BC Logo Min of Ed**Area of Learning: SCIENCE Kindergarten**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Plants and animals have observable features. |  | Humans interact with matter every day through familiar materials. |  | The motion of objects depends  on their properties. |  | Daily and seasonal changes  affect all living things. |

**Learning Standards**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate curiosity and a sense of wonder about the world * Observe objects and events in familiar contexts * Ask simple questions about familiar objects and events   Planning and conducting   * Make exploratory observations using their senses * Safely manipulate materials * Make simple measurements using non-standard units   Processing and analyzing data and information   * Experience and interpret the local environment * Recognize First Peoples stories (including oral and written narratives), songs, and art, as ways to share knowledge * Discuss observations * Represent observations and ideas by drawing charts and simple pictographs   Applying and innovating   * Take part in caring for self, family, classroom and school through personal approaches * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Share observations and ideas orally * Express and reflect on personal experiences of **place** | *Students are expected to know the following:*   * **basic needs** of plants and animals * **adaptations** of local **plants** and **animals** * **local First Peoples uses** of plants and animals * **properties** of **familiar materials** * **effects of pushes/pulls** on movement * effects of size, shape, and materials on movement * **weather** changes * **seasonal changes** * **living things make changes** to accommodate daily and seasonal cycles * First Peoples knowledge of seasonal changes |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 1**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Living things have features and behaviours that help them survive in their environment. |  | Matter is useful because  of its properties. |  | Light and sound can be  produced and their properties  can be changed. |  | Observable patterns and  cycles occur in the local sky  and landscape. |

**Learning Standards**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate curiosity and a sense of wonder about the world * Observe objects and events in familiar contexts * Ask questions about familiar objects and events * Make simple predictions about familiar objects and events   Planning and conducting   * Make and record observations * Safely manipulate materials to test ideas and predictions * Make and record simple measurements using informal or non-standard methods   Processing and analyzing data and information   * Experience and interpret the local environment * Recognize First Peoples stories (including oral and written narratives), songs, and art, as ways to share knowledge * Sort and classify data and information using drawings, pictographs and provided tables * Compare observations with predictions through discussion * Identify simple patterns and connections   Evaluating   * Compare observations with those of others * Consider some environmental consequences of their actions | *Students are expected to know the following:*   * **classification** of living and non-living things * **names** of local plants and animals * **structural features** of living things in the local environment * **behavioural adaptations** of animals in the local environment * **specific properties** of materials allow us to use them in different ways * natural and artificial **sources of light** and **sound** * **properties of light** and **sound** depend on their source and the objects with which they interact * **common objects in the sky** * the knowledge of First Peoples   + shared First Peoples knowledge of the sky   + **local First Peoples** knowledge of the local landscape, plants and animals   + local First Peoples understanding and use of **seasonal rounds** * **local patterns** that occur on Earth and in the sky |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 1**

**Learning Standards (continued)**

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| --- | --- |
| **Curricular Competencies** | **Content** |
| Applying and innovating   * Take part in caring for self, family, classroom and school through personal approaches * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Communicate observations and ideas using oral or written language, drawing, or role-play * Express and reflect on personal experiences of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 2**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Living things have life cycles adapted to their environment. |  | Materials can be changed through physical and chemical processes. |  | Forces influence the motion  of an object. |  | Water is essential to all  living things, and it cycles through the environment. |

**Learning Standards**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate curiosity and a sense of wonder about the world * Observe objects and events in familiar contexts * Ask questions about familiar objects and events * Make simple predictions about familiar objects and events   Planning and conducting   * Make and record observations * Safely manipulate materials to test ideas and predictions * Make and record simple measurements using informal or non-standard methods   Processing and analyzing data and information   * Experience and interpret the local environment * Recognize First Peoples stories (including oral and written narratives), songs, and art, as ways to share knowledge * Sort and classify data and information using drawings, pictographs and provided tables * Compare observations with predictions through discussion * Identify simple patterns and connections   Evaluating   * Compare observations with those of others * Consider some environmental consequences of their actions | *Students are expected to know the following:*   * **metamorphic** and **non-metamorphic** life cycles of different organisms * similarities and differences between **offspring and parent** * **First Peoples use of their knowledge** of life cycles * **physical** waysof changing materials * **chemical** waysof changing materials * types of **forces** * **water sources** including local watersheds * **water conservation** * the **water cycle** * local First People’s knowledge of water:   + water cycles   + conservation   + **connection to other systems** |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 2**

**Learning Standards (continued)**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| Applying and innovating   * Take part in caring for self, family, classroom and school through personal approaches * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Communicate observations and ideas using oral or written language, drawing, or role-play * Express and reflect on personal experiences of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 3**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Living things are diverse, can be grouped, and interact in their ecosystems. |  | All matter is made of particles. |  | Thermal energy can be produced and transferred. |  | Wind, water, and ice change  the shape of the land. |

**Learning Standards**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate curiosity and a sense of wonder about the world * Observe objects and events in familiar contexts * Identify questions about familiar objects and events that can be investigated scientifically * Make predictions based on prior knowledge   Planning and conducting   * Suggest ways to plan and conduct an inquiry to find answers to their questions * Consider ethical responsibilities when deciding how to conduct an experiment * Safely use appropriate tools to make observations and measurements, using formal measurements and digital technology as appropriate * Make observations about living and non-living things in the local environment * Collect simple data   Processing and analyzing data and information   * Experience and interpret the local environment * Identify First Peoples perspectives and knowledge as sources of information * Sort and classify data and information using drawings or provided tables * Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends * Compare results with predictions, suggesting possible reasons for findings | *Students are expected to know the following:*   * **biodiversity** in the local environment * **the knowledge of local First Peoples** of **ecosystems** * **energy is needed for life** * **matter is anything that has mass and takes up space** * **atoms are building blocks of matter** * **sources** of **thermal energy** * **transfer of thermal energy** * major local **landforms** * local First Peoples knowledge of local landforms * observable changes in the local environment caused by erosion and deposition by wind, water, and ice |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 3**

**Learning Standards (continued)**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| Evaluating   * Make simple inferences based on their results and prior knowledge * Reflect on whether an investigation was a fair test * Demonstrate an understanding and appreciation of evidence * Identify some simple environmental implications of their and others’ actions   Applying and innovating   * Contribute to care for self, others, school, and neighbourhood through personal or collaborative approaches * Co-operatively design projects * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Represent and communicate ideas and findings in a variety of ways, such as diagrams and simple reports, using digital technologies as appropriate * Express and reflect on personal or shared experiences of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 4**

**BIG IDEAS**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| All living things sense and respond to their environment. |  | Matter has mass, takes up space, and can change phase. |  | Energy can be transformed. |  | The motions of Earth and the moon cause observable patterns that affect living and non-living systems. |

**Learning Standards**

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| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate curiosity about the natural world * Observe objects and events in familiar contexts * Identify questions about familiar objects and events that can be investigated scientifically * Make predictions based on prior knowledge   Planning and conducting   * Suggest ways to plan and conduct an inquiry to find answers to their questions * Consider ethical responsibilities when deciding how to conduct an experiment * Safely use appropriate tools to make observations and measurements, using formal measurements and digital technology as appropriate * Make observations about living and non-living things in the local environment * Collect simple data   Processing and analyzing data and information   * Experience and interpret the local environment * Identify First Peoples perspectives and knowledge as sources of information * Sort and classify data and information using drawings or provided tables * Use tables, simple bar graphs, or other formats to represent data and show simple patterns and trends * Compare results with predictions, suggesting possible reasons for findings | *Students are expected to know the following:*   * sensing and responding:   + **humans**   + **other animals**   + **plants** * **biomes** aslarge regions with similar environmental features * phases of matter * the **effect** **of temperature** on particle movement * energy:   + has **various forms**   + is **conserved** * **devices that transform energy** * local changes caused by **Earth’s axis**, **rotation**, **and orbit** * **the effects of the relative positions of the sun, moon, and Earth** including **local First Peoples perspectives** |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 4**

**Learning Standards (continued)**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| Evaluating   * Make simple inferences based on their results and prior knowledge * Reflect on whether an investigation was a fair test * Demonstrate an understanding and appreciation of evidence * Identify some simple environmental implications of their and others’ actions   Applying and innovating   * Contribute to care for self, others, school, and neighbourhood through individual or collaborative approaches * Co-operatively design projects * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Represent and communicate ideas and findings in a variety of ways, such as diagrams and simple reports, using digital technologies as appropriate * Express and reflect on personal or shared experiences of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 5**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Multicellular organisms have organ systems that enable them to survive and interact within their environment. |  | Solutions are homogeneous. |  | Machines are devices that transfer force and energy. |  | Earth materials change as they move through the rock cycle and can be used as natural resources. |

**Learning Standards**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate a sustained curiosity about a scientific topic or problem of personal interest * Make observations in familiar or unfamiliar contexts * Identify questions to answer or problems to solve through scientific inquiry * Make predictions about the findings of their inquiry   Planning and conducting   * With support, plan appropriate investigations to answer their questions or solve problems they have identified * Decide which variable should be changed and measured for a fair test * Choose appropriate data to collect to answer their questions * Observe, measure, and record data, using appropriate tools, including digital technologies * Use equipment and materials safely, identifying potential risks   Processing and analyzing data and information   * Experience and interpret the local environment * Identify First Peoples perspectives and knowledge as sources of information * Construct and use a variety of methods, including tables, graphs, and digital technologies, as appropriate, to represent patterns or relationships in data * Identify patterns and connections in data * Compare data with predictions and develop explanations for results * Demonstrate an openness to new ideas and consideration of alternatives | *Students are expected to know the following:*   * basic structures and functions of body systems:   + **digestive**   + **musculo-skeletal**   + **respiratory**   + **circulatory** * **solutions and solubility** * properties of **simple machines** and their **force effects** * machines:   + **constructed**   + **found in nature** * **power** – the rate at which energy is transferred * the rock cycle * local types of **earth materials** * First Peoples concepts of **interconnectedness** in the environment * the nature of sustainable practices around BC’s resources * First Peoples knowledge of sustainable practices |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 5**

**Learning Standards (continued)**

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| --- | --- |
| **Curricular Competencies** | **Content** |
| Evaluating   * Evaluate whether their investigations were fair tests * Identify possible sources of error * Suggest improvements to their investigation methods * Identify some of the assumptions in **secondary sources** * Demonstrate an understanding and appreciation of evidence * Identify some of the social, ethical, and environmental implications of the findings from their own and others’ investigations   Applying and innovating   * Contribute to care for self, others, and community through personal or collaborative approaches * Co-operatively design projects * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Communicate ideas, explanations, and processes in a variety of ways * Express and reflect on personal, shared, or others’ experiences of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 6**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Multicellular organisms rely on internal systems to survive, reproduce, and interact with their environment. |  | Everyday materials  are often mixtures. |  | Newton’s three laws of motion describe the relationship  between force and motion. |  | The solar system is part  of the Milky Way, which is  one of billions of galaxies. |

**Learning Standards**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate a sustained curiosity about a scientific topic or problem of personal interest * Make observations in familiar or unfamiliar contexts * Identify questions to answer or problems to solve through scientific inquiry * Make predictions about the findings of their inquiry   Planning and conducting   * With support, plan appropriate investigations to answer their questions or solve problems they have identified * Decide which variable should be changed and measured for a fair test * Choose appropriate data to collect to answer their questions * Observe, measure, and record data, using appropriate tools, including digital technologies * Use equipment and materials safely, identifying potential risks   Processing and analyzing data and information   * Experience and interpret the local environment * Identify First Peoples perspectives and knowledge as sources of information * Construct and use a variety of methods, including tables, graphs, and digital technologies, as appropriate, to represent patterns or relationships in data * Identify patterns and connections in data * Compare data with predictions and develop explanations for results * Demonstrate an openness to new ideas and consideration of alternatives | *Students are expected to know the following:*   * the basic structures and functions of body **systems:**   + **excretory**   + **reproductive**   + **hormonal**   + **nervous** * **heterogeneous mixtures** * mixtures**:**   + **separated using a difference in component properties**   + **local First Peoples knowledge** of separation and extraction methods * **Newton’s three laws of motion** * effects of **balanced and unbalanced forces** in **daily physical activities** * **force of gravity** * the overall scale, structure, and age of the universe * the position, motion, and **components of our solar system** in our galaxy |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 6**

**Learning Standards (continued)**

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| --- | --- |
| **Curricular Competencies** | **Content** |
| Evaluating   * Evaluate whether their investigations were fair tests * Identify possible sources of error * Suggest improvements to their investigation methods * Identify some of the assumptions in **secondary sources** * Demonstrate an understanding and appreciation of evidence * Identify some of the social, ethical, and environmental implications of the findings from their own and others’ investigations   Applying and innovating   * Contribute to care for self, others, and community through personal or collaborative approaches * Co-operatively design projects * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Communicate ideas, explanations, and processes in a variety of ways * Express and reflect on personal, shared, or others’ experiences of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 7**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Evolution by natural selection provides an explanation for the diversity and survival of living things. |  | Elements consist of one type of atom, and compounds consist of atoms of different elements chemically combined. |  | The electromagnetic force produces both electricity  and magnetism. |  | Earth and its climate have changed over geological time. |

**Learning Standards**

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| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest * Make observations aimed at identifying their own questions about the natural world * Identify a question to answer or a problem to solve through scientific inquiry * Formulate alternative “If…then…” hypotheses based on their questions * Make predictions about the findings of their inquiry   Planning and conducting   * Collaboratively plan a range of investigation types, including field work and experiments, to answer their questions or solve problems they have identified * Measure and control variables (dependent and independent) through fair tests * Observe, measure, and record data (**qualitative and quantitative**), using equipment, including digital technologies, with **accuracy** and **precision** * Use appropriate SI units and perform simple unit conversions * Ensure that safety and ethical guidelines are followed in their investigations   Processing and analyzing data and information   * Experience and interpret the local environment * Apply First Peoples perspectives and knowledge, other **ways of knowing**, and local knowledge as sources of information * Construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, keys, models, and digital technologies as appropriate * Seek patterns and connections in data from their own investigations and secondary sources * Use scientific understandings to identify relationships and draw conclusions | *Students are expected to know the following:*   * **organisms have evolved over time** * **survival needs** * **natural selection** * **elements** and **compounds** are **pure substances** * **crystalline structure** of solids * **chemical changes** * electricity   + **generated in different ways** with different environmental impacts   + **electromagnetism** * the fossil record provides evidence for changes in biodiversity over **geological time** * First Peoples knowledge of changes in biodiversity over time * evidence of **climate change** over geological time and the recent **impacts of humans:**   + **physical records**   + **local First Peoples knowledge of climate change** |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 7**

**Learning Standards (continued)**

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| --- | --- |
| **Curricular Competencies** | **Content** |
| Evaluating   * Reflect on their investigation methods, including the adequacy of controls on variables (dependent  and independent) and the quality of the data collected * Identify possible sources of error and suggest improvements to their investigation methods * Demonstrate an awareness of assumptions and bias in their own work and secondary sources * Demonstrate an understanding and appreciation of evidence (qualitative and quantitative) * Exercise a healthy, informed skepticism and use scientific knowledge and findings from their own investigations to evaluate claims in secondary sources * Consider social, ethical, and environmental implications of the findings from their own and  others’ investigations   Applying and innovating   * Contribute to care for self, others, community, and world through personal or collaborative approaches * Co-operatively design projects * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate * Express and reflect on a variety of experiences and perspectives of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 8**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Life processes are performed  at the cellular level. |  | The behaviour of matter can be explained by the kinetic molecular theory and atomic theory. |  | Energy can be transferred as  both a particle and a wave. |  | The theory of plate tectonics is the unifying theory that explains Earth’s geological processes. |

**Learning Standards**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate a sustained intellectual curiosity about a scientific topic or problem of  personal interest * Make observations aimed at identifying their own questions about the natural world * Identify a question to answer or a problem to solve through scientific inquiry * Formulate alternative “If…then…” hypotheses based on their questions * Make predictions about the findings of their inquiry   Planning and conducting   * Collaboratively plan a range of investigation types, including field work and experiments,  to answer their questions or solve problems they have identified * Measure and control variables (dependent and independent) through fair tests * Observe, measure, and record data (**qualitative and quantitative**), using equipment, including digital technologies, with **accuracy** and **precision** * Use appropriate SI units and perform simple unit conversions * Ensure that safety and ethical guidelines are followed in their investigations   Processing and analyzing data and information   * Experience and interpret the local environment * Apply First Peoples perspectives and knowledge, other **ways of knowing**, and local knowledge as sources of information * Construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, keys, models, and digital technologies as appropriate * Seek patterns and connections in data from their own investigations and secondary sources * Use scientific understandings to identify relationships and draw conclusions | *Students are expected to know the following:*   * **characteristics of life** * **cell theory** and **types of cells** * photosynthesis and cellular respiration * the relationshipof **micro-organisms** with living things:   + basic functions of the **immune system**   + **vaccination** and **antibiotics**   + impacts of **epidemics** and **pandemics** on  human populations * **kinetic molecular theory (KMT)** * **atomic theory** and **models** * **protons, neutrons, and quarks** * **electrons and leptons** * **types** and **effects** of electromagnetic radiation * light:   + **properties**   + **behaviours**   + **ways of sensing** * **plate tectonic movement** * major geological events of local significance * First Peoples knowledgeof:   + local geological formations   + significant local geological events * layers of Earth |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 8**

**Learning Standards (continued)**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| Evaluating   * Reflect on their investigation methods, including the adequacy of controls on variables (dependent and independent) and the quality of the data collected * Identify possible sources of error and suggest improvements to their investigation methods * Demonstrate an awareness of assumptions and bias in their own work and secondary sources * Demonstrate an understanding and appreciation of evidence (qualitative and quantitative) * Exercise a healthy, informed skepticism and use scientific knowledge and findings from their own investigations to evaluate claims in secondary sources * Consider social, ethical, and environmental implications of the findings from their own and others’ investigations   Applying and innovating   * Contribute to care for self, others, community, and world through personal or collaborative approaches * Co-operatively design projects * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving   Communicating   * Communicate ideas, findings, and solutions to problems, using scientific language, representations, and digital technologies as appropriate * Express and reflect on a variety of experiences and perspectives of **place** |  |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 9**

**BIG IDEAS**

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| --- | --- | --- | --- | --- | --- | --- |
| Cells are derived from cells. |  | The electron arrangement of atoms impacts their chemical nature. |  | Electric current is the flow of electric charge. |  | The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles  and energy flows through them. |

**Learning Standards**

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| --- | --- |
| **Curricular Competencies** | **Content** |
| *Students are expected to be able to do the following:*  Questioning and predicting   * Demonstrate a sustained intellectual curiosity about a scientific topic or problem of personal interest * Make observations aimed at identifying their own questions, including increasingly complex ones, about the natural world * Formulate multiple hypotheses and predict multiple outcomes   Planning and conducting   * 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 and those of others * Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data * Ensure that safety and ethical guidelines are followed in their investigations   Processing and analyzing data and information   * 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 (dependent and independent) and identifying inconsistencies * Construct, analyze and interpret graphs (including interpolation and extrapolation), models  and/or diagrams * Use knowledge of scientific concepts to draw conclusions that are consistent with evidence * Analyze cause-and-effect relationships | *Students are expected to know the following:*   * asexual reproduction:   + **mitosis**   + **different forms** * sexual reproduction:   + **meiosis**   + **human sexual reproduction** * element properties as organized in the **periodic table** * The arrangement of electrons determines the **compounds** formed by elements * **circuits** —must be complete for electrons to flow * **voltage**, **current**, **and resistance** * **effects of solar radiation** on the cycling of matter and energy * **matter** **cycles** within **biotic and abiotic** components of ecosystems * **sustainability** **of systems** * First Peoples knowledge of **interconnectedness** and **sustainability** |

BC Logo Min of Ed**Area of Learning: SCIENCE Grade 9**

**Learning Standards (continued)**

|  |  |
| --- | --- |
| **Curricular Competencies** | **Content** |
| Evaluating   * 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 the 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 secondary sources * Consider the changes in knowledge over time as tools and technologies have developed * Connect scientific explorations to careers in science * Exercise a healthy, informed skepticism, and use scientific knowledge and findings to form their own investigations and to evaluate claims in secondary sources * 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   Applying and innovating   * Contribute to care for self, others, community, and world through individual or collaborative approaches * Transfer and apply learning to new situations * Generate and introduce new or refined ideas when problem solving * Contribute to finding solutions to problems at a local and/or global level through inquiry * Consider the role of scientists in innovation   Communicating   * Formulate physical or mental theoretical models to describe a phenomenon * 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 * Express and reflect on a variety of experiences, perspectives, and worldviews through **place** |  |