force fields, Magnetic forces, Electric forces, Harnessing electrical energy, Conductors, Electrical circuits
How can we connect?	Systems	Interac-tion	Personal and Cultural Expression	We interact and express ourselves through systems that manipulate information as different forms of energy	A	**Thinking** (E.17) Critical Thinking Skills: Use models and simulations to explore complex systems and issues	Communicating digitally, Telecommunications, Transmissions, Waves, Law of

							Reflection, Concave v convex, Focal point, Light waves, Wave signals, Frequencies, Electromagnetic energy, Analogue v digital systems, Mobile voices
How do our bodies work?	Systems	Balance	Personal and Cultural Expression	By understanding how our body systems function, people can learn to make decisions for balanced and healthy lifestyles	B,C	**Thinking** (E.2.10) Creative Thinking Skills: Practise flexible thinking—develop multiple opposing, contradictory and complementary arguments	Types of Cells Organs, Skeletal system, Bone structure, Specialized tissues, Circulatory system, Muscular system, Types of Muscles, Nervous system, Nerve cells, Human physiology