

# SOW

Small family farmers feed the world

# Much Love



## Development & Peace SOW MUCH LOVE Student Activity Guide (Fall 2014) Alberta Curriculum Connections – Grade 7 – 9

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### GRADE 7

#### RELIGIOUS EDUCATION

##### Key concepts

##### Unit 4

- each of us has gifts that are needed in order for creation to unfold according to God's plan
- God wants human beings to be intimately involved in caring for creation
- all creation is good; we are stewards of creation
- the environmental crisis is as a result of our unwillingness to live justly
- we must challenge anything that undermines our dignity or the dignity of others

##### Unit 5

- Jesus challenges the basic power structures within society and our role within those structures

##### Unit 6

- The kingdom of God is not a place. It is a way of living. When we live the way God wants us to live, we are living in the kingdom of God.
- our culture often encourages us to live in ways that are opposed to God's way
- happiness is found in developing loving relationships
- parables have two levels of meaning: literal and figurative
- the kingdom of God is not about competition. It is about unity and sharing in joy

#### SCIENCE

**Focusing Questions:** How do human activities affect ecosystems? What methods can we use to observe and monitor changes in ecosystems, and assess the impacts of our actions?

##### **Outcomes for Science, Technology and Society (STS) and Knowledge**

##### *Students will:*

1. Investigate and describe relationships between humans and their environments, and identify related issues and scientific questions
  - illustrate how life-supporting environments meet the needs of living things for nutrients, energy sources, moisture, suitable habitat, and exchange of gases
  - describe examples of interaction and interdependency within an ecosystem (*e.g., identify examples of dependency between species, and describe adaptations involved; identify changing relationships between humans and their environments, over time and in different cultures—as, for example, in aboriginal cultures*)

- identify examples of human impacts on ecosystems, and investigate and analyze the link between these impacts and the human wants and needs that give rise to them (*e.g., identify impacts of the use of plants and animals as sources of food, fibre and other materials; identify potential impacts of waste products on environments*)
  - analyze personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions
2. Trace and interpret the flow of energy and materials within an ecosystem
- describe the process of cycling carbon and water through an ecosystem
  - identify mechanisms by which pollutants enter and move through the environment, and can become concentrated in some organisms (*e.g., acid rain, mercury, PCBs, DDT*)
3. Monitor a local environment, and assess the impacts of environmental factors on the growth, health and reproduction of organisms in that environment
- investigate a variety of habitats, and describe and interpret distribution patterns of living things found in those habitats (*e.g., describe and compare two areas within the school grounds—a relatively undisturbed site and a site that has been affected by heavy use; describe and compare a wetland and a dryland area in a local parkland*)
  - investigate and interpret evidence of interaction and change (*e.g., population fluctuations, changes in weather, availability of food or introduction of new species into an ecosystem*)
  - identify signs of ecological succession in local ecosystems (*e.g., emergence of fireweed in recently cut forest areas, replacement of poplar by spruce in maturing forests, reestablishment of native plants on unused farmland*)
4. Describe the relationships among knowledge, decisions and actions in maintaining life-supporting environments
- identify intended and unintended consequences of human activities within local and global environments (*e.g., changes resulting from habitat loss, pest control or from introduction of new species; changes leading to species extinction*)
  - describe and interpret examples of scientific investigations that serve to inform environmental decision making
  - illustrate, through examples, the limits of scientific and technological knowledge in making decisions about life-supporting environments (*e.g., identify limits in scientific knowledge of the impact of changing land use on individual species; describe examples in which aboriginal knowledge—based on long-term observation—provides an alternative source of understanding*)
  - analyze a local environmental issue or problem based on evidence from a variety of sources, and identify possible actions and consequences (*e.g., analyze a local issue on the control of the beaver population in a nearby wetland, and identify possible consequences*)

**Skill Outcomes** (focus on the use of research and inquiry skills to inform the decision-making process)

Initiating and Planning

*Students will:*

Ask questions about the relationships between and among observable variables, and plan investigations to address those questions

- state a prediction and a hypothesis based on background information or an observed pattern of events (*e.g., predict changes in the population of an organism if factor X were increased, or if a species were introduced or removed from the ecosystem; propose factors that will affect the population of a given animal species*)

Performing and Recording

*Students will:*

Conduct investigations into the relationships between and among observations, and gather and record qualitative and quantitative data

- research information relevant to a given problem or issue
- select and integrate information from various print and electronic sources or from several parts of the same source (*e.g., compile information on a global environmental issue from books, magazines, pamphlets and Internet sites, as well as from conversations with experts*)

- use tools and apparatus effectively and accurately for collecting data (e.g., measure factors, such as temperature, moisture, light, shelter and potential sources of food, that might affect the survival and distribution of different organisms within a local environment)
- estimate measurements (e.g., estimate the population of a given plant in a one square metre quadrat, and use this figure to estimate the population within an area of 100 square metres)

Communication and Teamwork

*Students will:*

Work collaboratively on problems; and use appropriate language and formats to communicate ideas, procedures and results

- communicate questions, ideas, intentions, plans and results, using lists, notes in point form, sentences, data tables, graphs, drawings, oral language and other means (e.g., present findings from an analysis of a local issue, such as the control of the beaver population in a nearby wetland)
- evaluate individual and group processes used in planning, problem solving, decision making and completing a task
- defend a given position on an issue, based on their findings (e.g., make a case for or against on an issue, such as: “Should a natural gas plant be located near a farming community?”)

## **Unit B: Plants for Food and Fibre (Science and Technology Emphasis)**

**Focusing Questions:** How do we produce useful plant products? What techniques do we use, what knowledge are these techniques based on, and how do we apply these techniques in a sustainable way?

### **Outcomes for Science, Technology and Society (STS) and Knowledge**

*Students will:*

1. Investigate plant uses; and identify links among needs, technologies, products and impacts
  - illustrate and explain the essential role of plants within the environment
  - describe human uses of plants as sources of food and raw materials, and give examples of other uses (e.g., identify uses of plants as herbs or medicines; describe plant products, and identify plant sources on which they depend)
  - investigate trends in land use from natural environments (e.g., forests, grasslands) to managed environments (e.g., farms, gardens, greenhouses) and describe changes
  - investigate practical problems and issues in maintaining productive plants within sustainable environments, and identify questions for further study (e.g., investigate the long-term effects of irrigation practices or fertilizer use)
2. Investigate life processes and structures of plants, and interpret related characteristics and needs of plants in a local environment
  - investigate and interpret variations in needs of different plants and their tolerance for different growing conditions (e.g., tolerance for drought, soil salinization or short growing seasons)
  - describe life cycles of seed plants, and identify example methods used to ensure their germination, growth and reproduction (e.g., describe propagation of plants from seeds and vegetative techniques, such as cuttings; conduct a germination study; describe the use of beehives to support pollination)
3. Analyze plant environments, and identify impacts of specific factors and controls
  - describe methods used to increase yields, through modifying the environment and by creating artificial environments (e.g., describe processes used in raising bedding plants or in vegetable production through hydroponics)
  - identify practices that may enhance or degrade soils in particular applications
  - describe and interpret the consequences of using herbicides, pesticides and biological controls in agriculture and forestry
4. Identify and interpret relationships among human needs, technologies, environments, and the culture and use of living things as sources of food and fibre
  - investigate and describe the development of plant varieties through selective breeding, and identify related needs and problems (e.g., identify needs leading to the development of new grain varieties; identify problems arising from the development of new plant varieties that require extensive fertilization)

- investigate and identify intended and unintended consequences of environmental management practices (e.g., identify problems arising from monocultural land use in agricultural and forestry practices, such as susceptibility to insect infestation or loss of diversity)
- identify the effects of different practices on the sustainability of agriculture and environmental resources (e.g., identify positive and negative effects of using chemical fertilizers and pesticides and of using organic farming practices)

**Skill Outcomes** (focus on problem solving)

Initiating and Planning

*Students will:*

Ask questions about the relationships between and among observable variables, and plan investigations to address those questions

- identify questions to investigate arising from practical problems and issues (e.g., *What methods will help limit moisture loss from plants and soil? What reduction in the loss of soil moisture can be achieved through the use of a plastic ground sheet or through the use of a plastic canopy?*)
- rephrase questions in a testable form, and clearly define practical problems (e.g., *rephrase a broad question, such as: “What amount of fertilizer is best?” to become “What effect will the application of different quantities of fertilizer X have on the growth of plant Y and its environment?”*)
- state a prediction and a hypothesis based on background information or an observed pattern of events (e.g., *predict the effect of a particular plant treatment*)

**Attitude Outcomes**

Mutual Respect

*Students will be encouraged to:*

Appreciate that scientific understanding evolves from the interaction of ideas involving people with different views and backgrounds (e.g., *show awareness of the diversity of agricultural practices used by societies around the world at different times through history; appreciate the role of Aboriginal knowledge in identifying useful herbs and medicines*)

Scientific Inquiry

*Students will be encouraged to:*

Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., *consider the nutrient content of food they eat and the potential presence of residues; consider observations and ideas from a number of sources, during investigations and before drawing conclusions*)

Stewardship

*Students will be encouraged to:*

Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment (e.g., *voluntarily care for plants in a school or home environment; assume personal responsibility for their impact on the environment; recognize that their consumption habits have environmental consequences*)

# GRADE 8

## RELIGIOUS EDUCATION

### Outcomes

#### Unit 1

- define solidarity and explain how the nature of God as Trinity calls us to live in solidarity with each other

#### Unit 5

- explain the role of conscience in answering the question “What is right? What is wrong?”
- demonstrate an understanding of social sin and individual participation in it
- articulate the value

#### Unit 7.

- express a growing sense of responsibility for stewardship of the earth
- describe Jesus’ response to violence and explain its relevance to our lives
- illustrate the relationship between poverty and excess consumption
- understand the Golden Rule and apply it to a decision-making situation

### Key concepts

#### Unit 7

- to make peace, one must seek justice for all – especially the weak and the powerless
- although we may not be able to eliminate injustice in the world, we can live justly in our own relationships

## SCIENCE

### Unit B: Cells and Systems (Nature of Science Emphasis)

**Focusing Questions:** How can we make sense of the vast diversity of living things? What do living things have in common—from the smallest to the largest—and what variations do we find in the structure and function of living things?

### Outcomes for Science, Technology and Society (STS) and Knowledge

*Students will:*

4. Describe areas of scientific investigation leading to new knowledge about body systems and to new medical applications

- identify examples of research into functions and dysfunctions of human cells, organs or body systems

### Skill Outcomes (focus on scientific inquiry)

Initiating and Planning

*Students will:*

Ask questions about the relationships between and among observable variables, and plan investigations to address those questions

- identify questions to investigate (*e.g., identify questions that arise from their own observations of plant and animal diversity*)
- rephrase questions in a testable form (*e.g., rephrase a question, such as: “Why this structure?” to become questions, such as: “How is this structure used by the organism?”, “How would the organism be affected if this structure were absent or did not function?” or “What similar structures do we find in other organisms?”*)

### Unit E: Freshwater and Saltwater Systems (Social and Environmental Emphasis)



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**Focusing Questions:** How do water, land and climate interact? What are the characteristics of freshwater and saltwater systems, and how do they affect living things, including humans?

**Outcomes for Science, Technology and Society (STS) and Knowledge**

*Students will:*

1. Describe the distribution and characteristics of water in local and global environments, and identify the significance of water supply and quality to the needs of humans and other living things
  - describe, in general terms, the distribution of water in Alberta, Canada and the world; and interpret information about water characteristics (*e.g., identify glaciers, snow, polar icecaps, ground water and oceans as components of Earth's water; interpret graphical information on the availability of potable water*)
  - identify major factors used in determining if water is potable, and describe and demonstrate tests of water quality (*e.g., investigate and describe the physical characteristics of a sample of water, such as clarity, salinity and hardness; investigate biological tests*)
2. Investigate and interpret linkages among landforms, water and climate
  - describe the processes of erosion and deposition resulting from wave action and water flow, by:
    - identifying dissolved solids and sediment loads, and identifying sources and endpoints for these materials
4. Analyze human impacts on aquatic systems; and identify the roles of science and technology in addressing related questions, problems and issues
  - analyze human water uses, and identify the nature and scope of impacts resulting from different uses (*e.g., identify pollutants in ground water and surface water systems resulting from domestic and industrial use; analyze the effects of agriculture and forestry practices on stream flow and water quality*)
  - identify current practices and technologies that affect water quality, evaluate environmental costs and benefits, and identify and evaluate alternatives (*e.g., research and analyze alternatives for ensuring safe supplies of potable water; research, analyze and debate alternatives for a specific water quality issue, such as the location and design of a landfill, the protection of a natural waterway, the use of secondary and tertiary wastewater treatment, the salinization of soils due to irrigation, the eutrophication of ponds and streams due to excess use of phosphates in fertilizers and detergents, or a proposal to export water resources*)
  - provide examples of problems that cannot be solved using scientific and technological knowledge alone (*e.g., the need to prevent pollutants from entering aquatic environments,*)

**Attitude Outcomes**

Interest in Science

*Students will be encouraged to:*

Show interest in science-related questions and issues, and pursue personal interests and career possibilities within science-related fields (*e.g., select and explore media on topics related to the diversity of living things and the maintenance of health; express interest in science-related/ technology-related careers that contribute to the welfare of living things*)

Mutual Respect

*Students will be encouraged to:*

Appreciate that scientific understanding evolves from the interaction of ideas involving people with different views and backgrounds (*e.g., recognize that a wide range of people working in different fields have contributed to scientific and medical knowledge*)

Stewardship

*Students will be encouraged to:*

Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment (*e.g., show interest in the health of individuals in their family and community; assume personal responsibility for the impact of their actions on the health of others and for the welfare and survival of other living things*)



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## **HEALTH**

### **STRAND: LIFE LEARNING CHOICES**

#### **LEARNING STRATEGIES**

L-8.3 identify components of ethical decision making, and apply these concepts to personal decision making

## **GRADE 9**

### **RELIGIOUS EDUCATION**

#### **Outcomes**

##### Unit 6

- demonstrate an understanding of how responding with compassion leads to peace
- identify social justice issues
- use the preferential option for the poor as the criterion for analyzing social injustice issues
- define justice in terms of respect for the integrity and balance of creation
- evaluate their lifestyle in terms of its ecological impact

#### **Key concepts**

##### Unit 1

- our relationship with Jesus calls us to be of the “same mind” with Jesus, looking out for the interests and well-being of others with compassion and love

##### Unit 5

- The dignity of the human person requires the pursuit of the common good. Everyone should be concerned to create and support institutions that improve the conditions of human life

##### Unit 6

- Christian justice is rooted in love. It is based not only on fairness, but also on mercy and compassion
- Compassion is the ability to feel and act with and for another. It is not pity.
- As Christians we are called to see that a wide variety of issues are issues of justice: for example poverty, unjust labour practices, immigration, refugees, ecology, unemployment, land use, etc
- The earth is ultimately a common heritage, the fruits of which are for the benefit of all

##### Unit 7

- We believe in the right to property – however, it must always be held in check by the common good
- All people have a right to what is necessary to fulfill their basic human needs
- When we own something we are merely stewards. Each of us must use the things we own in such a way that they benefit not only ourselves, but also the common good
- the seventh commandment – “You shall not steal” – forbids unjustly taking or keeping the goods of one’s neighbours or wronging them in any way with respect to their goods

## **SCIENCE**

### **Unit A: Biological Diversity (Social and Environmental Emphasis)**

**Focusing Questions:** What is biological diversity, and by what processes do diverse living things pass on their characteristics to future generations? What impact does human activity have on biological diversity?

#### **Outcomes for Science, Technology and Society (STS) and Knowledge**



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*Students will:*

1. Investigate and interpret diversity among species and within species, and describe how diversity contributes to species survival
  - observe variation in living things, and describe examples of variation among species and within species (*e.g., observe and describe characteristics that distinguish two closely related species*)
  - investigate and interpret dependencies among species that link the survival of one species to the survival of others
    - identify examples of symbiotic relationships (*e.g., organisms that benefit other organisms by providing habitat, food, means of fertilization, or a source of oxygen*)
    - classify symbiotic relationships as mutualism, commensalism, parasitism
  - identify the role of variation in species survival under changing environmental conditions (*e.g., resistance to disease, ability to survive in severe environments*)
2. Investigate the nature of reproductive processes and their role in transmitting species characteristics
  - distinguish between sexual and asexual reproduction, and identify and interpret examples of asexual and sexual reproduction in different species, by:
    - describing mechanisms of asexual reproduction including binary fission, budding and the production of spores
    - describing mechanisms of sexual reproduction (*e.g., cross-fertilization in seed plants, sexual reproduction in mammals*)
    - describing examples of organisms that show both sexual and asexual reproduction (*e.g., yeasts that reproduce both by budding and sexual reproduction; plants that reproduce through suckering, runners or bulbs, as well as by seed production*)
    - describing the formation of zygote and embryo in plant and animal reproduction
3. Describe, in general terms, the role of genetic materials in the continuity and variation of species characteristics; and investigate and interpret related technologies
  - describe, in general terms, the role and relationship of chromosomes, genes and DNA
  - distinguish between cell division that leads to identical daughter cells, as in binary fission and mitosis, and cell division that leads to formation of sex cells, as in meiosis; and describe, in general terms, the synthesis of genetic materials that takes place during fertilization
  - compare sexual and asexual reproduction, in terms of the advantages and disadvantages (*e.g., recognize that asexual reproduction provides an efficient means of transmitting characteristics and that sexual reproduction provides an opportunity for recombination of characteristics*)
  - describe, in simple terms, some genetic technologies (*e.g., cloning and genetic engineering*); and identify questions and issues related to their application
4. Identify impacts of human action on species survival and variation within species, and analyze related issues for personal and public decision making
  - describe the relative abundance of species on Earth and in different environments (*e.g., note the overall abundance of insect species; note that in harsh environments there are relatively fewer species found than in temperate and tropical environments*)
  - describe ongoing changes in biological diversity through extinction and extirpation of native species, and investigate the role of environmental factors in causing these changes (*e.g., investigate the effect of changing river characteristics on the variety of species living in the river; investigate the effect of changing land use on the survival of wolf or grizzly bear populations*)
  - evaluate the success and limitations of various local and global strategies for minimizing loss of species diversity (*e.g., breeding of endangered populations in zoos, development of seed banks, designating protected areas, development of international treaties regulating trade of protected species and animal parts*)
  - investigate and describe the use of biotechnology in environmental, agricultural or forest management; and identify potential impacts and issues (*e.g., investigate issues related to the development of patented crop varieties and*

*varieties that require extensive chemical treatments; identify issues related to selective breeding in game farming and in the rearing of fish stocks)*

**Skill Outcomes** (focus on the use of research and inquiry skills to inform the decision-making process)

Initiating and Planning

*Students will:*

Ask questions about the relationships between and among observable variables, and plan investigations to address those questions

- identify science-related issues (*e.g., identify issues related to loss of species diversity*)
- identify questions to investigate arising from science-related issues (*e.g., “What factors affect the ability of organisms to survive and reproduce in this ecosystem?”*)
- state a prediction and a hypothesis based on background information or an observed pattern of events (*e.g., predict changes to an area of local parkland that is subject to intense use; hypothesize means of impact, such as soil compaction and disturbance of nest sites*)

Communication and Teamwork

*Students will:*

Work collaboratively on problems; and use appropriate language and formats to communicate ideas, procedures and results

- communicate questions, ideas, intentions, plans and results, using lists, notes in point form, sentences, data tables, graphs, drawings, oral language and other means (*e.g., illustrate and compare methods of reproduction in sample organisms studied*)
- evaluate individual and group processes used in investigating an issue and evaluating alternative decisions (*e.g., evaluate strategies for locating information, such as the use of particular key words or search tools; evaluate approaches for sharing work on a given research task and for synthesizing the information found*)
- defend a given position on an issue, based on their findings (*e.g., defend a position on a proposed measure to protect a particular plant or animal population*)

**Attitude Outcomes**

Interest in Science

*Students will be encouraged to:*

Show interest in science-related questions and issues, and confidently pursue personal interests and career possibilities within science-related fields (*e.g., select and explore media on topics related to species diversity; express interest in hobbies and careers that involve the care, culture and study of living things*)

Mutual Respect

*Students will be encouraged to:*

Appreciate that scientific understanding evolves from the interaction of ideas involving people with different views and backgrounds (*e.g., show awareness that the scientific study of changing animal and plant populations can arise from a variety of global needs, involving many individuals and organizations*)

Scientific Inquiry

*Students will be encouraged to:*

Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (*e.g., strive to assess a problem accurately by careful analysis of evidence gathered; critically consider ideas and perceptions, recognizing that the obvious is not always right*)

Stewardship

*Students will be encouraged to:*

Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment (*e.g., consider implications of changing land use on the welfare and survival of living things; identify potential conflicts between attempting to meet the wants and needs of humans and, at the same time, providing life-*

supporting environments for all living things; minimize environmental impact during studies by avoiding sampling that will affect an animal or plant population)

### Unit C: Environmental Chemistry (Social and Environmental Emphasis)

**Focusing Questions:** What substances do we find in local and global environments? What role do they play, and how do changes in their concentration and distribution affect living things?

#### **Outcomes for Science, Technology and Society (STS) and Knowledge**

Students will:

1. Investigate and describe, in general terms, the role of different substances in the environment in supporting or harming humans and other living things
  - identify common organic and inorganic substances that are essential to the health and growth of humans and other living things, and illustrate the roles served by these substances (*e.g., identify calcium as an essential material for bones; identify minerals that are known to enhance plant growth but that limit growth if too little or too much is available*)
  - describe, in general terms, the forms of organic matter synthesized by plants and animals, including carbohydrates, proteins and lipids
  - describe and illustrate processes by which chemicals are introduced to the environment or their concentrations are changed (*e.g., dilution in streams, biomagnification through food chains*)
  - describe the uptake of materials by living things through ingestion or absorption, and investigate and describe evidence that some materials are difficult for organisms to break down or eliminate (*e.g., DDT, mercury*)
  - identify questions that may need to be addressed in deciding what substances—in what amounts—can be safely released into the environment
2. Identify processes for measuring the quantity of different substances in the environment and for monitoring air and water quality
  - identify substrates and nutrient sources for living things within a variety of environments
  - describe and illustrate the use of biological monitoring as one method for determining environmental quality (*e.g., assess water quality, by observing the relative abundance of various vertebrate and invertebrate species*)
  - identify chemical factors in an environment that might affect the health and distribution of living things in that environment (*e.g., available oxygen, pH, dissolved nutrients in soil*)
  - apply and interpret measures of chemical concentration in parts per million, billion or trillion
3. Analyze and evaluate mechanisms affecting the distribution of potentially harmful substances within an environment
  - describe mechanisms for the transfer of materials through air, water and soil; and identify factors that may accelerate or retard distribution (*e.g., wind speed, soil porosity*)
  - describe mechanisms for biodegradation, and interpret information on the biodegradability of different materials
  - comprehend information on the biological impacts of hazardous chemicals on local and global environments, by:
    - interpreting evidence for environmental changes in the vicinity of a substance release
    - interpreting LD50 data and other information on toxicity [*Note: LD50 refers to the amount of a substance found to be lethal to 50% of a population, if ingested.*]
  - investigate and evaluate potential risks resulting from consumer practices and industrial processes, and identify processes used in providing information and setting standards to manage these risks (*e.g., interpret and explain the significance of manufacturer's information on how wood preservatives can be safely applied; recognize that some individuals may have greater sensitivity to particular chemical substances than do others in the general population*)

- identify and evaluate information and evidence related to an issue in which environmental chemistry plays a major role (e.g., *evaluate evidence that the use of insecticides to control mosquitoes has an effect/has no effect on bird populations*)

**Skill Outcomes** (focus on the use of research and inquiry skills to inform the decision-making process)

Initiating and Planning

*Students will:*

Ask questions about the relationships between and among observable variables, and plan investigations to address those questions

- identify science-related issues (e.g., *identify issues regarding the use of soil fertilizers*)
- identify questions arising from practical problems and issues (e.g., *ask questions about the needs of different living things for nutrients and about the mechanisms by which these nutrients are obtained*)
- state a prediction and a hypothesis about the concentration or dispersal of a chemical substance within an environment (e.g., *state a hypothesis that relates the amount of oxygen in a local water sample to the presence or absence of dissolved nutrients*)

Communication and Teamwork

*Students will:*

Work collaboratively on problems; and use appropriate language and formats to communicate ideas, procedures and results

- work cooperatively with team members to develop and carry out a plan, and troubleshoot problems as they arise
- receive, understand and act on the ideas of others (e.g., *seek and achieve group consensus on procedures to be used in an investigative activity, and act on that consensus*)
- defend a given position on an issue or problem, based on their findings (e.g., *provide a clear rationale for a choice between alternative chemical products in a consumer application*)

**Attitude Outcomes**

Interest in Science

*Students will be encouraged to:*

Show interest in science-related questions and issues, and confidently pursue personal interests and career possibilities within science-related fields (e.g., *actively participate in extracurricular activities, such as science fairs, science clubs, or science and technology challenges*)

Mutual Respect

*Students will be encouraged to:*

Appreciate that scientific understanding evolves from the interaction of ideas involving people with different views and backgrounds (e.g., *consider more than one perspective when formulating conclusions, solving problems or making decisions on environmental quality issues*)

Scientific Inquiry

*Students will be encouraged to:*

Seek and apply evidence when evaluating alternative approaches to investigations, problems and issues (e.g., *consider observations and ideas from a number of sources during investigations and before drawing conclusions; strive to assess a problem or situation accurately, by careful analysis of evidence gathered*)

Stewardship

*Students will be encouraged to:*

Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment (e.g., *show respect for all forms of life; modify their behaviour in light of an issue related to conservation and protection of the environment; recognize that the materials people use may have environmental consequences when people dispose of them*)

## **SOCIAL STUDIES**

### Canada: Opportunities and Challenges

#### Values and Attitudes

*Students will:*

**9.1.3 appreciate how emerging issues impact quality of life, citizenship and identity in Canada (C, I, PADM)**

**9.2.1 appreciate the values underlying economic decision making in Canada and the United States (C, ER)**

**9.2.2 appreciate the relationship between consumerism and quality of life (C, CC)**

**9.2.3 appreciate the impact of government decision making on quality of life (C, CC, PADM)**

#### Knowledge and Understanding

**9.1.4 examine the structure of Canada's federal political system by exploring and reflecting upon the following questions and issues:**

- How are laws passed in the federal political system? (PADM)
- How do lobby groups impact government decision making? (PADM, C)

**9.2.4 compare and contrast the principles and practices of market and mixed economies by exploring and reflecting upon the following questions and issues:**

- What are the principles of a market economy? (ER)
- Why do governments intervene in a market economy? (ER, PADM)
- Why is Canada viewed as having a mixed economy? (ER, PADM)
- What is the role of the consumer in market and mixed economies? (ER)
- To what extent do consumer actions reflect individual and collective identity? (ER, I)
- How has the emergence of labour unions impacted market and mixed economies? (ER)

**9.2.5 assess, critically, the relationship between consumerism and quality of life in Canada and the United States by exploring and reflecting upon the following questions and issues:**

- What are the indicators of quality of life? (PADM, ER)
- How does individual consumer behaviour impact quality of life (e.g., environmental issues)? (PADM, ER)
- How does marketing impact consumerism? (ER)
- How does consumerism provide opportunities for and limitations on impacting quality of life? (PADM, ER)
- How is consumerism used as a power of a collective (e.g., boycotts)? (ER, PADM, C)

**9.2.6 assess, critically, the interrelationship between political decisions and economic systems by exploring and reflecting upon the following questions and issues:**

- How do government decisions on environmental issues impact quality of life (i.e., preservation, exploitation and trade of natural resources)? (PADM, ER)

## **SKILLS AND PROCESSES**

### **DIMENSIONS OF THINKING**

*Students will:*

**9.S.1 develop skills of critical thinking and creative thinking:**

- determine the validity of information based on context, bias, source, objectivity, evidence or reliability to broaden understanding of a topic or an issue
- evaluate, critically, ideas, information and positions from multiple perspectives

- demonstrate the ability to analyze current affairs from multiple perspectives
- re-evaluate personal opinions to broaden understanding of a topic or an issue
- generate creative ideas and strategies in individual and group activities

**9.S.4. demonstrate skills of decision making and problem solving:**

- take appropriate action and initiative when required in decision-making and problem-solving scenarios
- participate in and predict outcomes of problem-solving and decision-making scenarios
- propose and apply strategies or options to solve problems and deal with issues
- propose and apply new ideas and strategies, supported with facts and reasons, to contribute to problem solving and decision making

**SOCIAL PARTICIPATION AS A DEMOCRATIC PRACTICE**

*Students will:*

**9.S.5 demonstrate skills of cooperation, conflict resolution and consensus building:**

- demonstrate leadership in groups, where appropriate, to achieve consensus and resolve conflicts peacefully and equitably
- demonstrate a positive attitude regarding the needs and perspectives of others

**9.S.6 develop age-appropriate behaviour for social involvement as responsible citizens contributing to their community, such as:**

- develop leadership skills by assuming specific roles and responsibilities in organizations, projects and events within their community

**RESEARCH FOR DELIBERATIVE INQUIRY**

*Students will:*

**9.S.7 apply the research process:**

- determine how information serves a variety of purposes and that the accuracy or relevance may need verification

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Thank you to the member-volunteers who prepared these curriculum connections

If you use this activity for curriculum not listed here please send your curriculum connections to [schools@devp.org](mailto:schools@devp.org) to be shared with fellow teachers

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