Learning Standards (continued)

Curricular Competencies	Content
Testing • Identify **sources of feedback** • Develop an **appropriate test** of the prototype • Conduct the test, collect and compile data, evaluate data, and decide on changes • Iterate the prototype or abandon the design idea *Making* • Identify and use appropriate tools, **technologies**, materials, and processes for production • Make a step-by-step plan for production and carry it out, making changes as needed • Use materials in ways that minimize waste *Sharing* • Decide on how and with whom to **share** their **product** and processes • Demonstrate their product to potential users, providing a rationale for the selected solution, modifications, and procedures, using appropriate terminology • Critically evaluate the success of their product, and explain how their design ideas contribute to the individual, family, community, and/or environment • Critically reflect on their design thinking and processes, and evaluate their ability to work effectively both as individuals and collaboratively in a group, including their ability to share and maintain an efficient co-operative work space • Identify new design issues **Applied Skills** • Demonstrate an awareness of precautionary and emergency safety procedures in both physical and digital environments • Identify the skills and skill levels needed, individually or as a group, in relation to specific projects, and develop and refine them as needed	**Electronics and Robotics** *Students are expected to know the following:* • uses of electronics and robotics • **components** of an electric circuit • ways in which various **electrical components** affect the path of electricity • **Ohm's law** • **platforms** for PCB (printed circuit board) production • basic robot behaviours using **input/output devices**, movement- and sensor-based responses, and microcontrollers • **mechanical devices** for the transfer of mechanical energy • mechanical advantage and power efficiency, including friction, force, and torque • robotics **coding** • various **platforms** for robotics programming **Entrepreneurship and Marketing** *Students are expected to know the following:* • risks and benefits of entrepreneurship • the role of social entrepreneurship in First Nations communities • ways of decreasing production costs through training and technological advancement • flow of goods and services from producers to consumers • **identification** of a good or service that ensures brand recognition • marketing strategies using the 4 Ps: product, price, promotion, and placement • market segmentation by **demographic, geographic, psychographic**, and **purchasing pattern** • evolving consumer needs and wants • role of online technologies in expanding access to goods and services • **sources of financing** for a new venture or start-up business • **measurement** of financial success and failure

Learning Standards (continued)

Curricular Competencies	Content
Applied Technologies • Choose, adapt, and if necessary learn about appropriate tools and technologies to use for tasks • Evaluate the personal, social, and environmental impacts, including unintended negative consequences, of the choices they make about technology use • Evaluate how the land, natural resources, and culture influence the development and use of tools and technologies	**Food Studies** *Students are expected to know the following:* • **pathogenic microbes** associated with food-borne illnesses • components of food preparation, including use and adaptations of ingredients, techniques, and equipment • health, economic, and environmental **factors** that influence availability and choice of food in personal, local, and global contexts • **ethical issues** related to food systems • First Peoples traditional food use, including ingredients, harvesting/gathering, storage, preparation, and preservation
	Information and Communications Technologies *Students are expected to know the following:* • **text-based coding** • binary representation of various data types, including text, sound, pictures, video • **drag-and-drop mobile development** • programming **modular components** • development and collaboration in a **cloud-based environment** • design and function of networking hardware and topology, including wired and wireless network router types, switches, hubs, **wireless transfer systems**, and client-server relationships • functions of operating systems, including mobile, open source, and proprietary systems • current and future **impacts** of evolving web standards and cloud-based technologies • **design for the web** • strategies for curating and managing personal digital content, including management, personalization, organization, maintenance, contribution, creation, and publishing of digital content • **relationships** between technology and social change • strategies to manage and maintain **personal learning networks**, including **content consumption and creation** • **keyboarding techniques**

Learning Standards (continued)

Curricular Competencies	Content
	Media Arts *Students are expected to know the following:* • **digital and non-digital** media technologies, their distinguishing characteristics and uses • techniques for organizing ideas to structure information and story through media **conventions** • **media production skills** • **standards-compliant technology** • **ethical, moral, and legal considerations and regulatory issues** • technical and symbolic elements that can be used in storytelling • specific features and purposes of media artworks from the present and the past to explore viewpoints, including those of First Peoples • specific purposes of media use in the social advocacy of First Peoples in Canada • influences of digital media in society
	Metalwork *Students are expected to know the following:* • **basic metallurgy** • range of **uses** of metalwork • **welding** • fabrication **techniques and processes** using **hand tools** and **stationary equipment** • foundry processes, including creating patterns and moulds, and **casting** • recycling and repurposing of materials

Learning Standards (continued)

Curricular Competencies	Content
	Power Technology *Students are expected to know the following:* • energy transmission and applications • efficiency, including energy loss in the form of thermal energy • **thermodynamics** • types of fuels and methods of converting fuels to mechanical energy • alternative energy sources • **small engine systems** • **mechanical measurement devices** • power technology **hand tools** • effects of **forces** on devices • manuals as information sources
	Textiles *Students are expected to know the following:* • natural and manufactured fibres, including their origins, characteristics, uses, and care • strategies for using and **modifying** simple patterns • **elements of design** used in the design of a textile item • **social factors** that influence textile choices and the impact of those choices on local communities • role of textiles in First Peoples cultures
	Woodwork *Students are expected to know the following:* • importance of woodwork in historical and cultural contexts, locally and throughout Canada • identification, characteristics, properties, and uses of wood from various tree species • techniques for adjusting plans and drawings • woodworking **techniques** and **traditional** and **non-traditional** joinery using a variety of tools and equipment, including **stationary power equipment** • the relationship between First Peoples culturally modified trees and the sustainable use of wood • **issues** in the sustainable use of wood

BRITISH COLUMBIA
Ministry of Education

Area of Learning: ARTS EDUCATION — Drama — Grade 9

BIG IDEAS

Identity is explored, expressed, and impacted through drama experiences.	Drama provides opportunities to gain insight into perspectives and experiences of people from a variety of times, places, and cultures.	Collaborative drama experiences can build community and nurture relationships with others.	Drama uses a unique sensory language for creating and communicating.

Learning Standards

Curricular Competencies	Content
Students will be able to use creative processes to: **Exploring and creating** • Select and combine dramatic elements and principles to intentionally create a particular mood, effect, and meaning • Create dramatic works both collaboratively and as an individual, using ideas inspired by imagination, inquiry, and **purposeful play** • Explore relationships between identity, place, culture, society, and belonging through dramatic experiences • Demonstrate an understanding and appreciation of personal, social, cultural, historical, and environmental in relation to drama • Take creative risks to experience and express thoughts, emotions, and meaning **Reasoning and reflecting** • Describe, interpret, and evaluate how performers and playwrights use dramatic structures, elements, and techniques to create and communicate ideas • Develop and refine ideas and technical skills to improve the quality of performance pieces • Receive, offer, and apply constructive feedback **Communicating and documenting** • Adapt and apply learned skills, understandings, and processes for use in new contexts and for different purposes and audiences • Compose, interpret, and expand ideas using **symbolism**, imagery, and elements • Revise, refine, analyze, and **document** performance pieces and experiences to enhance presentation in a variety of ways **Connecting and expanding** • Reflect on creative processes to make connections to personal learning and experiences • Demonstrate respect for themselves, others, and the audience • Collaborate through reciprocal relationships during creative processes • Create personally meaningful bodies of artistic works that demonstrate an understanding and appreciation of social, cultural, environmental, and historical contexts • Demonstrate increasingly sophisticated application and/or engagement of curricular content	*Students are expected to know the following:* • drama elements, techniques, and vocabulary, to create mood and convey ideas, including but not limited to: **character**, time, place, plot, tension, mood, focus, contrast, balance • a variety of **drama forms** and **drama conventions** • the roles of performers and audiences in a variety of contexts • traditional and contemporary Aboriginal worldviews and cross-cultural perspectives communicated through storytelling and drama • contributions of innovative artists from a variety of genres, communities, times, and places • personal and social responsibility associated with creating, performing, and responding in drama • the ethics of **cultural appropriation** and plagiarism

BIG IDEAS

Identity is explored, expressed, and impacted through music experiences.	Music provides opportunities to gain insight into perspectives and experiences of people from a variety of times, places, and cultures.	Collaborative music experiences can build community and nurture relationships with others.	Music uses a unique sensory language for creating and communicating.

Learning Standards

Curricular Competencies

Students will be able to use creative processes to:

Exploring and creating

- Perform collaboratively in both solo and ensemble contexts
- Demonstrate an understanding of personal, social, cultural, historical, and environmental contexts through a variety of musical experiences
- Select and combine musical elements and techniques to interpret an idea or define style, creating a particular mood or effect
- Develop appropriate musical vocabulary, skills, and techniques
- Take musical risks to experience self-growth
- Contribute to create processes through collaborative and independent musical study

Reasoning and reflecting

- Describe, interpret, and consider how musicians use techniques, technology, and environments in composition and performance
- Develop, refine, document, and critically appraise ideas, processes, and technical skills to improve the quality of musicianship
- Receive, offer, and apply constructive feedback

Communicating and documenting

- Adapt and apply learned musical skills, understandings, and techniques for use in new contexts and for different purposes and audiences
- Revise, refine, analyze, and **document** musical experiences to enhance learning

Connecting and expanding

- Reflect on musical performance to make connections to personal learning and experiences
- Take musical risks to experience synchronicity among ensemble members and their audience
- Demonstrate respect for themselves, others, and the audience
- Demonstrate increasingly sophisticated application and/or engagement of curricular content

Content

Students are expected to know the following:

- music elements, principles, techniques, vocabulary, **notation**, and symbols to define style and convey ideas, including but not limited to: beat/pulse, **metre**, **duration**, **rhythm**, **tempo**, **pitch**, **timbre**, **dynamics**, **form**, **texture**
- musical interpretation and choices impact performance
- the roles of performers and audiences in a variety of contexts
- traditional and contemporary Aboriginal worldviews and cross-cultural perspectives communicated through song
- contributions of innovative **musicians** and composers from a variety of genres, communities, times, and places
- personal and social responsibility associated with creating, performing, and responding in music
- the ethics of **cultural appropriation** and plagiarism

BRITISH COLUMBIA
Ministry of Education

Area of Learning: ARTS EDUCATION — Visual Arts — Grade 9

BIG IDEAS

Identity is explored, expressed, and impacted through visual arts experiences.	The visual arts provide opportunities to gain insight into perspectives and experiences of people from a variety of times, places, and cultures.	Art experiences can build community and nurture relationships with others.	The visual arts use a unique sensory language for creating and communicating.

Learning Standards

Curricular Competencies

Students will be able to use creative processes to:

Exploring and creating

- Create both collaboratively and as an individual, using ideas inspired by imagination, inquiry, and **purposeful play**
- Explore materials, technologies, processes, and environments by combining and arranging elements, principles, and image design strategies
- Demonstrate an understanding and appreciation of personal, social, cultural, historical, and environmental contexts
- Demonstrate active engagement and discipline in creating works of art and resolving creative challenges
- Explore relationships between identity, place, culture, society, and belonging through artistic experiences
- Select and combine elements and principles of the arts to intentionally create a particular mood or meaning

Reasoning and reflecting

- Describe, interpret, and evaluate how artists use technologies, processes, materials, and environments to create and communicate ideas
- Develop, refine, document, and critically appraise ideas, processes, and technical skills
- Reflect on their art-making process and development as artists

Communicating and documenting

- Create works of art using materials, technologies, and processes for different purposes and audiences
- Compose, interpret, and expand ideas using symbolism, metaphor, and design strategies
- Revise, refine, analyze, and **document** creative works and experiences
- Present or share personal works of art

Connecting and expanding

- Reflect on works of art and creative processes to make connections to personal learning and experiences
- Take creative risks to experience and express thoughts, emotions, and meaning
- Demonstrate respect for themselves, others, and the audience
- Collaborate through reciprocal relationships during the creative process
- Create personally meaningful artistic works that demonstrate an understanding and appreciation of social, cultural, environmental, and historical contexts
- Demonstrate increasingly sophisticated application and/or engagement of curricular content

Content

Students are expected to know the following:

- visual arts elements, principles, and image design strategies to create mood and convey ideas, including but not limited to:
  - elements of design: line, shape, space, texture, colour, form, **value**
  - **principles of design:** pattern, repetition, **balance**, contrast, emphasis, **rhythm**, **movement**, **unity**, variety, **proportion**, **harmony**
  - image design strategies: elaboration, simplification, magnification, reversal, fragmentation, distortion
- personal narrative as a means of representing self-perception and identity in artistic works
- the roles of artists and audiences in a variety of contexts
- traditional and contemporary Aboriginal worldviews and cross-cultural perspectives as communicated through visual arts
- contributions of **innovative** artists from a variety of styles, genres, contexts, and movements
- personal and social responsibility associated with creating, experiencing, and responding to visual art
- the ethics of **cultural appropriation** and plagiarism

BIG IDEAS

Reflecting on our preferences and skills helps us identify the steps we need to take to achieve our career goals.	The value of work in our lives, communities, and society can be viewed from diverse perspectives.	Achieving our learning goals requires effort and perseverance.	Adapting to economic and labour market changes requires flexibility.	Our career paths reflect the personal, community, and educational choices we make.

Learning Standards

Curricular Competencies

Students are expected to be able to do the following:

- Use self-assessment and reflection to develop awareness of their strengths, preferences, and skills
- Question self and others about how individual purposes and passions can support the needs of the local and global community when considering career choices
- Recognize the impact of **personal public identity** in the world of work
- Demonstrate respect, collaboration, and inclusivity in working with others to solve problems
- Recognize and **explore diverse perspectives** on how work contributes to our community and society
- Demonstrate safety skills and appreciate the importance of workplace safety
- Set and achieve realistic learning goals with perseverance and resilience
- Recognize the influence of curriculum choices and co-curricular activities on **career paths**
- Appreciate the value of a network of resources and **mentors** to assist with career exploration
- Question self and others about the role of family expectations and traditions, and of community needs in career choices
- Apply a variety of **research skills** to expand their knowledge of diverse career possibilities and understand **career clusters**
- Explore volunteer and other new learning experiences that stimulate **entrepreneurial** and **innovative** thinking
- Apply decision-making strategies to a life, work, or community problem and adjust the strategies to adapt to new situations

Content

Students are expected to know the following:

Personal Development

- goal-setting strategies
- **self-assessment** for career research
- reflection
- project **management**

Connections to Community

- **local and global needs and opportunities**
- cultural and social awareness
- factors affecting types of jobs in the community
- career value of volunteering

Life and Career Plan

- graduation requirements
- role of mentors, family, community, school, and personal network in decision making
- influence of technology in learning and working
- workplace safety
  - hazard evaluation and control
  - rights and responsibilities of the worker
  - emergency procedures
- role of community, school, personal network, and mentorship in career planning

Area of Learning: ENGLISH LANGUAGE ARTS — Grade 9

BIG IDEAS

Language and **story** can be a source of creativity and joy.	Exploring **stories** and other **texts** helps us understand ourselves and make connections to others and to the world.	People understand **text** differently depending on their worldviews and perspectives.	**Texts** are socially, culturally, and historically constructed.	Questioning what we hear, read, and view contributes to our ability to be educated and engaged citizens.

Learning Standards

Curricular Competencies

*Using oral, written, visual, and digital **texts**, students are expected individually and collaboratively to be able to:*

Comprehend and connect (reading, listening, viewing)

- Access information and ideas for **diverse purposes** and from a **variety of sources** and evaluate their **relevance**, **accuracy**, and **reliability**
- Apply appropriate strategies to comprehend written, oral, and visual **texts**, guide **inquiry**, and **extend thinking**
- Synthesize ideas from a variety of sources to build understanding
- Recognize and appreciate how **different features, forms, and genres of texts** reflect different purposes, audiences, and messages
- **Think critically, creatively, and reflectively** to explore ideas within, between, and beyond **texts**
- Recognize and identify the role of **personal, social, and cultural contexts, values, and perspectives** in **texts**
- Recognize **how language constructs personal, social, and cultural identity**
- Construct meaningful personal connections between self, **text**, and world
- Respond to **text** in **personal, creative, and critical ways**
- Explain **how literary elements, techniques, and devices enhance and shape meaning**
- Recognize an increasing range of **text** structures and how they contribute to meaning
- Recognize and appreciate the role of **story**, narrative, and oral tradition in expressing First Peoples perspectives, values, beliefs, and points of view
- Develop an awareness of the **diversity within and across First Peoples societies** represented in **texts**
- Recognize the influence of place in First Peoples and other Canadian texts
- Create and communicate (writing, speaking, representing)
- **Exchange ideas and viewpoints** to build shared understanding and extend thinking
- Use writing and design processes to plan, develop, and create engaging and meaningful **literary and informational texts** for a variety of purposes and **audiences**
- Assess and **refine texts** to improve their clarity, effectiveness, and impact according to purpose, **audience**, and message
- Use an increasing repertoire of conventions of Canadian **spelling**, grammar, and punctuation
- Use and experiment with **oral storytelling processes**
- Select and use appropriate features, forms, and genres according to audience, purpose, and message
- Transform ideas and information to create original **texts**
- Express an opinion and support it with credible evidence

Content

Students are expected to know the following:

Story/text

- **forms, functions,** and **genres** of **text**
- **text features**
- **literary elements**
- **literary devices**
- **elements of visual/graphic texts**

Strategies and processes

- **reading strategies**
- **oral language strategies**
- **metacognitive strategies**
- **writing processes**

Language features, structures, and conventions

- **features of oral language**
- **multi-paragraphing**
- **language change**
- **elements of style**
- **usage**
- **syntax and sentence fluency**
- **conventions**
- **presentation techniques**
- **rhetorical devices**
- connotation and denotation

BRITISH COLUMBIA
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Area of Learning: CORE FRENCH — Grade 9

BIG IDEAS

Listening and viewing with intent strengthens our understanding and acquisition of French.	We can have meaningful conversations about things that are important to us in French.	**Stories** give us unique ways to interpret and share knowledge, thoughts, and feelings.	Francophone **creative works** are an expression of Francophone culture.	Acquiring French provides opportunities to explore our own cultural identity from a new perspective.

Learning Standards

Curricular Competencies	Content
Students are expected to be able to do the following: • **Recognize the relationship between French letter patterns and pronunciation** • **Derive meaning** from a variety of **texts** • Use a growing variety of **strategies** to increase understanding • **Narrate stories** • **Recognize the importance of story in personal, family, and community identity** • **Seek clarification and provide verification of meaning through a variety of strategies** • **Participate in short and simple conversations** • Exchange ideas and information using complete sentences, orally and in writing**:** – ask and respond to questions on familiar topics – describe **people**, objects, places, and personal interests – compare and contrast characteristics of people, objects, places, and personal interests – describe sequences of events – express simple needs in familiar situations – express opinions on familiar topics • Describe cultural practices, traditions, and attitudes in various Francophone regions and describe their role in cultural identity • Recognize how Francophone culture is expressed through **creative works** • **Describe similarities and differences** between their own cultural practices and traditions and those of Francophone communities in various regions • Engage with **Francophone communities, people, or experiences**	*Students are expected to know the following:* • **French letter patterns** • an increasing range of commonly used vocabulary and sentence structures for conveying meaning: – asking and responding to **various types of questions** – describing people, objects, places, and personal interests – **comparing and contrasting** – **sequencing events** – expressing simple needs – expressing opinions – **describing cultural aspects of communities** • **past, present, and future timeframes** • **elements** of common types of **texts** • **common elements** of **stories** • **cultural practices, traditions, and attitudes** in various Francophone regions

BRITISH COLUMBIA
Ministry of Education

Area of Learning: MATHEMATICS — Grade 9

BIG IDEAS

The principles and processes underlying operations with **numbers** apply equally to algebraic situations and can be described and analyzed.	Computational fluency and flexibility with numbers extend to operations with rational numbers.	**Continuous linear relationships** can be identified and represented in many connected ways to identify regularities and make generalizations.	Similar shapes have **proportional relationships** that can be described, measured, and compared.	Analyzing the validity, reliability, and representation of **data** enables us to compare and interpret.

Learning Standards

Curricular Competencies

Students are expected to do the following:

Reasoning and analyzing

- Use **logic and patterns** to solve puzzles and play games
- Use **reasoning and logic** to explore, analyze, and apply mathematical ideas
- **Estimate reasonably**
- Demonstrate and **apply** mental math strategies
- Use tools or technology to explore and create patterns and relationships, and test conjectures
- **Model** mathematics in contextualized experiences

Understanding and solving

- Apply **multiple strategies** to solve problems in both abstract and contextualized situations
- Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving
- Visualize to explore mathematical concepts
- Engage in problem-solving experiences that are **connected** to place, story, cultural practices, and perspectives relevant to local First Peoples communities, the local community, and other cultures

Communicating and representing

- Use mathematical vocabulary and language to contribute to mathematical discussions
- **Explain and justify** mathematical ideas and decisions
- **Communicate** mathematical thinking in many ways
- Represent mathematical ideas in concrete, pictorial, and symbolic forms

Connecting and reflecting

- **Reflect** on mathematical thinking
- Connect mathematical concepts to each other and to **other areas and personal interests**
- Use mathematical arguments to support **personal choices**
- **Incorporate First Peoples** worldviews and perspectives to **make connections** to mathematical concepts

Content

Students are expected to know the following:

- **operations** with rational numbers (addition, subtraction, multiplication, division, and order of operations)
- **exponents** and exponent laws with whole-number exponents
- operations with **polynomials**, of degree less than or equal to 2
- **two-variable linear relations**, using graphing, interpolation, and extrapolation
- **multi-step** one-variable linear equations
- spatial **proportional reasoning**
- **statistics** in society
- **financial literacy** — simple budgets and transactions

BIG IDEAS

Daily participation in different types of physical activity influences our physical literacy and personal health and fitness goals.	Lifelong participation in physical activity has many benefits and is an essential part of a healthy lifestyle.	Healthy choices influence our physical, emotional, and mental well-being.	Healthy relationships can help us lead rewarding and fulfilling lives.	Advocating for the health and well-being of others connects us to our community.

Learning Standards

Curricular Competencies

Students are expected to be able to do the following:

Physical literacy

- Develop, refine, and apply fundamental movement skills in a variety of physical activities and environments
- Develop and apply a variety of movement concepts and strategies in different physical activities
- Apply methods of monitoring and adjusting exertion levels in physical activity
- Develop and demonstrate safety, fair play, and leadership in physical activities
- Identify and describe preferred types of physical activity

Healthy and active living

- Participate daily in physical activity designed to enhance and maintain health components of fitness
- Describe how students' participation in physical activities at school, at home, and in the community can influence their health and fitness
- Propose healthy choices that support lifelong health and well-being
- Identify factors that influence health messages from a variety of sources, and analyze their influence on behaviour
- Identify and apply strategies to pursue personal healthy-living goals
- Reflect on outcomes of personal healthy-living goals and assess strategies used

Content

Students are expected to know the following:

- proper technique for fundamental movement skills including **non-locomotor**, **locomotor**, and **manipulative** skills
- **movement concepts** and **strategies**
- ways to **monitor and adjust physical exertion levels**
- how to participate in different types of physical activities, including **individual and dual activities**, **rhythmic activities**, and **games**
- training principles to enhance personal fitness levels, including the **FITT principle**, **SAID principle**, and **specificity**
- **effects of different types of physical activity on the body**
- healthy sexual decision making
- potential short- and long-term consequences of health decisions, including those involving nutrition, protection from sexually transmitted infections, and sleep routines
- **sources of health information**
- basic principles for **responding to emergencies**
- **strategies to protect themselves and others** from potential abuse, exploitation, and harm in a variety of settings
- consequences of bullying, stereotyping, and discrimination
- physical, emotional, and social aspects of **psychoactive substance** use and potentially addictive behaviours
- **signs and symptoms of stress, anxiety, and depression**
- influences of **physical**, **emotional**, and **social** changes on identities and relationships

(continued…)

Learning Standards (continued)

Curricular Competencies	Content
Social and community health • Propose strategies for avoiding and/or responding to potentially unsafe, abusive, or exploitive situations • Analyze strategies for responding to discrimination, stereotyping, and bullying • Propose strategies for developing and maintaining healthy relationships • Create strategies for promoting the health and well-being of the school and community **Mental well-being** • Analyze strategies for promoting mental well-being, for self and others • Assess and evaluate strategies for managing problems related to mental well-being and substance use, for others • Create and evaluate strategies for managing physical, emotional, and social changes during puberty and adolescence • Explore and describe factors that shape personal identities, including social and cultural factors	

BIG IDEAS

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

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** **(continued…)**

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**	

BIG IDEAS

Emerging ideas and ideologies profoundly influence societies and events.	The physical environment influences the nature of political, social, and economic change.	Disparities in power alter the balance of relationships between individuals and between societies.	Collective identity is constructed and can change over time.

Learning Standards

Curricular Competencies	Content
Students are expected to be able to do the following: • Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions • Assess the significance of people, places, events, or developments, and compare varying perspectives on their historical significance at particular times and places, and from group to group (significance) • Assess the justification for competing historical accounts after investigating points of contention, reliability of sources, and adequacy of evidence (evidence) • Compare and contrast continuities and changes for different groups at the same time period (continuity and change) • Assess how prevailing conditions and the actions of individuals or groups affect events, decisions, or developments (cause and consequence) • Explain and infer different perspectives on past or present people, places, issues, or events by considering prevailing norms, values, worldviews, and beliefs (perspective) • Recognize implicit and explicit ethical judgments in a variety of sources (ethical judgment) • Make reasoned ethical judgments about actions in the past and present, and determine appropriate ways to remember and respond (ethical judgment)	*Students are expected to know the following:* • political, social, economic, and technological revolutions • imperialism and colonialism, and their continuing effects on indigenous peoples in Canada and around the world • global demographic shifts, including patterns of migration and population growth • nationalism and the development of modern nation-states, including Canada • local, regional, and global conflicts • discriminatory policies and injustices in Canada and the world, such as the Head Tax, the *Komagata Maru* incident, residential schools, and World War I internment • physiographic features and natural resources in Canada