Content : **Sciences**					Grade: **7th**			
Unit Title	MYP Key Concept	MYP Related Concepts	MYP Global Context	Statement of Inquiry	MYP Objectives	ATL Skills	Content (topics, knowledge, skills, and outcomes)	Assessment
1	Relationships	Sciences • Interaction • Models	**Scientific and technical innovation** Students will explore the natural world and its laws. *Exploration to Develop:* Systems, models, methods; products, processes and solutions	Modeling helps us to understand relationships and interactions within a system.	**A: Knowing and understanding** • i. describe scientific knowledge • iii. analyse information to make scientifically supported judgments. **C: Processing and evaluating** • i. present collected and transformed data • ii. interpret data and describe results using	**Sciences** **A: Knowing and understanding** • i. describe scientific knowledge **Communication** **I. Communication skills** • Find information for disciplinary and interdisciplinary inquiries, using a variety of media • Organize and depict information logically • Structure information in summaries, essays and reports **Learning Experiences:** In order to (Objective A) describe scientific knowledge students will	TEKS SCI.7.12C Recognize levels of organization in plants and animals including cells, tissues, organs, organ systems, and organisms. Ⓢ SCI.7.12F Recognize that according to cell theory all organisms are composed of cells. ⓈSCI.7.12D Differentiate between structure and function in plant and animal cell organelles including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole. SCI.7.12E Compare the	**A: Knowing and understanding** **C: Processing and evaluating** **D: Reflecting on the impacts of science**

					scientific reasoning **D: Reflecting on the impacts of science** • iii. apply scientific language effectively • iv. document the work of others and sources of information used.	research information on the structure and function of cell organelles, and organize the information logically to ensure the information is correct and relevant. In order to (Objective A) apply scientific knowledge students will then summarize and organize the information into a report to present to the class following criterion A. **Self-management** **III. Organization skills** • Create plans to prepare for summative assessments (examinations and performances) **Learning Experiences:**	functions of a cell to the functions of organisms such as waste removal. Ⓢ SCI.7.12F Recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life., ELPS ELPS C.1a Use prior knowledge and experiences to understand meanings in English. ELPS C.4g Demonstrate comprehension of increasingly complex English by participating in shared reading, retelling or summarizing material, responding to questions, and taking notes commensurate with content area and grade level needs. ELPS C.5b	

						Students will communicate a plan of action to meet all deadlines for project. **Research** **VI. Information literacy skills** • Access information to be informed and inform others **Learning Experiences:** Students will explore several websites on cell organelles to summarize information to understand the interactions of organelles within a cell.	Write using newly acquired basic vocabulary and content-based grade-level vocabulary, College and Career Readiness CCRS 6.1A Know that although all cells share basic features, cells differentiate to carry out specialized functions.	
2	• Change • Relationships	• Interaction • Patterns	**Identities and relationships** Students will study their genetic history by tracing traits in their lineage.	Changes in living organisms can be caused by factors that are external and/or internal to	**A: Knowing and understanding** • i. describe scientific knowledge • ii. apply scientific knowledge and	**Sciences** **A: Knowing and understanding** • i. describe scientific knowledge **D: Reflecting on the impacts of science**	SCI.7.14A Define heredity as the passage of genetic instructions from one generation to the next generation. Ⓢ SCI.7.14B Compare the results of uniform or diverse	**D: Reflecting on the impacts of science**

			Exploration to Develop: Physical, psychological and social development; transitions; health and well-being; lifestyle choices	their systems. **Inquiry Questions:** How are genetic traits inherited by offspring?: LOI: An organism's traits are passed from generation to generation , Comparing modes of reproduction, what are the advantages and/or disadvantages does sexual reproduction have?: LOI 2:Organisms must reproduce either through asexual or sexual	understanding to solve problems set in familiar and unfamiliar situations • iii. analyse information to make scientifically supported judgments. **D: Reflecting on the impacts of science** • i. describe the ways in which science is applied and used to address a specific problem or issue • iii. apply scientific language effectively	• iii. apply scientific language effectively **Communication** **I. Communication skills** • Read critically and for comprehension • Make inferences and draw conclusions • Organize and depict information logically **Learning Experiences:** Students will be expected to read and write on disorders that influence a body system of their choice in a logical manner. **Thinking** **IX. Creative thinking skills** • Create original works and ideas; use existing works and ideas in new ways	offspring from sexual reproduction or asexual reproduction. Ⓢ SCI.7.14C Recognize that inherited traits of individuals are governed in the genetic material found in the genes within the chromosomes in the nucleus. Ⓢ SCI.7.12B Identify the main functions of the systems of the human organism including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems. SCI.7.12C Recognize levels of organization in plants and animals including cells, tissues,	

				reproduction. Should we be able to select for advantageous dominant and recessive traits in organisms?: LOI 3:Heredity includes the study of dominant and recessive traits.	• iv. document the work of others and sources of information used.	**Learning Experiences:** Students will gather information by researching their genetic traits and tracking a genetic disorder or disease has been carried in their families. Students are expected to produce a written report and poster outlining the passage of traits from one generation to the next.	organs, organ systems, and organisms. SCI.7.13A Investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight. SCI.7.13B Describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance. Process Skills SCI.7.3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, including examining all sides of the	

							scientific evidence of those scientific explanations so as to encourage critical thinking by the student. SCI.7.3B Use models to represent aspects of the natural world such as human body systems, and plant and animal cells.	
3	• Form • Perspective	Sciences • Function • Interaction	**Scientific and technical innovation** ii. The interaction between people and the natural world. *Exploration to Develop:* Systems, models, methods; products, processes and solutions	An organism's perspective on how it interacts with its surroundings is dependent upon the function and form of its response systems. **Inquiry Questions:** What do the senses help an organism perceive?: How is external	**B: Inquiring and designing** • i. describe a problem or question to be tested by a scientific investigation • ii. outline a testable hypothesis and explain it using scientific reasoning • iii. describe	**B: Inquiring and designing** • i. describe a problem or question to be tested by a scientific investigation **Communication** **I. Communication skills** • Give and receive meaningful feedback • Negotiate ideas and knowledge	Students will need to know the differences between Human Body Systems and Response to Stimuli. SCI.7.13A Investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight. SCI.7.13B Describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever	**B: Inquiring and designing**

				stimuli interpreted inside of the body? Can organisms train themselves to respond to external stimuli?: What advantage do organisms have when they can change or perceive stimuli in ways that benefit them? How do the human body systems work together to interpret stimuli?: How do we know if there is a dysfunction or weaknesses	how to manipulate the variables, and describe how data will be collected • iv. design scientific investigations.	with peers and teachers **Self-management** **III. Organization skills** • Keep an organized and logical system of information files/notebooks **Research** **VI. Information literacy skills** • Collect, record and verify data	or vomiting in animals that allow them to maintain balance. SCI.7.7B Illustrate the transformation of energy within an organism such as the transfer from chemical energy to heat and thermal energy in digestion. SCI.7.12B Identify the main functions of the systems of the human organism including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems. , Science Skills SCI.7.1A Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety	

				in perception of stimuli?			Standards. SCI.7.1B Practice appropriate use and conservation of resources including disposal, reuse, or recycling of materials. SCI.7.2A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology. SCI.7.2B Design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology. SCI.7.2C Collect and record data	

							using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers. SCI.7.2D Construct tables, using repeated trials and means, to organize data and identify patterns. SCI.7.2E Analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends. SCI.7.3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, including examining all sides of the	

							scientific evidence of those scientific explanations so as to encourage critical thinking by the student.	
4	• Change • Time, place and space	Sciences • Balance • Environment • Transformation	**Globalization and sustainability** *Exploration to Develop:* Human impact on the environment Commonality, diversity and interconnection Consumption, conservation, natural resources and public goods Population and demography	Various species use adaptation as a response to factors in their environment which causes change in their structure and function over time that helps them thrive and survive. **Inquiry Questions:** Is adaptation necessary?: Do species of organisms survive in spite of or because of environmental change? ,	**A: Knowing and understanding** • ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations • iii. analyse information to make scientifically supported judgments. **D: Reflecting on the impacts of science** • ii. discuss and analyse	**Sciences** **A: Knowing and understanding** • ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations • iii. analyse information to make scientifically supported judgments. **D: Reflecting on the impacts of science**	TEKS Ⓢ SCI.7.11A Examine organisms or their structures, such as insects or leaves, and use dichotomous keys for identification. SCI.7.11B Explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb. Ⓢ SCI.7.11C Identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding	**A: Knowing and understanding** **D: Reflecting on the impacts of science**

				Are there advantages to adapting to a new environment?: How do adaptations help an organism take advantage of their environment? How do species adapt to their environment?: What methods do animals use to adapt to their environment?	the various implications of the use of science and its application in solving a specific problem or issue	• ii. discuss and analyse the various implications of the use of science and its application in solving a specific problem or issue **Research** **VI. Information literacy skills** • Collect, record and verify data • Make connections between various sources of information • Collect and analyse data to identify solutions and make informed decisions **Thinking** **VIII. Critical thinking skills**	such as the Galapagos Medium Ground Finch (Geospiza fortis) or domestic animals. SCI.7.12A Investigate and explain how internal structures of organisms have adaptations that allow specific functions, such as gills in fish, hollow bones in birds, or xylem in plants. Ⓢ SCI.7.14B Compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction., Science Process Skills SCI.7.1A Demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards. SCI.7.1B Practice appropriate use and conservation	

						• Draw reasonable conclusions and generalizations • Identify trends and forecast possibilities **X. Transfer skills** • Combine knowledge, understanding and skills to create products or solutions	of resources including disposal, reuse, or recycling of materials. SCI.7.2A Plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology. SCI.7.2B Design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology. SCI.7.2E Analyze data to formulate reasonable explanations, communicate valid conclusions	

							supported by the data, and predict trends.] SCI.7.3A In all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning and experimental and observational testing, including examining all sides of the scientific evidence of those scientific explanations so as to encourage critical thinking by the student.	
5	Global interaction	Mathematics • Quantity Sciences • Patterns	**Fairness and development** *Exploration to Develop:* Inequality, difference and inclusion	By analyzing trends in natural environments, we can quantify developing patterns. **Inquiry Questions:** Types of Natural Disasters : What are the types of	**Interdisciplinary:** **A: Disciplinary grounding** • demonstrate relevant disciplinary factual, conceptual and/or procedural knowledge. **B: Synthesizing** • synthesize disciplinar	**Mathematics** **B: Investigating patterns** • ii. describe patterns as relationships and/or general rules consistent with findings	MATH.7.6B Select and use different simulations to represent simple and compound events with and without technology. Ⓢ MATH.7.6C Make predictions and determine solutions using experimental data for simple and compound events. Ⓢ	**Interdisciplinary:** • A: Disciplinary grounding • B: Synthesizing • C: Communicating • D: Reflecting **Mathematics:**

				natural disasters ? , The student applies mathematical process standards to use statistical representations to analyze data.: How can you use proportional reasoning to solve problems involving graphs of data? , How do meteorologist use weather patterns ?: How does long term weather patterns help meteorologist predict when a natural	y knowledge to demonstrate interdisciplinary understanding. **C: Communicating** • use appropriate strategies to communicate interdisciplinary understanding effectively **D: Reflecting** • reflect on themselves as disciplinary and interdisciplinary learners **Mathematics:** **B: Investigating patterns**	**Sciences** **D: Reflecting on the impacts of science** • i. describe the ways in which science is applied and used to address a specific problem or issue **Communication** **I. Communication skills** • Organize and depict information logically **Research** **VI. Information literacy skills** • Collect and analyse data to identify solutions and make informed decisions • Process data and report results	MATH.7.6D Make predictions and determine solutions using theoretical probability for simple and compound events, Science 7.8(A) Predict and describe how different types of catastrophicevents impact ecosystems such as floods, hurricanes, or tornadoes	• B: Investigating patterns **Sciences:** • D: Reflecting on the impacts of science

				disaster may be ensuing? The student applies mathematical process standards to use probability and statistics to describe or solve problems involving proportional relationships.: How can you use experimental probability to make qualitative and quantitative predictions and use the predictions to draw conclusions?, Does planning prepare you for a natural disaster?: Can you be	• ii. describe patterns as relationships and/or general rules consistent with findings **Sciences:** **D: Reflecting on the impacts of science** • i. describe the ways in which science is applied and used to address a specific problem or issue			

				prepare for all types of natural disaster? , Students make decisions and predictions using experimental and/or theoretical data for simple and compound events: Is there another way to use experimental probability to determine if a statistical weather pattern is accurate?				
6	Systems	Sciences • Environment • Interaction	**Scientific and technical innovation** Students will study the interaction between people and	Components of systems provide structure and order in the natural	**C: Processing and evaluating** • i. present collected and	**Research** **VI. Information literacy skills** • Collect, record and verify data • Access information to be	7.5A Recognize that radiant energy from Sun is transformed into Chemical energy through photosynthesis 7.5B Demonstrate	**A: Knowing and understanding** **D: Reflecting on the impacts of science**

			natural world. *Exploration to Develop:* Systems, models, methods; products, processes and solutions	environment **Inquiry Questions:** Components of system: What are abiotic and biotic factors? , Components of systems: What is energy transformation and how does this phenomenon cause photosynthesis? , Components of systems: How do organisms use energy from the sun? , Components of systems : Why is cycling of matter and energy	transformed data • iii. discuss the validity of a hypothesis based on the outcome of the scientific investigation • v. describe improvements or extensions to the method.	informed and inform others • Collect and analyse data to identify solutions and make informed decisions.	and explain the cycling of matter within living systems, such as the decay of biomass of a compost bin 7.5C Diagram the flow of energy through living systems including food chains, food webs and energy pyramids. 7.6A Identify the organic compounds contain carbon and other elements such as hydrogen, phosphorus, nitrogen, or sulfur. 7.10A Observe and describe how different environments,including microhabitats in schoolyards and biomes, support different varieties of organisms. 7.10B Describe how biodiversity contributes to the sustainability of	

				important to living things? Components of systems: How does ecological succession help maintain equilibrium in ecosystem? Components of systems: What are the characteristics of biomes that predict the type of organisms that will most likely live there? , Components of systems: Should organisms adapt to fit different biomes? , Components of systems : What else			an ecosystem. 7.10C Observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds.	

				could organisms use to receive energy if the sun were to disappear. , Component of systems : What happens if biomes are out of equilibrium?				

The prescribed **MYP Key Concepts** for a subject area must be covered over the course of the year by every teacher of that subject.

MYP Related Concepts must be taught over the course of the MYP program.

MYP Global Context must be covered over the course of the year by each teacher.

The **Statement of Inquiry** is constructed for a unit by combining a key concept, one or more related concepts, and a global context in a meaningful statement that the students can understand.

MYP assessment requires teachers to assess the prescribed subject-group objectives using the assessment criteria for each subject group in each year of the program. **MYP Objectives** and strands must be assessed twice per school year by each teacher.

MYP ATL Skills must show a progression and be covered over the course of the MYP program.

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Content includes the topics, knowledge, skills and outcomes required by the state and district.

Summative assessment tasks should be directly linked to the statement of inquiry and provide varied opportunities for students to demonstrate their, knowledge, understanding, and skills.