

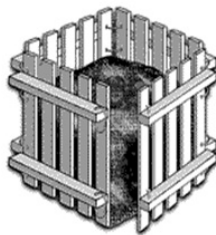


Prevention of Food Waste in Schools: K-12 Potential Manitoba SLO Curricular Connections

Part B –Composting (English)

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Part A - Organic Waste Reduction (English) is potential Manitoba M-12 Curricular Connections for organic waste reduction in connection with climate change and food security.

Part B - Composting is the English version of possible composting connections.

Partie A - Réduction des déchets organiques (français) is the French version of potential Manitoba K-12 Curricular Connections for organic waste reduction in connection with climate change and food security.

Partie B - Compostage (français) is the French version of possible composting connections.

Green Action Centre - Prevention of Food Waste in School: K-12 Potential Manitoba SLO Curricular Connections Part B – Composting (English)

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Kindergarten (Page 1 of 1)

Subject	Grade	Cluster	Student Learning Outcomes
Science	K		None
Social Studies	K	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social Studies	K	2: The People Around Me	VC-001 Be willing to contribute to their groups and communities.
Physical Education/Health Education	K		None

Grade 1 (page 1 of 1)

Subject	Grade	Cluster	Student Learning Outcomes
Science	1	1: Characteristics and Needs of Living Things	1-1-10 Describe how humans and other living things depend on their environment to meet their needs. <i>Examples: the environment provides humans and other living things with food ...</i>
Science	1	1: Characteristics and Needs of Living Things	1-1-12 Identify hobbies and jobs that require knowledge of the needs of living things. <i>Examples: gardeners, nurses, zookeepers...</i>
Science	1	1: Characteristics and Needs of Living Things	1-1-13 Develop, implement, and evaluate personal and group action plans that contribute to a healthy environment for themselves and for other living things. <i>Examples: wash hands before eating, reduce amount of waste produced by the class...</i>
Science	1	3: Characteristics of Objects and Materials	1-3-11 Demonstrate ways to reduce, reuse, and recycle materials during classroom learning experiences.
Social Studies	1	Skills - Active Democratic Citizenship	S-100 Cooperate and collaborate with others. <i>Examples: share space and resources, assume responsibilities, seek agreement...</i>
Social Studies	1	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social Studies	1	3: Connecting with Others	VC-002 Be willing to contribute to their groups and communities.
Physical Education/Health Education	1		None

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Subject	Grade	Cluster	Student Learning Outcomes
Science	2	2: Properties of Solids, Liquids, and Gases	2-2-16 Describe ways humans dispose of solids and liquids to maintain a clean and healthy environment. <i>Examples: take used car oil and old paints to collection sites, recycle newspapers...</i>
Social Studies	2	Skills - Active Democratic Citizenship	S-100 Cooperate and collaborate with others. <i>Examples: make collective decisions, share responsibilities, seek agreement...</i>
Social Studies	2	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social Studies	2	1: Our Local Community	VC-002 Be willing to contribute to their groups and communities.
Social Studies	2	2: Communities in Canada	KL-022 Explain the importance of conserving or restoring natural resources.
Physical Education/Health Education	2		None

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Subject	Grade	Cluster	Student Learning Outcomes
Science	3	1: Growth and Changes in Plants	3-1-12 Identify needs common to plants and animals, and contrast how they meet those needs.
Science	3	1: Growth and Changes in Plants	3-1-13 Describe ways that plants and animals depend on each other. <i>Examples: plants provide food and shelter for some animals, animals help distribute pollen and seeds...</i>
Science	3	1: Growth and Changes in Plants	3-1-14 Describe ways plants are important to the environment. <i>Examples: improve soil, air, and water quality; reduce erosion...</i>
Science	3	1: Growth and Changes in Plants	3-1-15 Identify and describe hobbies and jobs involving plants.
Science	3	4: Soils in the Environment	3-4-01 Use appropriate vocabulary related to their investigations of soils in the environment. <i>Include: soil, soil component, loam, clay, sand, pebbles, organic matter, humus, rocks, sedimentation, sieving, water-holding capacity.</i>
Science	3	4: Soils in the Environment	3-4-02 Identify and describe various components within a sample of soil from the local environment. <i>Examples: clay, loam, sand, pebbles, organic matter, humus, rocks...</i>
Science	3	4: Soils in the Environment	3-4-08 Explain the importance of understanding the characteristics of different soils. <i>Examples: enables farmers to determine which crops can be grown in a particular area, enables gardeners to improve plant growth, enables engineers to know what types of foundations to set for structures...</i>
Science	3	Cluster 4: Soils in the Environment	3-4-09 Identify animals found in soil and explain their importance to soil quality. <i>Examples: worms, insects, and mammals help to aerate the soil or increase nutrients...</i>
Science	3	Cluster 4: Soils in the Environment	3-4-10 Describe ways to return organic matter to the soil. <i>Examples: composting, spreading manure on fields...</i>
Science	3	Cluster 4: Soils in the Environment	3-4-11 Use the design process to construct a simple composter that returns organic matter to the soil. <i>Examples: classroom composter for left-over food, school compost</i>
Social Studies	3	Skills - Active Democratic Citizenship	S -100 Collaborate with others to share ideas, decisions, and responsibilities in groups

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Subject	Grade	Cluster	Student Learning Outcomes
Social Studies	3	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social studies	3	1: Connecting With Canadians	VC-002 Be willing to contribute to their groups and communities.
Social Studies	3	2: Exploring the World	KG-027 Give examples of concerns common to communities around the world.
Social Studies	3	2: Exploring the World	KG-031 Give examples of personal decisions and actions that may positively affect people locally or globally. Examples: charitable donations and projects, recycling...
Social Studies	3	Cluster 3: Communities of the World	KL-018 Give examples of the use of natural resources in communities studied.
Physical Education/Health Education	3		None

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Subject	Grade	Cluster	Student Learning Outcomes
Science	4	1: Habitats and Communities	4-1-01 Use appropriate vocabulary related to their investigations of habitats and communities. <i>Include: habitat, physical adaptation, behavioural adaptation, traditional knowledge, technological development, population, community, food chain, food web, organism, producer, consumer, herbivore, omnivore, carnivore, predator, prey, scavenger, endangerment, extinction, conservation.</i>
Science	4	1: Habitats and Communities	4-1-02 Recognize that each plant and animal depends on a specific habitat to meet its needs.
Science	4	1: Habitats and Communities	4-1-03 Identify the components of an animal habitat. <i>Include: food, water, living space, cover/shelter.</i>
Science	4	1: Habitats and Communities	4-1-09 Recognize that plant and animal populations interact within a community.
Science	4	1: Habitats and Communities	4-1-10 Recognize that the food chain is a system in which some of the energy from the Sun is transferred eventually to animals.
Science	4	1: Habitats and Communities	4-1-11 Construct food chains and food webs, and classify organisms according to their roles. <i>Include: producer, consumer, herbivore, omnivore, carnivore, predator, prey, scavenger.</i>
Science	4	1: Habitats and Communities	4-1-17 Recognize and appreciate how traditional knowledge contributes to our understanding of plant and animal populations and interactions.
Social Studies	4	Skills - Active Democratic Citizenship	S-100 Collaborate with others to share ideas, decisions, and responsibilities in groups.
Social Studies	4	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social Studies	4	2: Living in Canada	VC-001 Be willing to contribute to their groups and communities.
Social Studies	4	2: Living in Canada	4-KE-048 Identify various ways in which governments help people meet their needs. <i>Examples: education, health care, sanitation...</i>
Social Studies	4	3: Living in Manitoba	KL-023 Identify Issues related to environmental stewardship and sustainability in Manitoba.
Social Studies	4	3: Living in Manitoba	VL-006A Respect their spiritual Connections to the Natural Environment (land, water, sky).
Social Studies	4	4: History of Manitoba	KH-035 Describe ways in which life in Manitoba has changed over time. <i>Examples: housing, food, hunting and fishing, clothing, recreation, languages, education, agriculture, transportation...</i>

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Subject	Grade	Cluster	Student Learning Outcomes
Social Studies	4	4: Canada's North	KH-038 Describe changes in ways of life in the last century in the northern territory studied. <i>Examples: food, clothing, transportation, languages, recreation, education...</i>
Physical Education/Health Education	4	4. Personal and social Management Outcomes	S.4.4.A.2 Design, implement, evaluate, and revise an action plan for making a group decision (e.g., classroom rules and routines, planning a class or group activity...).

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Subject	Grade	Cluster	Student Learning Outcomes
Science	5	2: Properties of and Changes in Substances	5-2-10 Recognize that a physical change alters the characteristics of a substance without producing a new substance, and that a chemical change produces a new substance with distinct characteristics and properties.
Social Studies	5	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social Studies	5	1: First Peoples	KL-017 Describe practices and beliefs that reflected First People's connection with the land and the natural environment.
Social Studies	5	1: First Peoples	KL-017 Describe practices and beliefs that reflected First People's connection with the land and the natural environment.
Physical Education/Health Education	5		None
Human Ecology	5	3: Demonstrate understanding of citizenship and sustainability.	5.3.1.3 Identify local food programs to increase food security (e.g., education programs, food banks, community kitchens, food drives, and community gardens, etc.).
Human Ecology	5	3: Demonstrate understanding of citizenship and sustainability.	5.3.2.2 Identify sustainable food practices that reduce the impact on the environment (e.g., packaging, buy local or garden, use of leftovers, etc.).

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Subject	Grade	Cluster	Student Learning Outcomes
Science	6		None
Social Studies	6	Skills - Active Democratic Citizenship	S-100 Collaborate with others to establish and carryout group goals and responsibilities.
Social Studies	6	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social Studies	6	4: Canada Today: Democracy, Diversity, and the Influence of the Past	VC-002 Be willing to support the ideals of democracy and contribute to local democratic processes. <i>Examples: school or community projects, student councils...</i>
Physical Education/Health Education	6		None
Human Ecology	6	3: Demonstrate understanding of citizenship and sustainability.	6.3.2.2 Identify sustainable food preparation and purchasing practices that reduce the impact on the environment (e.g., cooking practices that require less energy, reusable container/shopping bags, bulk buying).
Human Ecology	6	4: Demonstrate understanding of relationships and influences around food choices.	6.4.2.1 Identify factors that affect people's food needs and wants as they relate to food choices.

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Subject	Grade	Cluster	Student Learning Outcomes
Science	7	1: Interactions Within Ecosystems	7-1-12 Provide examples of scavengers and decomposers, and describe their role in cycling matter in an ecosystem. <i>Include: micro-organisms.</i>
Science	7	1: Interactions Within Ecosystems	7-1-14 Identify beneficial and harmful roles played by micro-organisms. <i>Examples: beneficial—aid indigestion, composting, food and vaccine production; harmful—cause disease, food spoilage...</i>
Science	7	1: Interactions Within Ecosystems	7-1-15 Research and describe human food production or preservation techniques that apply a knowledge of micro-organisms. <i>Examples: bread and yogurt making, food drying, sterilization, refrigeration...</i>
Science	7	4: Earth's Crust	7-4-10 Describe methods used to control soil erosion, and recognize the importance of soil conservation. <i>Examples: economically important to the agri-food industry, important for controlling the flow of water, necessary for plant growth...</i>
Science	7	4: Earth's Crust	7-4-11 Identify environmental, social, and economic factors that should be considered in making informed decisions about land use
Social Studies	7	Skills - Active Democratic Citizenship	S- 100 Collaborate with others to establish and carry out goals and responsibilities.
Social Studies	7	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect principles of environmental stewardship and sustainability.
Physical Education/Health Education	7		None
Human Ecology	7	3: Demonstrate understanding of citizenship and sustainability.	7.3.1.3 Investigate how to access and/or contribute to food initiatives to connect with community in rural, urban, and/or northern locations.
Human Ecology	7	3: Demonstrate understanding of citizenship and sustainability.	7.3.2.2 Identify sustainable practices that reduce the impact of food production and consumption on the environment (e.g., organic farming, food co-ops, community garden, composting, recycling).*
Human Ecology	7	4: Demonstrate understanding of relationships and influences around food choices.	7.4.2.1 Describe factors that affect adolescent food needs and wants as they relate to food choices.

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Grade 8 (page 1 of 1)

Subject	Grade	Cluster	Student Learning Outcomes
Science	8		None
Social Studies	8	Skills - Active Democratic Citizenship	S-100 Collaborate with others to establish and carry out group goals and responsibilities.
Social Studies	8	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect the principles of sustainable development.
Social Studies	8	1: Understanding Societies Past and Present	VL-008 Appreciate the importance of sustaining the natural environment for future societies.
Physical Education/Health Education	8		None
Human Ecology	8	2: Demonstrate understanding of fundamentals of nutrition	8.2.3.4 Identify current and future technological trends in food and nutrition, and discuss the real or perceived benefits to Canadian consumers.
Human Ecology	8	3: Demonstrate understanding of citizenship and sustainability.	8.3.1.3 Create an action plan to contribute towards a local food program.
Human Ecology	8	3: Demonstrate understanding of citizenship and sustainability.	8.3.2.1 Describe factors (e.g., cost, nutrition, and convenience) that influence where people choose to get their food (e.g., hunting/gathering, garden, various forms of stores that sell groceries, farmers' market, pick-your-own, etc.).
Human Ecology	8	4: Demonstrate understanding of relationships and influences around food choices.	8.4.2.1 Analyze what influences personal food choices as needs or wants.

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Subject	Grade	Cluster	Student Learning Outcomes
Science	9		None
Social Studies	9	Skills - Active Democratic Citizenship	S-100 Collaborate with others to establish and carryout group goals and responsibilities.
Social Studies	9	Skills - Active Democratic Citizenship	S-103 Make decisions that reflect care, concern, and responsibility for the environment.
Social Studies	9	Skills - Active Democratic Citizenship	S-107 Make decisions that reflect social responsibility.
Social Studies	9	2: Democracy and Governance in Canada	KP-046 Give examples of ways in which people can individually and collectively influence Canada's political and social systems. <i>Examples: voting, political parties, labour organizations, civil disobedience, NGOs, lobbying...</i>
Social Studies	9	3: Canada in the Global Context	KE-049 Evaluate implications of living in a consumer-based economy. <i>Examples: social, political, environmental...</i>
Social Studies	9	4. Canada: Opportunities and Challenges	KL-028 Evaluate Canadian concerns and commitments regarding environmental stewardship and sustainability.
Social Studies	9	4. Canada: Opportunities and Challenges	KG-042 Describe Canada's responsibilities and potential for leadership regarding current global issues. <i>Examples: refugees, international development, environmental stewardship, military defence...</i>
Physical Education/Health Education	9		None
Human Ecology 0486 (Full Credit) Part 1 Family Studies	9		None
Human Ecology 0486 (Full Credit) Part 2 Textile Arts and Design	9		None
Human Ecology 0488 Textile Arts and Design Half Credit	9		None
Human Ecology 0488 Textile Arts and Design Full Credit	9		None

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Subject	Grade	Cluster	Student Learning Outcomes
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	9	3: Demonstrate understanding of citizenship and sustainability.	9.3.2.1 Discuss personal practices that reduce the environmental impact of food production and consumption.
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	9	4: Demonstrate understanding of relationships and influences around food choices.	9.4.1.1 Identify factors that influence personal food choices (e.g., nutritional, cultural, emotional, environmental, religious, social, ethical, and economic).
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	9	Goal 5: Demonstrate understanding of career development and the skills required.	9.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0487 Family Studies Half Credit	9		None
Human Ecology 0487 Family Studies Full Credit	9		None
Human Ecology 0488 Textile Arts and Design Half Credit	9		None
Human Ecology 0488 Textile Arts and Design Full Credit	9		None
Human Ecology 0489 Food and Nutrition Half Credit	9	3. Demonstrate understanding of citizenship and sustainability.	9.3.2.1 Discuss personal practices that reduce the environmental impact of food production and consumption.
Human Ecology 0489 Food and Nutrition Half Credit	9	3. Demonstrate understanding of citizenship and sustainability	9.3.2.2 Recognize individual food consumption patterns and their impact on food waste and packaging.
Human Ecology 0489 Food and Nutrition Half Credit	9	4: Demonstrate understanding of relationships and influences around food choices.	9.4.1.1 Identify factors that influence personal food choices (e.g., nutritional, cultural, emotional, environmental, religious, social, ethical, and economic).
Human Ecology 0489 Food and Nutrition Half Credit	9	Goal 5: Demonstrate understanding of career development and the skills required.	9.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0489 Food and Nutrition Half Credit	9		End of Half Credit

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Subject	Grade	Cluster	Student Learning Outcomes
Human Ecology 0489 Food and Nutrition Full Credit	9		Start of Full Credit
Human Ecology 0489 Food and Nutrition Full Credit	9	2: Demonstrate understanding of the fundamentals of nutrition.	9.2.3.5 Describe current and future technological trends in food and nutrition.
Human Ecology 0489 Food and Nutrition Full Credit	9	3. Demonstrate understanding of citizenship and sustainability.	9.3.1.4 Describe current and future trends in food and nutrition (e.g., agricultural practices for ethics in food production, relationship between food choices and social justice, etc.)
Human Ecology 0489 Food and Nutrition Full Credit	9	3. Demonstrate understanding of citizenship and sustainability.	9.3.2.1 Discuss personal practices that reduce the environmental impact of food production and consumption.
Human Ecology 0489 Food and Nutrition Full Credit	9	3. Demonstrate understanding of citizenship and sustainability	9.3.2.2 Recognize individual food consumption patterns and their impact on food waste and packaging.
Human Ecology 0489 Food and Nutrition Full Credit	9	3. Demonstrate understanding of citizenship and sustainability.	9.3.2.3 Investigate food production in Manitoba.
Human Ecology 0489 Food and Nutrition Full Credit	9	4: Demonstrate understanding of relationships and influences around food choices.	9.4.1.1 Identify factors that influence personal food choices (e.g., nutritional, cultural, emotional, environmental, religious, social, ethical, and economic).
Human Ecology 0489 Food and Nutrition Full Credit	9	Goal 5: Demonstrate understanding of career development and the skills required.	9.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Bakery and Pastry Arts 8231 Exploration of Baking and Pastry Arts (9)	9	8: Demonstrate awareness of sustainability as it pertains to the baking industry.	9.8.2.1: Demonstrate knowledge of the importance of reducing the amount of resources used and waste generated.
Culinary Arts 8790 Exploration of Culinary Arts (9)	9	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	9.6.1.1: Identify the waste produced in a culinary arts facility.

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Subject	Grade	Cluster	Student Learning Outcomes
Culinary Arts 8790 Exploration of Culinary Arts (9)	9	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	9.6.1.2: Demonstrate the disposal and recycling of waste.
Culinary Arts 8790 Exploration of Culinary Arts (9)	9	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	9.6.1.4: Identify and locate facilities for recycling and waste disposal.
Horticulture 8717 Exploration of Horticulture (9)	9	3: Demonstrate an understanding of the fundamentals of horticulture .	9.3.1.6: Define terminology associated with fertilizers. (D1.1)
Horticulture 8717 Exploration of Horticulture (9)	9	4: Demonstrate an understanding of soils and growing media .	9.4.1.1: Demonstrate knowledge of the physical characteristics that must be considered when determining the suitability for plant growth.
Horticulture 8717 Exploration of Horticulture (9)	9	4: Demonstrate an understanding of soils and growing media .	9.4.1.2: Demonstrate knowledge of the types of media, as well as their characteristics and applications.
Horticulture 8717 Exploration of Horticulture (9)	9	4: Demonstrate an understanding of soils and growing media .	9.4.1.3: Demonstrate knowledge of soil science terminology.
Horticulture 8717 Exploration of Horticulture (9)	9	4: Demonstrate an understanding of soils and growing media .	9.4.1.4: Demonstrate knowledge of the chemical and biological properties of soils and growing media.
Horticulture 8717 Exploration of Horticulture (9)	9	7: Demonstrate an understanding of the principles of crop production and management .	9.7.1.1: Demonstrate knowledge of pre-harvest and post-harvest factors that affect quality.
Horticulture 8717 Exploration of Horticulture (9)	9	7: Demonstrate an understanding of the principles of crop production and management .	9.7.2.1: Demonstrate knowledge of practices to improve crop quality.

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Subject	Grade	Cluster	Student Learning Outcomes
Horticulture 8717 Exploration of Horticulture (9)	9	7: Demonstrate an understanding of the principles of crop production and management.	9.7.2.2: Demonstrate knowledge of cultural requirements that affect crop production.
Horticulture 8717 Exploration of Horticulture (9)	9	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	9.11.2.1: Demonstrate knowledge of the environmental impact of various horticultural practices. (D1.3) (A5.2)
Horticulture 8717 Exploration of Horticulture (9)	9	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	9.11.3.1: Demonstrate knowledge of the needs of the present world without compromising the ability of future generations to meet their own needs.
Horticulture 8717 Exploration of Horticulture (9)	9	12: Demonstrate an awareness of the ethical and legal standards as they pertain to horticulture.	9.12.1.1: Demonstrate knowledge of the ethical and legal expectations related to the horticulture industry.
Horticulture 8717 Exploration of Horticulture (9)	9	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	9.14.1.1: Describe the evolution and technological progression of, and the emerging trends in the horticulture industry.

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Subject	Grade	Cluster	Student Learning Outcomes
Science	10	1: Dynamics of an Ecosystem	S2-1-01 Illustrate and explain how carbon, nitrogen, and oxygen are cycled through an ecosystem.
Science	10	1: Dynamics of an Ecosystem	S2-1-02 Discuss factors that may disturb biogeochemical cycles. <i>Include: natural events, human activities</i>
Science	10	1: Dynamics of an Ecosystem	S2-1-10 Investigate how human activities affect an ecosystem and use the decision-making model to propose a course of action to enhance its sustainability. <i>Include: impact on biogeochemical cycling, population dynamics, and biodiversity</i>
Science	10	2: Chemistry in Action	S2-2-11 Describe the formation and environmental impact of various forms of air pollution. <i>Examples: acid precipitation, ground-level ozone, air-borne particulates, smog, ozone depletion, respiratory ailments, and acidified lakes...</i>
Social Studies	10	Skills - Active Democratic Citizenship	S-100 Collaborate with others to achieve group goals and responsibilities.
Social Studies	10	Skills - Active Democratic Citizenship	S-103 Promote actions that reflect principles of sustainability.
Social Studies	10	Skills - Active Democratic Citizenship	S-107 Make decisions that reflect social responsibility.
Social Studies	10	Skills - Active Democratic Citizenship	S-303 Reconsider personal assumptions based on new information and ideas.
Social Studies	10	Skills - Active Democratic Citizenship	S-307 Propose and defend innovative options or solutions to address issues and problems.
Social Studies	10	Skills - Active Democratic Citizenship	S-405 Articulate their perspectives on issues.
Social Studies	10	Skills - Active Democratic Citizenship	S-406 Debate differing points of view regarding an issue.
Social Studies	10	1: Geographic Literacy	VL-005 Respect the Earth as a complex environment in which humans have important responsibilities.
Social Studies	10	1: Geographic Literacy	KL-018 Explain the importance of stewardship in the preservation of the Earth's complex environment.
Social Studies	10	2. Natural Resources	KH-033 Identify factors that influence the changing use of natural resources over time. <i>Examples: technology, culture...</i>

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Subject	Grade	Cluster	Student Learning Outcomes
Social Studies	10	2. Natural Resources	VP-009 Be willing to consider the implications of personal choices regarding natural resources.
Social Studies	10	3. Food from the Land	KG-036 Describe issues related to freshwater and saltwater food resources.
Social Studies	10	3. Food from the Land	KL-021 Identify physical conditions required to produce major food crops. <i>Examples: topography, soil, climate, water...</i>
Social Studies	10	3. Food from the Land	KL-023 Describe the impact of various agricultural practices on the physical environment. <i>Examples: soil erosion, water quality, soil fertility...</i>
Social Studies	10	3. Food from the Land	VL-006 Be willing to consider the environmental consequences of their food choices.
Social Studies	10	3. Food from the Land	KE-044 Identify the stages involved in food production and distribution. <i>Include: growing, processing, transportation, and marketing.</i>
Social Studies	10	3. Food from the Land	KH-034 Give examples of ways in which food production has changed over time. <i>Examples: soil conservation strategies, technological change...</i>
Social Studies	10	3. Food from the Land	KI-005 Identify human factors affecting the production and use of various types of food. <i>Examples: cultural, economic, political, environmental, marketing...</i>
Social Studies	10	3. Food from the Land	KL-022 Explain ways in which natural and human-caused phenomena affect food production.
Social Studies	10	3. Food from the Land	KG-036 Describe issues related to freshwater and saltwater food resources.
Social Studies	10	3. Food from the Land	KG-037 Give examples of the potential impact of climate change on food production.
Social Studies	10	3. Food from the Land	KE-043 Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.
Social Studies	10	3. Food from the Land	VP-010 Be willing to consider the economic and political influence of their food choices. <i>Examples: food fashions, food aid, food shortages...</i>
Social Studies	10	4. Industry and Trade	KE-049 Identify current issues related to industry and trade. <i>Include: sustainable development, balance of trade.</i>
Social Studies	10	4. Industry and Trade	VE-011 Be willing to consider the economic implications of their consumer choices.

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Subject	Grade	Cluster	Student Learning Outcomes
Social Studies	10	4. Industry and Trade	VG-008 Be willing to consider the social and environmental impacts of their consumer choices.
Social Studies	10	5. Urban Places	KL-030 Describe urban environmental and economic issues. <i>Examples: land use, relationship to hinterland, infrastructure...</i>
Social Studies	10	5. Urban Places	VE-012 Appreciate the interdependence between urban centres and hinterlands
Physical Education/Health Education	10	3. Safety	K.3.S2.b.4 Investigate the contributions self and/or others can make to community/global health and sustainable development (i.e., maintaining safe and healthy lifestyle practices, volunteering, reducing, reusing, recycling).
Human Ecology 0486 (Full Credit) Part 1 Family Studies	10		None
Human Ecology 0486 (Full Credit) Part 2 Textile Arts and Design	10		None
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	10	3: Demonstrate understanding of citizenship and sustainability.	10.3.2.1 Examine personal practices that reduce the environmental impact of food production and consumption.
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	10	4. Demonstrate understanding of relationships and influences around food choices.	10.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	10	5: Demonstrate understanding of career development and the skills required.	10.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0487 Family Studies Half Credit	10		None
Human Ecology 0487 Family Studies Full Credit	10		None
Human Ecology 0488 Textile Arts and Design Half Credit	10		None
Human Ecology 0488 Textile Arts and Design Full Credit	10		None
Human Ecology 0489 Food and Nutrition Half Credit	10	3. Demonstrate understanding of citizenship and sustainability.	10.3.2.1 Examine personal practices that reduce the environmental impact of food production and consumption.

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Subject	Grade	Cluster	Student Learning Outcomes
Human Ecology 0489 Food and Nutrition Half Credit	10	3. Demonstrate understanding of citizenship and sustainability	10.3.2.2 Recognize individual food consumption patterns and their impact on food waste and packaging.
Human Ecology 0489 Food and Nutrition Half Credit	10	4. Demonstrate understanding of relationships and influences around food choices.	10.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0489 Food and Nutrition Half Credit	10	5: Demonstrate understanding of career development and the skills required.	10.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0489 Food and Nutrition Half Credit	10		End of Half Credit
Human Ecology 0489 Food and Nutrition Full Credit	10		Start of Full Credit
Human Ecology 0489 Food and Nutrition Full Credit	10	2: Demonstrate understanding of the fundamentals of nutrition.	10.2.3.5 Investigate current and future technological trends in food and nutrition.
Human Ecology 0489 Food and Nutrition Full Credit	10	3. Demonstrate understanding of citizenship and sustainability.	10.3.1.4 Describe current and future trends in food and nutrition (e.g., agricultural practices for ethics in food production, relationship between food choices and social justice, etc.).
Human Ecology 0489 Food and Nutrition Half Credit	10	3. Demonstrate understanding of citizenship and sustainability.	10.3.2.1 Examine personal practices that reduce the environmental impact of food production and consumption.
Human Ecology 0489 Food and Nutrition Full Credit	10	3. Demonstrate understanding of citizenship and sustainability.	10.3.2.2 Recognize individual food consumption patterns and their impact on food waste and packaging
Human Ecology 0489 Food and Nutrition Full Credit	10	4. Demonstrate understanding of relationships and influences around food choices.	10.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0489 Food and Nutrition Full Credit	10	5: Demonstrate understanding of career development and the skills required.	10.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.

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Subject	Grade	Cluster	Student Learning Outcomes
Bakery and Pastry Arts 8 3 2 4 : Introduction to Bakery and Pastry Arts (10)	10	8: Demonstrate awareness of sustainability as it pertains to the baking industry.	10.8.2.1: Demonstrate knowledge of the importance of reducing the amount of resources used and waste generated.
Bakery and Pastry Arts 8 3 2 4 : Introduction to Bakery and Pastry Arts (10)	10	11: Understand the evolution and technological progression of, and the emerging trends in baking.	10.11.1.2: Demonstrate knowledge of the technological progression of, and the emerging trends in baking.
Culinary Arts 8791 Culinary Arts Cooking Principles (10)	10	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	10.6.1.1: Identify the waste produced in a culinary arts facility.
Culinary Arts 8791 Culinary Arts Cooking Principles (10)	10	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	10.6.1.2: Demonstrate the disposal and recycling of waste.
Culinary Arts Culinary Arts 8791 Cooking Principles (10)	10	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	10.6.1.4: Identify and locate facilities for recycling and waste disposal.
Culinary Arts Culinary Arts 8791 Cooking Principles (10)	10	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	10.6.1.5: Describe the steps to set up a composting program.
Culinary Arts Culinary Arts 8791 Cooking Principles (10)	10	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	10.6.1.6: Describe how to reduce the usage of energy, waste, and water.
Culinary Arts Culinary Arts 8791 Cooking Principles (10)	10	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	10.6.1.7: Discuss the use of sustainable food containers.
Horticulture 8718 Introduction to Horticulture (10)	10	4: Demonstrate an understanding of soils and growing media.	10.4.1.1: Identify the physical characteristics that must be considered when determining the suitability for plant growth.

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Subject	Grade	Cluster	Student Learning Outcomes
Horticulture 8718 Introduction to Horticulture (10)	10	4: Demonstrate an understanding of soils and growing media .	10.4.1.2: Identify types of media, as well as their characteristics and applications.
Horticulture 8718 Introduction to Horticulture (10)	10	4: Demonstrate an understanding of soils and growing media .	10.4.1.3: Define soil science terminology.
Horticulture 8718 Introduction to Horticulture (10)	10	4: Demonstrate an understanding of soils and growing media .	10.4.1.4: Identify the chemical and biological properties of soils and growing media
Horticulture 8718 Introduction to Horticulture (10)	10	4: Demonstrate an understanding of soils and growing media .	10.4.2.4: Demonstrate knowledge of types of soil amendments, as well as their characteristics and applications.
Horticulture 8718 Introduction to Horticulture (10)	10	4: Demonstrate an understanding of soils and growing media .	10.4.2.5: Recognize the considerations when selecting soil amendments for plants.
Horticulture 8718 Introduction to Horticulture (10)	10	4: Demonstrate an understanding of soils and growing media .	10.4.2.6: Recognize the procedures to select and incorporate soil amendments for plants.
Horticulture 8718 Introduction to Horticulture (10)	10	7: Demonstrate an understanding of the principles of crop production and management.	10.7.1.1: Identify pre-harvest and post-harvest factors that affect quality.
Horticulture 8718 Introduction to Horticulture (10)	10	7: Demonstrate an understanding of the principles of crop production and management.	10.7.2.1: Identify practices to improve crop quality.
Horticulture 8718 Introduction to Horticulture (10)	10	7: Demonstrate an understanding of the principles of crop production and management.	10.7.2.2: Identify cultural requirements that affect crop production.
Horticulture 8718 Introduction to Horticulture (10)	10	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	10.11.1.1: Demonstrate knowledge of the concept of sustainability.

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Subject	Grade	Cluster	Student Learning Outcomes
Horticulture 8718 Introduction to Horticulture (10)	10	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	10.11.2.1: Identify the environmental impact of various horticultural practices.
Horticulture 8718 Introduction to Horticulture (10)	10	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	10.11.3.1: Identify the needs of the present world without compromising the ability of future generations to meet their own needs.
Horticulture 8718 Introduction to Horticulture (10)	10	12: Demonstrate an awareness of the ethical and legal standards as they pertain to horticulture.	10.12.1.1: Demonstrate knowledge of the ethical and legal expectations related to the horticulture industry.
Horticulture 8718 Introduction to Horticulture (10)	10	12: Demonstrate an awareness of the ethical and legal standards as they pertain to horticulture.	10.12.1.2: Demonstrate knowledge of the need for government legislation pertaining to the horticulture industry.
Horticulture 8718 Introduction to Horticulture (10)	10	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	10.14.1.1: Describe the evolution and technological progression of, and the emerging trends in the horticulture industry.

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Subject	Grade	Cluster	Student Learning Outcomes
Science Biology	11		None
Science Chemistry	11	5. Organic chemistry	C11-5-24 Use the decision-making process to investigate an issue related to organic chemistry. <i>Examples: gasohol production, alternative energy sources, recycling of plastics...</i>
Science Current Topics in Science	11		Current Topics in Science's format includes issues, and topics, as well as parts identified as specific learning outcomes.
Science Current Topics in Science	11	Possible Current Themes or Topics	Environmental Interactions ... Is the World Doing Enough to Reduce Pollution? ... Technologies of the Future: What Was Predicted in 1950 and Where Are We Now? ...
Science Current Topics in Science	11	Possible Current Themes or Topics	SLO B1 Describe scientific and technological developments, past and present, and appreciate their impact on individuals, societies, and the environment, both locally and globally.
Science Current Topics in Science	11	Science, Technology, Society, and the Environment.	SLO B2 Recognize that scientific and technological endeavours have been, and continue to be, influenced by human needs and by societal and historical contexts.
Science Current Topics in Science	11	Science, Technology, Society, and the Environment.	SLO B3 Identify the factors that affect health and explain the relationships of personal habits, lifestyle choices, and human health, both individual and social.
Science Current Topics in Science	11	Science, Technology, Society, and the Environment.	SLO B5 Identify and demonstrate actions that promote a sustainable environment, society, and economy, both locally and globally.
Science Current Topics in Science	11	Case Studies	Investigate the school operating system in terms of the origin, cost, use, and waste for each of water, light, heat, paper, and food. ... Develop a personal plan for promoting sustainable development. ...
Science Physics	11		None
Social Studies History of Canada	11		Grade 11 Social Studies focuses on 7 historical thinking skills. Students learn through working with Essential Questions.

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Subject	Grade	Cluster	Student Learning Outcomes
Social Studies History of Canada	11	5. Defining Contemporary Canada (1982-present)	Essential Question 11.5.4 How have Canada's international relations changed since 1982, and what should its global commitments be for the future? Select topics from the following list of suggested historical content to guide student inquiry: 3.Global interdependence now and in the future ... Environmental issues: sustainable development, climate change, Kyoto Accord, Canada's responsibilities as a developed country
Physical Education/Health Education	11		None
Human Ecology 0486 (Full Credit) Part 1 Family Studies	11		None
Human Ecology 0486 (Full Credit) Part 2 Textile Arts and Design	11		None
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	11	3. Demonstrate understanding of citizenship and sustainability.	11.3.2.1 Research Canadian practices that reduce the environmental impact of food production and consumption.
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	11	4: Demonstrate understanding of relationships and influences around food choices.	11.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	11	5: Demonstrate understanding of career development and the skills required.	11.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0487 Family Studies Half Credit	11		None
Human Ecology 0487 Family Studies Full Credit	11		None
Human Ecology 0488 Textile Arts and Design Half Credit	11		None
Human Ecology 0488 Textile Arts and Design Full Credit	11		None
Human Ecology 0489 Food and Nutrition Half Credit	11	3. Demonstrate understanding of citizenship and sustainability.	11.3.2.1 Research Canadian practices that reduce the environmental impact of food production and consumption.

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Subject	Grade	Cluster	Student Learning Outcomes
Human Ecology 0489 Food and Nutrition Half Credit	11	3. Demonstrate understanding of citizenship and sustainability.	11.3.2.2 Examine community food consumption patterns and their impact on food waste and packaging.
Human Ecology 0489 Food and Nutrition Half Credit	11	4. Demonstrate understanding of relationships and influences around food choices.	11.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0489 Food and Nutrition Half Credit	11	5: Demonstrate understanding of career development and the skills required.	10.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0489 Food and Nutrition Half Credit	11		End of Half Credit
Human Ecology 0489 Food and Nutrition Full Credit	11		Start of Full Credit
Human Ecology 0489 Food and Nutrition Full Credit	11	2: Demonstrate understanding of the fundamentals of nutrition.	11.2.3.5 Evaluate current and future trends in food and nutrition in terms of their real or perceived benefits to Canadian consumers. <i>Note similarity 11.3.1.5.</i>
Human Ecology 0489 Food and Nutrition Full Credit	11	3: Demonstrate understanding of citizenship and sustainability.	11.3.1.5 Evaluate current and future trends in food and nutrition in terms of their real or perceived benefits to Canadian consumers. <i>Note similarity 11.2.3.5.</i>
Human Ecology 0489 Food and Nutrition Full Credit	11	3. Demonstrate understanding of citizenship and sustainability.	11.3.2.1 Research Canadian practices that reduce the environmental impact of food production and consumption.
Human Ecology 0489 Food and Nutrition Full Credit	11	3. Demonstrate understanding of citizenship and sustainability.	11.3.2.2 Examine community food consumption patterns and their impact on food waste and packaging.
Human Ecology 0489 Food and Nutrition Full Credit	11	3. Demonstrate understanding of citizenship and sustainability.	11.3.2.3 Analyze the impact of food production practices and technologies on the environment and human health.
Human Ecology 0489 Food and Nutrition Full Credit	11	Goal 5: Demonstrate understanding of career development and the skills required.	11.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0490 Environmental Design Half Credit	11		None
Human Ecology 0490 Environmental Design Half Credit	11		None

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Subject	Grade	Cluster	Student Learning Outcomes
Baking and Pastry Arts 8338: Quick Breads, Cookies, Doughnuts, and Pies (11A)	11	8: Demonstrate awareness of sustainability as it pertains to the baking industry.	11A.8.2.1: Demonstrate the ability to minimize the amount of resources used and waste generated.
Baking and Pastry Arts 8338: Quick Breads, Cookies, Doughnuts, and Pies (11A)	11	8: Demonstrate awareness of sustainability as it pertains to the baking industry.	11A.8.2.2: Demonstrate knowledge of sustainable packaging options and trends in the baking industry.
Baking and Pastry Arts 8338: Quick Breads, Cookies, Doughnuts, and Pies (11A)	11	9: Demonstrate awareness of the ethical and legal standards as they pertain to baking.	11A.9.1.4: Demonstrate knowledge of storage regulations.
Baking and Pastry Arts 8338: Quick Breads, Cookies, Doughnuts, and Pies (11A)	11	11: Understand the evolution and technological progression of, and the emerging trends in baking.	11A.11.1.2: Demonstrate knowledge of the technological progression of, and the emerging trends in quick breads, cookies, doughnuts, and pies.
Baking and Pastry Arts 8339 Yeast-Dough Products (11B)	11	8: Demonstrate awareness of sustainability as it pertains to the baking industry.	11B.8.2.2: Demonstrate knowledge of sustainable packaging options and trends in the baking industry.
Baking and Pastry Arts 8358 Cakes, Fillings, Icings, and Decorations (11C)	11	8: Demonstrate awareness of sustainability as it pertains to the baking industry.	11C.8.2.1: Demonstrate knowledge of the advantages of recycling within the baking industry.
Culinary Arts 8792 Garde-Manger (11A)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11A.6.1.1: Identify the waste produced in a culinary arts facility.
Culinary Arts 8792 Garde-Manger (11A)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11A.6.1.2: Demonstrate the disposal and recycling of waste.
Culinary Arts 8792 Garde-Manger (11A)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11A.6.1.4: Identify and locate facilities for recycling and waste disposal.

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Subject	Grade	Cluster	Student Learning Outcomes
Culinary Arts 8792 Garde-Manger (11A)	11	10: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in the culinary arts.	11A.10.1.1: Demonstrate an understanding of the evolution and technical progression of, and the emerging trends in garde-manger.
Culinary Arts 8793 Patisserie and Baking (11B)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11B.6.1.1: Identify the waste produced in a culinary arts facility.
Culinary Arts 8793 Patisserie and Baking (11B)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11B.6.1.2: Demonstrate the disposal and recycling of waste.
Culinary Arts 8793 Patisserie and Baking (11B)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11B.6.1.4: Identify and locate facilities for recycling and waste disposal.
Culinary Arts 8793 Patisserie and Baking (11B)	11	10: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in the culinary arts.	11B.10.1.1: Demonstrate an understanding of the evolution and technical progression of, and the emerging trends in patisserie and baking.
Culinary Arts 8794 Vegetables, Fungi, Starches, and Farinaceous Products (11C)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11C.6.1.1: Identify the waste produced in a culinary arts facility.
Culinary Arts 8794 Vegetables, Fungi, Starches, and Farinaceous Products (11C)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11C.6.1.2: Demonstrate the disposal and recycling of waste.
Culinary Arts 8794 Vegetables, Fungi, Starches, and Farinaceous Products (11C)	11	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	11C.6.1.4: Identify and locate facilities for recycling and waste disposal.

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Subject	Grade	Cluster	Student Learning Outcomes
Culinary Arts 8794 Vegetables, Fungi, Starches, and Farinaceous Products (11C)	11	10: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in the culinary arts.	11C.10.1.1: Demonstrate an understanding of the evolution and technical progression of, and the emerging trends in vegetables, fungi, starches, and farinaceous products.
Horticulture 8719 Applied Horticulture (11A)	11	4: Demonstrate an understanding of soils and growing media.	11A.4.1.1: Describe the physical characteristics that must be considered when determining the suitability for plant growth. (A9.1) (GHCP A7)
Horticulture 8719 Applied Horticulture (11A)	11	4: Demonstrate an understanding of soils and growing media.	11A.4.1.2: Describe types of media, as well as their characteristics and applications. (A9.3)
Horticulture 8719 Applied Horticulture (11A)	11	4: Demonstrate an understanding of soils and growing media.	11A.4.1.3: Describe and utilize soil science terminology.
Horticulture 8719 Applied Horticulture (11A)	11	4: Demonstrate an understanding of soils and growing media.	11A.4.1.4: Describe the chemical and biological properties of soils and growing media. (A9.4) (GHCP A7)
Horticulture 8719 Applied Horticulture (11A)	11	4: Demonstrate an understanding of soils and growing media.	11A.4.2.5: Identify the considerations when selecting soil amendments for plants.
Horticulture 8719 Applied Horticulture (11A)	11	4: Demonstrate an understanding of soils and growing media.	11A.4.2.6: Identify the procedures to select and incorporate soil amendments for plants.
Horticulture 8719 Applied Horticulture (11A)	11	7: Demonstrate an understanding of the principles of crop production and management.	11A.7.2.1: Describe practices to improve crop quality.
Horticulture 8719 Applied Horticulture (11A)	11	7: Demonstrate an understanding of the principles of crop production and management.	11A.7.2.2: Describe cultural requirements that affect crop production.

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Subject	Grade	Cluster	Student Learning Outcomes
Horticulture 8719 Applied Horticulture (11A)	11	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	11A.11.2.1: Describe the environmental impact of various horticultural practices.
Horticulture 8719 Applied Horticulture (11A)	11	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	11A.11.3.1: Describe how the needs of the present world can be met without compromising the ability of future generations to meet their own needs.
Horticulture 8719 Applied Horticulture (11A)	11	12: Demonstrate an awareness of the ethical and legal standards as they pertain to horticulture.	11A.12.1.1: Describe the ethical and legal expectations related to the horticulture industry.
Horticulture 8719 Applied Horticulture (11A)	11	12: Demonstrate an awareness of the ethical and legal standards as they pertain to horticulture.	11A.12.1.2: Describe pertinent legislation pertaining to the horticulture industry. (A3.14, A3.4)
Horticulture 8719 Applied Horticulture (11A)	11	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	11A.14.1.1: Describe the evolution and technological progression of, and the emerging trends in the horticulture industry.
Horticulture 8733 Introduction to Landscape Maintenance and Construction (11B)	11	4: Demonstrate an understanding of soils and growing media .	11B.4.2.1: Discuss the purpose and characteristics of soil amendments.
Horticulture 8733 Introduction to Landscape Maintenance and Construction (11B)	11	12: Demonstrate an awareness of the ethical and legal standards as they pertain to horticulture.	11B.12.1.1: Describe the ethical and legal expectations related to the landscaping industry.

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Subject	Grade	Cluster	Student Learning Outcomes
Horticulture 8733 Introduction to Landscape Maintenance and Construction (11B)	11	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	11B.14.1.1: Describe the evolution and technological progression of, and the emerging trends in the landscaping industry.
Horticulture 8734 Introduction to Greenhouse Maintenance and Production (11C)	11	4: Demonstrate an understanding of soils and growing media.	11C.4.2.1: Describe the effects of growing media on plants.
Horticulture 8734 Introduction to Greenhouse Maintenance and Production (11C)	11	12: Demonstrate an awareness of the ethical and legal standards as they pertain to horticulture.	11C.12.1.1: Describe the ethical and legal expectations related to the greenhouse industry.
Horticulture 8734 Introduction to Greenhouse Maintenance and Production (11C)	11	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	11C.14.1.1: Describe the evolution and technological progression of, and the emerging trends in the greenhouse industry.

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Subject	Grade	Cluster	Student Learning Outcomes
Science Biology	12		None
Science Chemistry	12	3. Chemical Kinetics	C12-3-01: formulate an operational definition of reaction rate. <i>Include: examples of chemical reactions that occur at different rates.</i>
Science Chemistry	12	3. Chemical Kinetics	C12-3-02: identify variables used to monitor reaction rates (i.e., change per unit of time, Dx/Dt). <i>Examples: pressure, temperature, pH, conductivity, colour . . .</i>
Science Interdisciplinary Topics in Science 40S	12		Interdisciplinary Topics in Science 40S, The English version focuses on 4 General Learning Outcomes (GLO) with each GLO having a number of Student Learning Outcomes (SLO). The most relevant ones are part of GLO B which encourages students to “Explore problems and issues that demonstrate interdependence among science, technology, society and the environment within the context of sustainability” Other sections provide scientific frameworks for addressing issues such as food waste and climate change. Note the 2011 English version at 468 pages is very different than the French version of 2018 at 106 pages.
Science Interdisciplinary Topics in Science 40S	12	GLO B – Science, Technology, Society and the Environment	SLO B1: Identify and explore a current STSE issue. <i>Examples: clarify what the issue is, identify different viewpoints and/or stakeholders, research existing data/information...</i>
Science Interdisciplinary Topics in Science 40S	12	GLO B – Science, Technology, Society and the Environment	SLO B2: Recognize that decisions reflect values and consider their own values and those of others when making a decision. <i>Examples: maintaining/preserving the environment, generating wealth, maintaining personal and economic freedoms, maintaining health and wellbeing...</i>
Science Interdisciplinary Topics in Science 40S	12	GLO B – Science, Technology, Society and the Environment	SLO B3: Evaluate implications of possible alternatives or positions related to an STSE issue. <i>Examples: positive and negative consequences of a decision, strengths and weaknesses of a position...</i>
Science Interdisciplinary Topics in Science 40S	12	GLO B – Science, Technology, Society and the Environment	SLO B4: Recommend an alternative or identify a position and provide justification.

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Subject	Grade	Cluster	Student Learning Outcomes
Science Interdisciplinary Topics in Science 40S	12	GLO B – Science, Technology, Society and the Environment	SLO B5: Propose a course of action related to an STSE issue.
Science Interdisciplinary Topics in Science 40S	12	GLO B – Science, Technology, Society and the Environment	SLO B6: Reflect on the process used by themselves or others to arrive at an STSE decision.
Science Physics	12		None
Social Studies Grade 12 Canadian Law Manitoba Curriculum Framework	12	Module 6 Student Inquiry Theme 6E Environment-al Law	6E.1 Identify the need and rationale for laws to protect the environment.
Social Studies Grade 12 Canadian Law Manitoba Curriculum Framework	12	Module 6 Student Inquiry Theme 6E Environment-al Law	6E.2 Distinguish the separation of powers regarding environmental protection among the federal, provincial, and municipal governments as it relates to such areas as forestry, fisheries, endangered species, waste management, and hazardous materials.
Social Studies Grade 12 Canadian Law Manitoba Curriculum Framework	12	Module 6 Student Inquiry Theme 6E Environment-al Law	6E.3 Assess the effects that international agreements such as the Kyoto Protocol (1997) and the Paris Agreement (2016) have had on protecting the environment, reducing greenhouse gas emissions, and promoting sustainable development.
Social Studies Grade 12 Canadian Law Manitoba Curriculum Framework	12	Module 6 Student Inquiry Theme 6E Environment-al Law	6E.4 Evaluate the roles of individuals and non-governmental organizations with regard to environmental protection.
Social Studies Grade 12 Canadian Law Manitoba Curriculum Framework	12	Module 6 Student Inquiry Theme 6E Environment-al Law	6E.5 Describe the leadership of First Nations, Métis, and Inuit communities with regard to their traditional land use practices and environmental impact.
Social Studies Grade 12 Cinema as a Witness to Modern History: A Foundation for Implementation.	12		Grade 12 Cinema as a Witness to Modern History: A Foundation for Implementation enables students to examine history through media presentations. “Throughout the course, students will apply critical media literacy skills in order to understand that film does not simply reflect the past, but interprets and retells the past and, at times, reconstructs it.” (p 1) Al Gore’s film An Inconvenient Truth is a film suggested for studying.

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Subject	Grade	Cluster	Student Learning Outcomes
Social Studies Grade 12 Cinema as a Witness to Modern History: A Foundation for Implementation.	12	Cinema Timeline	2006 Al Gore's documentary about climate change, <i>An Inconvenient Truth</i> , breaks box-office records for a documentary.
Social Studies Grade 12 Current Topics in First Nations, Métis, and Inuit Studies	12		Grade 12 Current Topics in First Nations, Métis, and Inuit Studies has five clusters. Each cluster is explored through one or more Learning Experiences (LEs).
Social Studies Grade 12 Current Topics in First Nations, Métis, and Inuit Studies	12	3. Towards a Just Society	Acquiring Strategy C. Students participate in a land-based learning experience, moving beyond the classroom to learn from someone knowledgeable about trapping, hunting, fishing, tanning, sewing, gathering and preparing plants (as food or medicine), canoe or snowshoe construction, healing, ceremonies, food preparation and preservation, survival, or other land-based knowledge. Students record their experiences, thoughts and feelings in their reflection journals. (Notes: This Acquiring strategy recurs in all Cluster 3 LEs.
Social Studies Global Issues: Citizenship and Sustainability	12		Grade 12 Global Issues: Citizenship and Sustainability focuses on students exploring at least 3 of the 10 areas of inquiry. "The selection of issues for inquiry should be flexible, should allow for new or emerging issues, and should be based upon student interests and access to reliable resources." (p. 24) The topics below have the most obvious potential for: food waste, composting, and climate change connections.
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Media	culture of consumerism and environmental consequences
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Consumerism	citizen responsibilities and decision making
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Consumerism	citizen responsibilities and decision making
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Consumerism	generation of waste

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Subject	Grade	Cluster	Student Learning Outcomes
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Environment	energy efficiency and alternative energy sources
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Environment	energy consumption, carbon footprint, travel and transportation alternatives, alternative energy sources
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Environment	stewardship and equitable sharing of natural resources
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Environment	politics and economics of climate change (e.g., impact of industrialization, responsibilities of developed/less-developed economies, Kyoto Accord; Arctic sovereignty)
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Environment	Gaia hypothesis, systems thinking, interconnectedness of human and natural systems, living sustainably
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Poverty, Wealth and Power	bridging the gap between rich and poor countries: development assistance, debt relief, trade over aid, fair trade, rebuild fragile states/promote democracy, labour movements, community-based projects
Social Studies Global Issues: Citizenship and Sustainability	12	Area Inquiry: Social Justice and Human Rights	eco-activism
Social Studies Grade 12 World of Religions: A Canadian Perspective	12		None
Physical Education/Health Education	12		None
Human Ecology 0486 (Full Credit) Part 1 Family Studies	12		None
Human Ecology 0486 (Full Credit) Part 2 Textile Arts and Design	12		None
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	12	Goal 3: Demonstrate understanding of citizenship and sustainability.	12.3.2.1 Research Canadian practices that reduce the environmental impact of food production and consumption.

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Subject	Grade	Cluster	Student Learning Outcomes
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	12	4: Demonstrate understanding of relationships and influences around food choices.	12.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0486 (Full Credit) Part 3. Food and Nutrition	12	5: Demonstrate understanding of career development and the skills required.	12.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0487 Family Studies Half Credit	12		None
Human Ecology 0487 Family Studies Full Credit	12		None
Human Ecology 0488 Textile Arts and Design Half Credit	12		None
Human Ecology 0488 Textile Arts and Design Full Credit	12		None
Human Ecology 0489 Food and Nutrition Half Credit	12	Goal 3: Demonstrate understanding of citizenship and sustainability.	12.3.2.1 Research Canadian practices that reduce the environmental impact of food production and consumption.
Human Ecology 0489 Food and Nutrition Half Credit	12	Goal 3: Demonstrate understanding of citizenship and sustainability.	12.3.2.2 Investigate the global scope and impact of food waste and packaging.
Human Ecology 0489 Food and Nutrition Half Credit	12	4: Demonstrate understanding of relationships and influences around food choices.	12.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0489 Food and Nutrition Half Credit	12	Goal 5: Demonstrate understanding of career development and the skills required.	12.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0489 Food and Nutrition Full Credit	12	2: Demonstrate understanding of the fundamentals of nutrition.	12.2.3.5 Evaluate current and future trends in food and nutrition in terms of their real or perceived benefits to global populations. Note similarity 12.3.1.5.

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Subject	Grade	Cluster	Student Learning Outcomes
Human Ecology 0489 Food and Nutrition Full Credit	12	Goal 3: Demonstrate understanding of citizenship and sustainability.	12.3.1.5 Evaluate current and future trends in food and nutrition in terms of their real or perceived benefits to global populations. <i>Note similarity 12.2.3.5.</i>
Human Ecology 0489 Food and Nutrition Full Credit	12	Goal 3: Demonstrate understanding of citizenship and sustainability.	12.3.2.1 Research Canadian practices that reduce the environmental impact of food production and consumption.
Human Ecology 0489 Food and Nutrition Full Credit	12	Goal 3: Demonstrate understanding of citizenship and sustainability.	12.3.2.2 Investigate the global scope and impact of food waste and packaging.
Human Ecology 0489 Food and Nutrition Full Credit	12	Goal 3: Demonstrate understanding of citizenship and sustainability.	12.3.2.3 Analyze the impact of food production practices and technologies on the environment and human health.
Human Ecology 0489 Food and Nutrition Full Credit	12	4: Demonstrate understanding of relationships and influences around food choices.	12.4.1.1 Investigate media and marketing factors that influence personal food choices.
Human Ecology 0489 Food and Nutrition Full Credit	12	Goal 5: Demonstrate understanding of career development and the skills required.	12.5.4.1 Define, outline, coordinate, complete, assess, analyze, and reflect on an individual/group project.
Human Ecology 0490 Environmental Design Half Credit	12		None
Human Ecology 0490 Environmental Design Half Credit	12		None
Baking and Pastry Arts 8359 Tarts and Special Pastries (12A)	12	11: Understand the evolution and technological progression of, and the emerging trends in baking.	12A.11.1.1: Demonstrate knowledge of the evolution and technological progression of, and the trends related to tarts and special pastries.

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Subject	Grade	Cluster	Student Learning Outcomes
Baking and Pastry Arts 8374 Modern and Classic Desserts, and Plating Techniques (12B)	12	11: Understand the evolution and technological progression of, and the emerging trends in baking.	12B.11.1.2: Demonstrate knowledge of the technological progression of, and the emerging trends in modern and classic desserts and plating techniques.
Baking and Pastry Arts 8375 Advanced Bread Products (12C)	12	11: Understand the evolution and technological progression of, and the emerging trends in baking.	12C.11.1.3: Demonstrate knowledge of the emerging trends in artisan/specialty products.
Baking and Pastry Arts 8998 Advanced Baking and Pastries (12D)	12	11: Understand the evolution and technological progression of, and the emerging trends in baking.	12D.11.1.2: Demonstrate knowledge of the technological progression of, and the emerging trends in advanced baking and pastries.
Culinary Arts 8795 Stocks, Soups, and Sauces (12A)	12	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	12A.6.1.2: Demonstrate the reduction of the usage of energy, waste, and water.
Culinary Arts 8795 Stocks, Soups, and Sauces (12A)	12	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	12A.6.1.4: Discuss the use of sustainable food containers.
Culinary Arts 8795 Stocks, Soups, and Sauces (12A)	12	6: Demonstrate awareness of sustainability as it pertains to the culinary arts.	12A.6.1.5: Identify and locate facilities for recycling and waste disposal.
Culinary Arts 8795 Stocks, Soups, and Sauces (12A)	12	10: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in the culinary arts.	12A.10.1.1: Discuss the evolution and technical progression of, and the emerging trends in stocks, soups, and sauces.

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Subject	Grade	Cluster	Student Learning Outcomes
Culinary Arts 8796 Breakfast and Dairy (12B)	12	10: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in the culinary arts.	12B.10.1.1: Discuss the evolution and technical progression of, and the emerging trends in breakfast and dairy.
Culinary Arts 8797 Menu Planning and Food Costing (12C)	12	10: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in the culinary arts.	12C.10.1.1: Discuss the evolution and technical progression of, and the emerging trends in menu planning.
Culinary Arts 8798: Meats, Poultry, Fish, and Seafood (12D)	12	10: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in the culinary arts.	12D.10.1.1: Discuss the evolution and technical progression of, and the emerging trends in meats, poultry, fish, and seafood.
Horticulture 8764 Advanced horticulture (12A)	12	4: Demonstrate an understanding of soils and growing media.	12A.4.1.3: Apply knowledge of the types of media, their characteristics, and their applications when growing plants. (A9.3)
Horticulture 8764 Advanced horticulture (12A)	12	4: Demonstrate an understanding of soils and growing media.	12A.4.2.1: Apply the chemical and biological properties of soils and growing media when growing plants. (A9.4)
Horticulture 8764 Advanced horticulture (12A)	12	11. Demonstrate an awareness of sustainability as it pertains to horticulture.	12A.11.2.1: Describe sustainability practices and the environmental impacts of horticulture (e.g., xeriscaping, water gardens)
Horticulture 8764 Advanced horticulture (12A)	12	11. Demonstrate an awareness of sustainability as it pertains to horticulture.	12A.11.2.2: Describe the implications of soil management on the practice of environmental stewardship. (A9.2)

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Subject	Grade	Cluster	Student Learning Outcomes
Horticulture 8764 Advanced horticulture (12A)	12	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	12A.14.1.1: Describe the evolution and technological progression of, and the emerging trends in horticulture.
Horticulture 8765 Applied Landscape Maintenance and Construction (12 B)	12	4: Demonstrate an understanding of soils and growing media.	12B.4.1.3: Determine and apply cultural practices based on soil assessments.
Horticulture 8765 Applied Landscape Maintenance and Construction (12 B)	12	4: Demonstrate an understanding of soils and growing media.	12B.4.2.2: Describe types of soil amendments, their characteristics, and their applications. (A9.7)
Horticulture 8765 Applied Landscape Maintenance and Construction (12 B)	12	4: Demonstrate an understanding of soils and growing media.	12B.4.2.3: Describe the considerations when selecting soil amendments for plants. (A9.8)
Horticulture 8765 Applied Landscape Maintenance and Construction (12 B)	12	4: Demonstrate an understanding of soils and growing media.	12B.4.2.4: Describe the procedures to select and incorporate soil amendments for plants. (A9.9)
Horticulture 8765 Applied Landscape Maintenance and Construction (12 B)	12	4: Demonstrate an understanding of soils and growing media.	12B.4.2.5: Describe the procedures used to store, transport, and dispose of soil, and soil amendment products and packaging. (A9.10)
Horticulture 8765 Applied Landscape Maintenance and Construction (12 B)	12	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	12B.14.1.1: Describe the evolution and technological progression of, and the emerging trends in landscape maintenance and construction.
Horticulture 8766 Applied Maintenance and Greenhouse Production (12C)	12	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	12C.11.2.1: Describe sustainability practices and the environmental impacts of greenhouses.
Horticulture 8767 Arboreal-culture (12D)	12	4: Demonstrate an understanding of soils and growing media.	12D.4.2.1: Determine and apply arboricultural practices based on soil assessments.

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Subject	Grade	Cluster	Student Learning Outcomes
Horticulture 8767 Arboreal-culture (12D)	12	4: Demonstrate an understanding of soils and growing media .	12D.4.2.3: Identify the considerations when selecting soil amendments for tree establishment and maintenance. (A9.8)
Horticulture 8767 Arboreal-culture (12D)	12	11: Demonstrate an awareness of sustainability as it pertains to horticulture.	12D.11.2.1: Describe sustainability practices and the environmental impacts of arboriculture.
Horticulture 8767 Arboreal-culture (12D)	12	14: Demonstrate an understanding of the evolution and technological progression of, and the emerging trends in horticulture.	12D.14.1.1: Describe the evolution and technological progression of, and the emerging trends in arboriculture.