Science – MYP Year 3

** 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	**Energy**	Change Energy	Scientific and technical innovation Discoveries	Discoveries of simple machines have allowed us to change towards a cleaner, safer, more energy efficient future.	**Factual:** What are examples of energy? **Conceptual:** How is energy harnessed to do work? **Debatable:** Will energy ever "run out"?	**Criterion A:** ii **Criterion C:** i, ii, iii, iv, v **ATL Skills** Communication	Energy is necessary for changes to occur. Energy exists in different forms. Energy can undergo changes in form, object, and position, but cannot be created or destroyed. The meaning of heat and work in the context of physics. How humans use energy and the sources it is obtained from. Energy sources may be renewable and nonrenewable. Upon use, energy degrades into forms of energy that cannot be used again.
Unit 2	**Human Impact on the**	Change	Fairness and development	As stewards of the environment, it is	**Factual:** What are	**Criterion A:** i, ii, iii	Planet Earth

	Environment	Environment	Ecology and disparate impact	our responsibility to understand the consequences of our actions and change our attitude about ecology in terms of climate change and energy use.	conservation and stewardship? **Conceptual:** How can we tell if an ecosystem is healthy? **Debatable:** What will the future of resource use look like?	**Criterion D:** i, ii, iii, iv **ATL Skills** Communication Creative-thinking Organization Information literacy	Renewable and non-renewable resources Human Influence on the Biosphere Biodiversity
Unit 3	**Nutrition**	Relationships Consequences	Scientific and technical innovation Systems, models, methods	Relationship between nutrition and the human body create a consequential system that impacts overall health and well-being.	**Factual:** What nutrients do we need to survive and function optimally? **Conceptual:** How does the body acquire and transport nutrients? **Debatable:** Can our diet prevent illness and improve our lifespan?	**Criterion A:** i, ii **Criterion B:** i **Criterion C:** ii **Criterion D:** i, ii, iii, iv **ATL Skills** Organization Information literacy Creative-thinking	Information that is included on food labels. Why it is not recommended to eat junk food or sugary sodas. Why it is a good idea to have a varied diet, rich in greens, vegetables, and fruits. About the body systems involved in nutrition. What happens to the food you eat, from ingestion to the absorption of its nutrients by your cells. How oxygen from the air reaches all of your cells.

							How you eliminate the waste products of the cells in your body through urine. About the steps recommended to lead a healthy life.
Unit 4	**At-a-Distance Forces**	Relationships Transformation	Orientation in space and time Exchange, interactions	Through exploring the key concept of relationships and related concepts of transformations, students investigate how forces acting at a distance facilitate exchange and interaction within systems, impacting natural phenomena and technological applications.	**Factual:** What are the different types of forces that act at a distance, and how do they manifest in various natural and artificial systems? **Conceptual:** What are the similarities and differences between gravitational and electromagnetic forces in terms of their range, strength, and effects on objects? **Debatable:** What are the ethical considerations surrounding the use of electromagnetic forces in	**Criterion B:** i, ii, iii, iv **Criterion C:** i, ii, iii, iv, v **ATL Skills** Information literacy Collaboration Communication Organization	Object can exert a force on another without necessarily having to be in physical contact. The most obvious at-a-distance forces are: gravitational, magnetic, and electric. We can calculate the magnitude of forces exerted at a distance. At-a-distance forces create force fields around the object exerting them. Electricity and magnetism are closely related phenomena.

					technologies such as wireless communication and electric power transmission, and how can potential risks be mitigated?		
Unit 5	**Communication**	Systems Function	Personal and cultural expression Communication	Through examining communication as a system and its functions, students explore how interconnected networks facilitate the exchange of information, shaping societal interactions and cultural dynamics within the context of global communication.	**Factual:** What are the fundamental properties of light and how do they influence its behavior? **Conceptual:** How do optical phenomena such as reflection, refraction, and dispersion affect the transmission of light and its manipulation in communication devices? **Debatable:** What are the ethical implications of using optical technologies, such as surveillance cameras and facial recognition systems, for communication	**Criterion C:** i, ii, iii, iv, v **Criterion D:** i, ii, iii, iv **ATL Skills** Collaboration Communication Organization	Transformation of information into waves. Importance of sight and hearing. Optics manipulation. Mirror reflections. Laws of reflection. Image properties. Refraction and lenses. Lens power calculation. Sensor necessity. Historical transmission methods. Communication inventors and tech. Electromagnetic waves. Wave signal differences. Radio signal transmission. Radio advantages and limits. Cable comparison. Total internal reflection. Analogue vs. digital. Transistors in computing. Moore's law impact. Sample rate definition. Mobile network function.

					and security purposes?		Internet system explanation.
Unit 6	**Body systems**	Systems Function	Personal and cultural expression Systems	Knowledge of the human body and its systems helps us to make personal choices that keep our bodies balanced and functioning optimally.	**Factual:** What are the structures and functions of the major organs within each body system? **Conceptual:** How do the different body systems interact and work together to maintain homeostasis? **Debatable:** How do advancements in medical technology aid in the understanding and treatment of body system disorders?	**Criterion A:** i, ii, iii **Criterion B:** i, ii, iii, iv **ATL Skills** Collaboration Affective Organization	Levels of organization Circulatory system Digestive system Respiratory system Skeletal system Muscular system Integumentary system Lymphatic system Endocrine system Reproductive system Urinary system Nervous system Homeostasis