

Science – MYP Year 1



* All units taught in MYP Years 1-5 are continuously being developed and improved to best meet the needs of the students at LIS. Therefore, the following Subject Overview is only a reflection of current plans for the course. Some changes to this document may occur as a result of planning done throughout the academic year.

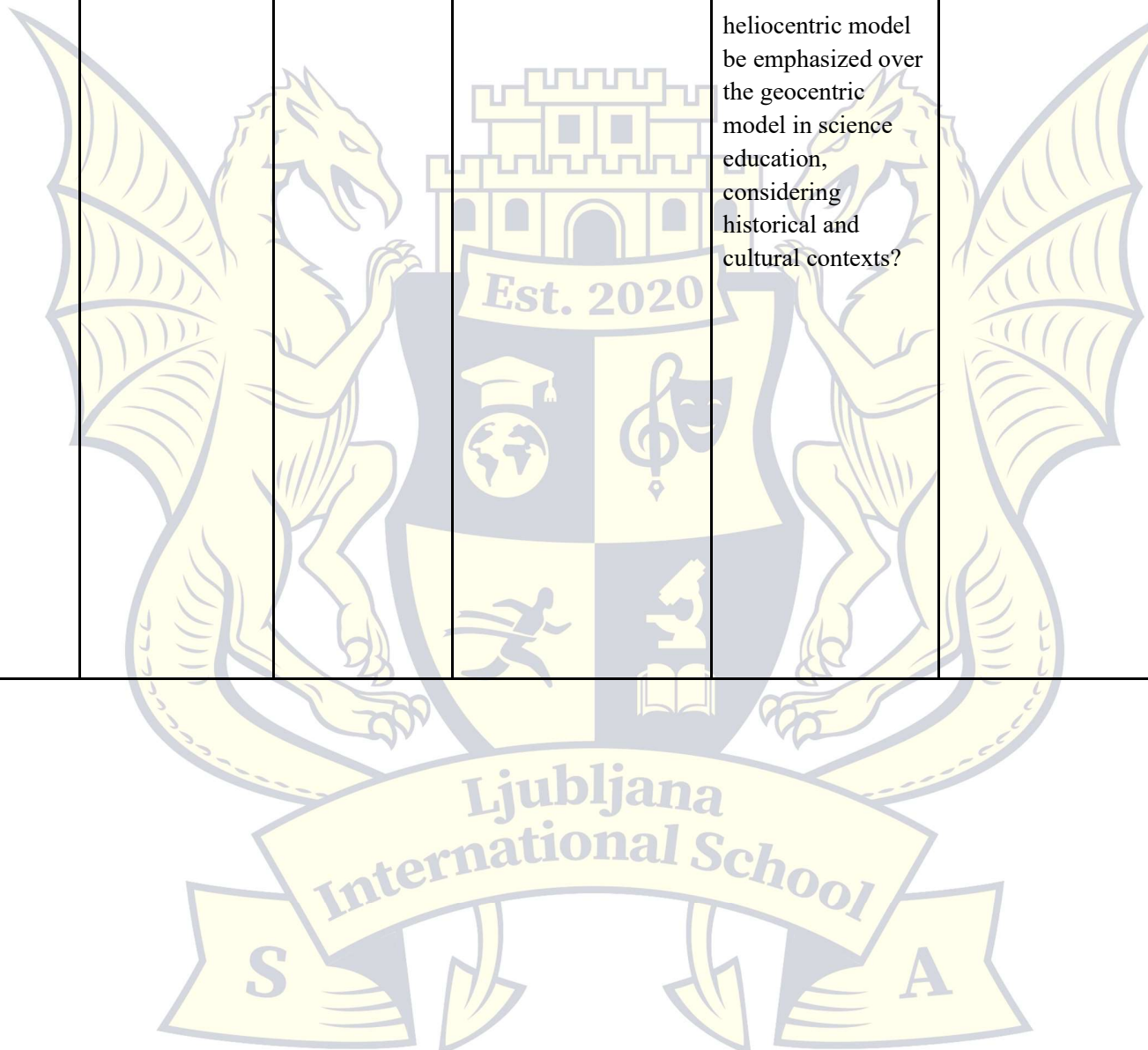
	Unit	Concepts	Global Context	Statement of Inquiry	Inquiry Questions	MYP Objectives ATL Skills	Content
Unit 1	What is Science?	Relationships Evidence	Identities and relationships self-esteem	Students build self-esteem regarding scientific process by using knowledge and evidence to explore relationships between variables in an attempt to understand the natural world.	<p>Factual: What is science?</p> <p>Conceptual: How are experiments conducted?</p> <p>Debatable: Is astrology science?</p>	<p>Criterion A: i, ii, iii Criterion D: i, ii, ii, iv</p> <p>ATL Skills Collaboration Creative-thinking Critical-thinking Information literacy Media literacy</p>	<p>Gain awareness about the innate interest of humans in seeking answers to the questions raised by our direct contact with nature and its phenomena.</p> <p>Understand science as a methodology to provide explanations about objects and phenomena in the world, based on natural causes.</p> <p>Understand that the answers science provides are tentative and provisional and that these are liable to change with new observations.</p> <p>Be aware that some questions, due to their inherent nature, science cannot respond.</p>

							<p>Find out about what scientists from different scientific disciplines do.</p> <p>Learn about the relationship between science and technology.</p>
Unit 2	Matter and Its Interactions	<p>Change Transformation</p>	<p>Fairness and development</p> <p>Human capability and development</p>	<p>Human capability and developments in materials science have allowed us to change or transform substances into new materials that improve lives.</p>	<p>Factual: What are different states of matter?</p> <p>Conceptual: How do substances interact?</p> <p>Debatable: Should we ban single-use plastics to protect the environment?</p>	<p>Criterion A: i, ii, iii</p> <p>Criterion D: i, ii, iii, iv</p> <p>ATL Skills Creative-thinking Information literacy Critical-thinking Transfer</p>	<p>Matter</p> <p>States of matter: solid, liquid, and gas</p> <p>Properties of matter: mass, volume, and density</p> <p>Mixtures and pure substances</p> <p>Types of mixtures</p> <p>Mixtures and separation methods</p> <p>Chemical changes</p> <p>Examples of chemical changes: oxidation, combustion, and fermentation</p> <p>Interaction of materials with light, heat, humidity, sound, electricity, magnetism, and forces</p> <p>The 3 Rs: reduce, reuse, and recycle</p>

<p>Unit 3</p>	<p>Characteristics of Living Things</p>	<p>Relationships Form Function</p>	<p>Globalization and sustainability Commonality and diversity</p>	<p>The biological relationship between form and function can help us understand organisms and their commonality and diversity.</p>	<p>Factual: What characteristics are shared by all living things?</p> <p>Conceptual: How are living things related?</p> <p>Debatable: Should viruses be considered living organisms, despite lacking some traditional characteristics of life such as metabolism and cellular structure?</p>	<p>Criterion A: i, ii, iii Criterion C: i, ii, iii, iv, v</p> <p>ATL Skills Communication Critical-thinking Media literacy Information literacy</p>	<p>Definition of a living organism.</p> <p>Life processes: nutrition, reproduction, and detection and response to changes in the environment.</p> <p>Food as a source of matter and energy.</p> <p>Two types of nutrition: obtaining food or producing it.</p> <p>Sexual and asexual reproduction.</p> <p>Cell as the elemental unit of life.</p> <p>The cell and its basic parts.</p> <p>Introduction to microorganisms.</p> <p>Unicellular and multicellular organisms.</p> <p>Organization of multicellular organisms: tissues, organs, and systems.</p>
<p>Unit 4</p>	<p>Energy</p>	<p>Change</p>	<p>Globalization and</p>	<p>Change in energy consumption and the</p>	<p>Factual:</p>	<p>Criterion B: i, ii, iii, iv, iv</p>	<p>Changes in the environment</p>

		Energy	sustainability Consumption, conservation, natural resources	promotion of conservation impact the management and preservation of natural resources	What is the definition of energy in the context of physics? Conceptual: How can the concept of energy conservation be explained, and what are some examples illustrating how energy is conserved in everyday situations? Debatable: Is it ethical to prioritize economic growth over environmental conservation when making decisions about energy policy and resource allocation?	Criterion C: i, ii, iii, iv, v ATL Skills Organization Collaboration Critical-thinking	Energy understood as the ability of objects. Forms of energy Properties of energy Renewable and nonrenewable sources of energy Production of electric energy and power plants Energy use and energy-saving measures
Unit 5	Ecosystems	Systems Balance Interaction	Scientific and technical innovation ingenuity and progress	Life on land depends on balanced interactions between the organisms in an ecosystem and their adaptations.	Factual: What are the main components of an ecosystem? Conceptual:	Criterion B: i, ii, iii, iv Criterion C: i, ii, iii, iv, v ATL Skills Information literacy	Living organisms and their development Ecosystems Components of ecosystems

					<p>How do changes in population size of one species affect other organisms in an ecosystem?</p> <p>Debatable: Should humans intervene in natural ecosystems to prevent extinction of endangered species?</p>	<p>Communication Affective Collaboration</p>	<p>Interactions among components in ecosystems</p> <p>Food chains and food webs</p> <p>Types of ecosystems: land, aquatic, natural, artificial</p> <p>Balanced ecosystems</p> <p>Disturbances in ecosystems: natural and human</p> <p>Protection and restoration: measures for ecosystems</p>
<p>Unit 6</p>	<p>The Earth in the Universe</p>	<p>Systems Environment Models</p>	<p>Orientation in space and time Variability</p>	<p>The Earth and solar system progress according to cycles over long periods of time which can be modeled to predict variability in our environment.</p>	<p>Factual: What is the main difference between the heliocentric and geocentric models of the universe?</p> <p>Conceptual: How does the discovery of exoplanets challenge our understanding of planetary formation within the solar system?</p>	<p>Criterion D: i, ii, iii, iv</p> <p>ATL Skills Communication Organization Affective</p>	<p>The universe is everything that exists, has existed, and will exist.</p> <p>The models of the universe are the different ways of imagining what the cosmos must be like, as inferred from the observations we have made.</p> <p>The historical models of the universe were either geocentric or heliocentric.</p>

					<p>Debatable: Should the heliocentric model be emphasized over the geocentric model in science education, considering historical and cultural contexts?</p>		<p>The current model is neither geocentric nor heliocentric.</p> <p>According to the current model, the Earth is one of eight planets in the solar system, revolving around the Sun with a variety of other bodies.</p> <p>According to the current model, the Sun is one of billions of stars in our galaxy, the Milky Way.</p> <p>According to the current model, the Milky Way is one of billions of galaxies in our universe.</p> <p>According to the current model, the universe is expanding.</p>
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