

# Tema International School



## Science Benchmarks and Skills

Strands:	By the end of <b>K1</b> , learners will:	By the end of <b>K2/3</b> learners will:	By the end of <b>Grade One</b> , learners will:	By the end of <b>Grade Two</b> , learners will:	By the end of <b>Grade Three</b> , learners will:	By the end of <b>Grade Four</b> , learners will:	By the end of <b>Grade Five</b> , learners will:	By the end of <b>Grade Six</b> , learners will:
<p><b>Living Things</b></p> <p><i>The study of the characteristics, systems and behaviours of humans and other animals, and of plants; the interactions and relationships between and among them, and with their environment.</i></p>	<p><b>Sharing the planet:</b> Explore the basic needs of living things (air, water, food, and shelter) that are met from the environment.</p> <p>Appreciate that all living things are important and should be treated with care and respect.</p> <p>Identify animals that do and do not live in the ocean.</p> <p>Identify ways in which they can care for and show respect for oceans.</p> <p>Observe the needs of living things.</p> <p>Take responsibility for living things.</p> <p>Be aware of the roles played by plants.</p> <p>Describe the simple life cycle of some living things. describe the life cycles of a variety of living things (for example, a range of animals and plant</p>	<p><b>How the world works:</b> Sort and classify groups of living and nonliving things in their own way.</p> <p>Explore the characteristics of living things.</p> <p>Use senses to describe change.</p> <p>Identify and describe how living things change (life cycle).</p> <p>Identify and describe how non-living things can be changed (human action, nature)</p> <p>Conduct an experiment to determine if an object can be changed</p> <p>Conduct experiments to explore permanent versus reversible change (ie. water can change between frozen and liquid, but baking ingredients together is irreversible change)</p> <p><b>Who we are:</b></p> <p>Observe and describe the characteristics of living and non-living things</p> <p>Identify the senses and its related sense organ.</p> <p>Care for the senses.</p> <p>Identify and describe unnamed objects using their five senses - sight, smell, taste, touch, and sound.</p>	<p><b>Sharing the planet:</b> Classify plants as vascular (have tubes to transport food) or non-vascular (absorb food via leaves).</p> <p>Observe and describe the characteristics of living and non-living things</p> <p>Observe the needs of living things that enable them to stay healthy</p> <p>Take responsibility for living things found in his or her environment.</p> <p>Identify the parts of plants that are used by other living things (for example, for food, shelter, tools)</p> <p>be aware of the role of plants in sustaining life (for example, providing oxygen, food)</p> <p>Ask questions that demonstrate a curiosity about living things, objects, and events in the immediate environment</p> <p>Investigate the physical characteristics of plants (e.g., basic parts, size, shape, colour) and explain how they help the plant meet its basic needs (e.g., roots anchor the plant and help provide the plant with food and water; some plants have brightly coloured flowers to attract bees).</p>	<p><b>Who we are:</b> Identify that humans cannot make their own food; they get nutrition from what they eat.</p> <p>Explain the importance of good hygiene practices on health.</p> <p>Investigate how the sun’s energy allows humans to meet their basic need for food.</p> <p>Identify the different food groups and what these groups provide our bodies (energy, minerals, vitamins, protein, etc...).</p> <p>Identify personal actions that they themselves can take to help maintain a healthy lifestyle.</p> <p>Identify the five components of a healthy lifestyle (nutrition/hydration, rest, exercise, hygiene, and personal wellness) and their importance in daily life.</p> <p>Who we are (A)</p> <p>recognise that living things, including humans, need certain resources for energy and growth</p> <p>identify the major food groups and be aware of the role they play in human</p>	<p><b>Who we are:</b> assess the impact that changes in environmental conditions can have on living things</p> <p>describe how water sustains life</p> <p>recognize the ways in which plants and animals have adapted over time</p> <p>make links between different features of the environment and the specific needs of living things</p> <p>assess the impact that changes in environmental conditions can have on living things</p> <p><b>Sharing the planet:</b> recognize the ways in which plants and animals have adapted over time</p> <ul style="list-style-type: none"> <li>make links between different features of the environment and the specific needs of living things</li> <li>assess the impact that changes in environmental conditions can have on living things</li> </ul>	<p><b>Sharing the planet:</b> Investigate and describe how plants and animals have features that help them live in various environments.</p> <p>Observe, record, and describe changes in the health or behavior of an organism as a result of changes in its environment.</p> <p>Give examples of how changes in the environment (drought, cold) have caused some plants and animals to die or move to new locations (migration).</p> <p>Explore the relationship between the components of a habitat and the plants and animals that live there.</p> <p>describe the interactions of living things within and between ecosystems</p> <p>examine interactions between living things and non- living parts of the environment</p> <p>recognize that solar energy sustains ecosystems through a transformation of energy</p> <p>analyse the effects of changing a link in a food web</p> <p>explain how human activities can have positive or adverse effects on local and other environments (for example, waste disposal, agriculture, industry).</p>	<p><b>Who we are:</b> recognize the importance of moderation in relation to safe personal behavior</p> <p>understand the interdependence of factors that can affect health and well-being</p> <p>identify realistic goals and strategies to improve personal fitness</p> <p>identify and discuss the changes that occur during puberty and their impact on well-being.</p> <p><b>How the world works</b> understand the role of vaccinations</p> <p>investigate technology developments</p> <p>examine the impact of particular technologies on sustainability</p> <p>suggest areas for future technological advances.</p> <p>explore health and safety issues facing children (for example, spread of disease, accidents, access to health care)</p>	<p><b>Who we are:</b> Assess the effects of social and environmental factors on human health, and propose ways in which individuals can reduce the harmful effects of these factors and take advantage of those that are beneficial.</p> <p>Recognize that living things go through predictable life cycles.</p> <p>Describe the changes that occur during puberty.</p> <p><b>Sharing the planet:</b> Explain the importance of biodiversity.</p> <p>Explain how energy is transferred through food webs in an ecosystem.</p> <p>Analyse the effects of changing a link in a food web.</p> <p>Explain how ecosystems, biomes and environments are interdependent.</p> <p>Explore how species develop interrelationships within species, between species, and between species and the environment and identify how these interrelationships sustain biodiversity.</p> <p>Analyse a local issue related to biodiversity.</p> <p>describe the interactions of living things within and</p>

		<p>Explain the functions of the five senses.</p>		<p>development.</p> <ul style="list-style-type: none"> <li>recognise that imagination contributes to scientific</li> <li>developments explore the use of imagination as a tool to solve problems (for example, particular inventions, scientific discoveries).</li> </ul> <p>Who we are ( B)</p> <p>talk about activities that occur during the day and night</p> <p>make connections between the weather and how to protect himself or herself</p> <p>identify simple patterns in daily and seasonal cycles</p> <p>observe the needs of living things that enable them to stay healthy</p>		<p>take responsibility for living things found in his or her environment.</p> <p>observe and describe the characteristics of living and non-living things</p> <p>investigate the responses of plants or animals to changes in their habitats.</p> <p>recognise the ways in which plants and animals have adapted over time</p> <p>make links between different features of the environment and the specific needs of living things</p> <p>assess the impact that changes in environmental conditions can have on living things</p>		<p>between ecosystems</p> <p>examine interactions between living things and non-living parts of the environment</p> <p>analyse the effects of changing a link in a food web</p> <p>explain how human activities can have positive or adverse effects on local and other environments (for example, waste disposal, agriculture, industry).</p> <p>Identify and describe different biomes</p> <p>Examine the importance of balance in biomes</p> <p>Investigate the conservation of biomes</p> <p><b>How the World Works</b></p> <p>explain how human activities can have positive or adverse effects on local and other environments (for example, waste disposal, agriculture, industry).</p>
		<p><b>Sharing the planet:</b> Identify the conditions and requirements for healthy growth (ie. food, water, light).</p> <p>Identify ways in which they can care for and show respect for nature, animals and their habitats.</p> <p><b>Sharing The Planet.</b></p> <ul style="list-style-type: none"> <li>observe the features of the local environment that are affected by daily and seasonal cycles.</li> <li>take responsibility for living things found in his or her environment.</li> <li>observe the needs of living things that enable them to stay</li> </ul>		<p>take responsibility for living things found in his or her environment.</p> <p>identify the parts of plants that are used by other living things (for example, for food, shelter, tools)</p> <p>be aware of the role of plants in sustaining life (for example, providing oxygen, food)</p> <p>show responsibility when caring for plants.</p> <p><b>How we organise</b></p>				

- healthy show responsibility when caring for plants.

**ourselves:**  
Describe and diagram how all animals, including humans, depend upon plants whether or not they eat the plants directly.

		<p>Classify animals based on their relationships with humans (pets, farm animals, wild animals, pests, etc...)</p> <p>Observe the needs of living things that enable them to stay healthy.</p> <p>Take responsibility for living things found in his or her environment.</p> <p>Observe and describe the characteristics of living and non-living things</p> <p>Identify the parts of plants that are used by other living things (for example, for food, shelter, tools)</p> <p>Be aware of the role of plants in sustaining life (for example, providing oxygen, food)</p> <p>show responsibility when caring for plants.</p> <p>recognise that living things, including humans, need certain resources for energy and growth</p> <p>describe the life cycles of a variety of living things (for example, a range of animals and plants)</p>						
--	--	--	--	--	--	--	--	--

			<p>Identify what plants provide for other living things (e.g., trees produce the oxygen that other living things breathe; plants such as tomatoes and apple trees provide food for humans and for other animals; a tree stump provides a home for a chipmunk, etc...)</p> <p>Investigate ways they can sustain plant life.</p>				
<p><b>Earth and Space Science</b></p> <p><i>The study of planet Earth and its position in the universe, particularly its relationship with the sun; the natural phenomena and systems that shape the planet and the distinctive features that identify it; the infinite and finite resources of the planet.</i></p>	<p><b>How we express ourselves:</b></p> <p>Classify objects found in nature using identifiable features (colour, source, shape).</p> <p>Explore the distinctive features of nature, such as plants, seeds, animals, trees, outdoors, sunshine, rain, etc...</p> <p><b>Sharing The Planet:</b></p> <p>be aware of how to change water into a solid, liquid and gas</p> <p>describe observable changes (including changes of state) that occur in materials</p> <p>use senses to describe observable properties of familiar materials (including solids, liquids, gases)</p>	<p>Sharing the planet (B)</p> <p>reflect on and self-assess his or her personal use of natural resources</p> <p>investigate ways that familiar materials can be reused</p> <p>group materials on the basis of properties for the purpose of recycling</p> <p>describe how a particular material is recycled</p>	<p><b>How we organise ourselves:</b></p> <p>Identify the natural resources required in a variety of production processes.</p> <p><b>Sharing the Planet:</b></p> <p>Explore the impact of waste on the environment (eg. water pollution, air pollution, sanitation).</p> <p>Explain that the supply of many resources is limited but the supply can be extended through careful use, decreased use, reusing and/or recycling.</p> <p><b>Sharing the Planet (A)</b></p> <p>describe the natural features of local and other environments (for example, underlying geology)</p> <p>Analyse ways in which humans use the natural environment</p> <p>identify or generate a question or problem to be explored in relation to human impact on the local environment.</p> <p>Group materials on the basis of properties for the purpose of recycling</p> <p>Describe how a particular material is recycled</p>	<p><b>Sharing the planet:</b></p> <p>Describe ways in which living things, including humans, depend on freshwater (e.g., all living things need to drink or absorb water to stay alive)</p> <p>Identify sources of water in the natural and built environment (e.g., natural: oceans, lakes, ponds, streams, springs, water tables; human-made: wells, sewers, water supply systems, reservoirs, water towers) and which of these supply fresh water.</p> <p>take responsibility for living things found in his or her environment.</p> <p>identify the parts of plants that are used by other living things (for example, for food, shelter, tools)</p> <p>be aware of the role of plants in sustaining life (for example, providing oxygen, food)</p>	<p><b>How the world works:</b></p> <p>Describe the movement of the Earth and other planets relative to the sun in the solar system</p> <p>Describe the movement of the moon relative to the Earth</p> <p>Describe the sun, Earth and moon as approximately spherical bodies</p> <p>Use models to demonstrate how the rotation of the Earth on its axis every 24 hours produces the night-and-day cycle and</p> <p>reflect on the explanations from a range of sources as to why the Earth changes.</p> <p>identify the long-term and short-term changes on Earth (for example, plate tectonics, erosion, floods, deforestation)</p> <p>describe how natural phenomena shape the planet</p> <p>identify the evidence that the Earth has changed (for example, land formations in local environment)</p> <p>describe how water sustains life</p> <p>explore scientific and technological developments that help people understand and respond to the changing</p>	<p><b>How the world works:</b></p> <p>Describe how natural phenomena (waves, wind, water, glacier movement, and ice) shape and reshape the planet.</p> <p>Develop models to demonstrate the effects of forces from natural phenomena (e.g., tornadoes, hurricanes, earthquakes, tsunamis) on the natural and built environment.</p> <p>Describe changes in Earth's surface that are due to rapid processes (including landslides, Make suggestions as to how effects of natural disasters can be minimized.</p> <p>Explain, using examples, that hazard + vulnerability = natural disaster (both of these factors must exist for it to be considered a disaster)</p> <p>investigate technology developments</p> <p>examine the impact of particular technologies on sustainability</p> <p>suggest areas for future technological advances.</p> <p>Explore scientific principles to provide solutions to real world problems.</p>	

				<p>Sharing the Planet ( B )</p> <p>Analyse ways in which humans use the natural environment</p> <p>identify or generate a question or problem to be explored in relation to human impact on the local environment</p> <p>Recognise that imagination contributes to scientific developments</p> <p>explore the use of imagination as a tool to solve problems (for example, particular inventions, scientific discoveries).</p> <p>reflect on the impact of air on living things</p> <p>group materials on the basis of properties for the purpose of recycling</p> <p>describe how a particular material is recycled</p>		<p>Earth</p> <p>demonstrate how energy can be stored and transformed from one form to another (for example, storage of fat, batteries as a store of energy)</p> <p>identify and describe different forms of energy</p> <p>Explain the relationship between forces and motion</p> <p>examine ways in which the local community could be improved in relation to the conservation of energy</p> <p>assess renewable and sustainable energy sources (for example, wind, solar, water)</p>	<p>Analyse how and why scientific knowledge affects people and society</p> <p>Identify and describe scientific phenomena</p> <p>Identify practices to conserve the earth</p>
--	--	--	--	--	--	--	--

				<p>Apply and justify a personal action that can reduce their use of limited resources.</p>	<p>Investigate evaporation, condensation and precipitation through simulations.</p> <p>Explain the water cycle.</p> <p>Explain why fresh water is a limited resource, referencing the water cycle.</p> <p>Differentiate between potable and non-potable water.</p> <p>Assess personal and family uses of fresh water as responsible/efficient or wasteful, and create a plan to reduce the amount of water used, where possible.</p> <p>Illustrate the locations of freshwater (including oceans, seas, rivers, lakes, ponds, streams, and glaciers) on Earth by using drawings, maps, or models.</p> <p><b>Where we are in place and time:</b> Observe and describe weather associated with seasons.</p>	<p>explain the apparent movement of the sun across the sky</p> <p>Explain what makes Earth a unique planet that can sustain human life, referencing its natural resources and position in the solar system.</p> <p>Reflect on explanations from a range of sources as to why the Earth changes.</p> <p>Describe how water sustains life.</p> <p>Identify the long -term and short –term changes on Earth.</p> <p>Describe how natural phenomena change the planet.</p> <p>Identify the evidence that the earth has changed.</p> <p>Explore scientific and technological developments that help people understand and respond to the changing Earth.</p>		
--	--	--	--	--	--	---	--	--



				<p>Observe and record daily changes in weather (e.g., clouds or air temperature).</p> <p>Graph recorded weather data to show daily and seasonal patterns in weather.</p> <p>Describe weather by measurable quantities such as temperature, wind direction, wind speed, precipitation and barometric pressure.</p> <p>Identify and use the tools of a meteorologist (e.g., measure rainfall using rain gauge, measure air pressure using barometer,</p>		
--	--	--	--	--	--	--

					<p>measure temperature using a thermometer, measure wind speed using an anemometer).</p> <p>Predict weather and justify prediction with observable evidence.</p> <p>Explore the relationship between weather and climate.</p>			
<p><b>Materials and Matter</b></p> <p><i>The study of the properties, behaviours and uses of materials, both natural and human-made; the origins of human-made materials and how they are manipulated to suit a purpose.</i></p>	<p><b>How the world works:</b> Use senses to describe observable properties of familiar materials.</p> <p>Choose materials with a purpose as play evolves.</p> <p>Experiment with different construction materials to identify their features.</p> <p>Demonstrate how the features of different materials make them suitable/unsuitable for building (i.e., round objects don't stack, plasticity).</p> <p>Identify the simple physical properties of a variety of everyday materials (sink and float, rough and smooth, strong and weak) and explore these properties in their play.</p>	<p><b>How the world works:</b> Explore the characteristics of non-living things.</p> <p>Explore materials that undergo a physical change (changes the appearance only) using their senses.</p> <p>Explore materials that undergo a chemical change (changes into an entirely different substance) using their senses.</p> <p>Conduct an experiment to determine if an object can be changed.</p>		<p><b>How the world works:</b> Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</p> <p>Distinguish between an object and the material from which it is made.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p> <p>Describe how the properties of certain materials can change when specific actions are applied to them, such as freezing, mixing, heating, cutting, dissolving and bending.</p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p>			<p><b>How we express ourselves:</b> Explore key concepts and principles of photography</p> <p>Recognise that we need light in order to see things and that dark is the absence of light</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p>	

<p><b>Forces and Energy</b></p> <p>The study of energy, its origins, storage and transfer, and the work it can do; the study of forces; the application of scientific understanding through inventions and machines.</p>			<p><b>How The World Works</b></p> <p>explore links between air, light and sound (for example, thunder and lightning).</p> <p>recognise that imagination contributes to scientific developments</p> <p>explore the use of imagination as a tool to solve problems (for example, particular inventions, scientific discoveries).</p> <p>apply his or her understanding about the properties of air (for example, building a windmill)</p>	<p><b>How the World works B</b></p> <p>recognise that imagination contributes to scientific developments</p> <p>investigate ways that familiar materials can be reused</p> <p>explore links between air, light and sound (for example, thunder and lightning).</p> <p>apply his or her understanding about the properties of air (for example, building a windmill)</p> <p>reflect on the impact of air on living things</p> <p>investigate and identify the properties of air</p> <p>explore the use of imagination as a tool to solve problems (for example, particular inventions, scientific discoveries).</p> <p>examine how people use air in their everyday lives (for example, transportation, recreation)</p> <p>group materials on the basis of properties for the purpose of recycling</p> <p>explore the role of living things in recycling energy and matter.</p>	<p><b>How we express ourselves:</b></p> <p>Demonstrate how sounds is made in a variety of ways (singing, whispering, striking an object), and associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds</p>	<p><b>How The World Works</b></p> <p>Suggest areas for future technological advances. examine the impact of particular technologies on sustainability</p> <p>investigate technology developments</p> <p>analyze the way in which technology supports the functioning of workplaces (for example, schools)</p> <p>Analyze why and how we still use simple machines.</p> <p>investigate which simple machines were developed by past civilizations (for example, lever, ramp, pulley, screw, wheel)</p>	<p><b>Sharing the Planet:</b></p> <p>Identify a variety of renewable and non-renewable sources of energy and give everyday examples of how that energy is used.</p> <p>Identify and describe forms of energy as potential or kinetic.</p>	
--	--	--	---	--	---	---	---	--



					<p>travel through a medium to the ear.</p> <p>Investigate the basic properties of sound (frequency, pitch, loudness, duration, timbre, location)</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p><b>How the world works:</b> Explore simple and compound machines.</p> <p>State and apply the principles of work, effort, and force.</p> <p>Identify the six basic types of simple machines – lever; inclined plane; pulley; wheel and axle, including gear; screw; and wedge – and give examples of ways in which each is used in daily life to make tasks easier.</p> <p>Experiment with the design cycle.</p> <p>Use diagrams to show simple machines in action.</p> <p>Explain and demonstrate how simple machines interact to create compound machines.</p> <p>analyze why and how we still use simple machines.</p> <ul style="list-style-type: none"> <li>• explore the principle of using gears to provide more work for less energy</li> <li>• investigate which simple machines were developed by past civilizations (for</li> </ul>		<p>Explain and demonstrate an energy transformation.</p> <p>Explain and demonstrate how energy has been transformed, recognizing that energy cannot be created or destroyed.</p> <p>Analyse the long-term impacts on society and the environment of human uses of energy and natural resources.</p> <p>Evaluate the effects of various technologies on energy consumption and propose ways individuals can improve energy conservation.</p> <p><b>How the world works:</b> Demonstrate Newton's three physical laws of motion.</p> <p>Identify different kinds of forces.</p> <p>Describe how different forces (e.g., magnetism, muscular force, gravitational force, friction) applied to an object at rest can cause the object to start, stop, attract, repel, or change direction.</p> <p>Conduct investigations to determine the effects of increasing or decreasing the amount of force applied to an object.</p> <p>Design and build devices that use forces to create controlled movement.</p>	
--	--	--	--	--	--	--	--	--

					<p>example, lever, ramp, pulley, screw, wheel)</p> <ul style="list-style-type: none"><li>• understand the relationship between the force applied to an object and resulting motion of the object</li><li>• explain the relationship between force and motion • identify their own and others' existing ideas about forces and motion</li></ul> <p>recognize that forces act in all real-life situations whether objects are moving or not</p>			
--	--	--	--	--	---	--	--	--

<p><b>Science Skills</b></p>	<p><i>By the end of K1, learners will:</i> 1. explore ideas, manipulate materials and trial designs □through play.</p>	<p><i>By the end of K2/3, learners will:</i> 1. follow a planning process,</p>	<p><i>By the end of Grade One, learners will:</i> 1. explore ideas, manipulate materials and trial designs □ using digital and</p>	<p><i>By the end of Grade Two, learners will:</i> 1. conduct guided investigations by observing,</p>	<p><i>By the end of Grade Three, learners will:</i> 1. conduct guided investigations by observing,</p>	<p><i>By the end of Grade Four, learners will:</i> 1. design and conduct guided investigations by observing,</p>	<p><i>By the end of Grade Five, learners will:</i> 1. design and conduct investigations to observe, questioning,</p>	<p><i>By the end of Grade Six, learners will:</i> 1. design and conduct investigations to observe, questioning,</p>
------------------------------	--	--	--	--	--	--	--	---

	<ol style="list-style-type: none"> <li>2. ask questions about the familiar world</li> <li>3. talk about their observations</li> </ol>	<ol style="list-style-type: none"> <li>2. explore ideas, manipulate materials and trial designs using digital and non-digital tools □through play,</li> <li>3. ask questions about the familiar world,</li> <li>4. talk about their observations</li> </ol>	<p>non-digital tools through play;</p> <ol style="list-style-type: none"> <li>2. use their imagination to propose a solution to make something□ work better;</li> <li>3. perform simple tests using simple equipment</li> <li>4. identify variables in simple investigations;</li> <li>5. suggest possible explanations in relation to what they have observed;</li> <li>6. gather and record data to help answer questions.</li> </ol>	<p>questioning and predicting;</p> <ol style="list-style-type: none"> <li>2. identify and generate a question or problem to be explored;□</li> <li>3. identify variables in simple investigations;</li> <li>4. perform simple tests using simple equipment</li> <li>5. suggest possible explanations in relation to what they have observed;</li> <li>6. gather and record data to help answer questions.</li> </ol>	<p>questioning and predicting;</p> <ol style="list-style-type: none"> <li>2. identify and generate a relevant question or problem to be explored using different types of scientific inquiries*. □</li> <li>3. manipulate a variable in conducting an investigation in order to conduct a fair test;</li> <li>4. discuss the ways in which □an experiment is unfair if the relevant variables are not controlled;</li> <li>5. combine prior knowledge with observations to suggest an answer to the question posed in the investigation</li> <li>6. record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>7. use technology to make a task easier or repeatable in real-world tasks</li> </ol> <p>* recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys</p>	<p>questioning and predicting;</p> <ol style="list-style-type: none"> <li>2. identify and generate a relevant question or problem to be explored using different types of scientific inquiries*.</li> <li>3. formulate a testable hypothesis;</li> <li>4. suggest approaches and methods for solving problems;</li> <li>5. manipulate a variable in conducting an investigation in order to conduct a fair test;</li> <li>6. discuss the ways in which□ an experiment is unfair if the relevant variables are not controlled;</li> <li>7. suggest and justify possible explanations, making reference to prior knowledge/ observations;</li> <li>8. record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>9. use technology to make a task easier or repeatable in real-world tasks</li> </ol> <p>* recognise when a simple fair test is necessary and help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys</p>	<p>predicting and suggesting possible explanations to a question they have posed;</p> <ol style="list-style-type: none"> <li>2. formulate a testable hypothesis;</li> <li>3. suggest approaches and methods for solving □problems;</li> <li>4. identify and manipulate a variable in an investigation in □order to test a student-generated hypothesis;</li> <li>5. explain the ways in which an experiment is unfair if the relevant variables are not controlled;</li> <li>6. record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>7. take measurements, using a range of scientific equipment, with increasing accuracy and precision</li> <li>8. report and present findings from inquiries, including conclusions, causal relationships and explanations of and a degree of trust in results</li> <li>9. use technology to make a task easier or repeatable in real-world tasks</li> </ol>	<p>predicting and suggesting possible explanations to a question they have posed;</p> <ol style="list-style-type: none"> <li>2. suggest approaches and methods for solving □problems;</li> <li>3. identify and manipulate a variable in an investigation in □order to test a student-generated hypothesis;</li> <li>4. explain the ways in which an experiment is unfair if the relevant variables are not controlled;</li> <li>5. record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> <li>6. take measurements, using a range of scientific equipment, with increasing accuracy and precision, take repeat readings when appropriate</li> <li>7. report and present findings from inquiries, including conclusions, causal relationships and explanations of and a degree of trust in results</li> <li>8. identifying scientific evidence that has been used to support or refute ideas or arguments</li> <li>9. use technology to make a task easier or repeatable in real-world tasks</li> </ol>
--	---	---	---	--	---	---	---	--

**Reference documents:**

*Making the PYP happen: A curriculum framework for international primary education.* (2007). Cardiff, Wales: International Baccalaureate organization.  
 Great Britain, Department of Education. (2015, May 6). *National Curriculum in England: Science Programmes of Study*. Retrieved June 27, 2016, from <https://www.gov.uk/government/publications/national-curriculum-in-england-science-programmes-of-study/national-curriculum-in-england-science-programmes-of-study>  
 Canada, Ontario Ministry of Education. (2007). Retrieved June 27, 2016, from <http://www.edu.gov.on.ca/eng/curriculum/elementary/scientec18curr.pdf>



AERO SCIENCE K-8 and High School STANDARDS with Progression/Performance Indicators. (2011). Retrieved June 27, 2016, from [http://www.projectaero.org/aero\\_standards/science-standards/AERO-ScienceK-12Framework.pdf](http://www.projectaero.org/aero_standards/science-standards/AERO-ScienceK-12Framework.pdf)