Science					
Topic	**Key Concepts**	**Theme**	**ATL skills**	**Lines of Inquiry**	**Assessment Objectives**
Stand-alone: Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. Stand-alone: Generate and compare multiple solutions that use patterns to transfer information.* Stand-alone: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem	Causation Responsibility Perspective	STP: Human actions and reactions can cause conflict and influence how it is resolved.	**Self-management** States of mind (mindfulness, perseverance, emotional management, self-motivation, resilience) **Social Skills** Developing positive interpersonal relationships and collaboration skills (using self-control, managing setbacks, supporting peers)	- Causes of conflicts at different levels - The impact of conflict - Conflict resolution and management	Scientific Method or Science and Engineering Practices 3-LS2-1. Construct an argument that some animals form groups that help members survive. 3-LS4-1. Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago. 3-LS4-3. Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. 3-LS4-4. Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.* 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost."
Integrated: Use evidence to construct an explanation relating the speed of an object to the energy of that object. Integrated: Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. Integrated: Ask questions and predict outcomes about the changes in energy that occur when objects collide. Integrated: Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.* Integrated: Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.	Form Function Responsibility	How the World Works	**Thinking Skills** Reflections/metacognition skills (reconsidering the process of learning) **Research Skills** Media literacy skills (interacting with media to use and create ideas and information) Information-literacy skills (formulation and planning, data gathering and recording) **Self-management** Organization skills (managing time and tasks effectively)	- Renewable and non-renewable resources - How energy is converted and transformed - Responsible use of energy	Scientific Method or Science and Engineering Practices 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world. 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.* 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost."

Integrated: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.					
Stand-alone: Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	Causation Change Perspective	HWEO: Creating and responding to art develops an understanding of ourselves and the world around us.	**Communication Skills** ICT skills (using technology to communicate information) **Self-management** Organization skills (managing time and tasks effectively) **Thinking skills** Creative-thinking skills (generating novel ideas and considering new perspectives)	- How art provides insight and information - How art changes ideas and feelings - Personal preferences in appreciation of arts	Scientific Method or Science and Engineering Practices 3-LS1-1. Develop models to describe what organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death. 3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms. 3-LS3-2. Use evidence to support the explanation that traits can be influenced by the environment. 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing. "
Integrated: Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. Integrated: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	Function Connection Causation	WWA: The human body consists of a network of interconnected systems.	**Research skills** Information-literacy skills (synthesising and interpreting, evaluating and communicating) Ethical use of media/information (understanding and applying social and ethical technology) **Communication Skills** Exchanging-information skills (listening, interpreting, speaking)	- How body systems work - The interconnectedness of body systems - Maintaining a healthy body	Scientific Method or Science and Engineering Practices

Stand-alone: Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. Stand-alone: Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.	Function Responsibility Change	HWOO: Governmental systems address human needs, rights, and responsibilities.	**Social Skills** Developing social-emotional intelligence **Communication Skills** Literacy skills (reading, writing and using language to gather and communicate information) **Thinking skills** Transfer skills (using skills and knowledge in multiple contexts)	- How government systems work (Governance systems and processes) - How government systems deal with a crisis - How citizens can monitor and influence actions of their government	Scientific Method or Science and Engineering Practices 3-PS2-1. Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. 3-PS2-2. Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion. 3-PS2-3. Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other. 3-PS2-4. Define a simple design problem that can be solved by applying scientific ideas about magnets.* 3-5-ETS1-1. Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost."
Integrated: Analyze and interpret data from maps to describe patterns of Earth's features. Integrated: Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.* Integrated: Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.	Form Connection Change	WWPT: Past civilisations connect to the present day.	**Thinking Skills** Critical-thinking skills (analysing and evaluating issues and ideas) **Communication Skills** ICT skills (using technology to gather and investigate information)	- Similarities and differences of past civilizations - Development of systems and technology - Connections between artifacts and civilizations	

Taking Action

Taking action is one of the five essential elements of the PYP and an intricate part of the inquiry cycle which could be interpreted as a "conclusion" to learning. When taking action, students make connections to new knowledge they have acquired and apply their skills in everyday life.