

Science – NAD and BC Standards

Key for “Province”:

Bold type – Big Ideas

Regular type – BC curricular competencies

Italicized type: Content

Topics	Gr	North American Division	Province:
Life Sciences: Biology I	9- 12	<i>Course Focus:</i> BIO1.1 Identify SDA Christian principles and values in correlation with science.	(9-12 CC) <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others’ investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<i>Course Focus, cont:</i> BIO1.1.1 Recognize God’s power as Designer, Creator, Sustainer, and Redeemer in the universe.	(9-12 CC) <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others’ investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<i>Course Focus, cont:</i> BIO1.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man’s interpretation.	(9-12 CC) <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others’ investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<i>Course Focus, cont:</i> BIO1.1.3 Develop stewardship and service attitudes toward health, life, and earth’s environment.	(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them <ul style="list-style-type: none"> Contribute to care for self, others, community, and world through individual or collaborative approaches Contribute to finding solutions to problems at a local and/or global level through inquiry <i>Sustainability of systems</i>
		<i>Course Focus, cont:</i> BIO1.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.	(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them <ul style="list-style-type: none"> Assess risks and address ethical, cultural and/or environmental issues associated with their proposed methods and those of others Consider social, ethical, and environmental implications of the findings from their own and others’ investigations Contribute to care for self, others, community, and world through individual or collaborative approaches Contribute to finding solutions to problems at a local and/or global level through inquiry
		<i>Course Focus, cont:</i> BIO1.1.5 Equip students with Christian perspectives on scientific issues.	(9) Cells are derived from cells <ul style="list-style-type: none"> Ensure that safety and ethical guidelines are followed in their investigations

		<ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources
	<p><i>Course Abilities:</i> BIO1.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract one, about the natural world • Formulate multiple hypotheses and predict multiple outcomes • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed. • Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. <p>Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.</p>
	<p><i>Course Abilities, cont:</i> BIO1.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable qualitative and quantitative data • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment, including digital technologies, to

		<p>systematically and accurately collect and record data.</p> <ul style="list-style-type: none"> • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation • (Sci 9, Sci 10) Ensure that safety and ethical guidelines are followed in their investigations
	<p><i>Course Abilities, cont:</i> BIO1.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Cooperatively design projects with local an/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Consider the role of scientists in innovation. • Express and reflect on a variety of experiences, perspectives, and worldview through place.
	<p><i>Cell Structure and Processes:</i> BIO1.4.1 Acknowledge God as Creator of life while recognizing divergent theories. HS-LS4-1, 4-2, 4-4, 4-5</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Cell Structure and Processes, cont:</i> BIO1.4.2 Demonstrate understanding of cellular structures and processes. HS-LS1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7</p>	<p>(8) Life processes are performed at the cellular level</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/ or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Characteristics of life</i> <i>Cell theory and types of cells</i> <i>Photosynthesis and cellular respiration</i></p> <p>(9) Cells are derived from cells</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/ or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Asexual reproduction</i></p>

		<p><i>Sexual reproduction</i> (10) DNA is the basis for the diversity of living things</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/ or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>DNA structure and function</i> (Li Sci 11) Life is a result of interactions at the molecular and cellular levels.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/ or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Cell structure and function</i> <i>Sexual and asexual reproduction</i> <i>Energy transformations in cells</i></p>
	<p><i>Cell Structure and Processes, cont:</i> BIO1.5.1 Manipulate cellular models and samples. HS-LS1-1, 1-4, 1-5</p>	<p>(8) Life processes are performed at the cellular level</p> <ul style="list-style-type: none"> • Observe, measure, and record data using equipment, including digital technologies, with accuracy and precision • Use scientific understanding to identify relationships and draw conclusions • Demonstrate an understanding and appreciation of evidence • Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate <p><i>Characteristics of life</i> <i>Cell theory and types of cells</i> <i>Photosynthesis and cellular respiration</i> (9) Cells are derived from cells</p> <ul style="list-style-type: none"> • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled • Formulate physical or mental theoretical models to describe a phenomenon <p><i>Asexual reproduction</i> <i>Sexual reproduction</i> (10) DNA is the basis for the diversity of living things</p>

			<ul style="list-style-type: none"> • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled • Formulate physical or mental theoretical models to describe a phenomenon <p><i>DNA structure and function</i></p> <p>(Li Sci 11) Life is a result of interactions at the molecular and cellular levels.</p> <ul style="list-style-type: none"> • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record reliable data • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled • Formulate physical or mental theoretical models to describe a phenomenon <p><i>Cell structure and function</i></p> <p><i>Sexual and asexual reproduction</i></p> <p><i>Energy transformations in cells</i></p> <p><i>Single-celled and multi-celled organisms</i></p>
		<p><i>Cell Structure and Processes, cont:</i></p> <p>BIO1.6.1 Compare and contrast cell diagrams and processes. HS-LS1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7</p>	<p>(8) Life processes are performed at the cellular level</p> <ul style="list-style-type: none"> • Observe, measure, and record data using equipment, including digital technologies, with accuracy and precision • Use scientific understanding to identify relationships and draw conclusions • Demonstrate an understanding and appreciation of evidence • Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate <p><i>Characteristics of life</i></p> <p><i>Cell theory and types of cells</i></p> <p><i>Photosynthesis and cellular respiration</i></p> <p>(9) Cells are derived from cells</p> <ul style="list-style-type: none"> • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled • Formulate physical or mental theoretical models to describe a phenomenon <p><i>Asexual reproduction</i></p> <p><i>Sexual reproduction</i></p> <p>(10) DNA is the basis for the diversity of living things</p>

		<ul style="list-style-type: none"> • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled • Formulate physical or mental theoretical models to describe a phenomenon <p><i>DNA structure and function</i> (Li Sci 11) Life is a result of interactions at the molecular and cellular levels.</p> <ul style="list-style-type: none"> • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record reliable data • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled • Formulate physical or mental theoretical models to describe a phenomenon <p><i>Cell structure and function</i> <i>Sexual and asexual reproduction</i> <i>Energy transformations in cells</i> <i>Single-celled and multi-celled organisms</i></p>
	<p><i>Cell Structure and Processes, cont:</i> BIO1.6.6 Validate God as the Author of life, while evaluating aspects of divergent theories of origin. HS-LS4-1, 4-2, 4-4, 4-5</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Genetics:</i> BIO1.4.3 Describe the dynamics of genetics and biotechnology. HS-LS1-1, 1-6, 3-1, 3-2, 3-3</p>	<p>(9) Cells are derived from cells.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Analyze cause-and-effect relationships • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources • Consider the changes in knowledge over time as tools and technologies have developed • Consider the role of scientists in innovation • Formulate physical or mental theoretical models to describe a phenomenon <p><i>Asexual reproduction</i> A. mitosis B. different forms <i>Sexual reproduction</i> A. Meiosis B. Human sexual reproduction</p> <p>(10) DNA is the basis for the diversity of living things</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Analyze cause-and-effect relationships

		<ul style="list-style-type: none"> • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources • Consider the changes in knowledge over time as tools and technologies have developed • Consider the role of scientists in innovation • Formulate physical or mental theoretical models to describe a phenomenon <p><i>Patterns of inheritance</i> <i>Mechanisms for the diversity of life</i> A. <i>Natural selection</i> B. <i>artificial selection</i> <i>Applied genetics and ethical considerations</i></p> <p>(Li Sci 11) Evolution occurs and the population level</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Analyze cause-and-effect relationships • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources • Consider the changes in knowledge over time as tools and technologies have developed • Consider the role of scientists in innovation • Formulate physical or mental theoretical models to describe a phenomenon <p><i>Microevolution</i> A. <i>Adaptation to changing environments</i> B. <i>Changes in DNA</i> <i>Natural selection</i></p>
	<p><i>Genetics, cont:</i> BIO1.5.2 Test concepts of Mendelian inheritance and evaluate genetic manipulation. HS-LS1-1, 3-1, 3-2, 3-3</p>	<p>(10) DNA is the basis for the diversity of living things</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data • Construct, analyze, and interpret graphs • Consider social, ethical, and environmental implications of the findings from their own and others' investigations <p><i>DNA structure and function</i> <i>Patterns of inheritance</i> <i>Mechanisms for the diversity of life</i> A. <i>Mutation and its impact on evolution</i> B. <i>Natural selection and artificial selection</i></p> <p>(Li Sci 11) Evolution occurs at the population level.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data • Construct, analyze, and interpret graphs • Consider social, ethical, and environmental implications of the findings from their own and others' investigations <p><i>Microevolution</i> 1. <i>Adaptation to changing environments</i> 2. <i>Changes in DNA</i> 3. <i>Natural selection</i> <i>Macroevolution:</i> A. <i>Speciation</i> B. <i>Processes of macroevolution</i></p>

		<i>Evidence for macroevolution</i>
	<p><i>Genetics, cont:</i> BIO1.6.2 Draw conclusions about genetic trends and the ethical ramifications of biotechnology. HS-LS3-2, 3-3</p>	<p>(10) DNA is the basis for the diversity of living things.</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations • Critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems <p><i>Applied genetics and ethical considerations</i></p> <p>(Li Sci 11) Life is a result of interactions at the molecular and cellular levels</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations • Critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems <p><i>Changes in DNA</i> <i>Natural selection</i></p> <p>(A&P 12) Gene expression, through protein synthesis, is an interaction between genes and the environment</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations • Critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems <p><i>Genomics and biotechnology</i></p>
	<p><i>Taxonomy:</i> BIO1.4.4 Investigate taxonomy and the relationships among living organisms. HS-LS2-2, 4-2</p>	<p>(Li Sci 11) Organisms are grouped based on common characteristics.</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data • Experience and interpret the local environment <p><i>Taxonomic principles for classifying organisms</i> <i>Binomial nomenclature</i></p>
	<p><i>Taxonomy, cont:</i> BIO1.5.3 Classify, compare, and examine organisms. HS-LS1-2</p>	<p>(Li Sci 11) Organisms are grouped based on common characteristics.</p> <ul style="list-style-type: none"> • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled • Communicate scientific ideas and information, constructing evidence-based arguments and using appropriate scientific language <p><i>Levels of organization</i> <i>Trends in complexity among various life forms</i> <i>First Peoples' knowledge of classification</i></p>
	<p><i>Taxonomy, cont:</i> BIO1.6.3 Evaluate the rationale for the current system of taxonomy.</p>	<p>(Li Sci 11) Organisms are grouped based on common characteristics.</p> <ul style="list-style-type: none"> • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. <p><i>Evidence for phylogenetic relationships</i></p>

		<p><i>Taxonomic principles for classifying organisms</i> <i>First Peoples understandings of interrelationships between organisms</i> <i>Similarities and differences between domains and kingdoms</i></p>
	<p><i>Ecology:</i> BIO1.4.5 Comprehend the interdependence between organisms and their environment. HS-LS1-5, 1-7, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 4-2</p>	<p>(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world • Experience and interpret the local environment <p><i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i> <i>First Peoples knowledge of interconnectedness and sustainability</i></p> <p>(En Sci 11) Complex roles and relationships contribute to diversity of ecosystems.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world • Experience and interpret the local environment <p><i>Abiotic characteristics</i> <i>A. Aquatic</i> <i>A. Atmospheric</i> <i>B. Edaphic</i> <i>Levels of biotic diversity</i></p>
	<p><i>Ecology, cont:</i> BIO1.5.4 Investigate relationships between organisms within their niche. HS-LS1-3, 2-2, 2-3, 2-4, 2-5, 2-8, 4-3, 4-4</p>	<p>(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them</p> <ul style="list-style-type: none"> • Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i> <i>Sustainability of systems</i> <i>First Peoples knowledge of interconnectedness and sustainability</i></p> <p>(En Sci 11) Complex roles and relationships contribute to diversity of ecosystems.</p> <ul style="list-style-type: none"> • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>Ecosystem complexity:</i> <i>A. Roles</i></p>

	<p><i>Ecology, cont:</i> BIO1.5.5 Research the dynamics, organization, and problems in earth’s biomes. HS-LS1-3, 2-1, 2-2, 2-6, 2-7, 4-6</p>	<p><i>A. Relationships</i> <i>Population dynamics</i></p> <p>(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.</p> <ul style="list-style-type: none"> • Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest • Analyze cause-and-effect relationships • Contribute to finding solutions to problems at a local and/or global level through inquiry • Communicate scientific ideas, claims, information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations <p><i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i> <i>Sustainability of systems</i> <i>First Peoples knowledge of interconnectedness and sustainability</i></p> <p>(En Sci 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> • Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest • Analyze cause-and-effect relationships • Contribute to finding solutions to problems at a local and/or global level through inquiry • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations <p><i>First Peoples knowledge and other traditional Ecological knowledge in sustaining biodiversity</i> <i>Benefits of ecosystem services</i> <i>Human actions and their impact on ecosystem integrity</i> <i>Resource stewardship</i> <i>Restoration practices</i></p>
	<p><i>Ecology, cont:</i> BIO1.6.4 Determine how the relationships between organisms affect the balance of the ecosystem. HS-LS1-3, 1-5, 2-1, 2-2, 2-3, 2-4, 2-5, 2-6, 2-8, 4-2, 4-3, 4-4</p>	<p>(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, and identifying inconsistencies • Analyze cause-and-effect relationships <p><i>effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i></p>

		<p>(En Sci 11) Changing ecosystems are maintained by natural processes.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Analyze cause-and-effect relationships <p><i>Energy flow through ecosystems</i> <i>Matter cycles through and between living systems</i> <i>Succession</i></p>
	<p><i>Ecology, cont:</i> BIO1.6.5 Assess the environmental issues facing local ecosystems and earth’s biomes. HS-LS2-1, 2-2, 2-6, 2-7, 4-5, 4-6</p>	<p>(En Sci 11) Human practices affect the sustainability of ecosystems.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world • Formulate multiple hypotheses and predict multiple outcomes <p><i>First Peoples knowledge and other traditional ecological knowledge in sustaining biodiversity</i> <i>Benefits of ecosystem services</i></p> <p>(Earth Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world • Formulate multiple hypotheses and predict multiple outcomes <p><i>Economic and environmental implications of geologic resources within BC and globally</i></p> <p>The transfer of energy through the atmosphere creates weather, and this transfer is affected by climate change</p> <p><i>Changes in the composition of the atmosphere due to natural and human causes</i></p>
	<p><i>Application:</i> BIO1.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Contribute to care for self, other, community, and world through individual or collaborative approaches. • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. • Consider the role of scientists in innovation.
	<p><i>Application, cont:</i> BIO1.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.
	<p><i>Application, cont:</i></p>	<p>(9-12 CC)</p>

	BIO1.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.	<ul style="list-style-type: none"> Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. Describe specific ways to improve their investigation methods and the quality of their data. Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. Consider the changes in knowledge over time as tools and technologies have developed.
	<i>Application, cont:</i> BIO1.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).	(9-12 CC) <ul style="list-style-type: none"> Experience and interpret the local environment Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information Seek and analyze patterns, trends, and connections in data including describing relationships between variables, performing calculations, and identifying inconsistencies Construct, analyze, and interpret graphs, models, and/or diagrams Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. Analyze cause-and-effect relationships.
	<i>Application, cont:</i> BIO1.3.4 Conduct research in the content area.	(9-12 CC) <ul style="list-style-type: none"> Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. Assess risks and address ethical, cultural, and /or environmental issues associated with their proposed methods Use appropriate SI units and appropriate equipment to systematically and accurately collect and record data Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
	<i>Application, cont:</i> BIO1.3.5 Engage in various uses of technology.	(9-12 CC) <ul style="list-style-type: none"> Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. Implement multiple strategies to solve problems in real-life, applied, and conceptual situations
	<i>Application, cont:</i> BIO1.7.1 Develop a personal ethical value system regarding a world view of life. HS-LS4-6	(9-12 CC) <ul style="list-style-type: none"> Contribute to care for self, others, community, and world through individual or collaborative approaches

		<ul style="list-style-type: none"> • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. • Consider the role of scientists in innovation.
	<p><i>Application, cont:</i> BIO1.7.2 Utilize biological concepts to influence lifestyle choices. HS-LS2-7</p>	<p>(En Sci 11) Human practices affect the sustainability of systems</p> <ul style="list-style-type: none"> • Formulate physical or mental theoretical models to describe a phenomenon • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. • Express and reflect on a variety of experiences, perspectives, and worldview through place. <p><i>Human actions and their impact on ecosystem integrity</i> <i>Resource stewardship</i> <i>Restoration practices</i></p> <p>(En Sci 12) Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> • Formulate physical or mental theoretical models to describe a phenomenon • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. • Express and reflect on a variety of experiences, perspectives, and worldview through place. <p><i>Personal choices and sustainable living</i></p> <p>(A&P 12) Homeostasis is maintained through physiological processes</p> <ul style="list-style-type: none"> • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. • Express and reflect on a variety of experiences, perspectives, and worldview through place. <p><i>Lifestyle differences and their effects on human health</i> <i>Holistic approach to health</i> <i>Disease as an imbalance in homeostasis</i></p>
	<p><i>Application, cont:</i> BIO1.7.3 Minimize damage to the environment by practicing good stewardship. HS-LS2-7, 4-5, 4-6</p>	<p>(En Sci 11) Humans can play a role in stewardship and restoration of ecosystems.</p> <ul style="list-style-type: none"> • Experience and interpret the local environment. • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Contribute to finding solutions to problems at a local and/or global level through inquiry.

			<ul style="list-style-type: none"> Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. <p><i>Human actions and their impact on ecosystem integrity</i> <i>First Peoples ways of knowing and doing</i> <i>Resource stewardship</i> <i>Restoration practices</i></p> <p>(En Sci 12) Living sustainably supports the well being of self, community, and Earth</p> <ul style="list-style-type: none"> Experience and interpret the local environment. Contribute to care for self, others, community, and world through individual or collaborative approaches. Contribute to finding solutions to problems at a local and/or global level through inquiry. Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. <p><i>Global water security</i> A. <i>Laws and regulation</i> B. <i>Conservation of water</i> <i>Changes to climate systems</i> <i>Impacts of global warming</i> <i>Mitigation and adaptations</i> <i>Land use and degradation</i> <i>Land management</i> <i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i></p>
Life Sciences: Biology II	9-12	<p><i>Course Focus:</i> BIO2.1 Identify SDA Christian principles and values in correlation with science.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> BIO2.1.1 Recognize God's power as Designer, Creator, Sustainer, and Redeemer in the universe.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> BIO2.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> BIO2.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.</p>	<p>(En Sci 11) Humans can play a role in stewardship and restoration of ecosystems</p> <ul style="list-style-type: none"> Contribute to care for self, others, community, and world through individual or collaborative approaches. Implement multiple strategies to solve problems in real-life, applied, and conceptual situations <p><i>Resource stewardship</i></p>

		<p><i>Restoration practices</i> (En Sci 12) Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> • Contribute to care for self, others, community, and world through individual or collaborative approaches • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations <p><i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i></p>	
		<p><i>Course Focus, cont:</i> BIO2.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.</p>	<p>(En Sci 11) Humans can play a role in stewardship and restoration of ecosystems</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations <p><i>Resource stewardship</i> <i>Restoration practices</i> (En Sci 12) Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations <p><i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i></p>
		<p><i>Course Focus, cont:</i> BIO2.1.5 Equip students with Christian perspectives on scientific issues.</p>	<p>(En Sci 11) Human practices affect the sustainability of ecosystems</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>Resource stewardship</i> <i>Restoration practices</i> (En Sci 12)Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i></p>
		<p><i>Course Abilities:</i> BIO2.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract one, about the natural world • Formulate multiple hypotheses and predict multiple outcomes • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies

		<ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed. • Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.
	<p><i>Course Abilities, cont:</i> BIO2.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable qualitative and quantitative data • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation
	<p><i>Course Abilities, cont:</i> BIO2.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Cooperatively design projects with local an/or global connections and applications.

		<ul style="list-style-type: none"> • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Consider the role of scientists in innovation. • Express and reflect on a variety of experiences, perspectives, and worldview through place.
	<p><i>Zoology:</i> BIO2.4.2 Observe and model organisms representing the major groups of invertebrate and vertebrate animals.</p>	<p>(Life Sciences 11) Organisms are grouped based on common characteristics</p> <ul style="list-style-type: none"> • Construct, analyze, and interpret graphs, models, and/or diagrams <p><i>Single-celled and multi-celled organisms</i></p>
	<p><i>Zoology, cont:</i> BIO2.5.1 Manipulate invertebrate and vertebrate animals.</p>	<p>(Li Sci 11) Organisms are grouped based on common characteristics</p> <ul style="list-style-type: none"> • Construct, analyze, and interpret graphs, models, and/or diagrams <p><i>trends in complexity among various life forms</i></p>
	<p><i>Zoology, cont:</i> BIO2.6.1 Ascertain the increasing complexity from invertebrate to vertebrate animals.</p>	<p>(Life Sciences 11) Organisms are grouped based on common characteristics</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>trends in complexity among various life forms</i> <i>Evidence for phylogenetic relationships</i></p>
	<p><i>Embryology:</i> BIO2.4.1 Recognize God as the Designer and Creator of all life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Embryology, cont:</i> BIO2.4.3 Describe the processes of gamete production, fertilization, and development.</p>	<p>(9) Cells are derived from cells Construct, analyze, and interpret graphs, models, and or diagrams <i>Meiosis</i> <i>human sexual reproduction</i></p> <p>(Li Sci 11) Life is a result of interactions at the molecular and cellular levels Construct, analyze, and interpret graphs, models, and or diagrams <i>Sexual and asexual reproduction</i></p>
	<p><i>Embryology, cont:</i> BIO2.5.2 Investigate the reproductive processes within organisms.</p>	<p>(9) Cells are derived from cells</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world. <p><i>Asexual reproduction</i></p> <ul style="list-style-type: none"> • <i>Mitosis</i> • <i>Different forms</i> <p>(Li Sci 11) Life is a result of interactions at the molecular and cellular levels</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. <p><i>Sexual and asexual reproduction</i></p>
	<p><i>Embryology, cont:</i> BIO2.6.2 Compare embryological development of different organisms.</p>	<p>(Li Sci 11) Life is a result of interactions at the molecular and cellular levels</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data <p><i>Evidence for phylogenetic relationships</i></p>

	<p><i>Immunology:</i> BIO2.4.4 Identify the reactions, causes, and results of immune system function.</p>	<p>(8) Life processes are performed at the cellular level</p> <ul style="list-style-type: none"> Use scientific understandings to identify relationships and draw conclusions <p><i>Basic functions of the immune system</i> <i>Vaccination and antibiotics</i> <i>Impacts of epidemics and pandemics on human populations</i></p>
	<p><i>Immunology, cont:</i> BIO2.5.3 Explore immune system disorders.</p>	<p>(A&P 12) Organ systems have complex interrelationships to maintain homeostasis</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Proteins and their relationship to the structure and function of all cells</i> <i>Organ systems</i> <i>-Maintenance of homeostasis</i></p>
	<p><i>Immunology, cont:</i> BIO2.6.3 Evaluate immune system responses at the cellular and molecular levels.</p>	<p>(A&P 12) Organ systems have complex interrelationships to maintain homeostasis</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence Consider the changes in knowledge over time as tools and technologies have developed <p><i>Proteins and their relationship to the structure and function of all cells</i> <i>Organ systems</i> <i>-Maintenance of homeostasis</i></p>
	<p><i>Microbiology:</i> BIO2.4.5 Understand the diversity, impact, and diseases of microorganisms .</p>	<p>(8) Life Processes are performed at the cellular level</p> <ul style="list-style-type: none"> Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest <p><i>The relationship of micro-organisms with other living things</i></p> <p>(Li Sci 11) Organisms are grouped based on common characteristics</p> <ul style="list-style-type: none"> Consider the changes in knowledge over time as tools and technologies have developed <p><i>Single-celled and multi-celled organisms</i></p> <p>(A&P12) Homeostasis is maintained through physiological processes.</p> <ul style="list-style-type: none"> Consider the changes in knowledge over time as tools and technologies have developed <p><i>Feedback loops and regulation of the body's internal environment</i> <i>Disease as an imbalance in homeostasis</i></p>
	<p><i>Microbiology, cont:</i> BIO2.5.4 Examine the role of microbes in epidemiology.</p>	<p>(A&P12) Homeostasis is maintained through physiological processes.</p> <ul style="list-style-type: none"> Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems <p><i>Disease as an imbalance in homeostasis</i> <i>Holistic approach to health</i></p>
	<p><i>Microbiology, cont:</i> BIO2.6.4 Assess treatment methods and effectiveness in terms of microbial cause.</p>	<p>(A&P12) Homeostasis is maintained through physiological processes.</p> <ul style="list-style-type: none"> Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems

		<p><i>Disease as an imbalance in homeostasis</i> <i>Holistic approach to health</i></p>
	<p><i>Botany:</i> BIO2.4.6 Exhibit an understanding of global conservation efforts.</p>	<p>(En Sci 12) Human actions affect the quality of water and its ability to sustain life</p> <ul style="list-style-type: none"> • Construct, analyze, and interpret graphs, models, and/or diagrams • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems <p><i>Water quality parameters and bioindicators</i> <i>Availability and water use impacts</i> <i>Global water security</i></p> <ul style="list-style-type: none"> • <i>Laws and regulation</i> <p><i>Conservation of water</i></p>
	<p><i>Botany, cont:</i> BIO2.4.7 Demonstrate understanding of simple and complex plant forms.</p>	<p>(Li Sci 11) Organisms are grouped based on common characteristics</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Trends in complexity among various life forms</i></p>
	<p><i>Botany, cont:</i> BIO2.5.5 Research the impact of plant life on the biosphere.</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> • Experience and interpret the local environment • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>Ecosystem complexity</i> <i>Benefits of ecosystem services</i></p>
	<p><i>Botany, cont:</i> BIO2.6.5 Analyze the importance of plant life to human life.</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships <p><i>Ecosystem complexity</i> <i>Benefits of ecosystem services</i></p>
	<p><i>Application:</i> BIO2.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Contribute to care for self, other, community, and world through individual or collaborative approaches. • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. • Consider the role of scientists in innovation.
	<p><i>Application, cont:</i> BIO2.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.
	<p><i>Application, cont:</i> BIO2.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions.

		<ul style="list-style-type: none"> • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed.
	<p><i>Application, cont:</i> BIO2.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Experience and interpret the local environment • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Analyze cause-and-effect relationships.
	<p><i>Application, cont:</i> BIO2.3.4 Conduct research in the content area.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Assess risks and address ethical, cultural, and /or environmental issues associated with their proposed methods • Use appropriate SI units and appropriate equipment to systematically and accurately collect and record data • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation
	<p><i>Application, cont:</i> BIO2.3.5 Engage in various uses of technology.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations
	<p><i>Application, cont:</i> BIO2.6.6 Validate God as the Author of life, while studying major areas of Biology II.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Application, cont:</i></p>	<p>(9-12 CC)</p>

	<p>BIO2.7.1 Strengthen belief in God as Designer and Creator by applying the higher concepts of Biology II.</p>	<ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Application, cont:</i> BIO2.7.2 Utilize the concepts of Biology II to improve lifestyle choices.</p>	<p>(En Sci 11) Human practices affect the sustainability of systems</p> <ul style="list-style-type: none"> • Formulate physical or mental theoretical models to describe a phenomenon. • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. • Express and reflect on a variety of experiences, perspectives, and worldview through place. <p><i>Human actions and their impact on ecosystem integrity</i> <i>Resource stewardship</i> <i>Restoration practices</i></p> <p>(En Sci 12) Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> • Formulate physical or mental theoretical models to describe a phenomenon • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. • Express and reflect on a variety of experiences, perspectives, and worldview through place. <p><i>Personal choices and sustainable living</i></p> <p>(A&P 12) Homeostasis is maintained through physiological processes</p> <ul style="list-style-type: none"> • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. • Express and reflect on a variety of experiences, perspectives, and worldview through place. <p><i>Lifestyle differences and their effects on human health</i> <i>Holistic approach to health</i> <i>Disease as an imbalance in homeostasis</i></p>
	<p><i>Application, cont:</i> BIO2.7.3 Apply the study of Biology II to ethical issues regarding life.</p>	<p>(Sci Cit 11) Scientific processes and knowledge inform our decisions and impact our daily lives</p> <ul style="list-style-type: none"> • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-

			<p>based arguments and using appropriate scientific language, conventions, and representations</p> <p><i>Evidence-based decision making through science</i></p> <p><i>Personal and public health practices, including First Peoples traditional health and healing practices</i></p> <p><i>Impact of technologies</i></p>
Life Sciences: Ecology/Environmental Science	9-12	<p><i>Course Focus:</i></p> <p>ECO.1 Identify SDA Christian principles and values in correlation with science.</p>	<p>(Sci Cit 11) Scientific processes and knowledge inform our decisions and impact our daily lives</p> <ul style="list-style-type: none"> Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>Personal and public health practices, including First Peoples traditional health and healing practices</i></p> <p><i>Beneficial scientific innovations</i></p>
		<p><i>Course Focus, cont:</i></p> <p>ECO.1.1 Recognize God’s power as Designer, Creator, Sustainer, and Redeemer ins the universe.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their won and others’ investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i></p> <p>ECO.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man’s interpretation.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their won and others’ investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i></p> <p>ECO.1.3 Develop stewardship and service attitudes toward health, life, and earth’s environment.</p>	<p>(Sci Cit 11) Scientific understanding enables humans to respond and adapt to changes locally and globally</p> <ul style="list-style-type: none"> Use local knowledge to experience and interpret the local environment Contribute to care for self, others, community, and world through individual or collaborative approaches <p><i>Human impact of Earth’s systems</i></p> <p><i>A. Natural resources</i></p> <p><i>B. Effects of climate change</i></p> <p><i>Actions and decisions affecting the local and global environment, including those of First Peoples</i></p> <p>(En Sci 12) Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> Use local knowledge to experience and interpret the local environment Contribute to care for self, others, community, and world through individual or collaborative approaches <p><i>Personal choices and sustainable living</i></p> <p><i>Global environmental ethics, policy, and law</i></p>
		<p><i>Course Focus, cont:</i></p> <p>ECO.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.</p>	<p>(Sci Cit 11) Scientific processes and knowledge inform our decisions and impact our daily lives.</p> <ul style="list-style-type: none"> Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information

		<ul style="list-style-type: none"> • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations <i>Personal and public health practices, including First Peoples traditional health and healing practices</i> <i>Actions and decisions affecting the local and global environment, including those of First Peoples</i> <p>(En Sci 11) Humans can play a role in stewardship and restoration of ecosystems</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations <i>Resource stewardship</i> <i>Restoration practices</i> <p>(En Sci 12)Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations <i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i>
	<p><i>Course Focus, cont:</i> ECO.1.5 Equip students with Christian perspectives on scientific issues.</p>	<p>(En Sci 11) Human practices affect the sustainability of ecosystems</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <i>Resource stewardship</i> <i>Restoration practices</i> <p>(En Sci 12)Living sustainably supports the well-being of self, community, and Earth.</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i>
	<p><i>Course Abilities:</i> ECO.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract one, about the natural world • Formulate multiple hypotheses and predict multiple outcomes • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Evaluate their methods and experimental conditions, including identifying sources of error or

			<p>uncertainty, confounding variables, and possible alternative explanations and conclusions.</p> <ul style="list-style-type: none"> • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed. • Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.
		<p><i>Course Abilities, cont:</i> ECO.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable qualitative and quantitative data • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
		<p><i>Course Abilities, cont:</i> ECO.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Cooperatively design projects with local an/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Consider the role of scientists in innovation. • Express and reflect on a variety of experiences, perspectives, and worldview through place.

	<p><i>Principles:</i> ECO.4.1 Recognize God as the Designer and Creator of our earth.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Principles, cont:</i> ECO.4.2 Understand the factors that influence organisms within their environment (trophic levels, symbiosis, food chain/web, biomes). HS-LS1-5, 2-3, 2-4, 2-5, 2-8, 4-2, 4-3, HS-ESS3-6</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence Analyze cause-and effect relationships <p><i>Abiotic characteristics</i></p> <p>A. Aquatic B. Atmospheric C. Edaphic</p> <p><i>Ecosystem complexity</i></p> <p>A. Roles B. Relationships</p> <p><i>Population dynamics</i></p>
	<p><i>Principles, cont:</i> ECO.5.1 Examine relationships between organisms within the environment. HS-LS1-5, 2-5, 2-8, 4-2, 4-3</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> Experience and interpret the local environment Seek and analyze patterns, trends, and connections in data <p><i>levels of biotic diversity</i></p>
	<p>ECO.6.1 Evaluate factors affecting relationships between organisms within the environment. HS-LS1-5, 2-3, 2-4, 2-5, 2-8, 4-2, 4-3</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled <p><i>Abiotic characteristics</i></p> <p>A. Aquatic B. Atmospheric C. Edaphic</p> <p><i>Ecosystem complexity</i></p> <p>A. Roles B. Relationships</p> <p><i>Population dynamics</i></p>
	<p><i>Population Dynamics:</i> ECO.4.3 Demonstrate understanding of the nature of population dynamics (plant, animal, and human). HS-LS1-3, 2-1, 2-2, 2-6, 4-4, 4-5</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> Use scientific concepts to draw conclusions that are consistent with evidence <p><i>Abiotic characteristics</i></p> <p>A. Aquatic B. Atmospheric C. Edaphic</p> <p><i>Ecosystem complexity</i></p> <p>A. Roles B. Relationships</p> <p><i>Population dynamics</i></p>
	<p><i>Population Dynamics, cont:</i> ECO.5.2 Investigate the factors affecting population dynamics. HS-LS1-3, 2-1, 2-2, 2-6, 4-2, 4-3, 4-4, 4-5, HS-ESS3-4</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> Collaboratively and individually plan, select, and use appropriate investigation methods, including

		<p>field work and lab experiments, to collect reliable data</p> <p><i>Abiotic characteristics</i></p> <p>A. <i>Aquatic</i></p> <p>B. <i>Atmospheric</i></p> <p>C. <i>Edaphic</i></p> <p><i>Ecosystem complexity</i></p> <p>A. <i>Roles</i></p> <p>B. <i>Relationships</i></p> <p><i>Population dynamics</i></p>	
		<p><i>Population Dynamics, cont:</i></p> <p>ECO.6.2 Research and predict how factors affect population dynamics. HS-LS1-3, 2-1, 2-2, 2-6, 4-2, 4-3, 4-4, 4-5</p>	<p>(En Sc 11) Complex roles and relationships contribute to diversity of ecosystems</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies <p><i>Abiotic characteristics</i></p> <p>A. <i>Aquatic</i></p> <p>B. <i>Atmospheric</i></p> <p>C. <i>Edaphic</i></p> <p><i>Ecosystem complexity</i></p> <p>A. <i>Roles</i></p> <p>B. <i>Relationships</i></p> <p><i>Population dynamics</i></p>
		<p><i>Natural Resources:</i></p> <p>ECO.4.4 Identify non-energy resources and their effects on the environment. HS-LS2-1, 2-2, 2-3, 2-4, HS-ESS2-6, 3-1, 3-2, 3-3, 3-4, 3-5</p>	<p>(Earth Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems. <p><i>Economic and environmental implications of geologic resources within BC and globally</i></p> <p>(Earth Sci 12) Minerals, rocks, and earth materials form in response to conditions within and on the Earth's surface and are the foundation of many resource-based industries.</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems. <p><i>BC resource deposits and others</i></p> <p>A. <i>Origin and formation</i></p> <p>B. <i>Economic, environmental, and First Peoples considerations</i></p> <p>(En Sci 12) Sustainable land use is essential to meet the needs of a growing population</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems. <p><i>Soil characteristics</i></p> <p><i>Land use and degradation</i></p> <p><i>Land management</i></p>

	<p><i>Energy:</i> ECO.4.5 Classify conventional and alternative energy sources. HS-PS3-3</p>	<p>(10) Energy is conserved, and its transformation can affect living things and the environment</p> <ul style="list-style-type: none"> • Construct, analyze, and interpret graphs, models, and/or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Nuclear energy and radiation</i> <i>Local and global impacts of energy transformations from technologies</i></p> <p>(En Sci 12) Human activities cause changes in the global climate system.</p> <ul style="list-style-type: none"> • Construct, analyze, and interpret graphs, models, and/or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i></p>
	<p><i>Energy, cont:</i> ECO.5.3 Survey advantages, disadvantages, and uses of conventional and alternative energy sources. HS-PS3-3</p>	<p>(10) Energy is conserved, and its transformation can affect living things and the environment</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Consider social, ethical, and environmental implications of the finding from their own and others' investigations. <p><i>Nuclear energy and radiation</i> <i>Local and global impacts of energy transformations from technologies</i></p> <p>(Sci Cit 11) Scientific processes and knowledge inform our decisions and impact our daily lives. Scientific knowledge can be used to develop procedures, techniques, and technologies that have implication for places of employment.</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Consider social, ethical, and environmental implications of the finding from their own and others' investigations. <p><i>Evidence-based decisions making through science</i> <i>Practical applications of science in the workplace</i> <i>Impacts of technology in the workplace</i></p> <p>(En Sci 12) Human activities cause changes in the global climate system.</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Consider social, ethical, and environmental implications of the finding from their own and others' investigations. <p><i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i></p>
	<p><i>Energy, cont:</i> ECO.6.3 Compare and contrast advantages, disadvantages, and uses of conventional and alternative energy sources. HS-ESS3-4, HS-PS3-3</p>	<p>(10) Energy is conserved, and its transformation can affect living things and the environment</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing

		<p>relationships between variables, performing calculations, and identifying inconsistencies</p> <p><i>Nuclear energy and radiation</i></p> <p><i>Local and global impacts of energy transformations from technologies</i></p> <p>(Sci Cit 11) Scientific processes and knowledge inform our decisions and impact our daily lives.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies <p><i>Human impact of Earth's systems</i></p> <p><i>A. Natural resources</i></p> <p><i>B. Effect of climate change</i></p> <p><i>Actions and decisions affecting the local and global environment, including those of First Peoples</i></p> <p>(En Sci 12) Human activities cause changes in the global climate system.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies <p><i>Personal choices and sustainable living</i></p> <p><i>Global environmental ethics, policy, and law</i></p>
	<p><i>Conservation:</i></p> <p>ECO.4.6 Exhibit an understanding of global conservation efforts. HS-LS2-7, 4-6, HS-ESS2-2, 3-1, 3-2, 3-3, 3-4</p>	<p>(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Sustainability of systems</i></p> <p><i>First Peoples knowledge of interconnectedness and sustainability</i></p> <p>(En Sci 11) Humans can play a role in stewardship and restoration of ecosystems.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Human actions and their impact on ecosystem integrity</i></p> <p><i>Resource stewardship</i></p> <p><i>Restoration practices</i></p> <p>(En Sci 12) Sustainable land use is essential to meet the needs of a growing population.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p><i>Availability and water use impacts</i></p> <p><i>Global water security</i></p> <p><i>A. Laws and regulation</i></p> <p><i>B. Conservation of water</i></p> <p><i>Mitigation and adaptations</i></p> <p><i>Land use and degradation</i></p> <p><i>Land management</i></p> <p><i>Personal choices and sustainable living</i></p> <p><i>Global environmental ethics, policy, and law</i></p>
	<p><i>Conservation, cont:</i></p>	<p>(En Sci 11) Humans can play a role in stewardship and restoration of ecosystems.</p>

	<p>ECO.5.4 Explore conservation methods for natural resources. HS-LS2-7, 4-6, HS-ESS2-2, 3-1, 3-2, 3-3, 3-4, HS-PS3-3</p>	<ul style="list-style-type: none"> • Assess risks in the context of personal safety and social responsibility <p><i>Human actions and their impact on ecosystem integrity</i> <i>First Peoples ways of knowing and doing</i> <i>Resource stewardship</i> <i>Restoration practices</i></p> <p>(Sci Cit 11) Scientific understanding enables humans to respond and adapt to changes locally and globally.</p> <ul style="list-style-type: none"> • Assess risks in the context of personal safety and social responsibility <p><i>Actions and decisions affecting the local and global environment, including those of First Peoples</i></p> <p>(En Sci 12) Living sustainable supports the well-being of self, community, and Earth.</p> <p>Human actions affect the quality of water and its ability to sustain life.</p> <ul style="list-style-type: none"> • Assess risks in the context of personal safety and social responsibility <p><i>Water quality parameters and bioindicators</i> <i>Availability and water use impacts</i> <i>Global water security</i> <i>A. Laws and regulation</i> <i>B. Conservation of water</i> <i>Soil characteristics and ecosystem services</i> <i>Land use and degradation</i> <i>Land management</i> <i>Global environmental ethics, policy, and law</i></p>
	<p><i>Conservation, cont:</i> ECO.6.4 Analyze current natural resource conservation methods. HS-LS2-7, 4-6, HS-ESS2-2, 3-1, 3-2, 3-3, 3-4</p>	<p>(En Sci 11) Humans can play a role in stewardship and restoration of ecosystems.</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships <p><i>Human actions and their impact on ecosystem integrity</i> <i>First Peoples ways of knowing and doing</i> <i>Resource stewardship</i> <i>Restoration practices</i></p> <p>(Sci Cit 11) Scientific understanding enables humans to respond and adapt to changes locally and globally.</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships <p><i>Actions and decisions affecting the local and global environment, including those of First Peoples</i></p> <p>(En Sci 12) Living sustainable supports the well-being of self, community, and Earth.</p> <p>Human actions affect the quality of water and its ability to sustain life.</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships <p><i>Water quality parameters and bioindicators</i> <i>Availability and water use impacts</i> <i>Global water security</i> <i>A. Laws and regulation</i> <i>B. Conservation of water</i> <i>Soil characteristics and ecosystem services</i> <i>Land use and degradation</i> <i>Land management</i></p>

		<i>Global environmental ethics, policy, and law</i>
	<p><i>Application:</i> ECO.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Contribute to care for self, other, community, and world through individual or collaborative approaches. • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. • Consider the role of scientists in innovation.
	<p><i>Application, cont:</i> ECO.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.
	<p><i>Application, cont:</i> ECO.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed.
	<p><i>Application, cont:</i> ECO.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Experience and interpret the local environment • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Analyze cause-and-effect relationships.
	<p><i>Application, cont:</i> ECO.3.4 Conduct research in the content area.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data.

			<ul style="list-style-type: none"> Assess risks and address ethical, cultural, and /or environmental issues associated with their proposed methods. Use appropriate SI units and appropriate equipment to systematically and accurately collect and record data. Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
		<i>Application, cont:</i> ECO.3.5 Engage in various uses of technology.	(9-12 CC) <ul style="list-style-type: none"> Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. Implement multiple strategies to solve problems in real-life, applied, and conceptual situations.
		<i>Application, cont:</i> ECO.7.1 Strengthen belief in God as Designer and Creator by applying the fundamentals of Ecology/Environmental Science.	(9-12 CC) <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<i>Application, cont:</i> ECO.7.2 Utilize the concepts of Ecology/Environmental Science to improve lifestyle choices. HS-LS2-7, 4-6, HS-ESS3-1, 3-2, 3-3, 3-4, 3-5	(En Sci 12) Living sustainably supports the well-being of self, community, and Earth. <i>Personal choices and sustainable living</i>
		<i>Application, cont:</i> ECO.7.3 Apply the study of Ecology/Environmental Science to ethical issues regarding the environment. HS-LS2-6, 2-7, 4-6, HS-ESS2-2, 3-1, 3-2, 3-3, 3-4, 3-5, 3-6	(En Sci 12) Living sustainably supports the well-being of self, community, and Earth. <i>Personal choices and sustainable living</i> <i>Global environmental ethics, policy, and law</i>
Health Sciences: Anatomy and Physiology	9-12	<i>Course Focus:</i> A&P.1 Identify SDA Christian principles and values in correlation with science.	(9,10) Healthy choices influence our physical, emotional, and mental well-being. <ul style="list-style-type: none"> Propose healthy choices that support lifelong health and well-being. Reflect on outcomes of personal healthy-living goals and assess strategies used. <i>(sources of health information, potential short-term and long-term consequences of health decisions)</i>
		<i>Course Focus, cont:</i> A&P.1.1 Recognize God's power as Designer, Creator, Sustainer, and Redeemer in the universe.	(9,10) Healthy choices influence our physical, emotional, and mental well-being. <ul style="list-style-type: none"> Propose healthy choices that support lifelong health and well-being. Reflect on outcomes of personal healthy-living goals and assess strategies used. <i>(sources of health information, potential short-term and long-term consequences of health decisions)</i>
		<i>Course Focus, cont:</i> A&P.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.	(9,10) Healthy choices influence our physical, emotional, and mental well-being. <ul style="list-style-type: none"> Propose healthy choices that support lifelong health and well-being. Reflect on outcomes of personal healthy-living goals and assess strategies used.

		(sources of health information, potential short-term and long-term consequences of health decisions)
	<p><i>Course Focus, cont:</i> A&P.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.</p>	<p>(Sci Cit 11) Scientific processes and knowledge inform our decisions and impact our daily lives.</p> <ul style="list-style-type: none"> • Contribute to care for self, others, community, and world through individual or collaborative approaches • Contribute to finding solutions to problems at a local and/or global level through inquiry (Personal and public health practices, including First Peoples traditional health and healing practices)
	<p><i>Course Focus, cont:</i> A&P.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.</p>	<p>(Sci. 9-12 CC)</p> <ul style="list-style-type: none"> • Identify factors that influence health messages from a variety of sources, and analyze their influence on behaviour. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. • Contribute to the care for self, others, community, and world through individual or collaborative approaches.
	<p><i>Course Focus, cont:</i> A&P.1.5 Equip students with Christian perspectives on scientific issues.</p>	<p>(Sci. 9-12 CC)</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables and identifying inconsistencies. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations.
	<p><i>Course Abilities:</i> A&P.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract one, about the natural world • Formulate multiple hypotheses and predict multiple outcomes • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled.

			<ul style="list-style-type: none"> • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed. • Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.
		<p><i>Course Abilities, cont:</i> A&P.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable qualitative and quantitative data • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation
		<p><i>Course Abilities, cont:</i> A&P.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Consider the role of scientists in innovation. • Express and reflect on a variety of experiences, perspectives, and worldview through place.
		<p><i>Anatomical Orientation:</i> A&P.4.1 Recognize God as the designer and creator of the human body.</p>	<p>(Sci. 9-12 CC)</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables and identifying inconsistencies.

		<ul style="list-style-type: none"> Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. Consider social, ethical, and environmental implications of the findings from their own and others' investigations.
	<p><i>Anatomical Orientation, cont:</i> A&P.4.2 Define and properly use anatomical orientation terminology.</p>	<p>(A&P 12) Organ systems have complex interrelationships to maintain homeostasis</p> <ul style="list-style-type: none"> Communicate scientific ideas and information and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations <p><i>Micro to macro organization</i></p>
	<p><i>Anatomical Orientation, cont:</i> A&P.4.3 Demonstrate an understanding of the structure of cell types and tissues.</p>	<p>(A&P 12) Organ systems have complex interrelationships to maintain homeostasis</p> <ul style="list-style-type: none"> Communicate scientific ideas and information and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations <p><i>Micro to macro organization</i></p>
	<p><i>Anatomical Orientation, cont:</i> A&P.4.4 Identify the components within each system (skeletal, digestive, circulatory, etc.). HS-LS1-2</p>	<p>(A&P 12) Organ systems have complex interrelationships to maintain homeostasis</p> <ul style="list-style-type: none"> Communicate scientific ideas and information and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations <p><i>Organ systems</i></p> <ul style="list-style-type: none"> <i>Structure and function</i> <i>Structural and functional interdependence</i> <p><i>Maintenance of homeostasis</i></p>
	<p><i>Anatomical Orientation, cont:</i> A&P.4.5 Describe the major chemical and cellular processes necessary for maintaining life (cellular respiration, protein synthesis, mitosis, meiosis). HS-LS1-1, 1-4, 1-6, 1-7, 3-1, 3-2, 3-3</p>	<p>(A&P 12) Homeostasis is maintained through physiological processes</p> <ul style="list-style-type: none"> Communicate scientific ideas and information and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations <p><i>Biological molecules</i> <i>Metabolism and enzymes</i> <i>Feedback loops and regulation o the body's internal environment</i> <i>Transport across a cell membrane</i></p> <p>Gene Expression, through protein synthesis, is an interaction between genes and the environment</p> <ul style="list-style-type: none"> Communicate scientific ideas and information and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations <p><i>DNA</i></p> <ul style="list-style-type: none"> <i>The cell's genetic information</i> <i>Replication</i> <i>Gene expression</i>

		<ul style="list-style-type: none"> • <i>Proteins and their relationship to the structure and function of all cells</i> <i>Genomics and biotechnology</i>
	<i>Cells and Tissues:</i> A&P.5.1 Examine anatomy of specimens.	(A&P 12) Organ systems have complex interrelationships to maintain homeostasis <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world <i>Micro to macro organization</i>
	<i>Cells and Tissues, cont:</i> A&P.5.2 Explore human cells and tissues with microscopes. HS-LS1-2	(A&P 12) Organ systems have complex interrelationships to maintain homeostasis <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world <i>Micro to macro organization</i>
	<i>Cells and Tissues, cont:</i> A&P.6.1 Interpret the relationship between the structure and the function of cell types and tissues. HS-LS1-2, 1-7, 3-1, 3-2	(A&P 12) Organ systems have complex interrelationships to maintain homeostasis <ul style="list-style-type: none"> • Construct, analyze, and interpret graphs, models, and/or diagrams <i>Micro to macro organization</i>
	<i>Systems:</i> A&P.5.3 Investigate the function of components within each system. HS-LS1-2, 1-3, 1-7	(A&P 12) Organ systems have complex interrelationships to maintain homeostasis <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. <i>Organ systems</i> <ul style="list-style-type: none"> • <i>Structure and function</i> • <i>Structural and functional interdependence</i> <i>Maintenance of homeostasis</i>
	<i>Systems, cont:</i> A&P.6.2 Evaluate the relationship between the structure and the function of organs. HS-LS1-3	(A&P 12) Organ systems have complex interrelationships to maintain homeostasis <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Organ systems</i> <ul style="list-style-type: none"> • <i>Structure and function</i> • <i>Structural and functional interdependence</i> <i>Maintenance of homeostasis</i>
	<i>Systems, cont:</i> A&P.6.3 Correlate the structure of each organ system with its function. HS-LS1-2	(A&P 12) Organ systems have complex interrelationships to maintain homeostasis <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Organ systems</i> <ul style="list-style-type: none"> • <i>Structure and function</i> • <i>Structural and functional interdependence</i> <i>Maintenance of homeostasis</i>
	<i>Systems, cont:</i> A&P.6.4 Analyze the interdependence of organ systems in the body. HS-LS1-2, 1-3	(A&P 12) Organ systems have complex interrelationships to maintain homeostasis <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Organ systems</i> <ul style="list-style-type: none"> • <i>Structure and function</i> • <i>Structural and functional interdependence</i> <i>Maintenance of homeostasis</i>
	<i>Application:</i>	(9-12 CC)

	<p>A&P.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1</p>	<ul style="list-style-type: none"> • Contribute to care for self, other, community, and world through individual or collaborative approaches. • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. <p>Consider the role of scientists in innovation.</p>
	<p><i>Application, cont:</i> A&P.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence <p>Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.</p>
	<p><i>Application, cont:</i> A&P.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. <p>Consider the changes in knowledge over time as tools and technologies have developed.</p>
	<p><i>Application, cont:</i> A&P.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Experience and interpret the local environment • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p>Analyze cause-and-effect relationships.</p>
	<p><i>Application, cont:</i> A&P.3.4 Conduct research in the content area.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Assess risks and address ethical, cultural, and /or environmental issues associated with their proposed methods

			<ul style="list-style-type: none"> Use appropriate SI units and appropriate equipment to systematically and accurately collect and record data <p>Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation</p>
		<p><i>Application, cont:</i> A&P.3.5 Engage in various uses of technology.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data <p>Implement multiple strategies to solve problems in real-life, applied, and conceptual situations</p>
		<p><i>Application, cont:</i> A&P.7.1 Strengthen belief in God as Designer and Creator from studying anatomy and physiology. HS-LS1-3</p>	<p>(Sci. 9-12 CC)</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables and identifying inconsistencies. Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. Consider social, ethical, and environmental implications of the findings from their own and others' investigations.
		<p><i>Application, cont:</i> A&P.7.2 Utilize the concepts of anatomy and physiology to improve lifestyle choices. HS-LS3-2</p>	<p>(A&P 12) Homeostasis is maintained through physiological processes</p> <ul style="list-style-type: none"> Contribute to care for self, others, community, and world through individual or collaborative approaches. <p><i>Lifestyle differences and their effects on human health</i> <i>Holistic approach to health</i> <i>Disease as an imbalance in homeostasis</i></p>
Earth and Space Sciences	9-12	<p><i>Course Focus:</i> ESC.1 Identify SDA Christian principles and values in correlation with science.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> ESC.1.1 Recognize God's power as Designer, Creator, Sustainer, and Redeemer in the universe.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> ESC.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.

	<p><i>Course Focus, cont:</i> ESC.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.</p>	<p>(9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations • Contribute to care for self, others, community, and world through individual or collaborative approaches • Contribute to finding solutions to problems at a local and/or global level through inquiry <p><i>First Peoples knowledge of interconnectedness and sustainability</i></p> <p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p> <ul style="list-style-type: none"> • Contribute to care for self, others, community, and world through individual or collaborative approaches • Contribute to finding solutions to problems at a local and/or global level through inquiry <p><i>Economic and environmental implications of geologic resources with BC and globally</i> <i>First Peoples knowledge and perspectives of water resources and processes</i></p>
	<p><i>Course Focus, cont:</i> ESC.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Course Focus, cont:</i> ESC.1.5 Equip students with Christian perspectives on scientific issues.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Course Abilities:</i> ESC.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract one, about the natural world • Formulate multiple hypotheses and predict multiple outcomes • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence.

			<ul style="list-style-type: none"> • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed. • Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.
		<p><i>Course Abilities, cont:</i> ESC.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable qualitative and quantitative data. • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
		<p><i>Course Abilities, cont:</i> ESC.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Consider the role of scientists in innovation.

		<ul style="list-style-type: none"> Express and reflect on a variety of experiences, perspectives, and worldview through place.
	<p><i>Geology:</i> ESC.4.1 Recognize God as the Designer and Creator of our earth within the universe while recognizing divergent theories. HS-ESS1-2, 1-6, 2-7</p>	<p>(Sci 10) The formation of the universe can be explained by the big bang theory.</p> <ul style="list-style-type: none"> Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>Formation of the universe</i> A. Big Bang theory B. Components of the universe over time <i>Astronomical data and collection methods</i> (Ear Sci 11) Astronomy seeks to explain the origin and interactions of Earth and its solar system.</p> <ul style="list-style-type: none"> Formulate physical or mental theoretical models to describe a phenomenon <p><i>The nebular hypothesis</i> <i>Earth as a unique planet within its solar system</i></p>
	<p><i>Geology, cont:</i> ESC.4.2 Demonstrate understanding of the structure, composition, and processes of earth (geologic time table, plate tectonics, rocks and minerals). HS-ESS1-5, 1-6, 2-1, 2-3</p>	<p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p> <p>Plate tectonic theory explains the consequences of tectonic plate interactions</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Properties of earth materials:</i> A. Minerals B. Igneous rocks C. Sedimentary rocks D. Metamorphic rocks E. Geologic resources</p> <p><i>Surface and internal processes of the rock cycle</i> <i>Evidence that supports plate tectonic theory</i> <i>Factors that affect plate motion</i> <i>First Peoples knowledge of local plate tectonic settings and geologic terrains</i></p> <p>(Ear Sci 12) Minerals, rocks, and earth materials form in response to conditions within and on the Earth’s surface and are the foundation of many resource-based industries.</p> <p>The plate tectonic theory explains the changes that occur within Earth and to Earth’s crust throughout geological time</p> <p>The form arrangement, and structure of rocks are affected by three-dimensional forces over time.</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Classification of minerals</i> <i>Processes of rock formation</i> A. Igneous B. Sedimentary C. Metamorphic <i>BC resource deposits and others</i> A. Origin and formation B. Economic, environmental, and First Peoples considerations</p>

		<p><i>The geologic time scale and major events in Earth's history</i></p> <p><i>Methods for relative and absolute dating of rocks, fossils, and geologic events</i></p> <p><i>Reconstruction of Earth's past through correlation of fossil data and rock strata</i></p> <p><i>Formation of volcanic and deformational features through plate movement</i></p> <p><i>Evidence that supports a layered model of Earth</i></p> <p><i>Earthquakes and analysis of seismic waves</i></p> <p><i>Internal and external factors that affect the plasticity of rock strata</i></p> <p><i>Faulting and folding</i></p> <p><i>Geologic maps, cross-sections, and block diagrams</i></p> <p><i>Weathering and erosion processes</i></p>
	<p><i>Geology, cont:</i></p> <p>ESC.5.1 Observe the structure and composition of rocks and minerals. HS-ESS1-6, 2-1</p>	<p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. <p><i>Properties of earth materials:</i></p> <p>A. <i>Minerals</i></p> <p>B. <i>Igneous rocks</i></p> <p>C. <i>Sedimentary rocks</i></p> <p>D. <i>Metamorphic rocks</i></p> <p>(Ear Sci 12) Minerals, rocks, and earth materials form in response to conditions within and on the Earth's surface and are the foundation of many resource-based industries.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world <p><i>Classification of minerals</i></p>
	<p><i>Geology, cont:</i></p> <p>ESC.6.1 Classify different types of rocks and minerals.</p>	<p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Properties of earth materials:</i></p> <p>A. <i>Minerals</i></p> <p>B. <i>Igneous rocks</i></p> <p>C. <i>Sedimentary rocks</i></p> <p>D. <i>Metamorphic rocks</i></p> <p>(Ear Sci 12) Minerals, rocks, and earth materials form in response to conditions within and on the Earth's surface and are the foundation of many resource-based industries.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Classification of minerals</i></p>
	<p><i>Geologic History:</i></p>	<p>(Ear Sci 12) Earth's geological and biological history is interpreted and inferred from information stored in rock strata and fossil evidence.</p>

	<p>ESC.4.3 Become acquainted with the geologic history of the earth (fossil record, absolute vs. relative time). HS-ESS1-5, 1-6</p>	<ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies <p><i>The geologic time scale and major events in Earth's history</i> <i>The local and global fossil record</i> A. Evidence of evolution B. Methods of fossil formation C. First Peoples perspectives <i>Methods for relative and absolute dating of rocks, fossils, and geologic events</i> <i>Reconstruction of Earth's past through correlation of fossil data and rock strata</i></p>
	<p><i>Geologic History, cont:</i> ESC.5.2 Explore the fossil record of earth's history from a creationist's paradigm.</p>	<p>(Ear Sci 12) Earth's geological and biological history is interpreted and inferred from information stored in rock strata and fossil evidence.</p> <ul style="list-style-type: none"> • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information <p><i>The geologic time scale and major events in Earth's history</i> <i>The local and global fossil record</i> A. Evidence of evolution B. Methods of fossil formation C. First Peoples perspectives <i>Methods for relative and absolute dating of rocks, fossils, and geologic events</i> <i>Reconstruction of Earth's past through correlation of fossil data and rock strata</i></p>
	<p><i>Geologic History, cont:</i> ESC.6.2 Correlate the fossil record to earth's history from a creationist's paradigm.</p>	<p>(Ear Sci 12) Earth's geological and biological history is interpreted and inferred from information stored in rock strata and fossil evidence.</p> <ul style="list-style-type: none"> • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems. <p><i>The geologic time scale and major events in Earth's history</i> <i>The local and global fossil record</i> A. Evidence of evolution B. Methods of fossil formation C. First Peoples perspectives <i>Methods for relative and absolute dating of rocks, fossils, and geologic events</i> <i>Reconstruction of Earth's past through correlation of fossil data and rock strata</i></p>
	<p><i>Weather:</i> ESC.4.4 Familiarize students with the factors that affect earth's climate patterns. HS-ESS1-1, 2-2, 2-4</p>	<p>(Ear Sci 11) The transfer of energy through the atmosphere creates weather, and this transfer is affected by climate change. The distribution of water has a major influence on weather and climate.</p> <p><i>The hydrologic cycle</i> <i>Changes in the composition of the atmosphere due to natural and human causes</i> <i>Weather as the interaction of water, air, and energy transfer</i></p>

		<p><i>Solar radiation interactions and impacts on the energy budget</i> <i>Evidence of climate change</i> <i>Local and global ocean currents</i> <i>Influences of large bodies of water on local and global climates</i> <i>Effects of climate change on water sources</i></p>	
		<p><i>Weather, cont:</i> ESC.5.3 Investigate principles of climate and global weather patterns. HS-SSE1-1, 2-4</p>	<p>(Ear Sci 11) The transfer of energy through the atmosphere creates weather, and this transfer is affected by climate change. The distribution of water has a major influence on weather and climate.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies <p><i>The hydrologic cycle</i> <i>Changes in the composition of the atmosphere due to natural and human causes</i> <i>Weather as the interaction of water, air, and energy transfer</i> <i>Solar radiation interactions and impacts on the energy budget</i> <i>Evidence of climate change</i> <i>Local and global ocean currents</i> <i>Influences of large bodies of water on local and global climates</i> <i>Effects of climate change on water sources</i></p>
		<p><i>Weather, cont:</i> ESC.6.3 Analyze and predict the relationship between climate and global weather patterns. HS-ESS1-1, 2-4, 3-5</p>	<p>(Ear Sci 11) The transfer of energy through the atmosphere creates weather, and this transfer is affected by climate change. The distribution of water has a major influence on weather and climate.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies <p><i>The hydrologic cycle</i> <i>Changes in the composition of the atmosphere due to natural and human causes</i> <i>Weather as the interaction of water, air, and energy transfer</i> <i>Solar radiation interactions and impacts on the energy budget</i> <i>Evidence of climate change</i> <i>Local and global ocean currents</i> <i>Influences of large bodies of water on local and global climates</i> <i>Effects of climate change on water sources</i></p>
		<p><i>Water:</i> ESC.4.5 Present the basic concepts of earth’s biogeochemical cycles. HS-ESS2-5, 2-6</p>	<p>(Sci 9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them. <i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i></p>

		<p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications. The distribution of water has a major influence on weather and climate. <i>Surface and internal processes of the rock cycle</i> <i>The hydrologic cycle</i></p>	<p>(Ear Sci 12) Weathering and erosion processes continually reshape landscapes through the interaction of the geosphere with the hydrosphere and atmosphere. <i>Weathering and erosion processes</i> <i>Periods of glaciation</i> <i>Groundwater and aquifers</i> <i>Causes and controls of mass wasting</i></p>
	<p><i>Water, cont:</i> ESC.5.4 Examine factors that affect earth’s biogeochemical cycles. HS-ESS2-6</p>	<p>(Sci 9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.</p> <ul style="list-style-type: none"> • Experience and interpret the local environment <p><i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i></p> <p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications. The distribution of water has a major influence on weather and climate.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Surface and internal processes of the rock cycle</i> <i>The hydrologic cycle</i></p> <p>(Ear Sci 12) Weathering and erosion processes continually reshape landscapes through the interaction of the geosphere with the hydrosphere and atmosphere.</p> <ul style="list-style-type: none"> • Analyse cause-and-effect relationships. <p><i>Weathering and erosion processes</i> <i>Periods of glaciation</i> <i>Groundwater and aquifers</i> <i>Causes and controls of mass wasting</i></p>	<p>(Sci 9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.</p> <ul style="list-style-type: none"> • Analyse cause-and-effect relationships. <p><i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i></p> <p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p>
	<p><i>Water, cont:</i> ESC.6.4 Compare and contrast the relationship between earth’s biogeochemical cycles and the factors affecting them. HS-ESS2-6, 3-6</p>	<p>(Sci 9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.</p> <ul style="list-style-type: none"> • Analyse cause-and-effect relationships. <p><i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i></p> <p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p>	<p>(Sci 9) The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.</p> <ul style="list-style-type: none"> • Analyse cause-and-effect relationships. <p><i>Effects of solar radiation on the cycling of matter and energy</i> <i>Matter cycles within biotic and abiotic components of ecosystems</i></p> <p>(Ear Sci 11) Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.</p>

		<p>The distribution of water has a major influence on weather and climate.</p> <ul style="list-style-type: none"> Analyse cause-and-effect relationships. <p><i>Surface and internal processes of the rock cycle</i> <i>The hydrologic cycle</i></p> <p>(Ear Sci 12) Weathering and erosion processes continually reshape landscapes through the interaction of the geosphere with the hydrosphere and atmosphere.</p> <ul style="list-style-type: none"> Analyse cause-and-effect relationships. <p><i>Weathering and erosion processes</i> <i>Periods of glaciation</i> <i>Groundwater and aquifers</i> <i>Causes and controls of mass wasting</i></p>
	<p><i>Astronomy:</i> ESC.4.6 Describe how stars through fusion produce new elements and energy, and how that energy is transmitted to planetary objects. HS-ESS1-1, 1-3</p>	<p>(Ear Sci 11) Astronomy seeks to explain the origin and interactions of Earth and its solar system.</p> <ul style="list-style-type: none"> Communicate scientific ideas and information for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. <p><i>The nebular hypothesis</i></p>
	<p><i>Astronomy, cont:</i> ESC.6.5 Predict the motion of orbiting objects in the solar system using various models. HS-ESS1-4</p>	<p>(Ear Sci 11) Astronomy seeks to explain the origin and interactions of Earth and its solar system.</p> <ul style="list-style-type: none"> Communicate scientific ideas and information for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. <p><i>Earth as a unique planet within its solar system</i> <i>Stars as the centre of a solar system</i> <i>Impacts of the Earth-moon-sun system</i></p>
	<p><i>Application:</i> ESC.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Contribute to care for self, other, community, and world through individual or collaborative approaches. Cooperatively design projects with local and/or global connections and applications. Contribute to finding solutions to problems at a local and/or global level through inquiry. Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. Consider the role of scientists in innovation.
	<p><i>Application, cont:</i> ESC.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.
	<p><i>Application, cont:</i> ESC.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions.

		<ul style="list-style-type: none"> • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed.
	<p><i>Application, cont:</i> ESC.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Experience and interpret the local environment • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data including describing relationships between variables, performing calculations, and identifying inconsistencies • Construct, analyze, and interpret graphs, models, and/or diagrams • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Analyse cause-and-effect relationships.
	<p><i>Application, cont:</i> ESC.3.4 Conduct research in the content area.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Assess risks and address ethical, cultural, and /or environmental issues associated with their proposed methods • Use appropriate SI units and appropriate equipment to systematically and accurately collect and record data • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation •
	<p><i>Application, cont:</i> ESC.3.5 Engage in various uses of technology.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations
	<p><i>Application, cont:</i> ESC.7.1 Strengthen belief in God as Designer and Creator by applying the fundamentals of Earth Science. HS-ESS1-6, 2-7</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.

		<p><i>Application, cont:</i> ESC.7.2 Utilize the concepts of Earth Science to improve lifestyle choices. HS-ESS2-2, 3-1, 3-2, 3-3, 3-4, 3-6</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Application, cont:</i> ESC.7.3 Apply the study of Earth Science to issues regarding the environment. HS-ESS2-2, 2-4, 3-1, 3-2, 3-3, 3-4, 3-6</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
Physical Sciences: Chemistry	9-12	<p><i>Course Focus:</i> CHM.1 Identify SDA Christian principles and values in correlation with science.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> CHM.1.1 Recognize God's power as Designer, creator, Sustainer, and Redeemer in the universe.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> CHM.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i></p>	<p>(9-12 CC)</p>

	<p>CHM.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.</p>	<ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Course Focus, cont:</i> CHM.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Course Focus, cont:</i> CHM.1.5 Equip students with Christian perspectives on scientific issues.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Course Abilities:</i> CHM.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract one, about the natural world • Formulate multiple hypotheses and predict multiple outcomes • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Evaluate their methods and experimental conditions, including identifying sources of error or

			<p>uncertainty, confounding variables, and possible alternative explanations and conclusions.</p> <ul style="list-style-type: none"> • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed. • Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.
		<p><i>Course Abilities, cont:</i> CHM.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable qualitative and quantitative data. • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
		<p><i>Course Abilities, cont:</i> CHM.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Cooperatively design projects with local an/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Consider the role of scientists in innovation. • Express and reflect on a variety of experiences, perspectives, and worldview through place.

	<p><i>Structure and Properties of Matter:</i> CHM.4.1 Recognize God as the Designer and Creator of matter with inherent properties and laws.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Structure and Properties of Matter, cont:</i> CHM.4.2 Demonstrate understanding of structure and properties of matter. HS-PS1-3, 2-6, 4-3</p>	<p>(Sci 9) The electron arrangement of atoms impacts their chemical nature.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Element properties as organized in the periodic table</i> <i>The arrangement of electrons determines the compounds formed by elements.</i> <p>(Sci 10) Energy change is required as atoms rearrange in chemical processes.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Rearrangement of atoms in chemical reactions</i> <p>(Chem 11) Atoms and molecules are building blocks of matter.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Quantum mechanical model and electron configuration</i> <i>Valence electrons and Lewis structures</i> <i>Chemical bonding and electronegativity</i>
	<p><i>Structure and Properties of Matter, cont:</i> CHM.4.5 Describe the changes in the composition of the nucleus during fission, fusion, and radioactive decay. HS-PS1-8</p>	<p>(Sci 10) Energy is conserved, and its transformation can affect living things and the environment</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Nuclear energy and radiation</i>
	<p><i>Structure and Properties of Matter, cont:</i> CHM.5.1 Explore the design of the periodic table and structure of molecules. HS-PS1-1, 1-2</p>	<p>(Sci 9) The electron arrangement of atoms impacts their chemical nature.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <i>Element properties as organized in the periodic table</i> <i>The arrangement of electrons determines the compounds formed by elements.</i> <p>(Sci 10) Energy change is required as atoms rearrange in chemical processes.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <i>Rearrangement of atoms in chemical reactions</i> <i>Law of conservation of mass</i>

			<p>(Chem 11) Atoms and molecules are building blocks of matter.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Quantum mechanical model and electron configuration</i> <i>Valence electrons and Lewis structures</i> <i>Chemical bonding and electronegativity</i> <i>Bonds/forces</i></p>
		<p><i>Structure and Properties of Matter, cont:</i> CHM.6.1 Correlate the relationship between periodicity and molecular structure in the periodic table. HS-PS1-1, 1-2</p>	<p>(Sci 9) The electron arrangement of atoms impacts their chemical nature.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Element properties as organized in the periodic table</i> <i>The arrangement of electrons determines the compounds formed by elements.</i></p> <p>(Sci 10) Energy change is required as atoms rearrange in chemical processes.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Rearrangement of atoms in chemical reactions</i> <i>Law of conservation of mass</i></p> <p>(Chem 11) Atoms and molecules are building blocks of matter.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Quantum mechanical model and electron configuration</i> <i>Valence electrons and Lewis structures</i> <i>Chemical bonding and electronegativity</i> <i>Bonds/forces</i></p>
		<p><i>Chemical Interactions:</i> M.4.3 Describe the interactions of matter and energy (bonding, chemical reactions, conservation). HS-PS1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 3-1, 3-2, 3-4, 4-4</p>	<p>(Sci 9) The electron arrangement of atoms impacts their chemical nature.</p> <ul style="list-style-type: none"> Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. <p><i>The arrangement of electrons determines the compounds formed by elements.</i></p> <p>(Sci 10) Energy change is required as atoms rearrange in chemical processes.</p> <ul style="list-style-type: none"> Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. <p><i>Rearrangement of atoms in chemical reactions</i></p>

		<p><i>Acid-base chemistry</i> <i>Law of conservation of mass</i> <i>Energy change during chemical reactions</i> (Chem 11) Atoms and molecules are building blocks of matter.</p> <ul style="list-style-type: none"> • S Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. <p><i>Chemical bonding and electronegativity</i> <i>Bonds/forces</i> (Chem 12) Oxidation and reduction are complementary processes that involve the gain or loss of electrons.</p> <ul style="list-style-type: none"> • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. <p><i>The oxidation-reduction process</i> <i>Electrochemical cells</i> <i>Electrolytic cells</i></p>
	<p><i>Chemical Interactions, cont:</i> CHM.5.2 Examine the relationship between energy and chemical reactions (bond, activation, thermal). HS-PS1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 3-1, 3-2, 3-4</p>	<p>(Chem 12) Reactants must collide to react, and the reaction rate is dependent on the surrounding conditions.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. <p><i>Reaction rate</i> <i>Collision theory</i> <i>Energy change during a chemical reaction</i></p>
	<p><i>Chemical Interactions, cont:</i> CHM.6.2 Interpret the relationship between energy and chemical reactions. HS-PS1-2, 1-3, 1-4, 3-1, 3-2, 3-4</p>	<p>(Chem 12) Reactants must collide to react, and the reaction rate is dependent on the surrounding conditions.</p> <ul style="list-style-type: none"> • Analyze cause-and-effect relationships <p><i>Reaction mechanism</i> <i>Catalysts</i></p>
	<p><i>Stoichiometry:</i> CHM.4.4 Integrate balanced equations, conversion factors, ratio and proportion, and dimensional analysis. HS-PS1-7</p>	<p>(Chem 11) The mole is a quantity used to make atoms and molecules measurable.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>The mole</i> <i>Dimensional analysis</i> <i>Reactions</i></p>
	<p><i>Stoichiometry, cont:</i> CHM.5.3 Solve stoichiometric problems with appropriate chemical and mathematical skills. HS-PS1-7</p>	<p>(Chem 11) The mole is a quantity used to make atoms and molecules measurable.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Stoichiometric calculations using significant figures</i> <i>Analysis techniques</i></p>

		<p>(Chem 12) Dynamic equilibrium can be shifted by changes to the surrounding conditions.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>quantitative relationships</i></p>
	<p><i>Stoichiometry, cont:</i> CHM.6.3 Evaluate conditions and factors that affect stoichiometric results. HS-PS1-5, 1-6, 1-7</p>	<p>(Chem 11) The mole is a quantity used to make atoms and molecules measurable.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Local and other chemical processes</i></p> <p>(Chem 12) Dynamic equilibrium can be shifted by changes to the surrounding conditions.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Dynamic nature of chemical equilibrium Le Chatelier's principle and equilibrium shift Equilibrium constant quantitative relationships</i></p>
	<p><i>Solutions:</i> CHM.4.5 Identify the types and properties of solutions.</p>	<p>(Chem 11) Solubility within a solution is determined by the nature of the solute and the solvent.</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Solubility of molecular and ionic compounds Stoichiometric calculations in aqueous solutions</i></p> <p>(Chem 12) Saturated solutions are systems in equilibrium.</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Saturated solutions and solubility product (K_{sp}) Hydrolysis of ions in salt solutions</i></p>
	<p><i>Solutions, cont:</i> CHM.5.4 Investigate factors that define and affect solutions (pH, concentration, temperature, pressure).</p>	<p>(Chem 12) Saturated solutions are systems in equilibrium.</p> <p>Acid or base strength depends on the degree of ion dissociation.</p> <ul style="list-style-type: none"> Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Saturated solutions and solubility product (K_{sp}) Hydrolysis of ions in salt solutions Relative strength of acids and bases in solution Water as an equilibrium system Weak acids and bases Titration Applications of acid-base reactions</i></p>
	<p><i>Solutions, cont:</i> CHM.6.4 Predict solution changes as factors are manipulated. HS-PS1-5, 1-6</p>	<p>(Chem 12) Dynamic equilibrium can be shifted by changes to the surrounding conditions.</p> <p>Saturated solutions are systems in equilibrium.</p> <p>Acid or base strength depends on the degree of dissociation.</p>

		<ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Dynamic nature of chemical equilibrium</i> <i>Le Chatelier's principle and equilibrium shift</i> <i>Equilibrium constant (K_{eq})</i></p>
	<p><i>Solutions, cont:</i> CHM.6.5 Compare and contrast the processes of nuclear fission, fusion, and radioactive decay. HS-PS1-8</p>	<p>(Sci 10) Energy is conserved, and its transformation can affect living things and the environment.</p> <ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. <p><i>Nuclear energy and radiation</i> <i>Law of conservation of energy</i></p>
	<p><i>Application:</i> CHM.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Contribute to care for self, other, community, and world through individual or collaborative approaches. • Cooperatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. • Consider the role of scientists in innovation.
	<p><i>Application, cont:</i> CHM.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.
	<p><i>Application, cont:</i> CHM.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed.
	<p><i>Application, cont:</i> CHM.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Experience and interpret the local environment. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information.

		<ul style="list-style-type: none"> • Seek and analyze patterns, trends, and connections in data including describing relationships between variables, performing calculations, and identifying inconsistencies. • Construct, analyze, and interpret graphs, models, and/or diagrams. • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Analyze cause-and-effect relationships.
	<p><i>Application, cont:</i> CHM.3.4 Conduct research in the content area.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Assess risks and address ethical, cultural, and /or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
	<p><i>Application, cont:</i> CHM.3.5 Engage in various uses of technology.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations.
	<p><i>Application, cont:</i> CHM.7.1 Develop an increased respect for the Designer of all matter in the universe.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Application, cont:</i> CHM.7.2 Utilize various chemical resources to influence lifestyle choices (warning labels, MSDS, nutritional labels, Internet resources).</p>	<p>(Chem 11) Organic chemistry and its applications have significant implications for human health, society, and the environment.</p> <ul style="list-style-type: none"> • Contribute to care for self, others, community, and world through individual or collaborative approaches. <p><i>Applications of organic chemistry</i> <i>Green chemistry</i></p>
	<p><i>Application, cont:</i> CHM.7.3 Implement chemical principles to chemistry-related issues in society. HS-PS2-6</p>	<p>(Chem 11) Organic chemistry and its applications have significant implications for human health, society, and the environment.</p>

			<ul style="list-style-type: none"> Contribute to care for self, others, community, and world through individual or collaborative approaches. <p><i>Applications of organic chemistry</i> <i>Green chemistry</i></p>
Physical Sciences: Physical Science	9-12	<p><i>Course Focus:</i> PSC.1 Identify SDA Christian principles and values in correlation with science.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. Analyze cause-and-effect relationships. Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> PSC.1.1 Recognize God's power as Designer, Creator, Sustainer, and Redeemer in the universe.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. Analyze cause-and-effect relationships. Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Formulate physical or mental theoretical models to describe a phenomenon. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> PSC.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. Analyze cause-and-effect relationships. Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Formulate physical or mental theoretical models to describe a phenomenon. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i> PSC.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. Analyze cause-and-effect relationships. Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Formulate physical or mental theoretical models to describe a phenomenon. Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Course Focus, cont:</i></p>	<p>(9-12 CC)</p>

	<p>PSC.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.</p>	<ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Course Focus, cont:</i> PSC.1.5 Equip students with Christian perspectives on scientific issues.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Course Abilities:</i> PSC.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract one, about the natural world. • Formulate multiple hypotheses and predict multiple outcomes. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data. • Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed.

		<ul style="list-style-type: none"> • Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems.
	<p><i>Course Abilities, cont:</i> PSC.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable qualitative and quantitative data. • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
	<p><i>Course Abilities, cont:</i> PSC.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Cooperatively design projects with local an/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Consider the role of scientists in innovation. • Express and reflect on a variety of experiences, perspectives, and worldview through place.
	<p><i>Structure and Properties of Matter:</i> PSC.4.1 Recognize God as the Designer and Creator of our physical world.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.

	<p><i>Structure and Properties of Matter, cont:</i> PSC.4.2 Introduce the fundamental structure and properties of matter (physical, chemical, periodic table). HS-PS1-1, 1-2</p>	<p>(Sci 9) The electron arrangement of atoms impacts their chemical nature. <i>Element properties as organised in the periodic table</i> <i>The arrangement of electrons determines the compounds formed by elements</i> (Chem 11) Atoms and molecules are building blocks of matter. <i>Quantum mechanical model and electron configuration</i> <i>Valence electrons and Lewis structures</i> <i>Chemical bonding based on electronegativity</i></p>
	<p><i>Structure and Properties of Matter, cont:</i> PSC.5.1 Observe the structure and properties of matter. HS-PS1-3</p>	<p>(Sci 9) The electron arrangement of atoms impacts their chemical nature. • Experience and interpret the local environment. <i>Element properties as organized in the periodic table</i> <i>The arrangement of electrons determines the compounds formed by elements</i> (Chem 11) Atoms and molecules are building blocks of matter. • Experience and interpret the local environment. <i>Quantum mechanical model and electron configuration</i> <i>Valence electrons and Lewis structures</i> <i>Chemical bonding based on electronegativity</i></p>
	<p><i>Structure and Properties of Matter, cont:</i> PSC.6.1 Exhibit understanding of the basic structure and properties of matter. HS-PS1-1, 1-2, 1-3, 2-6</p>	<p>(Sci 9) The electron arrangement of atoms impacts their chemical nature. • Transfer and apply learning to new situations. <i>Element properties as organized in the periodic table</i> <i>The arrangement of electrons determines the compounds formed by elements</i> (Chem 11) Atoms and molecules are building blocks of matter. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. <i>Quantum mechanical model and electron configuration</i> <i>Valence electrons and Lewis structures</i> <i>Chemical bonding based on electronegativity</i> <i>Analysis techniques</i></p>
	<p><i>Measurement and Conversions:</i> PSC.4.3 Demonstrate understanding of scientific measurement and expression (conversions, scientific notation).</p>	<p>(Chem 11) The mole is a quantity used to make atoms and molecules measurable. • Apply the concepts of accuracy and precision to experimental procedures and data: sig figures, uncertainty, scientific notation. <i>Dimensional analysis</i> <i>Stoichiometric calculations using sign figures</i></p>
	<p><i>Interactions of Matter:</i> PSC.4.4 Become acquainted with the interactions of matter (bonding, reaction types). HS-PS1-1, 1-2, 1-4, 1-5</p>	<p>(Sci 10) Energy change is required as atoms rearrange in chemical processes. • Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world. <i>Rearrangement of atoms in chemical reactions</i> <i>Acid-base chemistry</i> <i>Law of conservation of mass</i> <i>Energy change during chemical reactions</i></p>

		<p>(Chem 11) Matter and energy are conserved in chemical reactions.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world. <p><i>Bonds/forces</i> <i>Reactions</i></p>
	<p><i>Interactions of Matter, cont:</i> PSC.5.2 Explore the interactions of matter. HS-PS1-1, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7</p>	<p>(Sci 10) Energy change is required as atoms rearrange in chemical processes.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world. <p><i>Rearrangement of atoms in chemical reactions</i> <i>Acid-base chemistry</i> <i>Law of conservation of mass</i> <i>Energy change during chemical reactions</i></p> <p>(Chem 11) Matter and energy are conserved in chemical reactions.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world. <p><i>Bonds/forces</i> <i>Reactions</i></p>
	<p><i>Interactions of Matter, cont:</i> PSC.6.2 Interpret the results of the interactions of matter. HS-PS1-1, 1-2, 1-4, 1-5, 1-6, 1-7, 2-5</p>	<p>(Sci 10) Energy change is required as atoms rearrange in chemical processes.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Rearrangement of atoms in chemical reactions</i> <i>Acid-base chemistry</i> <i>Law of conservation of mass</i> <i>Energy change during chemical reactions</i></p> <p>(Chem 11) Matter and energy are conserved in chemical reactions.</p> <ul style="list-style-type: none"> • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <p><i>Bonds/forces</i> <i>Reactions</i></p>
	<p><i>Force and Motion:</i> PSC.4.5 Familiarize students with the fundamental properties of force and motion (Newton’s laws, velocity, acceleration) HS-PS2-1, 2-2, 2-3, 2,4</p>	<p>(Phy 11) Forces influence the motion of an object.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. <p><i>Newton’s laws of motion and free-body diagrams</i> <i>Balanced and unbalanced forces in systems</i></p>
	<p><i>Force and Motion, cont:</i> PSC.5.3 Investigate the properties and interactions of force and motion. HS-PS2-1, 2-2, 2-3, 2-4, 2-5</p>	<p>(Phy 11) Forces influence the motion of an object.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. <p><i>Newton’s laws of motion and free-body diagrams</i> <i>Balanced and unbalanced forces in systems</i></p>
	<p><i>Force and Motion, cont:</i> PSC.6.3 Relate the concepts of force to motion. HS-PS2-1, 2-2, 2-3, 2-4</p>	<p>(Phy 11) Forces influence the motion of an object.</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships.

		<i>Newton's laws of motion and free-body diagrams</i> <i>Balanced and unbalanced forces in systems</i>
	<i>Energy:</i> PSC.4.6 Present the basic concepts of different energy forms (sound, electromagnetic waves, kinetic, potential, heat, nuclear, etc.). HS-PS1-8, 3-1, 3-2, 3-3, 3-4, 3-5, 4-1	(Sci 10) Energy is conserved, and its transformation can affect living things and the environment. <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Nuclear energy and radiation</i> <i>Law of conservation of energy</i> <i>Potential and kinetic energy</i> <i>Transformation of energy</i>
	<i>Energy, cont:</i> PSC.5.4 Examine the fundamental concepts of different energy forms. HS-PS1-4, 1-8, 3-1, 3-2, 3-3, 3-4, 3-5, 4-1	(Sci 10) Energy is conserved, and its transformation can affect living things and the environment. <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Nuclear energy and radiation</i> <i>Law of conservation of energy</i> <i>Potential and kinetic energy</i> <i>Transformation of energy</i>
	<i>Energy, cont:</i> PSC.6.4 Compare and contrast the different forms of energy. HS-PS1-8, 3-1, 3-2, 3-3, 3-4, 3-5	(Sci 10) Energy is conserved, and its transformation can affect living things and the environment. <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. <i>Nuclear energy and radiation</i> <i>Law of conservation of energy</i> <i>Potential and kinetic energy</i> <i>Transformation of energy</i>
	<i>Application:</i> PSC.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1	(9-12 CC) <ul style="list-style-type: none"> Contribute to care for self, other, community, and world through individual or collaborative approaches. Cooperatively design projects with local and/or global connections and applications. Contribute to finding solutions to problems at a local and/or global level through inquiry. Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. Consider the role of scientists in innovation.
	<i>Application, cont:</i> PSC.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.	(9-12 CC) <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations.
	<i>Application, cont:</i> PSC.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.	(9-12 CC) <ul style="list-style-type: none"> Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. Describe specific ways to improve their investigation methods and the quality of their data. Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled.

		<ul style="list-style-type: none"> • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Consider the changes in knowledge over time as tools and technologies have developed.
	<p><i>Application, cont:</i> PSC.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Experience and interpret the local environment. • Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. • Seek and analyze patterns, trends, and connections in data including describing relationships between variables, performing calculations, and identifying inconsistencies. • Construct, analyze, and interpret graphs, models, and/or diagrams. • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Analyze cause-and-effect relationships.
	<p><i>Application, cont:</i> PSC.3.4 Conduct research in the content area.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data. • Assess risks and address ethical, cultural, and /or environmental issues associated with their proposed methods. • Use appropriate SI units and appropriate equipment to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, scientific notation.
	<p><i>Application, cont:</i> PSC.3.5 Engage in various uses of technology.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations.
	<p><i>Application, cont:</i> PSC.7.1 Strengthen belief in God as Designer and Creator by applying the fundamentals of Physical Science.</p>	<p>(9-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
	<p><i>Application, cont:</i></p>	<p>(9-12 CC)</p>

		PSC.7.2 Utilize the concepts of Physical Science to improve lifestyle choices. HS-PS2-3, 4-2, 4-4, 4-5	<ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<i>Application, cont:</i> PSC.7.3 Apply the study of Physical Science to issues regarding the environment. HS-PS4-4	(9-12 CC) <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Analyze cause-and-effect relationships. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Formulate physical or mental theoretical models to describe a phenomenon. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
Physical Sciences: Physics	11 - 12	<i>Course Focus:</i> PHY.1 Identify SDA Christian principles and values in correlation with science.	(11-12 CC) <ul style="list-style-type: none"> • Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<i>Course Focus, cont:</i> PHY.1.1 Recognize God's power as Designer, Creator, Sustainer, and Redeemer in the universe.	(11-12 CC) <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<i>Course Focus, cont:</i> PHY.1.2 Acknowledge God as the Author of all scientific principles and laws regardless of man's interpretation.	(11-12 CC) <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations.
		<i>Course Focus, cont:</i> PHY.1.3 Develop stewardship and service attitudes toward health, life, and earth's environment.	(11-12 CC) <ul style="list-style-type: none"> • Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Co-operatively design projects with local and/or global connections and applications.

			<ul style="list-style-type: none"> Contribute to finding solutions to problems at a local and/or global level through inquiry.
		<p><i>Course Focus, cont:</i> PHY.1.4 Apply Biblical principles of Christian morality, integrity, and ethical behavior to all aspects of life.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. Consider social, ethical, and environmental implications of the findings from their own and others' investigations.
		<p><i>Course Focus, cont:</i> PHY.1.5 Equip students with Christian perspectives on scientific issues.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> Consider social, ethical, and environmental implications of the findings from their own and others' investigations.
		<p><i>Course Abilities:</i> PHY.2.1 Develop critical and creative thinking skills (analysis, evaluation, divergent questioning, modeling).</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. Formulate multiple hypotheses and predict multiple outcomes. Experience and interpret the local environment. Apply First Peoples perspectives and knowledge, other ways of knowing, and local knowledge as sources of information. Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. Construct, analyze, and interpret graphs, models, and/or diagrams. Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. Analyze cause-and-effect relationships. Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. Evaluate the validity and limitations of a model or analogy in relation to the phenomenon modelled. Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. Exercise a healthy, informed skepticism and use scientific knowledge and findings to form their own investigations to evaluate claims in primary and secondary sources. Consider social, ethical, and environmental implications of the findings from their own and others' investigations. Critically analyze the validity of information in primary and secondary sources and

		<p>evaluate the approaches used to solve problems.</p> <ul style="list-style-type: none"> Assess risks in the context of personal safety and social responsibility.
	<p><i>Course Abilities, cont:</i> PHY.2.2 Understand and utilize the scientific method of problem solving.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> Formulate multiple hypotheses and predict multiple outcomes. Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative). Assess risks and address ethical, cultural, and/or environmental issues associated with their proposed methods. Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. (gr. 11 ch. 1) Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, and scientific notation. (gr. 11 ch. 1) Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. Describe specific ways to improve their investigation methods and the quality of their data.
	<p><i>Course Abilities, cont:</i> PHY.2.3 Utilize the principles and methodologies of cooperative learning.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative). Contribute to care for self, others, community, and world through individual or collaborative approaches. Co-operatively design projects with local and/or global connections and applications.
	<p><i>Mechanics:</i> PHY.4.1 Recognize God as the Designer and Creator of our physical world and its governing laws.</p>	<p>Note: essentially every big idea in the curriculum could fit here. Note: The Grade 11 Physics book referenced here is “BC Science: Physics 11” by Edvantage Interactive. The Grade 12 Physics book referenced here is “BC Science: Physics 12” by Edvantage Interactive.</p>

		<p>(11) An object's motion can be predicted, analyzed, and described.</p> <ul style="list-style-type: none"> • Horizontal uniform and accelerated motion (ch. 2) • Projectile motion (ch. 2) • Graphical methods in physics (ch. 2, etc.)
	<p><i>Mechanics, cont:</i> PHY.4.2 Identify the fundamental properties and laws of mechanics. HS-PS2-1, 2-2, 2-3, 2-4, 3-1, 3-2, 3-3</p>	<p>(11) An object's motion can be predicted, analyzed, and described.</p> <ul style="list-style-type: none"> • Vector and scalar quantities (ch. 1) • Horizontal uniform and accelerated motion (ch. 2) • Projectile motion (ch. 2) • Graphical methods in physics (ch. 2, etc.) <p>(12) Measurement of motion depends on our frame of reference.</p> <ul style="list-style-type: none"> • Frames of reference (ch. 1, 2, 4) • Relative motion within a stationary reference frame (ch. 2) • Graphical methods in physics (ch. 2, etc.)
	<p><i>Mechanics, cont:</i> PHY.5.1 Test the properties and laws of mechanics (Newton's laws, work, power, velocity, energy, etc.). HS-PS2-1, 2-2, 2-3, 2-4, 3-1, 3-2, 3-3</p>	<p>(11) Forces influence the motion of an object.</p> <ul style="list-style-type: none"> • Contact forces and the factors that affect magnitude and direction (ch. 3) • Mass, force of gravity, and apparent weight (ch. 3) • Newton's laws of motion and free-body diagrams (ch. 4) • Conservation of energy; principle of work and energy (ch. 5) • Power and efficiency (ch. 5) • Simple machines and mechanical advantage (ch. 5) • Applications of simple machines by First Peoples (ch. 5) • Graphical methods in physics (ch. 5, etc.) <p>(12) Forces can cause linear and circular motion.</p> <p>(12) Forces and energy interactions occur within fields.</p> <p>(12) Momentum is conserved within a closed and isolated system.</p> <ul style="list-style-type: none"> • Static equilibrium (ch. 1) • Uniform circular motion (ch. 4) • Gravitational field and Newton's law of universal gravitation (ch. 4, 5) • Impulse and momentum (ch. 3) • Conservation of momentum and energy in collisions (ch. 3) • Graphical methods in physics (ch. 2, etc.)
	<p><i>Mechanics, cont:</i> PHY.6.1 Predict the outcome of motion and force problems using the principles of mechanics. HS-PS2-1, 2-2, 2-3, 2-4, 3-1, 3-2, 3-3</p>	<p>(11) Forces influence the motion of an object.</p> <ul style="list-style-type: none"> • Balanced and unbalanced forces in systems (ch. 4) • Conservation of energy; principle of work and energy (ch. 5) <p>(12) Forces can cause linear and circular motion.</p> <p>(12) Forces and energy interactions occur within fields.</p>

		<p>(12) Momentum is conserved within a closed and isolated system.</p> <ul style="list-style-type: none"> • Static equilibrium (ch. 1) • Uniform circular motion (ch. 4) • Gravitational field and Newton’s law of universal gravitation (ch. 4, 5) • Gravitational potential energy (ch. 3, 4) • Gravitational dynamics and energy relationships (ch. 4) • Impulse and momentum (ch. 3) • Conservation of momentum and energy in collisions (ch. 3) • Graphical methods in physics (ch. 2, etc.) • First Peoples knowledge and applications of forces in traditional technologies (not in textbook)
	<p><i>Thermodynamics:</i> PHY.4.3 Define the properties and laws of thermodynamics. HS-PS3-1, 3-2, 3-3, 3-4</p>	<p>(11) Energy is found in different forms, is conserved, and has the ability to do work.</p> <ul style="list-style-type: none"> • Conservation of energy; principle of work and energy (ch. 5) • Thermal equilibrium and specific heat capacity (ch. 5) <p>(12) Momentum is conserved within a closed and isolated system.</p> <p>(12) Forces and energy interactions occur within fields.</p> <ul style="list-style-type: none"> • Gravitational potential energy (ch. 3, 4) • Gravitational dynamics and energy relationships (ch. 4) • Impulse and momentum (ch. 3) • Conservation of momentum and energy in collisions (ch. 3) • Graphical methods in physics (ch. 2, etc.)
	<p><i>Thermodynamics, cont:</i> PHY.5.2 Explore the properties and laws of thermodynamics (laws, heat energy). HS-PS3-1, 3-2, 3-3, 3-4</p>	<p>(11) Energy is found in different forms, is conserved, and has the ability to do work.</p> <ul style="list-style-type: none"> • Conservation of energy; principle of work and energy (ch. 5) • Thermal equilibrium and specific heat capacity (ch. 5)
	<p><i>Thermodynamics, cont:</i> PHY.6.2 Correlate changes in energy to the laws of thermodynamics. HS-PS3-1, 3-2, 3-3, 3-4</p>	<p>(11) Energy is found in different forms, is conserved, and has the ability to do work.</p> <ul style="list-style-type: none"> • Conservation of energy; principle of work and energy (ch. 5) • Thermal equilibrium and specific heat capacity (ch. 5) <p>(12) Forces and energy interactions occur within fields.</p> <ul style="list-style-type: none"> • Gravitational potential energy (ch. 3, 4) • Electric potential energy, electric potential, and electric potential difference (ch. 5) • Electrostatic dynamics and energy relationships (ch. 5)
	<p><i>Sound and Electromagnetic Waves:</i></p>	<p>(11) Mechanical waves transfer energy but not matter.</p>

	PHY.4.4 Demonstrate an understanding of sound and electromagnetic wave principles. HS-PS4-1, 4-3, 4-4, 4-5	<ul style="list-style-type: none"> • Generation and propagation of waves (ch. 6) • Properties and behaviours of waves (ch. 6)
	<i>Sound and Electromagnetic Waves, cont:</i> PHY.5.3 Investigate the properties of sound and electromagnetic waves (waves, optics, etc.). HS-PS3-3, 4-1, 4-3, 4-4, 4-5	<p>(11) Mechanical waves transfer energy but not matter.</p> <ul style="list-style-type: none"> • Characteristics of sound (ch. 6) • Resonance and frequency of sound (not in textbook) <p>(11/12) Not in BC Curriculum (optics, gr. 11 ch. 7)</p>
	<i>Sound and Electromagnetic Waves, cont:</i> PHY.6.3 Evaluate the conditions and factors which affect sound and electromagnetic waves. HS-PS3-3, 4-1, 4-3, 4-4, 4-5	<p>(11) Mechanical waves transfer energy but not matter.</p> <ul style="list-style-type: none"> • Characteristics of sound (ch. 6) • Resonance and frequency of sound (not in textbook)
	<i>Electricity and Magnetism:</i> PHY.4.5 Describe the fundamental properties of electricity and magnetism. HS-PS2-4, 2-5, 3-1, 3-2, 3-3, 3-5	<p>(12) Forces and energy interactions occur within fields.</p> <ul style="list-style-type: none"> • Electric field and Coulomb's law (ch. 5) • Electric potential energy, electric potential, and electric potential difference (ch. 5) • Electrostatic dynamics and energy relationships (ch. 5) • Magnetic field (ch. 7) • Magnetic force (ch. 7) • Electromagnetic induction (ch. 8) • Applications of electromagnetic induction (ch. 8)
	<i>Electricity and Magnetism, cont:</i> PHY.5.4 Examine the principles of electricity and magnetism (circuits, Ohm's law, forces, charges, fields). HS-PS2-4, 2-5, 3-1, 3-2, 3-3, 3-5	<p>(11) Energy is found in different forms, is conserved, and has the ability to do work.</p> <ul style="list-style-type: none"> • Electric circuits (DC), Ohm's law, and Kirchoff's laws (gr. 12 ch. 6) • Power and efficiency (gr. 12 ch. 6) <p>(12) Forces and energy interactions occur within fields.</p> <ul style="list-style-type: none"> • Electric field and Coulomb's law (ch. 5) • Electric potential energy, electric potential, and electric potential difference (ch. 5) • Electrostatic dynamics and energy relationships (ch. 5) • Magnetic field (ch. 7) • Magnetic force (ch. 7) • Electromagnetic induction (ch. 8) • Applications of electromagnetic induction (ch. 8)
	<i>Electricity and Magnetism, cont:</i> PHY.6.4 Analyze various electrical circuits. HS-PS2-4, 2-5	<p>(11) Energy is found in different forms, is conserved, and has the ability to do work.</p> <ul style="list-style-type: none"> • Electric circuits (DC), Ohm's law, and Kirchoff's laws (gr. 12 ch. 6) • Power and efficiency (gr. 12 ch. 6)
	<i>Nuclear Physics:</i> PHY.4.6 Understand the basic concepts of nuclear physics. HS-PS1-8	Not covered in the new Physics curriculum; covered in the Chemistry 11 curriculum (ch. 5), or in the old Physics 11 curriculum (ch. 9).
	<i>Nuclear Physics, cont:</i> PHY.5.5 Research the principles of nuclear physics (quantum theory, radioactivity, dating methods, etc.). HS-PS1-8	Not covered in the new Physics curriculum; covered in the Chemistry 11 curriculum (ch. 5), or in the old Physics 11 curriculum (ch. 9).

	<p><i>Nuclear Physics, cont:</i> PHY.6.5 Interpret the results of nuclear research. HS-PS1-8</p>	<p>Not covered in the new Physics curriculum; covered in the Chemistry 11 curriculum (ch. 5), or in the old Physics 11 curriculum (ch. 9).</p>
	<p><i>Application:</i> PHY.3 Be able to apply science knowledge and skills to a variety of purposes. HS-ETS1</p>	<p>(12) Forces and energy interactions occur within fields.</p> <ul style="list-style-type: none"> • Applications of electromagnetic induction (ch. 8).
	<p><i>Application, cont:</i> PHY.3.1 Recognize scientific principles and laws as tools to solve problems in everyday life.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> • Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest. • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Connect scientific explorations to careers in science. • Contribute to care for self, others, community, and world through individual or collaborative approaches. • Co-operatively design projects with local and/or global connections and applications. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations.
	<p><i>Application, cont:</i> PHY.3.2 Apply the scientific method in analysis of controversial topics, e.g., cloning, global warming, stem cell research.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Consider the changes in knowledge over time as tools and technologies have developed. • Consider the role of scientists in innovation.
	<p><i>Application, cont:</i> PHY.3.3 Read, write, and interpret scientific documents (lab write-ups, journals, scientific publications).</p>	<ul style="list-style-type: none"> • (11-12 CC) • Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest. • Collectively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative). • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and in primary and secondary sources. • Exercise a healthy, informed skepticism and use scientific knowledge and findings to

			<p>form their own investigations to evaluate claims in primary and secondary sources.</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Critically analyze the validity of information in primary and secondary sources and evaluate the approaches used to solve problems. • Consider the role of scientists in innovation. • Formulate physical or mental theoretical models to describe a phenomenon. • Communicate scientific ideas and information, and perhaps a suggested course of action, for a specific purpose and audience, constructing evidence-based arguments and using appropriate scientific language, conventions, and representations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Application, cont:</i> PHY.3.4 Conduct research in the content area.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> • Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal, local, or global interest. • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative). • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Apply the concepts of accuracy and precision to experimental procedures and data: significant figures, uncertainty, and scientific notation. • Seek and analyze patterns, trends, and connections in data, including describing relationships between variables, performing calculations, and identifying inconsistencies. • Construct, analyze, and interpret graphs, models, and/or diagrams. • Use knowledge of scientific concepts to draw conclusions that are consistent with evidence. • Evaluate their methods and experimental conditions, including identifying sources of error or uncertainty, confounding variables, and possible alternative explanations and conclusions. • Describe specific ways to improve their investigation methods and the quality of their data.

		<p><i>Application, cont:</i> PHY.3.5 Engage in various uses of technology.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> • Collaboratively and individually plan, select, and use appropriate investigation methods, including field work and lab experiments, to collect reliable data (qualitative and quantitative). • Use appropriate SI units and appropriate equipment, including digital technologies, to systematically and accurately collect and record data. • Consider the changes in knowledge over time as tools and technologies have developed.
		<p><i>Application, cont:</i> PHY.7.1 Strengthen belief in God as Designer and Creator by applying the laws of physics.</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> • Make observations aimed at identifying their own questions, including increasingly abstract ones, about the natural world. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Application, cont:</i> PHY.7.2 Utilize the concepts of physics to improve lifestyle choices. HS-PS4-2, 4-5</p>	<p>(11-12 CC)</p> <ul style="list-style-type: none"> • Consider social, ethical, and environmental implications of the findings from their own and others' investigations. • Assess risks in the context of personal safety and social responsibility. • Contribute to care for self, others, and world through individual or collaborative approaches. • Contribute to finding solutions to problems at a local and/or global level through inquiry. • Implement multiple strategies to solve problems in real-life, applied, and conceptual situations. • Express and reflect on a variety of experiences, perspectives, and worldviews through place.
		<p><i>Application, cont:</i> PHY.7.3 Apply the study of physics to issues regarding nuclear energy. HS-PS1-8</p>	<p>Not covered in the new Physics curriculum; covered in the Chemistry 11 curriculum (ch. 5), or in the old Physics 11 curriculum (ch. 9).</p>
		<p>No NAD Correlation: Special Relativity</p>	<p>(12) Measurement of motion depends on our frame of reference.</p> <ul style="list-style-type: none"> • Postulates of Special Relativity (gr. 11 ch. 8) • Relativistic effects (gr. 11 ch. 8)
Engineering, Technology, and Applications of Science	9-12	None	None

Note: NAD Secondary Science standards are classified by course rather than by grade. Provinces will vary in the grades in which these courses (or similar) are offered. Please make it clear what grade each provincial standard refers to.