

Curriculum connections BC

Sciences 7

Big Idea : Earth and its climate have changed over geological time.

Content:

evidence of climate change :

- change in climate affects the interconnectedness of plants and animals, and their local environment (e.g. changes to harvesting dates, changes to schedules due to early/late ripening and runs, lowered water levels in creeks, rivers and lakes, change in humidity impacts the ability to preserve salmon, etc.
- over geological time and the recent impacts of humans(e.g. humans are capable of changing Earth's landscape, climate, and systems; efficacy of sustainable practices)
- physical records (e.g. ice flow data, fossil record, etc.)
- local First Peoples knowledge of climate change (e.g. oral history, change in traditional practice (e.g., the timing of harvest has been impacted by climate change), etc.

Competencies:

- Construct and use a range of methods to represent patterns or relationships in data, including tables, graphs, keys, models, and digital technologies as appropriate
- Demonstrate an awareness of assumptions and bias in their own work and secondary sources
- 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
- Transfer and apply learning to new situations
- 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.

Social Studies 7

Big Idea : **Geographic conditions shaped the emergence of civilizations.**

Content:

human responses to particular geographic challenges and opportunities, including climates, landforms, and natural resources

Competencies:

- Use Social Studies inquiry processes and skills to — ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions
- Assess the credibility of multiple sources and the adequacy of evidence used to justify conclusions (evidence)

Social Studies 8

Big Idea : Human and environmental factors shape changes in population and living standards

Content:

changes in population and living standards (e.g. forced and unforced migration and movement of people, diseases and health, urbanization and the effect of expanding communities, environmental impact (e.g., resource and land use))

Competencies:

- Use Social Studies inquiry processes and skills to — ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions
- Assess the credibility of multiple sources and the adequacy of evidence used to justify conclusions (evidence)
- Determine which causes most influenced particular decisions, actions, or events, and assess their short-and long-term consequences (cause and consequence)

Sciences 9

Big Idea : The biosphere, geosphere, hydrosphere, and atmosphere are interconnected, as matter cycles and energy flows through them.

Content:

- matter cycles within biotic and abiotic components of ecosystems:
 - e.g., water, nitrogen, carbon, phosphorous, etc.
 - human impacts on sources and sinks (e.g., climate change, deforestation, agriculture, etc.)
 - bioaccumulation and biomagnification
- sustainability of systems:
 - a system's approach to sustainability sees all matter and energy as interconnected and existing in dynamic equilibrium (e.g., carbon as a key factor in climate change, greenhouse effect, water cycle, etc.)
- First Peoples knowledge of interconnectedness
 - everything is connected, from local to global; First Peoples perspectives on interconnectedness and sustainability.

Competencies:

- Seek and analyze patterns, trends, and connections in data, including describing relationships between variables (dependent and independent) and identifying inconsistencies
- Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources
- 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
- Critically analyze the validity of information in secondary sources and evaluate the approaches used to solve problems
- 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 and perspectives of place.
- Contribute to finding solutions to problems at a local and/or global level through inquiry
- 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

Social studies 9

Big Idea : The physical environment influences the nature of political, social, and economic change.

Content:

physiographic features of Canada and geological processes

- connections between Canada's natural resources and major economic activities
- Compare and contrast physical features and natural resources in different regions of Canada
- Role-play negotiations between a wide range of stakeholders involved in the decision to build a new mine or oil pipeline
- What effect has the physical geography of Canada had on Canadian and regional identity?
- What perspectives do different groups (e.g., environmental groups, people employed in the forest industry, First Peoples, urban and rural populations) have on the use of natural resources?

Competencies:

- Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions
- Make reasoned ethical judgments about actions in the past and present, and determine appropriate ways to remember and respond (ethical judgment)

Sciences 10

Big Idea :

Energy is conserved, and its transformation can affect living things and the environment.

Content:

- practical applications and implications of chemical processes , including First Peoples knowledge.
 - semiconductors, resource extraction (e.g., ore, fracking), pulp and paper chemistry, food chemistry, corrosion/prevention, tanning, traditional medicines, phytochemistry, pharmaceuticals, environmental remediation, water quality, oil spill cleanup
- nuclear energy
 - positive and negative impacts, including environmental, health, economic
- local and global impacts of energy transformations
 - pollution, habitat destruction, carbon dioxide output
- mechanisms for the diversity of life:
 - artificial selection in agriculture (e.g., monoculture, polyculture, food sustainability)

Competencies:

- 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
- Analyze cause-and-effect relationships
- Demonstrate an awareness of assumptions, question information given, and identify bias in their own work and secondary sources
- 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
- 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
- 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

Social Studies 10

Big idea:The development of political institutions is influenced by economic, social, ideological, and geographic factors.

Content:

- environmental, political, and economic policies:
 - environmental issues, including climate change, renewable energy, overconsumption, water quality, food security, conservation
 - stakeholders (e.g., First Peoples; industry and corporate leaders; local citizens; grassroots movements; special interest groups, including environmental organizations)
 - other considerations in policy development, including cultural, societal, spiritual, land use, environmental social welfare programs (e.g., health care, education, basic income)

- national programs and projects (e.g. national climate strategy, including carbon pricing and ending of coal-fired electricity generation)

Competencies:

- Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas and data; and communicate findings and decisions
- Assess the justification for competing accounts after investigating points of contention, reliability of sources, and adequacy of evidence, including data (evidence)

Entrepreneurship and marketing 10

Big idea: Social, ethical, and sustainability considerations impact design and decision making.

Content:

- ethical marketing strategies

Competencies:

- Critically analyze and prioritize competing factors (social, ethical, and sustainable) to meet community needs for preferred futures.
- Evaluate a variety of materials for effective use and potential for reuse, recycling, and biodegradability
- Critically evaluate the success of the product, and explain how it makes a contribution to people and/or the environment
- Evaluate impacts (personal, social, and environmental) including unintended negative consequences, of choices made about technology use
- Evaluate the influences of land, natural resources, and culture on the development and use of tools and technologies

Culinary arts & Food studies 10

Big idea: Social, ethical, and sustainability considerations impact the culinary arts

Content:

- First Peoples food protocols, including land stewardship, harvesting/gathering, food preparation and/or preservation, ways of celebrating, and cultural ownership
- food products available locally via agriculture, fishing, and foraging, and their culinary properties

Competencies:

- Explore the impacts of culinary decisions on social, ethical, and sustainability considerations
- Evaluate the influences of land, natural resources, and culture on the development and use of culinary ingredients, tools, and technologies

Family and Society 10

Big idea: Social, ethical, and sustainability considerations impact service design for individuals, families, and groups.

Competencies:

- Analyze competing factors (social, ethical, and sustainable) to meet individual, family, and community needs for preferred futures.
- Evaluate the influences of social, cultural, and environmental (for example: land, natural resources) conditions on the development and use of tools and technologies

Chemistry 11

Content:

- green chemistry
 - development of sustainable processes and technologies that reduce negative impacts on the environment (e.g., reducing toxicity, designing benign solvents, increasing energy efficiency)

Competencies:

- 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
- Assess risks in the context of personal safety and social responsibility
- 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
- 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

Earth Sciences 11

Big idea: Earth materials are changed as they cycle through the geosphere and are used as resources, with economic and environmental implications.

Content:

- economic and environmental implications of geologic resources within B.C. and globally
 - economic feasibility (e.g., price, concentration, accessibility, environmental concerns)
 - exploration methods (e.g., use of geochemical and geophysical data, field work, remote sensing, mapping, drilling)
 - extraction methods (e.g., open-pit versus underground mining, fracking of oil and gas reservoirs, methods of concentrating and refining ore minerals and fossil fuels)
 - site remediation (e.g., government regulations, failed tailings ponds, acid rock drainage, land reclamation)
- evidence of climate change
 - both historical and recent (i.e., the last 100 years) climate change (e.g., ice core data, deep sea sediments, First Peoples knowledge)
- First Peoples knowledge of climate change and interconnectedness as related to environmental systems

- First Peoples knowledge and perspectives of water resources and processes
- effects of climate change (for example, ocean acidification, changes to ocean currents, loss of glaciers, rising sea levels)

Competencies:

- 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
- 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

Environmental Sciences 11

Big idea: Human practices affect the sustainability of ecosystems.

Humans can play a role in stewardship and restoration of ecosystems.

Content:

- First Peoples knowledge and other traditional ecological knowledge in sustaining biodiversity (e.g. agriculture, ethnobotany, forestry, fisheries, mining, energy, controlled burning, harvesting cycles)
- benefits of ecosystem services (e.g. water purification, pollination, climate regulation, medicines, food production, waste management)
- human actions and their impact on ecosystem integrity (e.g. harvesting, resource extraction and consumption, population growth, urbanization, habitat loss and fragmentation, climate change, pollution, introduced species, invasive species, forest fires)
- resource stewardship (e.g. sustainable use of, and care for, local resources (e.g., school garden, shoreline cleanup, citizen science projects))
- restoration practices
 - the process of renewing and recovering a degraded, damaged, or destroyed ecosystem (e.g., riparian zone recovery, invasive species removal, native species planting, ecological engineering, dam removal, hatcheries, wildlife, forestry and fisheries management)

Competencies:

- 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

-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

Science for Citizens 11

Big idea: Scientific understanding enables humans to respond and adapt to changes locally and globally.

Content:

- human impact on Earth's systems:
 - natural resources
 - including availability (e.g., food, water, energy, minerals) and responsible development and use
 - effects of climate change
 - impact on food production
 - impact on climate (e.g., desertification, changing range of plants and animals)
 - impact on weather
 - sea level rise (e.g., infrastructure changes in coastal communities)
 - ocean acidification
- actions and decisions affecting the local and global environment, including those of First Peoples
 - ethical, cultural, social, economic, environmental, and political implications
 - waste recycling and disposal including limitations of recycling
 - agriculture/aquaculture practices and processes (e.g., hydroponics, food crops, feed crops, fuel crops, animal husbandry, fish farms, new technologies, use of chemicals, environmental impacts)
 - energy generation, use, and efficiency (e.g., production, economics, environmental impacts)
 - sustainability of resources (e.g., impacts of personal choices, product life cycles)

Competencies:

- 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
- 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

Environmental Science 12

Big idea:

- Human actions affect the quality of water and its ability to sustain life
- Human activities cause changes in the global climate system.
- Sustainable land use is essential to meet the needs of a growing population.
- Living sustainably supports the well-being of self, community, and Earth.

Content:

- changes to climate systems
 - sinks and sources of greenhouse gases, snow and ice coverage, land surface coverage, solar radiation, energy balance, ocean temperatures, sea levels
- impacts of global warming
 - increase in extreme weather events, flooding, desertification, ocean acidification, permafrost melting, drought, wildfires, hurricanes, migratory changes, human health, food security, traditional ways of being and doing
- personal choices and sustainable living
 - diet (e.g., 100-mile diet, organic farming, community gardens, reducing meat consumption), sustainable building products, reduce household energy use, consumerism (reduce, reuse, repurpose, recycle, upcycle), conserve water, alternate transportation methods, traditional ecological knowledge (TEK)
- global environmental ethics, policy, and law
 - trade agreements, wildlife trafficking laws, Kyoto Agreement, fishing and hunting licences, traditional ecological knowledge (TEK), United Nations Declaration on the Rights of Indigenous Peoples, species at risk, Canadian laws

Competencies:

- 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
- 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

Physical Geography 12

Big idea:

- Interactions between human activities and the atmosphere affect local and global weather and climate.

Content:

- natural disasters and their effects on human and natural systems
- climate, weather, and interactions between humans and the atmosphere
- natural resources and sustainability

Competencies:

- Use geographic inquiry processes and geographic literacy skills to ask questions; gather, interpret, and analyze data and ideas from a variety of sources and spatial/temporal scales; and communicate findings and decisions (evidence and interpretation)
- Identify and assess how human and environmental factors and events influence each other (interactions and associations)

Political Studies 12

Big idea: Understanding how political decisions are made is critical to being an informed and engaged citizen.

Content:

- issues in local, regional, national, and international politics
- Sample topics: economic development, sustainability, conflict resolution

Competencies:

- Explain and infer different perspectives on political issues, decisions, or developments (perspective)

Comparatives Cultures 12

Big idea: Geographic and environmental factors influenced the development of agriculture, trade, and increasingly complex cultures.

Content:

- interactions between cultures and the natural environment
- climate and native plants and animals
 - natural resources and economic development
 - human adaptation to the physical environment:
 - Polynesian wayfinders' use of ocean currents
 - Cree seasonal hunting practices
 - fish farming in B.C.
 - transportation issues in local urban development
 - degrees of separation between the physical environment and cultural world:
 - San people's relationship to water
 - Canadian First Peoples community water supplies
 - protection of waterways in central/northern B.C.
 - local urban life and bottled water usage
 - interdependence of cultural identity and the physical environment:
 - Yanomamo group identity and hunting practices in the Amazon
 - Newfoundlanders, fishing, and identity

Social Justice 12

Big idea: Social justice issues are interconnected.

Content:

- Social justice issues
- Sample topics: environmental and ecological justice

Competencies:

- Assess the justification for competing accounts after investigating points of contention, reliability of sources, and adequacy of evidence, including data (evidence)

Urban Studies 12

Big idea: Decision making in urban and regional planning requires balancing political, economic, social, and environmental factors.

Content:

- urban planning and urban design

Sample topics: livability and sustainability

Competencies:

-Explain and identify the forces that shape opinions and decision making on current issues related to urban studies (perspective)