Climate Change Curriculum Connections

— GRADES 9, 10, 11, 12

Climate Change eCards meets grade 9 to 12 curriculum expectations for a number of subject areas including Science, Social Studies, Business Studies, Canadian World Studies, Physical Education/Health Education, Geography, Political Science, Planning, Active Healthy Lifestyles, Environmental Science, Biology and Chemistry. As a communications activity, eCards has easy applications in Language Arts classrooms as well.

In this document, look for curriculum links for these provinces:

- British Columbia
- Alberta
- Saskatchewan
- Manitoba
- Ontario
- New Brunswick
- Nova Scotia
- Newfoundland and Labrador
- Prince Edward Island

British Columbia

BC 10

Science

Earth and Space Science: Energy Transfer in Natural Systems

- evaluate possible causes of climate change and its impact on natural systems
- describe how natural phenomena can affect climate (e.g., biosphere processes, volcanic eruptions, Coriolis effect, El Niño and La Niña)
- describe how climate can be influenced by human activities (e.g., greenhouse gases, depletion of ozone layer
- describe how climate change affects natural systems (e.g., shrinking of the permafrost region, melting of ice shelves/caps/glaciers)

BC 11

Science and Technology

Natural Resources and the Environment

- discuss the impact of society on natural resource management and the environment
- describe local and global environmental issues
- analyze the impact of technologies on the environment
- describe the link between a local environmental issue and the use of technology
- explore the relationship between the technology utilized for the extraction of a natural resource and its impact on the environment

Sustainable Resources

Agriculture

- analyze the environmental, social, and economic significance of agriculture at the local, provincial, and global levels

Forestry

- analyze the environmental, social, and economic significance of forestry and related industries at the local, provincial, and global levels

Mining

- analyze the environmental, social, and economic impacts of acquiring mineral resources, and hydrocarbons from fossil fuels, at the local, provincial, and global levels

Saskatchewan

SK 9

Social Studies

- compare the factors that shape worldviews in a society, including time and place, culture, language, religion, gender identity, socio-economic situation, and education (e.g., explore students' beliefs on global warming)
- assess the relationship of the natural environment in the development of a society

SK 10

Science

Earth and Space Science: Weather Dynamics

- identify current issues related to global climate change
- identify the most important natural and human factors that influence global climate
- examine and evaluate evidence that climate change occurs naturally
- explain how scientific knowledge of global climate has evolved and continues to evolve, as new evidence becomes known
- select and integrate information related to global climate change from various print and electronic sources
- describe how scientists use technologies such as modeling to further our understanding of climate change
- discuss potential consequences of climate change and the need to investigate climate change
- identify questions or problems relating to global climate change that arise from personal research
- develop, present, and defend a position or course of action, based on personal research
- consider some personal, social, and environmental consequences of a position or proposed course of action related to global climate change
- understand the role that human values play in critical thinking

Alberta

AB 9

Health and Life Skills

Personal Health

- use knowledge of a healthy, active lifestyle to promote and encourage family/peer/ community involvement

Learning Strategies

- use decision-making skills to select appropriate risk-taking activities for personal growth and empowerment (e.g., increasing freedom means increased responsibility for consequences of choices)

Physical Education

- demonstrate etiquette and fair play
- describe, apply, monitor and practice leadership and followership skills related to physical activity
- develop practices that contribute to teamwork

AB 10

Knowledge and Employability Science

Investigating Matter and Energy in Environmental Systems

- examine how various abiotic factors influence biodiversity in an ecosystem (e.g., climate, substrate, temperature, elevation)
- explain how various factors influence the size of populations (e.g., immigration, emigration, birth rate and death rate, food supply, predation, disease, number of offspring produced, climate change)

Physical Education

- demonstrate etiquette and fair play
- describe, apply, monitor and assess leadership and followership skills related to physical activity
- develop and apply practices that contribute to teamwork

Science

Energy Flow in Global Systems

- explain how climate affects the lives of people and other species, and explain the need to investigate climate change
- identify the potential effects of climate change on environmentally sensitive biomes (e.g., impact of a reduction in the Arctic ice pack on local species and on Aboriginal societies that rely on traditional lifestyles)
- investigate and identify human actions affecting biomes that have a potential to change climate (e.g., emission of greenhouse gases, draining of wetlands, forest fires, deforestation) and critically examine the evidence that these factors play a role in climate change (e.g., global warming, rising sea level(s)
- describe and evaluate the role of science in furthering the understanding of climate and climate change through international programs (e.g., World Meteorological Organization, World Weather Watch, Global Atmosphere Watch, Surface Heat Budget of the Arctic Ocean (SHEBA) project, The Intergovernmental Panel on Climate Change (IPCC); the study of paleoclimates and models of future climate scenarios)

- describe the role of technology in measuring, modelling and interpreting climate and climate change (e.g., computer models, devices to take measurements of greenhouse gases, satellite imaging technology)
- identify questions to investigate that arise from practical problems and issues (e.g., develop questions related to climate change, such as "How will global warming affect Canada's northern biomes?"; and "How will a species be affected by an increase or decrease in average temperature?"
- identify and apply criteria for evaluating evidence and sources of information, including identifying bias (e.g., investigate the issue of global climate change)
- identify limitations of data, evidence or measurement (e.g., list the limitations of data and evidence of past climate changes, evaluate the validity of interpolations and extrapolations, use significant digits appropriately)
- explain how data support or refute a hypothesis or a prediction (e.g., provide evidence for or against the hypothesis that human activity is responsible for climate change)

AB 11

Physical Education

- demonstrate etiquette and fair play
- apply, monitor and assess leadership and followership skills related to physical activities, and demonstrate an understanding of leadership skills related to implementing physical activity events or programs in the school and/or community
- develop and apply practices that contribute to teamwork

Political Science

Political Thinking 20

- to provide an understanding of the process of political decision making
- to establish an awareness on the part of the student of different political points of view and to create in the student an element of political sophistication
- to illustrate the relationship that exists in society between freedom, on the one hand, and responsibility on the other

Science

The Changing Earth

- explain, in general terms, how changes to Earth's climate and how mass extinctions could be caused by changes or variation in the following: Earth's orbit around the sun, the inclination of Earth's axis, solar energy output, Earth's geography due to crustal movement, volcanic activity, ocean currents, atmospheric composition or asteroid impact
- distinguish between correlation and cause and effect when describing the relationship between climate change and mass extinction
- synthesize information from multiple sources when making inferences about global warming and climate change, recording relevant data, acknowledging sources of information and citing sources correctly

AB 12

Physical Education

- demonstrate etiquette and fair play
- apply, monitor and assess leadership and followership skills related to physical activities, and demonstrate an understanding of leadership skills related to implementing physical activity events or programs in the school and/or community
- develop and apply practices that contribute to teamwork

Manitoba

MB 9

Language Arts

Explore thoughts, ideas, feelings, and experiences

- question and reflect on personal responses, predictions, and interpretations; apply personal viewpoints to diverse situations or circumstances
- acknowledge the value of others' ideas and opinions in exploring and extending personal interpretations and viewpoints
- reflect on new understanding in relation to prior knowledge and identify gaps in personal knowledge
- structure and restructure ideas and information to extend current understanding and to broaden personal perspectives of the world
- consider diverse opinions, explore ambiguities, and assess whether new information clarifies understanding

Manage ideas and information

- determine depth and breadth of personal knowledge of a topic to identify possible areas of inquiry or research
- generate and access ideas in a group and use a variety of methods to focus and clarify inquiry or research topic
- prepare and use a plan to access, gather, and evaluate information and ideas from a variety of human, print, and electronic sources
- distinguish between fact and theory and between main and supporting information to evaluate usefulness, relevance, and completeness; address information gaps for particular forms, audiences, and purposes
- obtain information and varied perspectives when inquiring or researching using a range of information sources

Physical Education/Health Education

Personal and Social Management

- identify communication skills and strategies that promote team/group dynamics (e.g., listen actively, encourage others, be assertive in acceptable ways, show self-control, stay with the group until completion of the task, develop group consensus)
- assess behaviours and conflict-resolution strategies (i.e., negotiation, arbitration, and adjudication) in the context of final outcome (i.e., win/win, win/lose, lose/lose) for settling disputes or disagreements
- design, implement, and evaluate an action plan for making a decision based on personal values and beliefs related to physically active and healthy lifestyle practices (e.g., active living, good nutrition, no substance use, safety)
- apply conflict- resolution strategies (i.e., mediation and negotiation) in different case scenarios for understanding different perspectives and points of view (i.e., determine the reason behind a conflict)

Social Studies

Democracy and Governance in Canada

- Give examples of ways in which people can individually and collectively influence Canada's political and social systems (e.g., voting, political parties, labour organizations, civil disobedience, NGOs, lobbying)
- Describe their responsibilities and rights as citizens of Canada and the world

- Be willing to exercise their responsibilities and rights as citizens living in a democracy (e.g., citizen involvement in political processes, freedom of speech, freedom of association)

Canada in the Global Context

- identify on a world map countries in which events of global significance are taking place
- evaluate Canadian perspectives regarding current global issues.
- give examples of decisions that reflect the responsibilities of global citizenship (e.g., personal and national decisions)
- compare media portrayals of current issues *(e.g., local, national, international sources)*
- be willing to consider local, national, and global interests in their decisions and actions
- give examples of Canada's connections with other nations (e.g., trade, communication, environment, entertainment, sports)
- give examples of Canada's participation within international organizations (e.g., United Nations, Commonwealth, la Francophonie, Olympics)
- describe characteristics of Canada as an industrialized nation
- evaluate implications of living in a consumer-based economy (e.g., social, political, environmental)
- be willing to consider the impact of their consumer choices

Canada: Opportunities and Challenges

- evaluate Canadian concerns and commitments regarding environmental stewardship and sustainability
- give examples of contributions of various Canadians to the global community (e.g., arts and science)
- describe Canada's responsibilities and potential for leadership regarding current global issues (e.g., refugees, international development, environmental stewardship, military defence)
- identify opportunities and challenges regarding Canadian-American relationships (e.g., protection of national sovereignty, trade, defence, environment)
- be willing to make personal choices to sustain the environment
- value Canada's contributions to the global community (e.g., humanitarian, artistic, scientific, environmental)
- Be willing to consider ethical questions related to sharing wealth and resources

MB 10

Language Arts

Explore thoughts, ideas, feelings, and experiences

- seek and consider others' ideas through a variety of means to expand understanding
- explain opinions, providing support or reasons; anticipate other viewpoints

Manage ideas and information

- determine inquiry or research focus based on personal knowledge and interests and on others' expertise
- formulate questions to focus and guide inquiry or research
- collaborate to determine group knowledge base and to define research or inquiry purpose and parameters
- select and record important information and ideas using an organizational structure appropriate for purpose and information source; document sources accurately
- evaluate information for completeness, accuracy, usefulness, and relevance
- integrate new information with prior knowledge to draw logical conclusions and to refine understanding; consider alternative ways of reaching inquiry or research goals
- determine the credibility, accuracy, and completeness of a variety of information sources for a particular inquiry or research plan

Physical Education/Health Education

Personal and Social Management

- examine the effectiveness of using a goal-setting process for setting and achieving personal goals and/or for changing a behaviour (e.g., evaluate application of goal-setting process to improving cardiovascular fitness, career plan)
- analyze factors (i.e., values, beliefs, peers, media, environment, finances) that influence personal and/or group decisions for active, healthy lifestyles
- design, implement, evaluate, and revise an action plan for making a personal and/or group decision based on values and beliefs
- apply communication skills and strategies (e.g., listen actively, clarify feelings, summarize) in case scenarios for getting along with others in a variety of contexts (e.g., while participating in physical activities, discussion groups, project work, job interviews, conversations with adults in home/school/community)

Science

Dynamics of Ecosystems

- discuss factors that may disturb biogeochemical cycles (e.g., natural events, human activities)
- investigate how human activities affect an ecosystem and use the decision-making process to propose a course of action to enhance its sustainability (e.g., impact on biogeochemical cycling, population dynamics, and biodiversity)

Chemistry in Action

- describe the formation and the environmental impact of various types of air pollution (e.g., acid precipitation, ground-level ozone, airborne particulates, smog; ozone depletion, respiratory ailments, acidified lakes)
- investigate technologies that are used to reduce emissions of potential air pollutants (e.g., catalytic converters in automobiles, smokestack scrubbers, regulation of vehicle emissions, disposal of PCBs from electrical transformers, elimination of CFCs from refrigerants and aerosol propellants)

Weather Dynamics

- investigate and evaluate evidence that climate change occurs naturally and can be influenced by human activities (e.g., the use of technology in gathering and interpreting current and historical data)
- discuss potential consequences of climate change (e.g., changes in ocean temperature may affect aquatic populations, higher frequency of severe weather events influencing social and economic activities, scientific debate over nature and degree of change)

Social Studies

Geographic Literacy

- explain the importance of stewardship in the preservation of the Earth's complex environment
- respect the Earth as a complex environment in which humans have important responsibilities
- promote actions that reflect principles of sustainability
- make decisions that reflect social responsibility

Natural Resources

- describe sustainability issues related to natural resource extraction and consumption
- identify implications of more-developed countries extracting resources from less-developed countries (e.g., social, political, economic, environmental)
- be willing to consider the implications of personal choices regarding natural resources
- collaborate with others to achieve group goals and responsibilities
- use a variety of strategies in conflict resolution

- listen to others to understand their perspectives
- express informed and reasoned opinions
- articulate their perspectives on issues

Industry and Trade

- be willing to consider the social and environmental impacts of their consumer choices
- collaborate with others to achieve group goals and responsibilities
- make decisions that reflect fairness and equality in their interactions with others
- seek consensus in collaborative problem solving
- make decisions that reflect social responsibility

Urban Places

- identify issues related to urban growth and decline
- describe urban environmental and economic issue (e.g., land use, relationship to hinterland, infrastructure)
- collaborate with others to achieve group goals and responsibilities
- make decisions that reflect fairness and equality in their interactions with others
- promote actions that reflect principles of sustainability
- make decisions that reflect social responsibility

MB 11

Current Topics in the Sciences

Science, Technology, Society, and the Environment

- describe scientific and technological developments, past and present, and appreciate their impact on individuals, societies, and the environment, both locally and globally
- identify the factors that affect health and explain the relationships of personal habits, lifestyle choices, and human health, both individual and social
- identify and demonstrate actions that promote a sustainable environment, society, and economy, both locally and globally

Language Arts

Manage ideas and information

- determine inquiry or research focus and parameters based on personal knowledge and on others' expertise
- formulate and revise questions to focus inquiry or research topic and purpose
- summarize and record information, ideas, and perspectives from a variety of sources; document sources accurately
- evaluate how perspectives and biases influence the choice of information sources for inquiry or research

Celebrate and build community

- demonstrate flexibility in assuming a variety of group roles and take responsibility for tasks that achieve group goals
- evaluate the effectiveness of group process to improve subsequent success

Physical Geography

Elements of weather and climate

World climate, vegetation and soil regions

MB 12

Active Healthy Lifestyles

Personal and Social Development

- demonstrate understanding of the characteristics and development of effective teams
- explore and identify the various roles and skills of team members in building effective teams
- examine the characteristics of effective team leaders and their impact on team development

Language Arts

Explore thoughts, ideas, feelings, and experiences

- weigh and assess the validity of a range of ideas, observations, opinions, and emotions to reconsider and/or affirm positions
- invite diverse and challenging ideas and opinions through a variety of means to facilitate the re-examination of own ideas and positions
- explain how new knowledge, ideas, experiences, and perspectives reshape knowledge, ideas, and beliefs
- explore the strengths and limitations of various viewpoints on an issue or topic and identify aspects for further consideration; evaluate implications of particular perspectives when generating and responding to texts

Manage ideas and information

- consider own and others' expertise to explore breadth and depth of knowledge, and focus inquiry or research based on parameters of task
- formulate focused inquiry or research questions and refine them through reflection and discussion of topic, purpose, and context
- collaborate with and support group members in adapting procedures to achieve inquiry or research goals
- synthesize and record information, ideas, and perspectives from a variety of sources; document sources accurately
- evaluate information for completeness, accuracy, currency, historical context, relevance, balance of perspectives, and bias

Celebrate and build community.

- use language to demonstrate flexibility in working with others; encourage differing viewpoints to extend breadth and depth of individual and group thought
- demonstrate commitment and flexibility in a group, monitor own and others' contributions, and build on others' strengths to achieve group goals
- evaluate the usefulness of group process to achieve particular goals or tasks

World Geography: A Human Perspective

World Population: Characteristics, Distribution, and Growth

- what effect does a poor or failing economy have on the population and the environment as compared to a vibrant economy?
- what are the effects of an increasing population on the environment? On the economy?

Ontario

ON 9

Geography of Canada (Academic)

Geographic Foundations: Space and Systems

- explain the terms and concepts associated with regions (e.g., bioregion, ecozone, "ecological footprint", boundaries, transition zone, ecumene)

Human-Environment Interactions

- explain how human activities (e.g., agricultural and urban development, waste management, parks development, forest harvesting, land reclamation) affect, or are affected by, the environment
- identify the role of government in managing resources and protecting the environment
- present findings from research on ways of improving the balance between human and natural systems (e.g., recycling, river clean-ups, ecological restoration of local woodlots or schoolyards, industrial initiatives to reduce pollution)
- evaluate solutions to environmental problems proposed by various groups (e.g., by government, industry, environmentalists, community members) and make recommendations for sustainable resource use

Global Connections

- explain the role of selected international organizations and agreements and why Canada participates in them (e.g., Kyoto Protocol)
- evaluate Canada's participation in organizations that deal with global issues (e.g., global warming, biodiversity, human rights)
- compare, in terms of resource use and consumption, the "ecological footprint" of an average Canadian with that of an aver- age citizen in a developing country
- produce a set of guidelines for developing a solution to a global geographic or environmental issue

Understanding and Managing Change

- explain how selected factors cause change in human and natural systems (e.g., global warming)
- predict the consequences of human activities (e.g., agriculture, recreation) on natural systems (e.g., climate change)
- analyse the positive and negative effects on people and the environment of the manufacture, transportation to market, and consumption of selected products (e.g., cars, clothing, tropical food products)

Geography of Canada (Applied)

Human-Environment Interactions

- describe the role of key stakeholders in protecting the environment (e.g., through emissions testing, environmental assessments)
- create a visual (e.g., poster, cartoon, multi- media presentation) to address an environmental sustainability issue or promote environmental awareness

Global Connections

- describe Canada's participation in major international organizations (e.g., United Nations) and agreements (e.g., Kyoto Protocol)
- evaluate Canada's effectiveness and commitment in responding to global challenges (e.g., climate change,) and promoting international well-being (e.g., humanitarian aid, human rights advocacy, peacekeeping)

- analyze the potential impact on the global community of their personal choices (e.g., in music, clothes, food, work, recreation)
- compare the "ecological footprint" of a typical Canadian with those of people from other countries

Introduction to Business

Business Fundamentals

- explain the concepts of ethics and social responsibility as they apply to business (e.g., workplace safety, antidiscrimination issues, accessibility issues for people with disabilities, environmental responsibility, respect for labour laws, fair trade)
- explain controversial business issues from a local, national, and international perspective (e.g., accounting scandals, environmental impact of some business practices, insider trading, fraud)

ON 10

Introduction to Business

Business Fundamentals

- explain the concepts of ethics and social responsibility as they apply to business (e.g., workplace safety, antidiscrimination issues, accessibility issues for people with disabilities, environmental responsibility, respect for labour laws, fair trade)
- explain controversial business issues from a local, national, and international perspective (e.g., accounting scandals, environmental impact of some business practices, insider trading, fraud)

Science (Academic)

Earth and Space Science: Weather Dynamics

- explain the role of weather dynamics in environmental phenomena and consider the consequences to humans of changes in weather (e.g., the role of weather in air pollution, acid rain, global warming, and smog; the fact that smog aggravates asthma)

Science (Applied)

Earth and Space Science: Weather Systems

- identify the impact of climate change on economic, social, and environmental conditions

ON 11

Chemistry (University Prep)

Gases and Atmospheric Pressure

- analyze the cumulative effects of human activities and technologies on air quality, and describe some Canadian initiatives to reduce air pollution, including ways to reduce their own carbon footprint
- analyze the effects on air quality of some technologies and human activities (e.g., smelting; driving gas-powered vehicles), including their own activities, and propose actions to reduce their personal carbon footprint

Environmental Science (University and College Prep)

Scientific Solutions to Contemporary Environmental Challenges

- analyze, on the basis of research, social and economic issues related to a particular environmental challenge (e.g., melting of the polar ice cap) and to efforts to address it

- analyze ways in which societal needs or demands have influenced scientific endeavours related to the environment (e.g., research into alternative energy sources in response to demands to address the impact on climate change of burning fossil fuels)
- use a research process to locate a media report on a contemporary environmental issue (e.g., climate change, melting of the polar ice cap, deforestation), summarize its arguments, and assess their validity from a scientific perspective
- explain how new evidence affects scientific knowledge about the environment and leads to modifications of theory and/or shifts in paradigms (e.g., the impact of evidence of the effects of carbon dioxide emissions on theories of global warming)

Human Health and the Environment

- analyze longitudinal data to determine the impact of various environmental factors that affect human health (e.g., air temperature, atmospheric greenhouse gases, contaminants in drinking water)

Environmental Science (Workplace Prep)

Human Impact on the Environment

- propose possible solutions, on the basis of research, to a current practical environmental problem that is caused, directly or indirectly, by human activities
- analyze the risks and benefits to the environment of human recreational activities and the leisure industry
- explain the concept of a "carbon footprint" and how it is used to measure the impact on the environment of a range of human activities

Physical Geography: Patterns, Process, and Interactions (University and College Prep)

Human-Environment Interactions

- evaluate the impact on a selected region of human-caused changes in atmospheric conditions (e.g., acid precipitation, smog, ozone depletion)
- evaluate the impact of human activities (e.g., deforestation, the burning of fossil fuels, fertilizer use) on natural cycles (e.g., the carbon, nitrogen, or phosphorus cycles)

Global Connections

- analyze the effects that human activities and/or natural events in a region or country can have on another part of the world (e.g., downstream impacts of dams, climatic effects of volcanic eruptions, acid precipitation or ozone layer depletion from the burning of fossil fuels)

Understanding and Managing Change

- explain the relationship between natural variations in global climate and glacial movements
- distinguish natural short-term variability from long-term trends in historical climate data
- explain the potential effects of long-term climate change (e.g., global warming) on different parts of the world, including their local community
- explain the correlation between changes in population density, changes in human activities, and changes in the "ecological footprint" of our species
- describe the difficulties involved in predicting climate change

ON 12

Chemistry (College Prep)

Chemistry in the Environment

- identify gases and particulates that are commonly found in the atmosphere, and explain how they affect air quality (e.g., greenhouse gases, tropospheric and stratospheric ozone, carbon monoxide, chlorofluorocarbons, soot)

The Environment and Resource Management (University and College Prep)

Human-Environment Interactions

- explain the effects on human health and the environment of the use and proliferation of selected chemicals
- evaluate the effects of fossil fuel use (e.g., for transportation, heat, manufacturing) on urban and rural environments
- estimate personal and class "ecological footprints" (e.g., based on consumption of resources, production of wastes)

Understanding and Managing Change

- evaluate the impact on both human and natural systems of a selected environmental or resource management problem (e.g., tropical deforestation, climate change, water scarcity)

New Brunswick

NB 9

Physical Education and Health

Doing

- demonstrate cooperative skills in interaction with others
- demonstrate cooperation and supportive behaviour in interactions with others
- demonstrate leadership skills in interactions with others

Valuing

- demonstrate self- control and willingness to participate in a variety of activities
- demonstrate leadership and be proactive in the application of safety rules, routines, and procedures in their participation in physical activities

NB 10

Physical Education and Health

Doing

- demonstrate cooperative skills in interaction with others
- demonstrate cooperation and supportive behaviour in interactions with others
- demonstrate leadership skills in interactions with others

Valuing

- demonstrate self- control and willingness to participate in a variety of activities
- demonstrate leadership and be proactive in the application of safety rules, routines, and procedures in their participation in physical activities

Science

Earth and Space Science: Weather Dynamics

- relate both personal activities and scientific/ technological processes to weather and climate research and the application of the research

NB 12

Environmental Science

Introduction to Environmental Science

- develop an appreciation for the complexity of the interrelationship of the environment
- develop an awareness of one's personal responsibility in the maintenance and preservation of various ecosystems
- develop a sense of responsibility toward sustainability i.e. stewardship.
- develop an awareness of global environmental issues and the contribution of local activity to the resolution of global concerns
- develop an attitude of participation in planning and shaping the future by employing practical and creative solutions

Pollution

- understand greenhouse gases and their effects on the atmosphere
- demonstrate ability to make conclusions and recommendations concerning pollution data
- develop an appreciation that local action to reduce pollution has global effects
- develop an understanding that because of energy-matter cycles pollution does not "disappear"
- identify trends that suggest the Greenhouse Effect may be contributing to climate change

Nova Scotia

NS 9

Social Studies

Atlantic Canada in the Global Community

- people interact with the physical environment to create and refine their social environment
- natural resources shape the decisions that people make as they meet their needs and wants
- people organize into groups to achieve common and specific goals
- effective citizenship requires a sense of personal commitment, a willingness to act, and a concern for the future
- global interdependence and technological change affect sustainable living and cultural understanding
- demonstrate an appreciation for the wide variety of ways that people can meet their needs and wants
- the obligation to protect and sustain the environment

NS 10

Language Arts

- examine the ideas of others in discussion to clarify and extend their own understanding
- present a personal viewpoint to a group of listeners, interpret their responses, and take others' ideas into account when explaining their positions
- listen critically to analyze and evaluate ideas and information to formulate and refine opinions and ideas

NS 11

Biology

- analyze how individuals, society, and the environment are interdependent with scientific and technological endeavours.
- evaluate social issues related to applications and limitations of science and technology, and explain decision in terms of advantages and disadvantages for sustainability, considering a variety of perspectives.
- ask questions about observed relationships and plan investigations of questions, ideas, problems, and issues.
- work as a member of a team in addressing problems, and apply the skills and conventions of science in communicating information and ideas in assessing results.

Language Arts

- address complex issues, present points of view backed by evidence, and modify, defend, or argue for their positions in response to opposing points of view.
- listen critically to evaluate others' ideas in terms of their own understanding and experiences, and identify ambiguities, and unsubstantiated statements.

NS 12

English Language Arts

- articulate, advocate, and justify positions on an issue or text in a convincing manner, showing an understanding of a range of viewpoints
- listen critically to analyze and evaluate concepts, ideas, and information

Newfoundland and Labrador

NL 9

Science

Electricity

- make informed decisions about applications of science and technology, talking into account environmental and social advantages and disadvantages
- apply criteria for evaluating environmental problems associated with electrical energy production (e.g., safety, cost of production, degree of environmental impact)

NL 12

Earth Systems

The Earth's Systems

- recognize that the atmosphere is continuously being modified by biological and chemical processes
- use the effect of human activity on the atmosphere to illustrate the risks and benefits of applying scientific knowledge or introducing a technology
- identify the major gases and other components that comprise each layer of the atmosphere
- relate the changing composition of the atmosphere to natural phenomena and human activity

The Earth Through Time

- recognize that global systems are inherently dynamic, that is they have been undergoing changes since earliest time
- give examples of changes that have occurred naturally and those that have been caused by human activity (e.g., global climatic changes)
- use a specific example to illustrate how global systems have changed and are changing over time (e.g., human activities by generating excess greenhouse gases)
- predict basic climatic patterns and justify the predictions using past and present data
- predict the potential long-term impact on the biosphere of global climatic changes

Environmental Science

Introduction to Environmental Science

- identify that humans are one part of a complex system of living thing that can have a great impact on the other systems
- identify that anthropocentric attitudes have contributed to many of today's environmental issues
- identify the relationship between human population growth, demand for resources, and increased consumerism
- define sustainability as a human practice to maintain ecosystem stability
- identify individual impacts on the environment using the concept of ecological footprint
- describe your community's impact on the environment
- describe environmental responsibility of the individuals, community, industry, government

The Atmosphere and the Environment

- identify the anthropogenic interactions that affect Earth's atmosphere (e.g., combustion, industrial, domestic)
- identify that climate change can have a catastrophic affect on Earth (e.g., natural sources of green house gasses, anthropogenic sources of greenhouse gases)

- describe the impacts of climate change in Canada on wildlife and natural ecosystems (e.g., types of vegetation, shifting ecosystem boundaries, biodiversity of species, adaptation of species)
- describe the impacts of climate change in forests, agriculture, and fishery
- describe the impacts of climate change on coastal zones (sea level changes and areas of human habitat), extreme weather events, and human health
- describe efforts made to address climate change (e.g., individual, industries, provincial governments, federal governments, international agreements such as the Rio Declaration and the Kyoto Protocol)

eCards

Prince Edward Island

PEI 9

Health

Life Learning Choices

- relate the value of lifelong learning to personal success and satisfaction
- use decision making skills to select appropriate risk taking activities for personal growth and empowerment

Language Arts

Speaking and Listening Overview

- examine others' ideas in discussion to extend their own understanding
- asking relevant questions calling for elaboration, clarification, or qualification and respond thoughtfully to such questions
- articulate, advocate, and support points of view, presenting viewpoints in a convincing manner

Social Studies

Challenges and Opportunities

- identify and analyze the economic challenges and opportunities that may affect Canada's future (e.g., climate change)

PEI 10

Canadian Studies

Canada's Global Connections

- articulate the importance of sustainability of natural resources from a local, regional, national, and global perspective
- describe how Canadians can make their communities sustainable describe how Canada can work globally to create a sustainable world community
- predict possible future sustainability issues and their probable impact(s) within Canada

Language Arts

Speaking and Listening Overview

- examine others' ideas in discussion to extend their own understanding
- construct ideas about issues by asking relevant questions and responding thoughtfully to questions posed
- present a personal viewpoint to a group of listeners, interpret their responses, and take others' ideas into account when explaining their positions

Science

Sustainability of Ecosystems

- identify multiple perspectives that influence a science-related decision or issue

Chemical Reactions

- compare examples where society has used the presence of airborne pollution to influence decisions concerning science and technology

PEI 11

Agriscience

Atmospheric Quality

- define air and identify its major components
- discuss the greenhouse effect and global warming

Geography

Physical Patterns of the World

- explain how the relationship between Earth and Sun is critical to the study of geography
- relate major climate vegetation regions of the world
- describe factors that influence climate regions

Language Arts

Speaking and Listening Overview

- follow-up on and extend others' ideas in order to reflect upon their own interpretation of experiences
- ask perceptive/probing questions to explore ideas and gain information
- address complex issues, present points of view backed by evidence, and modify, defend, or argue for their positions in response to opposing points of view

PEI 12

Agriscience

Atmospheric Quality

- define air and identify its major components
- discuss the greenhouse effect and global warming

Language Arts

Speaking and Listening Overview

- examine others' ideas and synthesize what is helpful to clarify and expand on their own understanding
- ask discriminating questions to acquire, interpret, analyse, and evaluate ideas and information
- articulate, advocate, and justify positions on an issue or text in a convincing manner, showing an understanding of a range of viewpoints