

APPENDIX A

GLOSSARY

Biodiversity: having many different species of plants and animals in one area.

Biomass: an organic material that can be burned or converted to create other energy types such as methane gas or fuels for transportation. Examples are wood waste, municipal solid waste, ethanol and biodiesel.

Carbon credit: a permit that gives a company, country, etc., the right to emit a specified amount of carbon compounds into the atmosphere, and may be purchased if emissions are expected to exceed a quota or sold if the quota is not reached.

Carbon footprint: a measure of the CO₂ produced as a result of human activities including work, transport and food choices.

Carbon sink: is a natural or manmade area that stores carbon. Forests and oceans are examples of natural carbon sinks as they absorb carbon.

Carbon tax: a tax on fossil fuels, especially those used by motor vehicles, intended to reduce the emission of carbon dioxide.

Cholera: a severe diarrhoeal infectious disease. It is caused by enterotoxin-producing strains of the bacterium *Vibrio Cholerae* and transmitted through food or drinking water.

Cyclone: a storm characterized by severe winds and possibly heavy rains rotating about a lower pressure point.

Dengue fever: a mosquito-borne infection that causes a severe flu-like illness.

Diarrhoea: a symptom of gastrointestinal infection, which can be caused by a variety of bacterial, viral and parasitic organisms. Severe diarrhoea leads to fluid loss, and may be life-threatening, particularly in young children and people who are malnourished or have impaired immunity.

Drought: a period of prolonged dryness that causes extensive damage to crops or prevents their successful growth.

Ecological Footprint: a measure of human impact on the Earth's resources; it is usually a metric of the number of 'earths' we need to meet our human demands.

Flashfloods: short duration heavy rains resulting in large volume localized flooding.

Forest stewardship Council (FSC): a third-party forestry certification system designed to protect our environment (both people on the land and the land itself) to ensure our forests remain a renewable resource.

Fossil Fuel: a fuel (coal, oil or natural gas) formed in the earth.

Geothermal Energy: using the heat from the Earth as an energy source. Examples are the surface at hot springs or geysers, recovered deep layers of hot water and shallow recovery of warm water (most common in building projects).

Gigatonnes: metric unit of mass, a gigatonne = 1,000,000,000 tonnes.

Global Carbon Cycle: the whole Earth's balance of carbon.

GM (Genetically Modified): organisms with genetically altered DNA; the majority of GM foods are plant-based but GM animal products are now being produced.

Greenhouse Gas Emissions (GHG): a collection of gases (largest contributor is carbon dioxide) that are being trapped in the atmosphere. This is considered a cause of climate change.

Hygiene: adopting habits of cleanliness to promote health.

IPCC: Intergovernmental Panel on Climate Change; it is a scientific-based United Nations body formed to assess the effects of climate change on humans.

Land Degradation: a human-related destruction of land so its biological value is down-graded.

Land Desertification: a human-related degradation of arid or dry sub-humid land. Often it is caused by overpopulation due to depletion of groundwater and farming.

Life Cycle Analysis (LCA): a science-based measurement system. An LCA looks at products/systems, and provides numbers for environmental impacts.

Malaria: is caused by a parasite, which is transmitted via the bites of infected mosquitoes. Symptoms of malaria include fever, headache, and vomiting. If not treated, malaria can quickly become life-threatening by disrupting the blood supply to vital organs.

Malnutrition: is due to insufficient or imbalanced consumption of food or nutrients.

Millennium Development Goals (MDG): developed by the nations who met at the Millennium Summit at UN headquarters in New York. These goals aim to improve the wellbeing of everyone on the planet by committing to end poverty, improve the health of children and their families and by ensuring the sustainability of the planet.

Ozone Layer: filters dangerous ultraviolet light to prevent it from penetrating the Earth's upper atmosphere and arriving at the surface.

Potable Water: water fit for human consumption.

Refugee: a person who flees to a foreign country to escape danger.

Sanitation: providing good hygiene and preventing spread of disease. Providing sanitary conditions include safely treating drinking water and sewage and removing garbage.

Typhoid: an infectious disease caused by the bacterium *Salmonella typhi*. Food or water carrying the bacteria is eaten; the bacteria spread fast and enter the blood stream within 24-72 hours causing blood poisoning.

Typhoon: a severe tropical storm that develops in the Pacific or Indian oceans containing high winds and rainfall. (Synonym: hurricane)

Vector-Borne Diseases: diseases spread to humans via the vector: non-human organisms such as mosquitoes and ticks that carry pathogens.

Vibrio Cholerae: a bacterium causing cholera that affects the gastrointestinal tract.

Water cycle (also called hydrologic cycle): a process whereby water passes from vapour in the atmosphere to precipitation on land and ultimately back into the atmosphere as a result of evaporation and transpiration.

Waterborne Diseases: microorganisms with pathogens found in water cause it to become contaminated; transmitted by consuming the contaminated water.

West Nile: a vector-borne disease; the vector being a mosquito.

Zoonoses: diseases transmitted by vertebrate animals (can be a vector) to humans, though normally they would only infect other animals.

APPENDIX B

THE UN CONVENTION ON THE RIGHTS OF THE CHILD IN CHILD-FRIENDLY LANGUAGE

Article 1

Everyone under 18 has these rights.

Article 2

All children have these rights, no matter who they are, where they live, what their parents do, what language they speak, what their religion is, whether they are a boy or girl, what their culture is, whether they have a disability, whether they are rich or poor. No child should be treated unfairly on any basis.

Article 3

All adults should do what is best for you. When adults make decisions, they should think about how their decisions will affect children.

Article 4

The government has a responsibility to make sure your rights are protected. They must help your family to protect your rights and create an environment where you can grow and reach your potential.

Article 5

Your family has the responsibility to help you learn to exercise your rights, and to ensure that your rights are protected.

Article 6

You have the right to be alive.

Article 7

You have the right to a name, and this should be officially recognized by the government. You have the right to a nationality (to belong to a country).

Article 8

You have the right to an identity 0 an official record of who you are. No one should take this away from you.

Article 9

You have the right to live with your parent(s), unless it is bad for you. You have the right to live with a family who cares for you.

Article 10

If you live in a different country than your parents do, you have the right to be together in the same place.

Article 11

You have the right to be protected from kidnapping.

Article 12

You have the right to give your opinion, and for adults to listen and take it seriously.

Article 13

You have the right to find out things and share what you think with others, by talking, drawing, writing or in any other way unless it harms or offends other people.

Article 14

You have the right to choose your own religion and beliefs. Your parents should help you decide what is right and wrong, and what is best for you.

Article 15

You have the right to choose your own friends and join or set up groups, as long as it isn't harmful to others.

Article 16

You have the right to privacy.

Article 17

You have the right to get information that is important to your wellbeing, from radio, newspapers, books, computers and other sources. Adults should make sure that the information you are getting is not harmful, and help you find and understand the information you need.

Article 18

You have the right to be raised by your parent(s) if possible.

Article 19

You have the right to be protected from being hurt and mistreated, in body or mind.

Article 20

You have the right to special care and help if you cannot live with your parents.

Article 21

You have the right to care and protection if you are adopted or in foster care.

Article 22

You have the right to special protection and help if you are a refugee (if you have been forced to leave your home and live in another country), as well as all the rights in this Convention.

Article 23

You have the right to special education and care if you have a disability, as well as all the rights in this Convention, so that you can live a full life.

Article 24

You have the right to the best health care possible, safe water to drink, nutritious food, a clean and safe environment, and information to help you stay well

Article 25

If you live in care or in other situations away from home, you have the right to have these living arrangements looked at regularly to see if they are the most appropriate.

Article 26

You have the right to help from the government if you are poor or in need.

Article 27

You have the right to food, clothing, a safe place to live and to have your basic needs met. You should not be disadvantaged so that you can't do many of the things other kids can do.

Article 28

You have the right to a good quality education. You should be encouraged to go to school to the highest level you can.

Article 29

Your education should help you use and develop your talents and abilities. It should also help you learn to live peacefully, protect the environment and respect other people.

Article 30

You have the right to practice your own culture, language and religion or any you choose. Minority and indigenous groups need special protection of this right.

Article 31

You have the right to play and rest.

Article 32

You have the right to protection from work that harms you, and is bad for your health and education. If you work, you have the right to be safe and paid fairly.

Article 33

You have the right to protection from harmful drugs and from the drug trade.

Article 34

You have the right to be free from sexual abuse.

Article 35

No one is allowed to kidnap or sell you.

Article 36

You have the right to protection from any kind of

exploitation (being taken advantage of).

Article 37

No one is allowed to punish you in a cruel or harmful way.

Article 38

You have the right to protection and freedom from war. Children under 15 cannot be forced to go into the army or take part in war.

Article 39

You have the right to help if you've been hurt, neglected or badly treated.

Article 40

You have the right to legal help and fair treatment in the justice system that respects your rights.

Article 41

If the laws of your country provide better protection of your rights than the articles in this Convention, those laws should apply.

Article 42

You have the right to know your rights! Adults should know about these rights and help you learn about them, too.

Articles 43 to 54

These articles explain how governments and international organizations like UNICEF will work to ensure that the rights of children are protected.

Source: UN Convention on the Rights of the Child, Child-Friendly version, UNICEF website. Available from:

www.unicef.ca/portal/smartdefault.aspx?at=1451.

To access the complete version of the UNCRC and/or to learn more about the UN Convention on the Rights of the Child, visit

<http://www.unicef.org/crc/>.

APPENDIX C

CULMINATING TASK RUBRIC

Name:

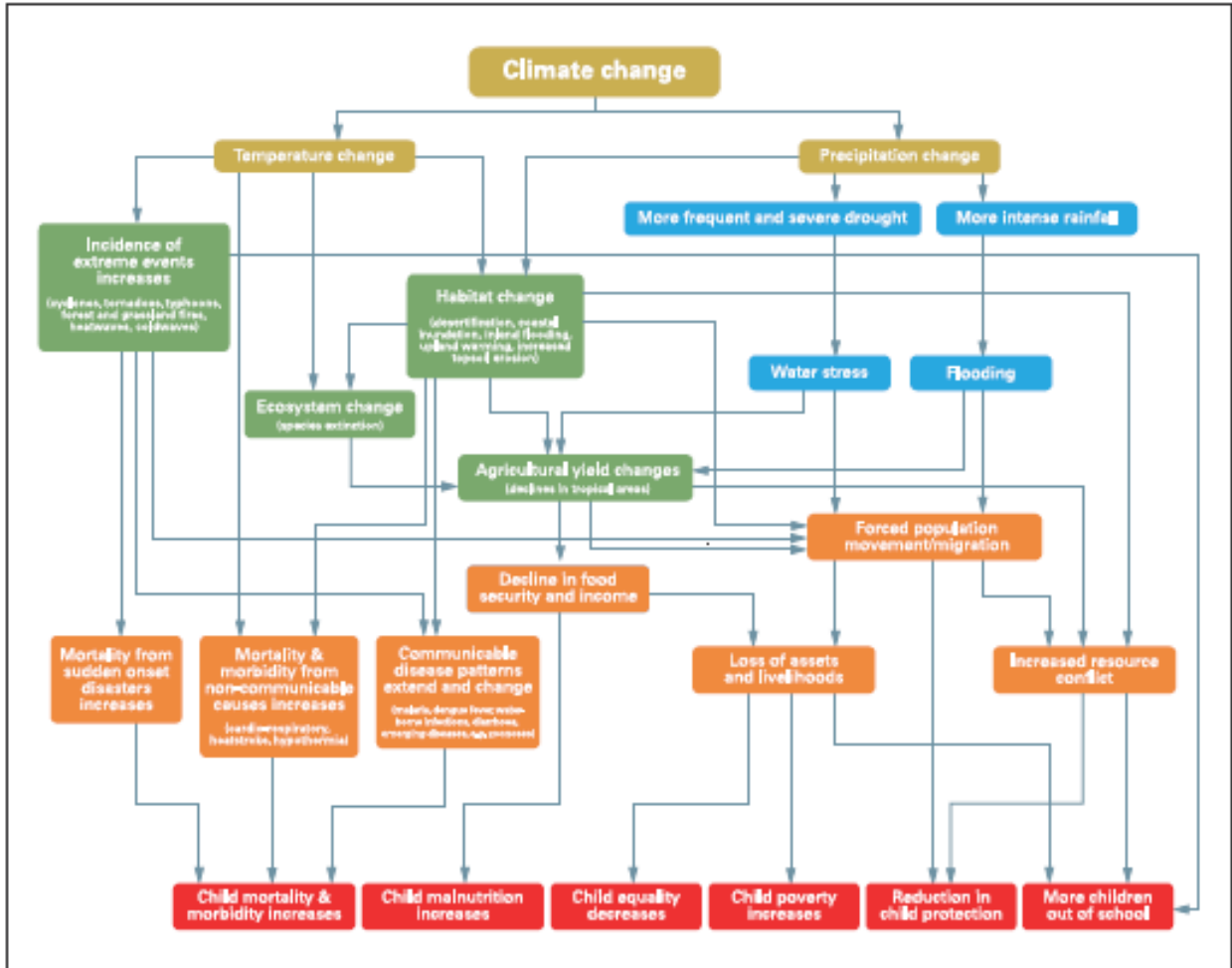
Date:

Expectations	Level 4	Level 3	Level 2	Level 1
KNOWLEDGE/ UNDERSTANDING Demonstrates a thorough understanding of the issues raised connecting climate change to children and provides an explanation of why it is a concern	Demonstrates a high degree of understanding of the issues raised connecting climate change to children and provides a thorough explanation of why it is a concern	Demonstrates considerable understanding of the issues raised connecting climate change to children and provides considerable explanation of why it is a concern	Demonstrates some understanding of the issues raised connecting climate change to children and provides some explanation of why it is a concern	Demonstrates limited understanding of the issues raised connecting climate change to children and provides a limited explanation of why it is a concern
THINKING/ INQUIRY Uses planning skills to generate ideas and gather information on issues raised connecting climate change to children	Uses planning skills with a high degree of effectiveness	Uses planning skills with considerable effectiveness	Uses planning skills with some effectiveness	Uses planning skills with limited effectiveness
COMMUNICATION Expresses ideas, perspective and recommendations on issues raised connecting climate change to children in oral, visual and written formats Uses clear language and presents point of view effectively, using an appropriate style and tone for the specific audience	Expresses ideas, perspective and recommendations with a high degree of effectiveness Uses clear language, point of view, style and tone with a high degree of effectiveness	Expresses ideas, perspective and recommendations with considerable effectiveness Uses clear language, point of view, style and tone with considerable effectiveness	Expresses ideas, perspective and recommendations with some effectiveness Uses clear language, point of view, style and tone with some effectiveness	Expresses ideas, perspective and recommendations with limited effectiveness Uses clear language, point of view, style and tone with limited effectiveness
APPLICATION Makes connections between personal and local concerns and global issues related to climate change and children	Makes connections between personal and local concerns and global issues with a high degree of effectiveness	Makes connections between personal and local concerns and global issues with considerable effectiveness	Makes connections between personal and local concerns and global issues with some effectiveness	Makes connections between personal and local concerns and global issues with limited effectiveness

Adapted from: Ministry of Education, The Ontario Curriculum

APPENDIX D

HOW CLIMATE CHANGE AFFECTS CHILDREN



APPENDIX E

REFLECT AND ACT

Take 10 minutes and reflect on lessons learned.

REFLECT	
Theme: _____	
What did you LEARN?	
What issue GOT to you?	
What are you going to do NOW?	

ACT	
What actions can you take to be part of the solution?	
YOU	
YOUR SCHOOL	
YOUR COMMUNITY	
YOUR PLANET	

APPENDIX F

MILLENNIUM DEVELOPMENT GOALS

In 2000 the largest gathering of world leaders in history met for the Millennium Summit at United Nations headquarters in New York. The nations met to discuss how increased globalization promises better living for some countries, but means increased poverty, conflict, health concerns and a degraded environment for others. Collectively, the nations present at the summit drafted the millennium development goals (MDG), which act as a blueprint for future actions.

Climate change has added a challenge to meeting the plan set out by the Millennium Development Goals (MDG). These goals aim to improve the wellbeing of everyone on the planet by committing to end poverty, improve the health of children and their families and by ensuring the sustainability of the planet. Here is how the MDGs are linked directly to climate change:

Millennium Development Goals	Examples of Links to the Environment
1. Eradicate extreme poverty and hunger	Livelihood strategies and food security of the poor often depend directly on healthy ecosystems and the diversity of goods and ecological services they provide.
2. Achieve universal primary education	Time spent collecting water and fuel wood by children, especially girls, can reduce time at school. Better lighting allows children to study outside of daylight hours and without putting their eyesight at risk.
3. Promote gender equality to empower women	Poor women are especially exposed to indoor air pollution and the burden of collecting fuel wood, and have unequal access to land, energy and other natural resources.
4. Reduce child mortality	Each year, more than 4 million children under the age of five die due to preventable environment-related disease. More than one-third of the global disease burden can be attributed to environmental factors falling on children below five years of age, who account for only about 10% of the world's population.
5. Improve maternal health	Indoor air pollution and carrying heavy loads of water and fuel wood adversely affect women's health and can make women less fit for childbirth and at greater risk of complications during pregnancy.
6. Combat HIV/AIDS, malaria and other major diseases	Over 24% of the total burden of diseases worldwide are associated with environmental risk factors and preventive environmental health measures are as important and at times more cost-effective than health treatments. Evidence now indicates that diminished immune systems caused by water-related intestinal worm infections, contribute to the HIV/AIDS pandemic.
7. Ensure environmental sustainability	Current trends in environmental degradation must be reversed in order to sustain the health and productivity of the world's ecosystem. The reliance on fuel wood can put considerable pressure on forests, particularly in areas where biomass is scarce and the demand for wood outweighs natural re-growth. Depending on the environmental context, deforestation is a driving force for land degradation and desertification.

Source: DFID/EC/UNDP/World Bank (2002), Linking Poverty Reduction and Environmental Management: Policy Challenges and Opportunities. Washington: The World Bank, p.1 . Updated, WHO data, 2006 by UNICEF

To learn about the MDGs and to follow the progress to reach the goals, visit:

- <http://www.un.org/millenniumgoals/bkqd.shtml>
- <http://www.unicef.org/mdg/>.

What happens next?

Goals set out by the global community will always need to be updated. At the time of the publication of this resource, the MDGs are being evaluated and the next steps being explored.

Beyond 2015 is a global campaign aiming to influence the creation of a post 2015 development framework that succeeds the current UN Millennium Development Goals. **Beyond 2015** is bringing together more than 570 civil society organizations in over 95 countries around the world. You can read more about it here: <http://www.beyond2015.org/>

APPENDIX G

CURRICULUM LINKS FOR BRITISH COLUMBIA

Course	Selected PLO	Related Themes
Science 9	<i>Physical Science: Characteristics of Electricity</i> • relate electrical energy to power consumption C R E	Energy
	<i>Processes of Science</i> • demonstrate ethical, responsible, cooperative behaviour	Energy
Science 10	<i>Energy Transfer in Natural Systems</i> • evaluate possible causes of climate change and its impact on natural systems	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
	<i>Sustainability of Ecosystems</i> • explain various ways in which natural populations are altered or kept in equilibrium	Natural Disasters, Health,
	<i>Processes of Science</i> • demonstrate ethical, responsible, cooperative behaviour	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Earth Science 11	<i>Surface Processes and the Hydrosphere</i> • describe the function of the hydrologic cycle	Water
	<i>Earth Materials (Rocks and Minerals)</i> • assess the extraction and use of geological resources	Energy
Biology 11	<i>Ecology</i> • analyze the functional inter-relationships of organisms within an ecosystem	Natural Environments
Sustainable Resources 11	• analyze the environmental, social, and economic significance of forestry and related industries at the local, provincial, and global levels • describe the processes associated with the generation and use of energy resources	Natural Environments, Energy Energy

CURRICULUM LINKS FOR BRITISH COLUMBIA

Course	Selected PLO	Related Themes
Science and Technology 11	<p><i>Agriculture</i></p> <ul style="list-style-type: none"> • describe elements of agricultural systems found locally, provincially, and globally • describe the role of genetics in agriculture • evaluate different methods, including those from Aboriginal cultures, of food production, processing, and preservation • analyze the effects of changing technology in agriculture on society 	Food Security
	<p>Natural Resources and the Environment</p> <ul style="list-style-type: none"> • discuss the impact of society on natural resource management and the 	Water, Energy
Sustainable Resources 12	<p>Components of Sustainable Agricultural Systems</p> <ul style="list-style-type: none"> • investigate the role of climate in agricultural production 	Natural Disasters
	<p>Agriculture 12</p> <p><i>Components of Sustainable Agricultural Systems</i></p> <ul style="list-style-type: none"> • debate the concept of sustainability as it relates to agriculture • analyze the use of water, fertilizers, pesticides, and pharmaceuticals in agricultural activities • investigate the role of climate in agricultural production 	Food Security
	<p><i>Forest Resources and Society</i></p> <ul style="list-style-type: none"> • analyze current forest management practices 	Natural Environments
	<p><i>Forest Ecology</i></p> <ul style="list-style-type: none"> • examine the components of forest ecosystems • investigate the interactions found within a forest environment • assess the impact of environmental components and changes on a forest ecosystem 	
Socials 1	<p><i>Human Geography</i></p> <ul style="list-style-type: none"> • assess environmental challenges facing Canadians, including <ul style="list-style-type: none"> – global warming – ozone layer depletion – fresh water quality and supply 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Civics 1	<p><i>Informed citizenship</i></p> <ul style="list-style-type: none"> • describe organizations that govern relations among nations, including those dealing with: <ul style="list-style-type: none"> – peace and security – trade and economics – international justice – social and environmental issues 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR BRITISH COLUMBIA

Course	Selected PLO	Related Themes
	<p><i>Civic Deliberation</i></p> <ul style="list-style-type: none"> analyze the domestic and international effects of Canada's record with respect to issues and events in one or more of the following categories: <ul style="list-style-type: none"> environment trade foreign aid peace and security human rights 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Geography 12	<p><i>Weather and Climate</i></p> <ul style="list-style-type: none"> analyze interactions between human activity and the atmosphere, with reference to: <ul style="list-style-type: none"> global climate change ozone depletion acid precipitation 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
	<p><i>Resources and Environmental Sustainability</i></p> <ul style="list-style-type: none"> assess the environmental impact of human activities, including: <ul style="list-style-type: none"> energy production and use forestry agriculture waste disposal water use 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Geography 12	<p><i>Biomes</i></p> <ul style="list-style-type: none"> analyze the interactions between human activity and biomes, with reference to: <ul style="list-style-type: none"> deforestation desertification soil degradation species depletion 	Natural Environments
Social Justice 12	<p><i>Defining Social Justice</i></p> <ul style="list-style-type: none"> apply critical thinking skills to a range of social justice issues, situations, and topics analyze selected social justice issues from an ethical perspective assess how belief systems can affect perspectives and decisions in relation to social justice issues conduct a self-assessment of their own attitudes and behaviours related to social justice 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
	<p><i>Recognizing and Analyzing Injustice</i></p> <ul style="list-style-type: none"> analyze social justice issues related to globalism and globalization 	Natural Disasters, Food Security, Health, Natural Environments, Water
	<p><i>Moving Toward a Socially Just World</i></p> <ul style="list-style-type: none"> assess various methods and models of promoting social justice apply systemic analysis to propose solutions to specific cases of social injustice implement a plan for action on a selected local, provincial, national, or international social justice issue assess lifelong opportunities related to social justice 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR BRITISH COLUMBIA

Course	Selected PLO	Related Themes
Visual Arts 9	<ul style="list-style-type: none"> • create images that: <ul style="list-style-type: none"> – support or challenge personal and societal beliefs, values, traditions, or practices – demonstrate an awareness of the styles of various artists, movements, and periods – respond to historical and contemporary images or issues – reflect a sense of personal and social responsibility 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Visual Arts 10	<ul style="list-style-type: none"> • create images that: <ul style="list-style-type: none"> – support or challenge personal and societal beliefs, values, traditions, or practices – reflect an understanding of responsibility to the context of a specific audience 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Visual Arts 11	<ul style="list-style-type: none"> • create/perform a work of art that reflects an understanding of the impact of social/cultural/ historical contexts 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Visual Arts 12	<ul style="list-style-type: none"> • use a variety of media arts technologies to create images that: <ul style="list-style-type: none"> – support or challenge beliefs, values, and traditions – incorporate characteristics of other artists, movements, and periods in personal style – reflect historical and contemporary issues • create/perform a work of art that communicates specific beliefs/traditions in response to historical/contemporary issues 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy Natural Disasters, Health, Natural Environments, Water, Energy
Drama 1: Theatre	Encourage students in drama to use sustainability topics in their drama performance. During set design, challenge students to use environmentally friendly materials.	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
Dance 12	<ul style="list-style-type: none"> • Create compositions for a variety of purposes: <ul style="list-style-type: none"> – to respond to or represent a range of stimuli for a variety of settings – to represent different points of view 	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
English Language Arts 9-12	Educators can include environmental topics in many English Language PLOs to allow students to understand the connection between them and the environment.	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

APPENDIX H

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
SNCID Science, Grade 9 Academic	<p><i>Biology</i></p> <p>B1. assess the impact of human activities on the sustainability of terrestrial and/or aquatic ecosystems, and evaluate the effectiveness of courses of action intended to remedy or mitigate negative impacts;</p> <p>B2. investigate factors related to human activity that affect terrestrial and aquatic ecosystems, and explain how they affect the sustainability of these ecosystems;</p> <p>B3. demonstrate an understanding of the dynamic nature of ecosystems, particularly in terms of ecological balance and the impact of human activity on the sustainability of terrestrial and aquatic ecosystems.</p>	Natural Disasters, Food Security, Natural Environments, Water
	<p><i>Physics</i></p> <p>E1. assess some of the costs and benefits associated with the production of electrical energy from renewable and non-renewable sources, and analyze how electrical efficiencies and savings can be achieved, through both the design of technological devices and practices in the home.</p>	
SNC1P Science, Grade 9 Applied	<p><i>Biology</i></p> <p>B1. analyze the impact of human activity on terrestrial or aquatic ecosystems, and assess the effectiveness of selected initiatives related to environmental sustainability;</p> <p>B2. investigate some factors related to human activity that affect terrestrial or aquatic ecosystems, and describe the consequences that these factors have for the sustainability of these ecosystems;</p> <p>B3. demonstrate an understanding of characteristics of terrestrial and aquatic ecosystems, the interdependence within and between ecosystems, and the impact humans have on the sustainability of these ecosystems.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
	<p><i>Physics</i></p> <p>E1. assess the major social, economic, and environmental costs and benefits of using electrical energy, distinguishing between renewable and non-renewable sources, and propose a plan of action to reduce energy costs.</p>	
SNC2D Science, Grade 10	<p><i>Earth and Space Science</i></p> <p>D1. analyze some of the effects of climate change around the world, and assess the effectiveness of initiatives that attempt to address the issue of climate change;</p> <p>D2. investigate various natural and human factors that influence Earth's climate and climate change;</p> <p>D3. demonstrate an understanding of natural and human factors, including the greenhouse effect, that influence Earth's climate and contribute to climate change.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
SNC2P Science, Grade 10 Applied	<p><i>Earth and Space Science</i></p> <p>D1. analyze effects of human activity on climate change, and effects of climate change on living things and natural systems;</p> <p>D2. investigate various natural and human factors that have an impact on climate change and global warming;</p> <p>D3. demonstrate an understanding of various natural and human factors that contribute to climate change and global warming.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
SBI3U Biology, Grade 11	<p><i>Diversity of Living Things</i></p> <p>B1. analyze the effects of various human activities on the diversity of living things.</p>	Natural Environments
	<p><i>Plants in the Natural Environment</i></p> <p>F1. analyze the roles of plants in ecosystems, and assess the impact of human activities on the balance of plants within those ecosystems.</p>	Food security, Natural Environments
SCH3U Chemistry, Grade 11	<p>Solutions and Solubility</p> <p>E1. analyze the origins and effects of water pollution, and a variety of economic, social, and environmental issues related to drinking water.</p>	Water
	<p><i>Gases and Atmospheric Chemistry</i></p> <p>F1. analyze the cumulative effects of human activities and technologies Environments, on air quality, and describe some Canadian initiatives to reduce air pollution, including ways to reduce their own carbon footprint.</p>	Natural Environments, Energy
SVN3E Environmental Science, Grade 11 Workplace Prep	<p><i>Human Impact on the Environment</i></p> <p>B1. analyze selected current environmental problems in terms of the role human activities have played in creating or perpetuating them, and propose possible solutions to one such problem;</p> <p>B2. investigate air, soil, and water quality in natural and disturbed environments, using appropriate technology;</p> <p>B3. demonstrate an understanding of some of the ways in which human activities affect the environment and how the impact of those activities is measured and monitored.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
	<p><i>Human Health and the Environment</i></p> <p>C1. analyze the effects on human health of environmental contaminants and a significant environmental phenomenon;</p> <p>C2. investigate how different environmental factors can affect people's health and their lifestyle choices;</p> <p>C3. demonstrate an understanding of the ways in which environmental factors can affect human health and how their impact can be reduced.</p>	Food Security, Health, Water, Energy

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
	<p><i>Energy Conservation</i></p> <p>D1. evaluate initiatives and technological innovations related to energy consumption and conservation, and assess their impact on personal lifestyles, social attitudes, and the environment;</p> <p>D2. investigate various methods of conserving energy and improving energy efficiency;</p> <p>D3. demonstrate an understanding of the basic principles of energy production, with reference to both renewable and non-renewable sources, and of various methods of energy conservation.</p>	Energy
	<p><i>Natural Resource Science and Management</i></p> <p>E1. assess the environmental impact of the harvesting and/or extraction of resources, including ways of reducing this impact, and analyze threats to the sustainability of natural resources;</p> <p>E2. investigate methods scientists use to classify and monitor natural resources, and conduct investigations using those methods;</p> <p>E3. demonstrate an understanding of the sustainable use of resources and its relationship to the biodiversity and sustainability of ecosystems.</p>	Natural Environments
SVN3M Environmental Science, Grade 1 , University/College Preparation	<p>B1. analyze social and economic issues related to an environmental challenge, and how societal needs influence scientific endeavours related to the environment;</p> <p>B2. investigate a range of perspectives that have contributed to scientific knowledge about the environment, and how scientific knowledge and procedures are applied to address contemporary environmental problems;</p> <p>B3. demonstrate an understanding of major contemporary environmental challenges and how we acquire knowledge about them.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
	<p><i>Human Health and the Environment</i></p> <p>C1. analyze initiatives, both governmental and non-governmental, that are intended to reduce the impact of environmental factors on human health;</p> <p>C2. investigate environmental factors that can affect human health, and analyze related data;</p> <p>C3. demonstrate an understanding of various environmental factors that can affect human health, and explain how the impact of these factors can be reduced.</p>	Food Security, Health, Water
	<p><i>Sustainable Agriculture and Forestry</i></p> <p>D1. evaluate the impact of agricultural and forestry practices on human health, the economy, and the environment;</p> <p>D2. investigate conditions necessary for plant growth, including the soil components most suitable for various species, and various environmentally sustainable methods that can be used to promote growth;</p> <p>D3. demonstrate an understanding of conditions required for plant growth and of a variety of environmentally sustainable practices that can be used to promote growth.</p>	Food Security, Natural Environments, Water

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
	<p><i>Conservation of Energy</i> F1. assess the impact on society and the environment of the use of various renewable and non-renewable energy sources, and propose a plan to reduce energy consumption;</p> <p>F2. investigate various methods of conserving energy and improving energy efficiency;</p> <p>F3. demonstrate an understanding of energy production, consumption, and conservation with respect to a variety of renewable and non-renewable sources.</p>	Energy
SPH4C Physics, Grade 12	<p><i>Electricity and Magnetism</i> D1. analyze the development of selected electrical and electromagnetic technologies, and evaluate their impact on society and the environment.</p>	Energy
SNC4M Science, Grade 12	<p><i>Biotechnology</i> F2. investigate various techniques used in biotechnology and how they are applied in the food industry and the health and agricultural sectors;</p> <p>F3. demonstrate an understanding of biological processes related to biotechnology and of applications of biotechnology in the health, agricultural, and environmental sectors.</p>	Food Security, Health
HFN10 and HFN20 Social Sciences and the Humanities: Food and Nutrition, Grades 9 and 10	<p><i>Diversity, Interdependence, and Global Connections</i> Complete an investigation of current global issues related to food (e.g., food distribution, food shortages, gene manipulation), using current social science research methods.</p>	Food Security
	<p><i>Social Science Skills</i> Demonstrate effective collaborative group skills.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
HIF10 and HIF20 Social Sciences and the Humanities: Individual and Family Living, Grades 9 and 10	<p><i>Social Science Skills</i> Demonstrate effective collaborative group skills.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
HPW3C Social Sciences and the Humanities: Living and Working with Children, Grade 11	<p><i>Growth and Development</i> Demonstrate an understanding of the multifaceted nature of and the various influences on child development.</p>	Food Security, Health, Water
	<p><i>Socialization of Children</i> Evaluate various global influences on children and families.</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
HIR3C Social Sciences and the Humanities: Managing Personal and Family Resources, Grade 11	<i>Preparing for the Challenges of the Future</i> Analyze how families are affected by global disparities in wealth and resources.	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
HF4AM Social Sciences and the Humanities: Food and Nutrition Sciences, Grade 12	<i>Personal and Social Responsibilities</i> Determine the relationship among nutrition, lifestyle, health, and disease.	Natural Disasters Food Security, Health, Water
	<i>Diversity, Interdependence and Global Connections</i> <ul style="list-style-type: none"> • identify the economic, political, and environmental factors that affect food production and supply throughout the world; • identify the factors that are critical to achieving and maintaining food security and eliminating hunger. 	Natural Disasters, Food Security, Health, Water
ADA10 Dramatic Arts, Grade 9	<i>Concepts and Terminology</i> C1.1 identify the drama forms, elements, conventions, and techniques used in their own and others' drama works, and explain how the various components are used or can be used to achieve specific purposes or effects.	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
ADA20 Grade 10 Drama	<i>The Creative Process</i> A1.1 develop interpretations of issues from contemporary or historical sources A1.2 select and use appropriate forms to present identified issues from a variety of perspectives A1.3 use role play and characterization to explore personal and social issues <i>Elements and Conventions</i> A2.2 use a variety of conventions to create a distinct voice that reflects a particular global, social, or personal perspective	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
ASM20 Grade 10 Media Arts	<i>The Critical Analysis Process</i> B1.3 use the critical analysis process to assess the effectiveness of media art works in communicating a message or expressing an emotion, and describe how their assessment of the works has evolved throughout the critical analysis process <i>Identity and Values</i> B2.3 identify and describe ways in which media art works can influence community or societal values <i>Responsible Practices</i> C3.3 identify and apply responsible environmental practices associated with the media arts workplace	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
ADA3M Dramatic Arts, Grade 11	<p><i>The Critical Analysis Process</i> B1.2 analyse drama works to determine how they communicate ideas about issues, culture, and society</p> <p><i>Drama and Society</i> B2.4 explain how different types of theatre mirror cultural diversity and local or regional concerns in Canadian and global societies from the past and present</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
BB110/BB120 Grades 10 & 11 Introduction to Business	<p><i>Functions of a Business</i> Demonstrate an understanding of a sound management practices in business</p> <p>Explain the importance of ethical behaviour with respect to employees, the environment, and communities</p> <p><i>Entrepreneurship</i> Analyze the importance of invention and innovation in entrepreneurship</p> <p>Describe how entrepreneurs discover opportunities in people's needs, wants, and problems</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
BDP30 Grade 11 The Enterprising Person	<p><i>The Enterprising Experience: Planning and Organizing an Event</i> Generate and evaluate ideas for an event in the school or the community and identify a realistic event to plan and organize</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
BDV4C Grade 12 Entrepreneurship: Venturing Planning in an Electronic Age	<p><i>The Venture Concept</i> Identify community problems, needs, or wants, and explain how selected problems, needs, or wants could be addressed</p> <p>Identify community problems, needs, or wants that could best be addressed by a not-for-profit venture and explain why</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
CGC1D Geography of Canada, Academic	<p><i>Global Connections</i> Evaluate Canada's participation in organizations that deal with global issues (eg global warming, biodiversity, human rights)</p> <p><i>Understanding and Managing Change</i> Explain how natural and human systems change over time and from place to place</p> <p>Explain how global economic and environmental factors affect individual choices</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
CGC1P Geography of Canada, Applied	<p><i>Global Connections</i> Report on how Canada influences and is influenced by its economic, cultural, and environmental connections with other countries</p> <p>Evaluate Canada’s effectiveness and commitment in responding to global challenges and promoting international well being</p> <p>Explain how current global issues affect Canadians</p> <p>Compare the “ecological footprint” of a typical Canadian with those from people from other countries</p> <p><i>Understanding and Managing Change</i> Explain the relationship between sustainability, stewardship, and an “Ecological footprint”</p> <p>Describe how regional disparities (eg in resource accessibility) affect the economic sustainability of communities</p> <p>Apply the concepts of stewardship and sustainability to analyse a current national or international issue</p> <p>Predict the impact of selected technological changes (eg in communications and information technology, renewable energy technology) on the future quality of life for Canadians</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
CGF3M Grade 11 Physical Geography: Patterns, Processes, and Interactions	<p><i>Global Connections</i> Explain the importance of water to global systems</p> <p><i>Understanding and Managing Change</i> Analyse the causes and consequences of climate change</p> <p>Analyse how changes in natural systems are caused by natural phenomena</p> <p>Explain how human uses of the earth, especially uses involving technology, cause changes over time in natural systems</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
CGW4U Grade 12 Canadian and World Issues: A Geographic Analysis	<p><i>Geographic Foundations: Space and Systems</i> Compare the cultural, economic, and political aspirations of selected groups and the effects of their actions on local, national, and global geographic issues</p> <p><i>Human-Environmental Interactions</i> Evaluate approaches, policies, and principles relating to the protection and sustainability of the planet’s life support systems</p> <p><i>Global Connections</i> Evaluate the social, economic, and environmental impact of the strategies for sustainable development implemented by a variety of individuals, organizations, and institutions</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
	<p><i>Understanding and Managing Change</i> Analyze trends and predict changes in the human use of the earth of its resources</p> <p>Evaluate the cultural, economic, and environmental impact of changing technology</p> <p>Evaluate the effectiveness of short-term and long-term solutions to geographic problems and issues at the local, national, and global level</p>	
CGR4M The Environment and Resource Management, Grade 12	<p><i>Geographic Foundations: Space and Systems</i> Explain how key ecological processes contribute to ecosystem health</p> <p>Analyse how the distribution of ecosystems has been and continues to be influenced by natural conditions</p> <p><i>Human-Environmental Interactions</i> Explain significant short-term and long term effects of human activity on the natural environment</p> <p>Analyse and evaluate interrelationship among the environment, the economy, and society</p> <p>Analyse patterns of social resource availability and use</p> <p><i>Global Connections</i> Analyse environmental and resource management issues and explain their global implications</p> <p>Explain how population growth affects the sustainability of global ecosystems</p> <p>Evaluate the effectiveness of the efforts of the international community to deal with environmental and resource management issues</p> <p><i>Understanding and Managing Change</i> Evaluate the impact of economic, social, political, and technological change on natural and human systems</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
CGU4C Grade 12 World Geography: Urban Patterns and Interactions	<p><i>Human-Environmental Interactions</i> Describe how the natural environment influences the location and development of settlements</p> <p>Explain how humans modify the environment to meet urban needs</p> <p>Assess the effects of human activities on urban and regional ecosystems and propose solutions to urban environmental problems</p> <p><i>Global Connections</i> Describe the influence of social, cultural, political, environmental, and economic factors on the development of urban settlements in different parts of the world</p> <p>Analyse the relationships between cities and their surrounding regions</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

CURRICULUM LINKS FOR ONTARIO

Course	Overall Expectations	Related Themes
CGR4E Grade 12, Workplace Preparation	<p><i>Human-Environmental Interactions</i> Explain how humans both depend upon and are an integral part of ecosystems</p> <p>Analyse how human activities have positive and negative effects on natural systems</p> <p>Analyse patterns of resource availability and use</p> <p><i>Global Connections</i> Explain the relationships among population growth, increasing consumption of resources, and environmental degradation on a global scale.</p> <p>Explain how the sustainable use of resources may be achieved through the cooperation of governments, businesses, industries, non-governmental organizations, and citizens around the world, even though their environmental perspectives may differ.</p> <p><i>Understanding and Managing Change</i> Describe trends in the consumption of natural resources and in resource management practices</p> <p>Describe the process of environmental degradation in an ecosystem and assess an existing rehabilitation strategy or devise a new one</p> <p>Evaluate the effects that environmental protection and resource management have on society</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy
TPJ2O Health Care, Grade 10	<p><i>Health Care and the Environment</i> C1 Demonstrate an understanding of environmental issues related to health care and personal well-being</p> <p>Identify current environmental issues and describe their implications for human health and well-being</p> <p><i>Health Care and Society</i> Identify current child and adolescent health issues in developing countries from recent media coverage</p>	Food Security, Health, Water,
TGJ3O Communications Technology: Broadcast and Print Production	<p>Students develop an understanding of the interrelationship between the technology or industry sector and the environment, and between the technology and various aspects of society.</p> <p>Specific Expectations:</p> <p>C1.1 describe the effects of current audio, video, broadcast journalism, graphic arts, and printing technologies on the environment</p> <p>C1.2 describe ways in which environmental problems are being or can be addressed by the audio, video, broadcast journalism, graphic arts, and printing industries</p>	Natural Disasters, Food Security, Health, Natural Environments, Water, Energy

Note: this is not an exhaustive list of curriculum expectations. Please refer to the Ontario Ministry of Education's resource guide (2011) *Environmental Education: Scope and Sequence of Expectations* for a full list of courses and expectations on environmental education and climate change:
<http://www.edu.gov.on.ca/eng/curriculum/secondary/enviro9to12curr.pdf>

APPENDIX I

CURRICULUM LINKS FOR ALBERTA, SASKATCHEWAN, MANITOBA,
QUEBEC AND ATLANTIC CANADA

ALBERTA

Grade/Subject	Expectations	Related Themes
Grade 9 Science Unit A: Biological Diversity	<p>Investigate and interpret diversity among species and within species, and describe how diversity contributes to species survival.</p> <ul style="list-style-type: none"> identify the role of variation in species survival under changing environment conditions. <p>Identify impacts of human action on species survival and variation within species, and analyze related issues for personal and public decision making.</p> <ul style="list-style-type: none"> describe ongoing changes in biological diversity through extinction and extirpation of native species, and investigate the role of environmental factors in causing these changes. investigate and describe the use of biotechnology in environmental, agricultural or forest management; and identify impacts and issues. 	Natural Disasters, Natural Environment
Grade 9 Science Unit C: Environmental Chemistry	<p>Investigate and describe, in general terms, the role of different substances in the environment in supporting or harming humans or other living things.</p> <ul style="list-style-type: none"> Describe and illustrate processes by which chemicals are introduced to the environment or their concentrations are changed. Identify questions that may need to be addressed in deciding what substances – in what amounts – can be released safely into the environment. <p>Identify processes for measuring the quantity of different substances in the environment and for monitoring air and water quality.</p> <ul style="list-style-type: none"> Identify chemical factors in an environment that might affect the health and distribution of living things in that environment. <p>Analyze and evaluate mechanism affecting the distribution of potentially harmful substances within the environment.</p> <ul style="list-style-type: none"> 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. Identify and evaluate information and evidence related to an issue in which environmental chemistry plays a major role. 	Health, Natural Environment, Water

CURRICULUM LINKS FOR ALBERTA

Grade/Subject	Expectations	Related Themes
Grade 9 Science Unit D: Electrical Principles and Technology	<p>Describe and discuss the societal and environmental implications of the use of electrical energy.</p> <ul style="list-style-type: none"> • Identify and evaluate alternative sources of electrical energy, including oil, gas, coal, biomass, wind, waves. • Describe the by-products of electrical generation and their impacts on the environment. • Identify concerns regarding conservation of energy resources, and evaluate means for improving the sustainability of energy use. <p>Attitude Outcome</p> <p>Demonstrate sensitivity and responsibility in pursuing a balance between the needs of humans and a sustainable environment.</p>	Energy, Natural Environment
Science 10 Unit D: Energy Flow in Global System	<p>Describe how the relationship among input solar energy, output terrestrial energy and energy flow within the biosphere affect the lives of humans and other species.</p> <ul style="list-style-type: none"> • Explain how climate affects the lives of people and other species, and explain the need to investigate climate change. <p>Relate climate to the characteristics of the world's major biomes, and compare biomes in different regions of the world.</p> <ul style="list-style-type: none"> • Identify the potential effects of climate change on environmentally sensitive biomes. <p>Investigate and interpret the role of environmental factors on global energy transfer and climate change.</p> <p>Attitude Outcome</p> <p>Demonstrate sensibility and responsibility.</p> <p>In pursuing a balance between the needs of humans and a sustainable environment.</p>	Natural Disasters, Health, Natural Environment, Energy

CURRICULUM LINKS FOR ALBERTA

Grade/Subject	Expectations	Related Themes
Science 20	<p>General Attitude Outcomes Science 20</p> <p>Demonstrate sensibility and responsibility in pursuing a balance between the needs of humans and a sustainable environment.</p> <ul style="list-style-type: none"> Assume part of the collective responsibility for the impact of humans in the environment. Encourage their peers and members of their communities to participate in a project related to sustainability. Participate in the social and political systems that influence environmental policy in their community. Promote actions that are not injurious for the environment. 	Natural Environment
Unit D: Changes in Living Systems	<p>Explain that society and technology have both intended and unintended consequences for humans and the environment.</p> <ul style="list-style-type: none"> Assess habitat loss and the responsibility of society to protect the environment for future generations. Discuss in terms of scientific principles how reforestation projects change the direction of secondary succession in a natural ecosystem. 	Natural Environment
Science 20 Unit D: Changes in Living Systems	<p>Explain that science and technology are developed to meet societal needs and expand human capabilities.</p> <ul style="list-style-type: none"> Contrast the diet of people in developing countries and that of people in developed countries in terms of energy efficiency and environment impact, and describe ways to address potential food shortage in the future. 	Food, Health
Science 20 Unit D: Changes in Living Systems	<p>Explain that science and technology have both intended and unintended consequences for humans and the environment.</p> <ul style="list-style-type: none"> Discuss the use of water by society, the impact such use has on water quality and quantity in ecosystems, and the need for water purification and conservation, considering such things as manufacturing, the oil industry, agricultural systems, the mining industry and domestic water consumption. 	Water
Science 14 Unit D: Investigating Matter and Energy in the Environment	<p>Describe how the flow of matter in the biosphere is cyclical along characteristics pathways and can be disrupted by human activity.</p> <p>Analyze a local ecosystem in terms of its biotic and abiotic components, and describe factors of the equilibrium.</p>	Water, Energy, Natural Disasters, Natural Environment

CURRICULUM LINKS FOR ALBERTA

Grade/Subject	Expectations	Related Themes
Science 24 Unit C: Disease Defense and Human Health	Describe how human health is affected by societal and environmental factors, and describe the need for action by society to improve human health. <ul style="list-style-type: none"> • Describe how human diseases may arise from an interaction of variables, including poor nutrition, stress, pathogen and environmental contamination. • Analyze the relationship between social conditions and disease. 	Health
Biology 20 Unit A: Energy and Matter Exchange in the Biosphere	Explain that science and technology have both intended and unintended consequences for humans and the environment. <ul style="list-style-type: none"> • Discuss the use of water by society, the impact such use has on water quality and quantity in ecosystems, and the need for water purification and conservation. 	Water
Biology 20 Unit A: Energy and Matter Exchange in the Biosphere	Explain that science and technology have both intended and unintended consequences for humans and the environment. <ul style="list-style-type: none"> • Describe how human activities can have a disrupting influence on the balance in the biosphere of photosynthetic and cellular respiratory activities: fossil fuel combustion, depletion of stratospheric ozone, forest destruction. 	Natural Environment, Natural Disasters
Social Studies 20 Theme III: Quality of Life	Quality of life is increasingly affected by issues of global concern. <ul style="list-style-type: none"> • Choose several examples and study their impact on human populations, deforestation, desertification, pollution, greenhouse effect. There are issues of common global concern.	Natural Disasters, Natural Environment
Social Studies 20 Theme IV Alternative Futures: Possibilities for Change	<ul style="list-style-type: none"> • Study at least one issue of global concern in the following areas: food sources and distribution; energy sources, spread of disease. There are potential solutions to global concerns.	Health, Food , Energy

CURRICULUM LINKS FOR ALBERTA

Grade/Subject	Expectations	Related Themes
Environmental and Outdoor Education JH Environmental Core	<ul style="list-style-type: none"> Students will develop lifestyle strategies that foster contact with the natural world, encourage responsibility for global and local environment and encourage living in harmony with others. Students will demonstrate the understanding that environments change over time, by identifying and describing examples of the following concepts: Students will recognize changes that result from human use of environments, including: changes due to individual and group activity in the environment, changes that result from extraction or harvesting of natural resources, changes that result from addition of materials to the environments. 	Natural Disasters, Natural Environment
Science 30 Unit B: Chemistry and the Environment	Identify and explain how human activities and natural events contribute to the production of photochemical smog, the depletion of the ozone layer and increased concentrations of organic compounds in the environment.	Natural Environment
Science 30 Unit D: Energy and the Environment	<p>Compare the energy consumption of contemporary society with that of traditional cultures and pre-contact Aboriginal societies, and investigate and analyze the exponential growth of global energy consumption in recent history.</p> <p>Compare Canada's per-capita energy consumption with developed and developing countries and identify factors that affect consumption; e.g., economy, lifestyle, level of technology, geography, climate.</p> <p>Apply the concept of sustainable development to increasing the efficient use of energy; e.g., efficient use of energy in the home, in industry and in transportation.</p> <p>Explain the need to develop technologies that use renewable and nonrenewable energy sources to meet the increasing global demand.</p> <p>Describe the environmental impact of developing and using various energy sources; i.e., conventional oil, oil sands, solar power, wind power, biomass, hydroelectricity, coal burning power, nuclear power, geothermal.</p>	Energy

MANITOBA

Grade/Subject	Expectations	Related Themes
Senior 4: World Geography – a Human Perspective (Grade 12) Unit 3: World Food Supply: Production and Distribution	Unit III is designed for students to understand World Food Supply: Production and Distribution (4 weeks)	Food Security
Senior 2 Science (Grade 10) Unit 1: Dynamics of Ecosystems	S-0-2c-3b, 5c, 9c Students will understand the bioaccumulation of toxins and the harmful effects on consumers, both past and present.	Health, Natural Environment
Senior 4 Biology 40s (grade 12)	B12-0-P4- Recognize that humans have impacted and continue to impact the environment.	Natural Disasters
Senior 2: Science (Grade 10) Cluster 4: Weather dynamics	S-04-08: S will discuss potential consequences of climate change.	Natural Environment
Senior 4: World issues (Grade 12) Unit 5: the World of the Future	Unit V is designed to help students speculate about the future if current trends continue.	Water
Senior 2: North America – a Geographic Perspective (grade 10) Unit 8: Canadian, Continental and World Issues (integrated)	To help students explore and better understand the following ideas: <ul style="list-style-type: none"> • interrelationship and interdependence of local, Canadian, Continental, and world issues. 	Natural Environment
Senior 4: World Geography (grade 12) Unit 4: World Resources, Energy, and Environment (4 weeks)	The major goals of the Senior 4 World Geography curriculum are to help students explore and better understand the following ideas with reference to a world view: population characteristics, distribution, growth, and challenges; environmental management and protection, and economic growth in the context of sustainable development.	Energy
Grade 12 Global Issues: Citizenship and Sustainability	Students conduct inquiry into the social, political, environmental, and economic impact of contemporary and emerging global issues. Through their inquiry, students focus on questions of quality of life locally, nationally and globally. This course is based on the principles of active democratic citizenship, ecological literacy, critical media literacy, and ethical decision-making, and consolidates learning across the disciplines to empower students as agents of change for a sustainable and equitable future. As a mandatory component of the course, students plan and implement a community-based action-research project.	Natural Environment, Food Security, Health, Water, Energy

SASKATCHEWAN

Grade/Subject	Expectations	Related Themes
History 20 (grade 11) Unit Five: Global Issues	Consumption levels of the Industrialized Developed Nations Know that the consumption of energy per person in developed nations is more than 80 times greater than the consumption of citizens of the Sub-Saharan nations.	Food Security
Social Studies 20: World Issues (Grade 11) Unit two – Population	Students will know how to determine both human Fertility Rate and the Death Rate of a country and understand their significance.	Health
History 20 (Grade 11) Unit Five: Global Issues	Arrogance of Humanism Perspective: Students will know that proponents of this perspective maintain that humans did not create and do not understand nature and have placed nature in jeopardy.	Natural Disasters
History 20 (Grade 11) Unit Five: Global Issues	Understand how the nature of the relationship between humans and their environment could define the nature and quality of human life in the future.	Natural Environment
Biology 20 Unit 2: Ecological Organization	During the course of this inspection, students will see how Saskatchewan is a part of the larger global ecosystem, and how diverse the life, and life-support system, in the province really is. Points to be stressed are that the quality soil, air, and water provide the basis for healthy life and that human action has a disproportionately large effect on populations and ecosystems.	Water
Physics 30 (Grade 12) Core Unit III: Electricity D. Electric Power and energy	Identify the impact each main method used to produce electricity has on the environment.	Energy

QUEBEC CURRICULUM CONNECTIONS TO CLIMATE CHANGE

Secondary School Education, Cycle One

Social Sciences: Geography

COMPETENCY 1: *Understands the organization of a territory:* Grasps the meaning of human actions with regard to the territory, relates different geographic scales, uses cartographic language. The student identifies relevant elements of the organization of the territory by ensuring that they relate to the type of territory concerned correspond to the designated focus, are characteristic of the organization of the territory. The student represents his/her construction of the organization of the territory coherently by highlighting: connections among elements of the organization of the territory, connections among concepts, relationships between human actions and the organization of the territory. The student considers the organization of the territory as a whole by using scales of analysis appropriately to highlight: new phenomena and external influences.

COMPETENCY 2: *Interprets a territorial issue:* Describes the complexity of the territorial issue. The student cites elements that are relevant to the territorial issue by referring to: exact and specific elements, appropriate concepts. The student describes the dynamics of the territorial issue by showing: how the basic elements of the issue interact, connections between the concepts, power struggles. The student expresses a well-founded opinion when it is based on: several points of view, the relation among several scales of analysis, consideration of the consequences of the proposals for the territory consideration of individual and collective interests.

COMPETENCY 3: *Constructs his/her consciousness of global citizenship:* Evaluates solutions to global issues, Examines human actions in terms of the future to be able to considers the impact of human actions on the future of the planet by taking into account the consistency of these human actions with their underlying values, the relationship between these human actions and sustainable development the need for concerted action to solve global problems, the contribution of international rules, conventions and organizations The student defends his/her opinion by basing it on the effectiveness of the solutions proposed.

Social Sciences – History and Citizenship Education

COMPETENCY 1: *Examines social phenomena from a historical perspective.* Contemplates the past of social phenomena, Considers social phenomena in terms of duration. Looks at social phenomena in their complexity.

COMPETENCY 2: *Interprets social phenomena using the historical method.* Establishes the factual basis of social phenomena, explains social phenomena, puts his/her interpretation of social phenomena in perspective

COMPETENCY 3: *Constructs his/her consciousness of citizenship through the study of history.*

Languages – Secondary English Language Arts

COMPETENCY 1: *Uses language/talk to communicate and to learn.* Interacts with peers and teachers in specific learning contexts. Explores the social practices of the classroom and community in specific contexts.

Secondary School Education, Cycle Two

Social Sciences: Contemporary Economic Environment

COMPETENCY 1: *Interprets a problem of the contemporary world.* To encircle the problem, to analyze the problem, to envisage the problem in its entirety, to carry a glance criticizes on its approach. From the point of view of the rigor of the reasoning, the student: leans on facts bound to the problem; puts in relation of the facts in the explanation of the problem, use concepts in an appropriate way. From the point of view of the precision of the overview, the student: puts in relation of the constituent elements of the problem; find resemblances and differences in the manners the problem of which shows itself in the world, kick away world tendencies.

COMPETENCY 2: *Take position on a stake in the contemporary world.* Examine points of view relative to the stakes. The student: establishes connections between the points of view of the actors, their interests and their values.

Languages: Secondary English Language Arts

COMPETENCY 1: *Uses language/talk to communicate and to learn.* Interacts with peers and teacher in specific contexts.

ATLANTIC CANADA

Grade/Subject	Expectations	Related Themes
Grade 9 Atlantic Canada and the Global Village Unit 1: Physical Settings	<p>Link human activity to the natural resources of the Atlantic region.</p> <p>Students will be expected to research the issue of sustainability in one resource industry and suggest the steps that are necessary to achieve this. (1.4.9)</p>	Natural Resources (Fishery/Farming/Forestry) Sustainable Development
Grade 9 Atlantic Canada and the Global Village Unit 4: Technology	<p>Analyse the effect of technology on resource industries in Atlantic Canada</p> <p>Students will be expected to evaluate the environmental effects of technology in the resource Industries. (4.6.6)</p>	Water (dams); Tree and Potato Harvesting
Grade 9 Atlantic Canada and the Global Village Unit 5: Interdependence	<p>Examine and analyse how Atlantic0Canadians are members of the global community through different interconnected systems.</p> <p>Demonstrate an understanding that global interdependence and technological change affect sustainable living and cultural understanding.</p> <p>Students will be expected to discuss an environmental issue that impacts directly on Atlantic Canada and the global village. (5.2.6)</p>	Global Warming; Global Village and Natural Disasters
Grade 10 Science Unit 4: Sustainability of Ecosystems	<p>Students explore the concept of sustainability and ideally move toward a more sophisticated level of global thinking.</p> <p>Students will be expected to:</p> <ul style="list-style-type: none"> • Question and analyze how a paradigm shift in sustainability can change society's views • Identify, investigate, and defend a course of action on a multi-perspective social issue • Identify and describe peer review, Canadian research, and global projects where science and technology affect sustainable development • Diagnose and report the ecosystem's response to short-term stress and long-term change • Predict and analyze the impact of external factors on the sustainability of an ecosystem, using a variety of formats. 	Human Impact; Industrialization; Urbanisation

CURRICULUM LINKS FOR ATLANTIC CANADA

Grade/Subject	Expectations	Related Themes
<p>Grade 11 Biology Unit 2: Biodiversity</p>	<p>Analyse how individuals, society, and the environment are inter-dependent with scientific and technological endeavours. (117)</p> <p>Evaluate social issues related to the applications and limitations of science and technology, and explain decision in terms of advantages and disadvantages for sustainability, considering a variety of perspectives. (118)</p> <p>Evaluate relationships that affect the biodiversity and sustainability of life within the biosphere. (318)</p> <p>Students will be expected to:</p> <ul style="list-style-type: none"> • debate the merits of funding specific scientific or technological endeavours and not others; (117-4) • provide examples of how science and technology are an integral part of their lives and their community; (117-5) • propose courses of action on social issues related to science and technology, taking into account an array of perspective, including that of sustainability; (118-10) • evaluate Earth's carrying capacity, considering human population growth and its demands on natural resources. (318-10) <p>Attitude Outcome: Students will be encouraged to develop attitudes that support the responsible acquisition and application of scientific and technological knowledge to the mutual benefit of self, society, and the environment.</p>	<p>Ecosystems; Global Resources</p>

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Grade 12 Global Geography All units	<p>Acknowledge that individually and collectively each person makes choices that have an impact upon the natural environment, locally and globally.</p> <p>Recognize, examine, and explain changing world conditions, and to identify and discuss emerging global trends.</p>	<p>Gaia Hypothesis; plant and animal species decline; deforestation; desertification; natural disasters; climate change</p> <p>Greenhouse effect; ozone depletion; acid rain; management of resources; pollution</p>
Unit 1: Our Fragile Planet	<p>Students will be expected to appreciate the potential of critical situations facing the planet.</p>	
Unit 2: Perilous Processes: Our Planet at Risk	<p>Students will be expected to recognize human-made perils and that these create problems that threaten the capability of our planet to sustain life.</p>	
Unit 5: Global Resources: The Good Earth	<p>Students will be expected to examine methods of managing consumption that enhance the conservation and preservation of renewable and non-renewable resources.</p>	
Unit 6: Global Factory: For Whose Benefit?	<p>Students will be expected to explain the evolving pattern of industrialization, global inequalities of production, consumption, and wealth, and their combined impact on the environment.</p>	
Unit 8: The Future Planet: Under New Management	<p>Students will be expected to reflect upon previous learnings in this and other courses in order to identify resources and processes that help us to understand the biosphere, humanity's role as part of it, and our responsibility to protect it.</p>	
Grade 12 Global History Unit 5: Acknowledging Global Interdependence: The Legacy of the 20th Century	<p>Students will be expected to:</p> <ul style="list-style-type: none"> • analyse and discuss the concept of global interdependence; • assess their own roles, responsibilities, and commitments in an interdependent world. 	