Science: 7th gr, Y2 2019-2020

Unit Title, MYP Year, Duration,	Key Concept	Related Concept(s)	Global Context	Statement of inquiry	MYP Subject Group Objectives	ATL Skills	Content (topics, knowledge, skills)
Cells	Systems	Function and Models	Identities and Relationships	Systems have specific functions that can be modeled and may be used to explain our identities and relationships.	Criterion A: Knowing and understanding i. Describe scientific knowledge ii. Apply scientific knowledge and understanding of cell function to solve problems set in familiar and unfamiliar situations. iii. Analyze information to make scientifically supported judgments. Criterion B: i. Describe a problem or question to be tested by a scientific investigation. ii. Outline and explain a testable hypothesis using correct scientific reasoning. iii. Describe how to manipulate the variables, and describe how sufficient, relevant data will be collected. Criterion C: i. Correctly collect, organize and present data in numerical and/or visual forms. ii. Accurately interpret data and describe results using correct scientific investigation.	Thinking: <u>Transfer</u> In order for students to apply scientific knowledge and understanding of cell functions to solve problems, students must combine knowledge, understanding and skills to create products or solutions. Self-Management Skills: <u>Organization</u> In order for students to apply scientific knowledge and understanding to solve problems, students must keep an organized and logical system of information files/notebooks.	**Learning experiences and teaching strategies**: Prokaryotic/Eukaryotic Cells -Chalk Art Cell Membrane -Soap Film as Cell Membrane Egg Osmosis Lab -Egg as Cell Cells as Factories -Matching Card Game Cell Riddles -Make a Kahoot! Game Mastering Mitosis -Make a Stop Motion video showing mitosis process When Viruses Attack -Create comic using what they learned about the flu virus Venn Diagram: Virus Vs. Bacteria

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DNA and Identification	Relationships	Evidence Consequences	Fairness And Development	Analyzing DNA allows us to see the relationship between the DNA and the individual. This evidence aids in their fair treatment.	Criterion A: Knowing and Understanding i. Describe scientific knowledge ii. Apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations. iii. Analyze information to make scientifically supported judgements. Criterion B: i. Describe a problem or question to be tested by a scientific investigation. ii. Outline and explain a testable hypothesis using correct scientific reasoning. Criterion C: i. Correctly collect, organize and present data in numerical and/or visual forms ii. Accurately interpret data and describe results using correct scientific investigation. iii. Discuss the validity of the hypothesis based on the outcome of a scientific investigation. iv. Discuss the validity of the method based on the outcome of a scientific investigation. v. Describe improvements or extensions to the method that would benefit the scientific investigation. Criterion D: i. Describe the ways in which science is applied and used to address a specific problem or issue ii. Discuss and analyze the implications of using science and its application to solve a specific problem or issue, interacting with a factor. iii. Consistently apply scientific language to communicate understanding clearly and precisely.	Thinking: <u>Critical Thinking</u> In order for students to describe the ways in which science is applied and used to address a specific problem or issue, students must use models and simulations to explore complex systems and issues. <u>Communication Skills</u> In order for students to consistently apply scientific language to communicate understanding clearly and precisely, students must use a variety of speaking techniques to communicate with a variety of audiences.	Grasp Goal: Analyze DNA to see the relationship between the DNA and the individual. Role: You are a lab technician who is asked to take a karyotype of a fetus' chromosomes. You will analyze the chromosome set to see if there is a disorder in the fetus. Audience: Your audience are the parents of the unborn child. Situation: A pregnant woman comes in because she wants to know if there is a disorder with her child. If there is, she would like to be prepared and inform herself about the disorder. Product: You and your partner will create a Piktochart online explaining the disorder.
Adaptations, Natural Selection, and Evolution	Change	Environments Interaction	Orientation in Space and Time	Analyzing the changes that have occurred in the interaction of	Criterion A: Knowing and Understanding i. Describe scientific knowledge	Social Skills: <u>Collaboration</u>	Traits: What you Need to Know Annotate

				species in our environment, allows to investigate the history of humans on Earth.	ii. Apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations. iii. Analyze information to make scientifically supported judgements. Criterion B: i. Describe a problem or question to be tested by a scientific investigation. ii. Outline and explain a testable hypothesis using correct scientific reasoning. iii. Describe how to manipulate the variables, and describe how sufficient, relevant data will be collected. Criterion C: i. Correctly collect, organize and present data in numerical and/or visual forms ii. Accurately interpret data and describe results using correct scientific investigation. iii. Discuss the validity of the hypothesis based on the outcome of a scientific investigation. iv. Discuss the validity of the method based on the outcome of a scientific investigation. v. Describe improvements or extensions to the method that would benefit the scientific investigation.	In order for students to correctly collect, organize and present data in numerical and/or visual forms, students must delegate and share responsibility for decision making. Research Skills: <u>Information Literacy</u> In order for students to accurately interpret data and describe results using correct scientific investigation, students must collect and analyze data to identify solutions and/or make informed decisions.	Natural Selection Game: Bird Beaks and Food Can You Identify a Human Embryo? Time After Time: Scale Events on a Time Line Mutation Nation Variations in Living Things: read and write definitions Bird Identification: Hand out a plush bird and have students identify it using a dichotomous key book. Video: Bird Feeding Adaptations: How Beaks are Adapted to What Birds Eat Organism Classification BrainPop: Natural Selection, Human Evolution
Body Works	Systems	Function, Model	Scientific Innovation: Principles	The modeling of a system's function can illuminate its principles for better understanding.	**<u>Criterion A: Knowing & Understanding</u>** i. Describe scientific knowledge ii. Apply scientific knowledge & understanding to solve problems set in familiar & unfamiliar situations iii. Analyze information to make	<u>Critical Thinking</u> In order for students to describe scientific knowledge, apply scientific knowledge &	Discover how the human body functions. Model the process of chemical and mechanical

					scientifically supported judgements **<u>Criterion D: Reflecting on impacts of Science</u>** i. Describe the ways in which science is applied and used to address a specific problem or issue ii. Discuss & analyze the various implications of using science and its application in solving a specific problem or issue iii. Apply scientific language effectively iv. Document the work of others and sources of information used	understanding to solve problems set in familiar & unfamiliar situations, and analyze information to make scientifically supported judgements, students must revise understanding based on new information and evidence. <u>Creativity and Innovation</u> In order for students to describe the ways in which science is applied and used to address a specific problem or issue, discuss & analyze the various implications of using science and its application in solving a specific problem or issue, apply scientific language effectively, and document the	breakdown of food. Understand how the respiratory system regulates blood gases. Model the path of blood. Understand heart recovery time. Learn how the heart works. Evaluate the strength of the heart muscle.

						work of others and sources of information used, students must apply existing knowledge to generate new ideas, products or processes.	