

# Science

Key for “Province”:

**Bold type – BC Big Ideas**

Regular type – BC curricular content (K-8)

Topics	Gr	North American Division	Province:
Life Sciences	3-5	<p><i>Molecules to Organisms: Structures and Processes::</i> S.3-5.LS.1 Develop models (e.g., drawings, diagrams) to describe that organisms have unique and diverse life cycles but all have birth, growth, reproduction, and death in common. (3-LS1-1)</p>	<p><b>(2) Living Things have life cycles adapted to their environment: metamorphic and non-metamorphic life cycles</b></p> <ul style="list-style-type: none"> <li>• make exploratory observations using their senses</li> <li>• represent observations and ideas by drawing charts and simple pictographs</li> <li>• experience and interpret the local environment</li> </ul>
		<p><i>Molecules to Organisms, cont:</i> S.3-5.LS.2 Construct an argument that plants and animals have internal and external structures (e.g., thorns, stems, roots, colored petals, heart, stomach, lung, brain, skin) that function to support survival, growth, behavior, and reproduction. (4-LS1-1)</p>	<p><b>(5) Multicellular organisms have organ systems that enable them to survive and interact with their environment: basic structures &amp; functions of body systems</b></p> <ul style="list-style-type: none"> <li>• Make observations in familiar or unfamiliar contexts</li> <li>• Choose appropriate data to collect to answer their questions</li> <li>• Demonstrate an understanding and appreciation of evidence</li> <li>• Communicate ideas, explanations, and processes in a variety of ways</li> </ul>
		<p><i>Molecules to Organisms, cont:</i> S.3-5.LS.3 Use a model to describe systems of information transfer (e.g., nerves, hormones) that animals use to receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (4-LS1-2)</p>	<p><b>(4) All living things sense and respond to their environment</b> <b>(6) Multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment: hormonal and nervous systems</b></p> <ul style="list-style-type: none"> <li>• Identify questions about familiar objects and events that can be investigated scientifically</li> <li>• Sort and classify data and information using drawings or provided tables</li> <li>• Make simple inferences based on their results and prior knowledge</li> <li>• Co-operatively design projects</li> <li>• Represent and communicate ideas and findings in a variety of ways, such as diagrams and simple reports, using digital technologies as appropriate</li> </ul>
		<p><i>Molecules to Organisms, cont:</i> S.3-5.LS.4 Support an argument that plants get the materials they need for growth chiefly from air and water. (5-LS1-1)</p>	<p><b>(2) Water is essential to all living things, and it cycles through the environment: water sources, conservation and cycles</b> <b>(3) Living things are diverse, can be grouped, and interact in their ecosystems: biodiversity and ecosystems</b> <b>(4) All living things sense and respond to their environment: plants</b></p> <ul style="list-style-type: none"> <li>• Demonstrate curiosity about the natural world</li> <li>• Make predictions based on prior knowledge</li> <li>• Collect simple data</li> </ul>

		<ul style="list-style-type: none"> <li>Sort and classify data and information using drawings or provided tables</li> <li>Reflect on whether an investigation was a fair test</li> </ul>
	<p><i>Ecosystems: Interactions, Energy, and Dynamics:</i> S.3-5.LS.5 Construct an argument that some animals form groups that help members survive. (3-LS2-1)</p>	<p><b>(3) Living things are diverse, can be grouped, and interact in their ecosystems: the knowledge of local First Peoples and biodiversity</b></p> <p><b>(4) All living things sense and respond to their environment: biomes and humans/other animals/plants</b></p> <ul style="list-style-type: none"> <li>Suggest ways to plan and conduct an inquiry to find answers to their questions</li> <li>Identify First Peoples perspectives and knowledge as sources of information</li> <li>Identify some simple environmental implications of their and others' actions</li> <li>Transfer and apply learning to new situations</li> <li>Express and reflect on personal or shared experiences</li> </ul>
	<p><i>Ecosystems, cont:</i> S.3-5.LS.6 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment. (5-LS2-1)</p>	<p><b>(4) All living things sense and respond to their environment: biomes and humans/other animals/plants</b></p> <ul style="list-style-type: none"> <li>Make observations about living and non-living things in the local environment</li> <li>Collect simple data</li> <li>Make simple inferences based on their results and prior knowledge</li> </ul>
	<p><i>Heredity: Inheritance and Variation of Traits:</i> S.3-5.LS.7 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-LS3-1)</p>	<p><b>(2) Living Things have life cycles adapted to their environment: offspring and parent</b></p> <p><b>(5) Multicellular organisms have organ systems that enable them to survive and interact with their environment: basic structures and functions</b></p> <ul style="list-style-type: none"> <li>Choose appropriate data to collect to answer their questions</li> <li>Make observations in familiar or unfamiliar contexts</li> <li>Identify patterns and connections in data</li> <li>Demonstrate an understanding and appreciation of evidence</li> </ul>
	<p><i>Heredity, cont:</i> S.3-5.LS.8 Use evidence to support the explanation that traits can be influenced by the environment (e.g., Galapagos finches, peppered moth). (3-LS3-2)</p>	<p><b>(3) Living things are diverse, can be grouped, and interact in their ecosystems: the knowledge of local First Peoples and biodiversity</b></p> <p><b>(4) All living things sense and respond to their environment: biomes and humans/other animals/plants</b></p> <ul style="list-style-type: none"> <li>Suggest ways to plan and conduct an inquiry to find answers to their questions</li> <li>Identify First Peoples perspectives and knowledge as sources of information</li> <li>Identify some simple environmental implications of their and others' actions</li> <li>Transfer and apply learning to new situations</li> </ul>

		<ul style="list-style-type: none"> <li>Express and reflect on personal or shared experiences</li> </ul>
	<p><i>Life: Origins, Unity, and Diversity:</i> S.3-5.LS.9 Analyze and interpret data (e.g., type, size, distributions) from fossils to provide evidence of the organisms and the environments (e.g., marine fossils on dry land, tropical plant fossils in Arctic areas, fossils of extinct organisms) in which they lived long ago. (3-LS4-1)</p>	<p><b>(3) Living things are diverse, can be grouped, and interact in their ecosystems: biodiversity and the knowledge of local First Peoples of ecosystems</b></p> <ul style="list-style-type: none"> <li>Experience and interpret the local environment</li> <li>Identify First Peoples perspectives and knowledge as sources of information</li> <li>Sort and classify data and information using drawings or provided tables</li> <li>Represent and communicate ideas and findings in a variety of ways</li> </ul>
	<p><i>Life: Origins, Unity, and Diversity, cont:</i> S.3-5.LS.10 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 (e.g., plants with larger thorns are less likely to be eaten by predators, animals with better camouflage coloration are more likely to survive and to reproduce). (3-LS4-2)</p>	<p><b>(3) Living things are diverse, can be grouped and interact in their ecosystems: biodiversity</b></p> <ul style="list-style-type: none"> <li>Make predictions based on prior knowledge</li> <li>Experience and interpret the local environment</li> <li>Compare results with predictions, suggesting possible reasons for findings</li> <li>Make simple inferences based on their results and prior knowledge</li> <li>Transfer and apply learning to new situations</li> </ul>
	<p><i>Life: Origins, Unity, and Diversity, cont:</i> S.3-5.LS.11 Construct an argument with evidence (e.g., needs, characteristics) that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all. (3-LS4-3)</p>	<p><b>(3) Living things are diverse, can be grouped and interact in their ecosystems: biodiversity</b> <b>(4) All living things sense and respond to their environment</b></p> <ul style="list-style-type: none"> <li>Make predictions based on prior knowledge</li> <li>Experience and interpret the local environment</li> <li>Compare results with predictions, suggesting possible reasons for findings</li> <li>Make simple inferences based on their results and prior knowledge</li> <li>Transfer and apply learning to new situations</li> </ul>
	<p><i>Life: Origins, Unity, and Diversity, cont:</i> S.3-5.LS.12 Make a claim about the merit of a plant or animal adaptation in response to an environmental change (e.g., land characteristics, water distribution, temperature, food, other organisms). (3-LS4-4)</p>	<p><b>(3) Living things are diverse, can be grouped and interact in their ecosystems: biodiversity</b> <b>(4) All living things sense and respond to their environment</b> <b>(5) Multicellular organisms have organ systems that enable them to survive and interact within their environment: basic structure and functions</b></p> <ul style="list-style-type: none"> <li>Make predictions based on prior knowledge</li> <li>Experience and interpret the local environment</li> <li>Compare results with predictions, suggesting possible reasons for findings</li> <li>Make simple inferences based on their results and prior knowledge</li> <li>Transfer and apply learning to new situations</li> </ul>
	<p><i>Life: Origins, Unity, and Diversity, cont:</i></p>	<p><b>(3) Living things are diverse, can be grouped and interact in their ecosystems: biodiversity</b></p>

		<p>S.3-5.LS.13 Construct an argument with evidence to support that God has created within living things a pool of variations that allows organisms to adapt to changes in the environment.</p>	<p><b>(4) All living things sense and respond to their environment</b>  <b>(5) Multicellular organisms have organ systems that enable them to survive and interact within their environment: basic structure and functions</b></p> <ul style="list-style-type: none"> <li>• Demonstrate a sustained curiosity about the natural world</li> <li>• Make observations about living and non-living things in the local environment</li> <li>• Collect simple data</li> <li>• Make simple inferences based on their results and prior knowledge</li> </ul>
		<p><i>Life: Origins, Unity, and Diversity, cont:</i>  S.3-5.LS.14 Apply scientific principles to construct a personal model that explains origins of life on earth and acknowledges God as the Creator.</p>	<p><b>(3) Living things are diverse, can be grouped and interact in their ecosystems: biodiversity</b>  <b>(4) All living things sense and respond to their environment</b>  <b>(5) Multicellular organisms have organ systems that enable them to survive and interact within their environment: basic structure and functions</b></p> <ul style="list-style-type: none"> <li>• Demonstrate a sustained curiosity about the natural world</li> <li>• Make observations about living and non-living things in the local environment</li> <li>• Collect simple data</li> <li>• Transfer and apply learning to new situations</li> <li>• Express and reflect on personal or shared experiences</li> </ul>
<p>Earth and Space Sciences</p>	<p>3-5</p>	<p><i>Earth's Systems:</i>  S.3-5.ES.1 Represent data (e.g., average temperature, precipitation, wind direction) in tables and graphical displays to describe typical weather conditions expected during a particular season. (3-ESS2-1)</p>	<p><b>(K) Daily and seasonal changes affect all living things</b>  <b>(4) Wind, water, and ice change the shape of the land: erosion and deposition by wind, water, and ice</b></p> <ul style="list-style-type: none"> <li>• Make exploratory observations using their senses</li> <li>• Collect simple data</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> <li>• Share observations and ideas orally</li> </ul>
		<p><i>Earth's Systems, cont:</i>  S.3-5.ES.2 Obtain and combine information to describe climates in different regions of the world. (3-ESS2-2)</p>	<p><b>(4) The motions of Earth and the moon cause observable patterns that affect living and non-living systems: Earth's axis, rotation, and orbit; First Peoples perspectives</b></p> <ul style="list-style-type: none"> <li>• Collect simple data</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> <li>• Communicate observations and ideas</li> </ul>
		<p><i>Earth's Systems, cont:</i>  S.3-5.ES.3 Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation (e.g., angle of slope in downhill movement of water, amount of vegetation, speed</p>	<p><b>(3) Wind, water, and ice change the shape of the land: observable changes in the local environment caused by erosion and deposition by wind, water, and ice; local First Peoples knowledge</b></p> <ul style="list-style-type: none"> <li>• Demonstrate curiosity and a sense of wonder about the world</li> </ul>

	<p>of wind, relative rate of deposition, cycles of freezing and thawing water, cycles of heating and cooling, volume of water flow). (4-ESS2-1)</p>	<ul style="list-style-type: none"> <li>• Make predictions based on prior knowledge</li> <li>• Consider ethical responsibilities when deciding how to conduct an experiment</li> <li>• Identify First Peoples perspectives and knowledge as sources of information</li> <li>• Transfer and apply learning to new situations</li> </ul>
<p><i>Earth's Systems, cont:</i> S.3-5.ES.4 Analyze and interpret data from maps, including topographic maps, to describe patterns of Earth's features. (4-ESS2-2)</p>	<p><b>(3) Wind, water and ice change the shape of the land: major local landforms and local First Peoples knowledge of local landforms</b></p> <ul style="list-style-type: none"> <li>• Make observations about living and non-living things in the local environment</li> <li>• Identify First Peoples perspectives and knowledge as sources of information</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> <li>• Co-operatively design projects</li> <li>• Express and reflect on personal or shared experiences</li> </ul>	
<p><i>Earth's Systems, cont:</i> S.3-5.ES.5 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact (e.g., influence of ocean on ecosystems, landform shape, climate; influence of the atmosphere on landforms and ecosystems; influence of mountain ranges on winds and clouds). (5-ESS2-1)</p>	<p><b>(4) The motions of Earth and the moon cause observable patterns that affect living and non-living systems: Earth's axis, rotation, and orbit; effects of the relative positions of the sun, moon, and Earth including local First Peoples perspectives</b></p> <ul style="list-style-type: none"> <li>• Observe objects and events in familiar contexts</li> <li>• Identify questions about familiar objects and events that can be investigated</li> <li>• Collect simple data</li> <li>• Sort and classify data and information using drawings or provided tables</li> <li>• Demonstrate an understanding and appreciation of evidence</li> <li>• Represent and communicate ideas and findings in a variety of ways</li> </ul>	
<p><i>Earth's Systems, cont:</i> S.3-5.ES.6 Describe and graph the amounts and percentages of water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth. (5-ESS2-2)</p>	<p><b>(3) Wind, water and ice change the shape of the land: major local landforms and local First Peoples knowledge of local landforms</b></p> <ul style="list-style-type: none"> <li>• Make observations about living and non-living things in the local environment</li> <li>• Identify First Peoples perspectives and knowledge as sources of information</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> <li>• Co-operatively design projects</li> <li>• Express and reflect on personal or shared experiences</li> </ul>	
<p><i>Earth and Human Activity:</i> S.3-5.ES.7 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard (e.g., barriers to prevent flooding, wind resistant roofs, lightning rods). (3-ESS3-1)</p>	<p><b>(3) Wind, water and ice change the shape of the land: major local landforms, local First Peoples knowledge of local landforms, and observable changes in the local environment caused by erosion and deposition</b></p>	

		<ul style="list-style-type: none"> <li>• Make observations about living and non-living things in the local environment</li> <li>• Identify First Peoples perspectives and knowledge as sources of information</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> <li>• Co-operatively design projects</li> <li>• Express and reflect on personal or shared experiences</li> </ul>
	<p><i>Earth and Human Activity, cont:</i> 4.M.2 Convert measurement from a larger unit to a smaller unit (km, m, cm; kg, g; lb, oz; L, mL; hr, min, sec) (4.MD.1)</p>	<p><b>(3,4,5)</b></p> <ul style="list-style-type: none"> <li>• Observe, measure, and record data, using appropriate tools, including digital technologies</li> </ul>
	<p><i>Earth and Human Activity, cont:</i> S.3-5.ES.8 Obtain and combine information to describe that energy and fuels are derived from natural resources (e.g., wind energy, water behind dams, sunlight, fossil fuels, fissile materials) and their uses affect the environment (e.g., loss of habitat due to dams, surface mining, air pollution). (4-ESS3-1)</p>	<p><b>(3) Thermal energy can be produced and transferred</b> <b>(4) Energy can be transformed: various forms, conserved, and devices that transform energy</b></p> <ul style="list-style-type: none"> <li>• Demonstrate curiosity about the natural world</li> <li>• Collect simple data</li> <li>• Sort and classify data and information using drawings or provided tables</li> <li>• Demonstrate an understanding and appreciation of evidence</li> <li>• Represent and communicate ideas and findings in a variety of ways</li> </ul>
	<p><i>Earth and Human Activity, cont:</i> S.3-5.ES.9 Generate and compare multiple solutions (e.g., earthquake resistant building, monitoring volcanic activity) to reduce the impacts of natural Earth processes on humans. (4-ESS3-2)</p>	<p><b>(5) Earth materials change as they move through the rock cycle and can be used as natural resources: the rock cycle</b></p> <ul style="list-style-type: none"> <li>• Demonstrate an openness to new ideas and considerations</li> <li>• Co-operatively design projects</li> <li>• Represent and communicate ideas and findings in a variety of ways</li> </ul>
	<p><i>Earth and Human Activity, cont:</i> S.3-5.ES.10 Obtain and combine information about ways individual communities use science ideas to protect the Earth’s resources and environment. (5-ESS3-1)</p>	<p><b>(5) Earth materials change as they move through the rock cycle and can be used as natural resources: the nature of sustainable practices around BC’s resources and First Peoples knowledge of sustainable practices</b></p> <ul style="list-style-type: none"> <li>• Identify First Peoples perspectives and knowledge as sources of information</li> <li>• Construct and use a variety of methods, including tables, graphs, and digital technologies, as appropriate, to represent patterns or relationships in data</li> <li>• Demonstrate an understanding and appreciation of evidence</li> </ul>
	<p><i>Earth’s Place in the Universe:</i> S.3-5.ES.11 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time. (4-ESS1-1)</p>	<p><b>(3) Wind, water and ice change the shape of the land: major local landforms; observable changes in the local environment; and local First Peoples knowledge of local landforms</b> <b>(5) Earth materials change as they move through the rock cycle and can be used as natural resources: the rock cycle and local types of earth materials</b></p>

			<ul style="list-style-type: none"> <li>Identify questions to answer or problems to solve through scientific inquiry</li> <li>Choose appropriate data to collect to answer their questions</li> <li>Identify First Peoples perspectives and knowledge as sources of information</li> <li>Identify some of the assumptions in secondary sources</li> <li>Transfer and apply learning to new situations</li> </ul>
		<p><i>Earth's Place in the Universe, cont:</i> S.3-5.ES.12 Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth. (5-ESS1-1)</p>	<p><b>(4) The motions of Earth and the moon cause observable patterns that affect living and non-living systems: the effects of the relative positions of the sun, moon, and Earth including local First Peoples perspectives</b></p> <ul style="list-style-type: none"> <li>Demonstrate curiosity about the natural world</li> <li>Make predictions based on prior knowledge</li> <li>Safely use appropriate tools to make observations and measurements, using formal measurements and digital technology as appropriate</li> <li>Sort and classify data and information using drawings or provided tables</li> <li>Demonstrate an understanding and appreciation of evidence</li> </ul>
		<p><i>Earth's Place in the Universe, cont:</i> S.3-5.ES.13 Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky. (5-ESS1-2)</p>	<p><b>(4) The motions of Earth and the moon cause observable patterns that affect living and non-living systems: local changes caused by Earth's axis, rotation, and orbit; and the effects of the relative positions of the sun, moon and Earth including local First Peoples perspectives</b></p> <ul style="list-style-type: none"> <li>Make predictions based on prior knowledge</li> <li>Collect simple data</li> <li>Sort and classify data and information using drawings or provided tables</li> <li>Make simple inferences based on their results and prior knowledge</li> <li>Represent and communicate ideas and findings in a variety of ways</li> </ul>
Physical Sciences	3-5	<p><i>Matter and Its Interactions:</i> S.3-5.PS.1 Develop a model to describe that matter is made of particles too small to be seen (e.g., add air to expand a basketball, compress air in a syringe, dissolve sugar in water, evaporate salt water). (5-PS1-1)</p>	<p><b>(3) All matter is made of particles: matter is anything that has mass and takes up space</b> <b>(4) Matter has mass, takes up space, and can change phase</b></p> <ul style="list-style-type: none"> <li>Make predictions based on prior knowledge</li> <li>Make observations about living and non-living things in the local environment</li> <li>Compare results with predictions</li> <li>Represent and communicate ideas and findings in a variety of ways</li> </ul>
		<p><i>Matter and Its Interactions, cont:</i> S.3-5.PS.2 Measure and graph quantities to provide evidence that the total weight of matter is conserved regardless of the type of change (e.g., phase changes, dissolving, mixing) that occurs</p>	<p><b>(4) Matter has mass, takes up space, and can change phase: phases of matter</b></p> <ul style="list-style-type: none"> <li>Identify questions about familiar objects and events that can be investigated</li> </ul>

	<p>when heating, cooling, or mixing substances. (5-PS1-2)</p>	<ul style="list-style-type: none"> <li>• Suggest ways to plan and conduct an inquiry to find answers to their questions</li> <li>• Collect simple data</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> <li>• Express and reflect on personal or shared experiences</li> </ul>
	<p><i>Matter and Its Interactions, cont:</i> S.3-5.PS.3 Make observations and measurements to identify materials (e.g., powders, metals, minerals, liquids) based on their properties (e.g., color, hardness, reflectivity, electrical conductivity, thermal conductivity, response to magnetic forces, solubility). (5-PS1-3)</p>	<p><b>(3) All matter is made of particles: matter is anything that has mass and takes up space, and atoms are building blocks of matter</b> <b>(4) Matter has mass, takes up space, and can change phase</b></p> <ul style="list-style-type: none"> <li>• Make observations about living and non-living things in the local environment</li> <li>• Collect simple data</li> <li>• Sort and classify data and information using drawings or provided tables</li> <li>• Demonstrate an understanding and appreciation of evidence</li> </ul>
	<p><i>Matter and Its Interactions, cont:</i> S.3-5.PS.4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances. (5-PS1-4)</p>	<p><b>(4) Matter has mass, takes up space, and can change phases</b> <b>(5) Solutions are homogeneous</b></p> <ul style="list-style-type: none"> <li>• Make predictions based on prior knowledge</li> <li>• Safely use appropriate tools to make observations and measurements</li> <li>• Use equipment and materials safely, identifying potential risks</li> <li>• Identify patterns and connections in data</li> <li>• Reflect on whether an investigation was a fair test</li> <li>• Contribute to care for self, others, school, and neighbourhood through individual or collaborative approaches</li> <li>• Represent and communicate ideas and findings in a variety of ways</li> </ul>
	<p>S.3-5.PS.5 Plan and conduct an investigation to provide evidence of the effects of balanced (e.g., pushing two opposite sides of a box) and unbalanced (e.g., pushing one side of a box) forces on the motion of an object. (3-PS2-1)</p>	<p><b>(5) Machines are devices that transfer force and energy: simple machines and their force effects</b> <b>(6) Newton's three laws of motion describe the relationship between force and motion: balanced and unbalanced forces</b></p> <ul style="list-style-type: none"> <li>• Identify questions to answer or problems to solve through scientific inquiry</li> <li>• With support, plan appropriate investigations</li> <li>• Observe, measure, and record data</li> <li>• Make simple inferences based on their results and prior knowledge</li> <li>• Suggest improvements to their investigation methods</li> </ul>
	<p><i>Motion and Stability: Forces and Interactions, cont:</i> S.3-5.PS.6 Observe and/or measure an object's motion to provide evidence that a pattern can be</p>	<p><b>(5) Machines are devices that transfer force and energy</b> <b>(6) Newton's three laws of motion describe the relationship between force and motion</b></p>



	used to predict future motion (e.g., child swinging, ball rolling in a bowl, pendulum). (3-PS2-2)	<ul style="list-style-type: none"> <li>• Make simple predictions about familiar objects and events</li> <li>• Make and record simple measurements using informal or non-standard methods</li> <li>• Identify simple patterns and connections in data</li> <li>• Transfer and apply learning to new situations</li> </ul>
	<i>Motion and Stability: Forces and Interactions, cont:</i> S.3-5.PS.7 Ask questions to determine cause and effect relationships (e.g., distance between objects affects strength of the force, orientation of magnets affect direction of magnetic force) of electric or magnetic interactions between two objects not in contact with each other. (3-PS2-3)	<p><b>(5) Machines are devices that transfer force and energy: simple machines and their force effects, and</b></p> <ul style="list-style-type: none"> <li>• Demonstrate a sustained curiosity about a scientific topic</li> <li>• Identify questions to answer or problems to solve through scientific inquiry</li> <li>• Decide which variable should be changed and measured for a fair test</li> <li>• Compare data with predictions and develop explanations for results</li> </ul>
	<i>Motion and Stability: Forces and Interactions, cont:</i> S.3-5.PS.8 Define a simple design problem (e.g., constructing a door latch, creating a device to keep two moving objects from touching) that can be solved by applying scientific ideas about magnets. (3-PS2-4)	<p><b>(5) Machines are devices that transfer force and energy: simple machines and their force effects; constructed machines</b></p> <ul style="list-style-type: none"> <li>• Identify questions to answer or problems to solve through scientific inquiry</li> <li>• With support, plan appropriate investigations to answer questions or solve problems they have identified</li> <li>• Evaluate whether their investigations were fair tests</li> <li>• Generate and introduce new or refined ideas when problem solving</li> </ul>
	<i>Motion and Stability: Forces and Interactions, cont:</i> S.3-5.PS.9 Support an argument that the gravitational force exerted by Earth on objects is directed down toward the center of the earth. (5-PS2-1)	<p><b>(6) Newton’s three laws of motion describe the relationship between force and motion: force of gravity</b></p> <ul style="list-style-type: none"> <li>• Identify questions to answer or problems to solve</li> <li>• Observe, measure, and record data</li> <li>• Identify patterns and connections in data</li> <li>• Generate and introduce new or refined ideas when problem solving</li> </ul>
	<i>Energy:</i> S.3-5.PS.10 Use evidence to construct an explanation relating the speed of an object to the energy of that object. (4-PS3-1)	<p><b>(5) Machines are devices that transfer force and energy: simple machines and their force effects, and power</b></p> <ul style="list-style-type: none"> <li>• Observe objects and events</li> <li>• Suggest ways to plan and conduct an inquiry to find answers to their questions</li> <li>• Compare results with predictions, suggesting possible reasons for findings</li> <li>• Communicate ideas, explanations, and processes in a variety of ways</li> </ul>
	<i>Energy, cont:</i> S.3-5.PS.11 Make observations to provide evidence that energy can be transferred from place to place	<p><b>(3) Thermal energy can be produced and transferred</b></p>

	<p>by sound, light, heat, and electric currents. (4-PS3-2)</p>	<p><b>(5) Machines are devices that transfer force and energy: simple machines and their force effects, and power</b></p> <ul style="list-style-type: none"> <li>• Observe objects and events</li> <li>• Suggest ways to plan and conduct an inquiry to find answers to their questions</li> <li>• Compare results with predictions, suggesting possible reasons for findings</li> <li>• Communicate ideas, explanations, and processes in a variety of ways</li> </ul>
	<p><i>Energy, cont:</i> S.3-5.PS.12 Ask questions and predict outcomes about the changes in energy that occur when objects collide. (4-PS3-3)</p>	<p><b>(5) Machines are devices that transfer force and energy: simple machines and their force effects, and power</b></p> <ul style="list-style-type: none"> <li>• Observe objects and events</li> <li>• Suggest ways to plan and conduct an inquiry to find answers to their questions</li> <li>• Compare results with predictions, suggesting possible reasons for findings</li> <li>• Communicate ideas, explanations, and processes in a variety of ways</li> </ul>
	<p><i>Energy, cont:</i> S.3-5.PS.13 Apply scientific principles to design, test, and refine a device (e.g., electric motor, solar heater) that converts energy from one form to another. (4-PS3-4)</p>	<p><b>(4) Energy can be transformed: devices that transform energy</b> <b>(5) Machines are devices that transfer force and energy: power</b></p> <ul style="list-style-type: none"> <li>• Suggest ways to plan and conduct an inquiry to find answers to their questions</li> <li>• Observe, measure, and record data, using appropriate tools, including digital technologies</li> <li>• Demonstrate an openness to new ideas and consideration of alternatives</li> <li>• Generate and introduce new or refined ideas when problem solving</li> </ul>
	<p><i>Energy, cont:</i> S.3-5.PS.14 Use models (e.g., diagrams, flow charts) to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun. (5-PS3-1)</p>	<p><b>4) Energy can be transformed: devices that transform energy</b> <b>(5) Machines are devices that transfer force and energy: power</b></p> <ul style="list-style-type: none"> <li>• Observe, measure, and record data</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> <li>• Represent and communicate ideas and findings in a variety of ways</li> </ul>
	<p><i>Waves and their Applications in Technologies...:</i> S.3-5.PS.15 Develop a model (e.g., diagrams, analogies, physical models) of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. (4-PS4-1)</p>	<p><b>(1) Light and sound can be produced and their properties can be changed</b></p> <ul style="list-style-type: none"> <li>• Observe objects and events</li> <li>• Make and record observations and simple measurements</li> <li>• Identify simple patterns and connections</li> </ul>
	<p><i>Waves and their Applications, cont:</i> S.3-5.PS.16 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. (4-PS4-2)</p>	<p><b>(1) Light and sound can be produced and their properties can be changed</b></p> <ul style="list-style-type: none"> <li>• Safely manipulate materials to test ideas and predictions</li> <li>• Compare observations through discussion</li> </ul>

		<p><i>Waves and their Applications, cont:</i>  S.3-5.PS.17 Generate and compare multiple solutions (e.g., drum sending codes through sound waves, grid of 1's and 0's representing black and white to send information about a picture, Morse code) that use patterns to transfer information. (4-PS4-3)</p>	<p><b>(1) Light and sound can be produced and their properties can be changed</b></p> <ul style="list-style-type: none"> <li>• Safely manipulate materials to test ideas and predictions</li> <li>• Compare observations through discussion</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> </ul>
Engineering, Technology, and Applications of Science	3-5	<p><i>Engineering Design:</i>  3.DSP.1 Draw and interpret scaled picture and bar graphs to represent a data set (3.MD.3)</p>	<p><b>(3,4,5)</b></p> <ul style="list-style-type: none"> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> </ul>
		<p><i>Engineering Design, cont:</i>  3.DSP.2 Measure length using rulers marked with halves and fourths of an inch and the nearest whole centimeter; show data by making a line plot (3.MD.4)</p>	<p><b>(3,4,5)</b></p> <ul style="list-style-type: none"> <li>• Observe, measure and record data</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> </ul>
		<p><i>Engineering Design, cont:</i>  4.DSP.1 Solve addition and subtraction problems using a line plot to display a data set of measurement in fractions of a unit (halves, fourths, and eighths) (4.MD.4)</p>	<p><b>(3,4,5)</b></p> <ul style="list-style-type: none"> <li>• Observe, measure and record data</li> <li>• Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends</li> </ul>