

MYP SUBJECT OVERVIEW

Carl Hankey School 2018-19

SUBJECT: Science

MYP Year: 2

TEACHER: Aleman

Unit Title Time Frame	Key Concept	Related Concept(s)	Global Context	Statement of Inquiry	MYP Subject Objectives	ATL Skills	Content
Structure and Properties of Matter 30hrs	Change	Environment al	Scientific and Technical Innovation Processes and solutions	Processes and solutions are created to adapt to environment al change.	A. Knowing and understanding i. describe scientific knowledge ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations D: Reflecting on the impact of science iii. apply scientific language effectively	Use models and simulations to explore complex systems (ATL Category: Thinking, skill cluster: Critical-thinking skills). Make unexpected or unusual connections between objects and/or ideas (ATL Category: Thinking, skill cluster: Creative- thinking skills). Give and receive meaningful feedback (ATL Category: Communication, skill cluster: Communication skills).	MS-ESS3-1. Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes. MS-PS1-1. Develop models to describe the atomic composition of simple molecules and extended structures. MS-PS1-4. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.
Photosynt hesis and Respiratio n 20hrs	Systems	Energy and Transfer	Scientific and Technical Innovation (systems and processes)	The process of energy transfer occurs in systems.	A: Knowledge and Understanding i. describe scientific knowledge ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations iii. analyse information to make scientifically supported judgments. 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 how to manipulate the variables, and describe how data will be	Use models and simulations to explore complex systems and issues. (ATL Category: Thinking, ATL Cluster: Critical Thinking Skill) Apply skills and knowledge in unfamiliar situations. (ATL Category: Thinking, ATL Cluster: Transfer) Make inferences and draw conclusions. (ATL Category: Communication, ATL Cluster: Communication skills) Collect, record and verify data. (ATL Category: Research, ATL Cluster: Information literacy skills)	MS-LS1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. MS-LS1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

					collected iv. design scientific investigations.		
A Long Walk to Water 30hrs	Change	Communities and Consequences	Scientific and Technical Innovation Advances on communities and environments	Changes as a result of advances can cause consequences to communities and environments.	<p>Interdisciplinary Criteria Criterion A: Disciplinary Grounding Criterion B: Synthesizing Criterion C: Communication MYP objective: A. Knowing and understanding i. explain scientific knowledge ii. apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations iii. analyse and evaluate information to make scientifically supported judgments.</p> <p>D. Reflecting on the impacts of science i. explain the ways in which science is applied and used to address a specific problem or issue ii. discuss and evaluate the various implications of the use of 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.</p>	<p>In order for students to show disciplinary grounding, students must apply skills and knowledge in unfamiliar situations (ATL Category: Thinking, skill cluster: Transfer skills). In order for students to show synthesizing, students must find information for disciplinary and interdisciplinary inquiries, using a variety of media (ATL Category: Communication, skill cluster: Communication skills) In order for students to communicate, students must organize and depict information logically (ATL Category: Communication, skill cluster: Communication skills)</p>	<p><u>MS-ESS3-1</u>. Construct a scientific explanation based on evidence for how the uneven distributions of Earth’s mineral, energy, and groundwater resources are the result of past and current geoscience processes. <u>MS-PS1-1</u>. Develop models to describe the atomic composition of simple molecules and extended structures. <u>MS-PS1-4</u>. Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed. MS-LS-1-6. Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. MS-LS-1-7. Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. MS-ESS-2-1. Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process. MS-PS1-2. Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. MS-PS1-5. Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved. MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. MS-ETS1-3. Analyze data from tests to determine similarities and differences</p>

							among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.