

APPENDIX B

Recommended ESD Learning Outcomes

The Manitoba Education ESD website lists specific learning outcomes and sustainable development curriculum correlations at www.edu.gov.mb.ca/k12/esd/correlations/index.html.

Kindergarten (Themes: Needs, Trees)		
Social Studies	Science	Physical/Health Education
<p>Skills: Active Democratic Citizenship</p> <p>0-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p>Cluster 3: The World Around Me</p> <p>0-KL-012 Describe characteristics of the local physical environment. Include: natural and constructed elements.</p> <p>0-KG-020 Recognize that people all over the world have the same basic needs. <i>Examples: food, clothing, shelter...</i></p> <p>0-KG-021 Recognize that they may have different ways of meeting their basic needs than people in other parts of the world.</p> <p>0-VL-003 Appreciate the beauty and importance of the natural environment.</p> <p>0-VG-005 Demonstrate interest in the larger world beyond their immediate environment.</p>	<p>Cluster 1: Trees</p> <p>K-1-02 Identify ways in which humans and other animals use trees. <i>Examples: humans eat apples and walnuts; birds make their home in trees; deer eat leaves, bark, and tender twigs...</i></p>	<p>1. Movement</p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p>3. Safety</p> <p>K.3.K.B.1 Identify safety symbols, hazards, and risks in everyday living (i.e., traffic, school bus ridership, waterfront, poisons, chemicals, stoves/ovens, sharp utensils, bathtubs).</p> <p>K.3.K.B.4 Recognize safety helpers in the community (e.g., parent/guardian, family member, babysitter, teacher, principal, doctor, police officer, bus driver, block parent, lifeguard...).</p>

Grade 1 (Themes: Needs/Wants, Weather Safety Needs)

Social Studies	Science	Physical/Health Education
<p>Skills: Active Democratic Citizenship 1-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p>Cluster 2: My Environment 1-KL-012 Recognize that people depend on the environment for survival. 1-KH-019 Describe how the repeating patterns of the seasons influence their lives. 1-KE-027 Give examples to distinguish needs from wants. 1-KE-028 Give examples of how media may influence their needs, wants, and choices. Include: advertising and television programming. 1-VL-007 Appreciate the beauty and benefits that the natural environment brings to their lives. 1-VL-007A Value the special relationships Aboriginal people have with the natural environment.</p>	<p>Cluster 4: Daily and Seasonal Changes 1-4-14 Describe safety precautions related to daily weather, the changing of the seasons, and weather extremes. <i>Examples: wearing a raincoat if rain is expected, staying indoors during a blizzard, staying off thin ice in the spring and fall...</i> 1-4-17 Use the design process to construct a device or structure that helps a Manitoba animal adjust to seasonal changes. <i>Examples: winter birdfeeder, dog house, dog "booties" for winter...</i></p>	<p>1. Movement A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p>3. Safety K.3.1.A.2 Identify how weather conditions may affect safe exercising (e.g., ice/rain, makes a running surface slippery, hot weather requires fluid replacement, danger of frostbite...).</p> <p>K.3.1.B.2 Identify unsafe situations related to the environment (i.e., forest fires, floods, tornadoes, lightning) and safety rules for own protection.</p> <p>K.3.1.B.4 Recognize community helpers (e.g., safe adult, police officer, bus driver, teacher, block parent, babysitter...) and how to seek help (e.g., know emergency telephone numbers, ask a safe adult or teenager for help, use a telephone, dial emergency telephone number, report what happened...).</p>

Grade 3 (Themes: Needs –Worldwide, Responsibilities, Soils)

Social Studies	Science	Physical/Health Education
<p>Skills: Active Democratic Citizenship 3-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p>Cluster 2: Exploring the World 3-KC-005 Recognize that people around the world have basic human rights. <i>Examples: access to food, water, shelter, a secure environment, education, fair and equal treatment...</i></p> <p>3-KG-027 Give examples of concerns common to communities around the world.</p> <p>3-KG-028 Identify organizations that support communities in all countries of the world. <i>Examples: United Nations and UNICEF, Red Cross Médecins sans frontières...</i></p> <p>3-KG-029 Identify ways in which community services can help people acquire their basic human rights. <i>Examples: ensure quality housing, education, security, food, and water...</i></p> <p>3-KG-031 Give examples of personal decisions and actions that may positively affect people locally or globally. <i>Examples: charitable donations and projects, recycling...</i></p>	<p>Cluster 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></p> <p>3-4-10 Describe ways to return organic matter to the soil. <i>Examples: composting, spreading manure on fields...</i></p> <p>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 composter for grass clippings and leaves...</i></p>	<p>1. Movement A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p>4. Personal and Social Management K.4.3.A.3 Explore the steps in the decision-making/ problem-solving process (e.g., define topic or issue, explore alternatives, check and consider health knowledge and values, identify possible solutions, decide, evaluate...).</p>

Grade 4 (Themes: Sustainability –Manitoba’s Plants & Animals)

Social Studies	Science	Physical/Health Education
<p>Skills: Active Democratic Citizenship</p> <p>4-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p>Cluster 3: Living in Manitoba</p> <p>4-KL-023 Identify issues related to environmental stewardship and sustainability in Manitoba.</p> <p>4-KL-024 Give examples of Aboriginal peoples’ traditional relationships with the land.</p> <p>4-KL-025 Describe places of historical, cultural, or environmental significance in Manitoba.</p> <p><i>Examples: Lower Fort Garry, the Forks, musée de Saint-Boniface, Thunderbird House, provincial/national parks...</i></p> <p>4-VL-006 Appreciate Manitoba’s natural environment.</p> <p>4-VL-006A Respect their spiritual connection to the natural environment (land, water, sky).</p>	<p>Cluster 1: Habitats and Communities</p> <p>4-1-13 Predict, based on their investigations, how the removal of a plant or animal population may affect the rest of the community.</p> <p><i>Examples: if the wolves were removed from a community, the deer population may increase rapidly...</i></p> <p>4-1-14 Investigate natural and human-caused changes to habitats, and identify resulting effects on plant and animal populations.</p> <p>Include: endangerment, extinction.</p> <p>4-1-15 Describe how their actions can help conserve plant and animal populations and their habitats.</p> <p><i>Examples: clean up a local stream to improve fish and bird habitat...</i></p> <p>4-1-17 Recognize and appreciate how traditional knowledge contributes to our understanding of plant and animal populations and interactions.</p>	<p>Movement</p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p>4. Personal and Social Management</p> <p>K.4.4.A.3 Identify the steps of the decision-making/problem-solving process with an emphasis on the final steps (e.g., making the decision, taking action, evaluating results...).</p>

Grade 7 (Human Actions – Climate Change, Human Actions – Ecosystems)

Social Studies	Science	Physical/Health Education
<p>Skills: Active Democratic Citizenship</p> <p>7-S-101 Use a variety of strategies to resolve conflicts peacefully and fairly. <i>Examples: clarification, negotiation, compromise...</i></p> <p>7-S-103 Make decisions that reflect principles of environmental stewardship and sustainability.</p> <p>7-S-105 Recognize bias and discrimination and propose solutions. <i>Examples: racism, ageism, heterosexism...</i></p> <p>Skills: Managing Information and Ideas</p> <p>7-S-207A Use traditional knowledge to read the land.</p> <p>Skills: Critical and Creative Thinking</p> <p>7-S-307 Compare differing viewpoints regarding global issues.</p> <p>7-S-311 Analyze prejudice, racism, stereotyping, or other forms of bias in the media and other information sources.</p> <p>Cluster 4: Human Impact in Europe or the Americas</p> <p>7-KL-026 Identify human activities that contribute to climate change.</p> <p>7-KL-027 Describe social, environmental, and economic consequences of climate change.</p> <p><i>(Continued on next page)</i></p>	<p>Cluster 1: Interactions Within Ecosystems</p> <p>7-1-05 Identify and describe positive and negative examples of human interventions that have an impact on ecological succession or the makeup of ecosystems. <i>Examples: positive – protecting habitats, reintroducing species; negative – preventing natural fires, introducing non-indigenous species, draining wetland for agriculture or housing...</i></p> <p>7-1-06 Identify environmental, social, and economic factors that should be considered in the management and preservation of ecosystems. <i>Examples: habitat preservation, recreation, employment, industrial growth, resource development...</i></p> <p>7-1-07 Propose a course of action to protect the habitat of a particular organism within an ecosystem. <i>Examples: protect the nesting habitat of a given bird in a local wetland...</i></p> <p>7-1-10 Analyze, using ecological pyramids, the implications of the loss of producers and consumers to the transfer of energy within an ecosystem.</p> <p>7-1-11 Explain, using ecological pyramids, the potential for bioaccumulation within an ecosystem.</p>	<p>1. Movement</p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p>4. Personal and Social Management</p> <p>K.4.7.A.3 Explain the benefits of using the decision-making/problem-solving process for making responsible and health-enhancing personal decisions (e.g., prevents impulsive and/or negative decisions, contributes to long-term health benefits...).</p>

Grade 7 (Human Actions – Climate Change, Human Actions – Ecosystems) *continued*

Social Studies	Science	Physical/Health Education
<p>7-KL-029 Give examples of the impact of human activity on the natural environment in a society of Europe or the Americas. Examples: endangered plant and animal species, reforestation, restoration of wetlands...</p> <p>7-KP-044 Identify ways in which government decisions may affect human impact on the natural environment.</p> <p>7-KE-051 Identify common challenges faced by large urban centres. <i>Examples: economic, environmental, social...</i></p> <p>7-KE-053 Describe sustainable development issues in a society of Europe or the Americas.</p> <p>7-KE-054 Give examples of the environmental and social impact of consumerism in the local community and in a society of Europe or the Americas.</p> <p>7-VL-009 Be willing to take actions to help sustain the natural environment in Canada and the world.</p> <p>7-VE-017 Be willing to consider the consequences of their consumer choices.</p>		

Grade 9 (Themes: Quality of Life in Canada, Electricity Issues in Manitoba)

Social Studies	Science	Physical/Health Education
<p>Skills: Active Democratic Citizenship</p> <p>9-S-103 Promote actions that reflect the principles of sustainable development.</p> <p>9-S-105 Recognize and take a stand against discriminatory practices and behaviours.</p> <p>9-S-107 Make decisions that reflect social responsibility.</p> <p>Critical and Creative Thinking</p> <p>9-S-306 Analyze prejudice, racism, stereotyping, and other forms of bias in the media and other information sources.</p> <p>Cluster 4: Canada: Opportunities and Challenges</p> <p>9-KC-014 Describe current issues related to citizenship in Canada.</p> <p>9-KI-022 Analyze current issues surrounding Canadian culture and identity.</p> <p>9-KI-023 Identify possible ways of resolving social injustices in Canada.</p> <p>9-KL-026 Analyze current Canadian demographics and predict future trends.</p> <p>9-KL-027 Give examples of opportunities and challenges related to First Nations treaties and Aboriginal rights.</p> <p>9-KL-028 Evaluate Canadian concerns and commitments regarding environmental stewardship and sustainability.</p> <p><i>(Continued on next page)</i></p>	<p>Cluster 0: Overall Skills and Attitudes</p> <p>9-0-3e Determine criteria for the evaluation of an STSE decision.</p> <p><i>Examples: scientific merit; technological feasibility; social cultural, economic, and political factors; safety; cost; sustainability...</i></p> <p>9-0-4b Demonstrate work habits that ensure personal safety, the safety of others, as well as consideration for the environment.</p> <p>Include: knowledge and use of relevant safety precautions, WHMIS regulations, and emergency equipment.</p> <p>9-0-5d Evaluate, using predetermined criteria, different STSE options leading to a possible decision.</p> <p>Include: scientific merit; technological feasibility; social, cultural, economic, and political factors; safety; cost; sustainability.</p> <p>9-0-7b Select the best option and determine a course of action to implement the STSE decision.</p> <p>9-0-7c Implement an STSE decision and evaluate its effects.</p> <p>9-0-9e Be sensitive and responsible in maintaining a balance between the needs of humans and a sustainable environment.</p> <p>9-0-9f Demonstrate personal involvement and be proactive with respect to STSE issues.</p> <p><i>(Continued on next page)</i></p>	<p>1. Movement</p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p>4. Personal and Social Management</p> <p>S.4.9.A.2 Design, implement, and evaluate an action plan for making a decision based on personal values and beliefs related to physical activity and healthy lifestyle practices (e.g., active living, good nutrition, no substance use, safety...).</p>

Grade 9 (Themes: Quality of Life in Canada, Electricity Issues in Manitoba) *continued*

Social Studies	Science	Physical/Health Education
<p>9-KH-033 Give examples of social and technological changes that continue to influence quality of life in Canada. <i>Examples: education, health care, social programs, communication, transportation...</i></p> <p>9-KG-042 Describe Canada’s responsibilities and potential for leadership regarding current global issues. <i>Examples: refugees, international development, environmental stewardship, military defence...</i></p> <p>9-KP-047 Identify opportunities and challenges regarding Canadian-American relationships. <i>Examples: protection of national sovereignty, trade, defence, environment...</i></p> <p>9-KE-052 Identify poverty issues in Canada and propose ideas for a more equitable society. <i>Examples: homelessness, child poverty, health care, education, nutrition...</i></p>	<p>Cluster 3: The Nature of Electricity</p> <p>9-3-23 Recognize and explain the importance of incorporating principles of electrical energy conservation into the decision-making process.</p> <p>9-3-24 Use the decision-making process to address an issue associated with the generation and transmission of electricity in Manitoba. Include: hydroelectric power, sustainability.</p>	
<p>9-VL-006 Respect traditional relationships that Aboriginal peoples of Canada have with the land.</p> <p>9-VL-007 Be willing to make personal choices to sustain the environment.</p> <p>9-VH-010 Appreciate that knowledge of the past helps to understand the present and prepare for the future.</p> <p><i>(Continued at right)</i></p>	<p align="center">Social Studies</p> <p>9-VG-013 Value Canada’s contributions to the global community. <i>Examples: humanitarian, artistic, scientific, environmental...</i></p> <p>9-VE-018 Be willing to consider ethical questions related to sharing wealth and resources.</p>	

Grade 10 (Resource Extraction, Bioaccumulation)

Social Studies	Science	Physical/Health Education
<p>Skills: Active Democratic Citizenship</p> <p>10-S-103 Promote actions that reflect principles of sustainability.</p> <p>10-S-105 Recognize and take a stand against discriminatory practices and behaviours.</p> <p>10-S-107 Make decisions that reflect social responsibility.</p> <p>Skills: Critical and Creative Thinking</p> <p>10-S-306 Analyze prejudice, racism, stereotyping, and other forms of bias in the media and other information sources.</p> <p>Cluster 2: Natural Resources</p> <p>10-KC-002 Describe sustainability issues related to natural resource extraction and consumption.</p> <p>10-KG-035 Identify implications of more-developed countries extracting resources from less-developed countries. <i>Examples: social, political, economic, environmental...</i></p> <p>10-VP-009 Be willing to consider the implications of personal choices regarding natural resources.</p>	<p>Cluster 1: Dynamics of Ecosystems</p> <p>10-1-01 Illustrate and explain how carbon, nitrogen, and oxygen are cycled through an ecosystem.</p> <p>10-1-02 Discuss factors that may disturb biogeochemical cycles. Include: natural events, human activities.</p> <p>10-1-03 Describe bioaccumulation and explain its potential impact on consumers. <i>Examples: DDT, lead, dioxin, PCBs, mercury...</i></p> <p>10-1-07 Discuss the potential consequences of introducing new species and of species extinction to an ecosystem.</p> <p>10-1-10 Investigate how human activities affect an ecosystem and use the decision-making model to propose a course of action to enhance its sustainability. Include: impact on biogeochemical cycling, population dynamics, and biodiversity.</p>	<p>1. Movement</p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p>3. Safety</p> <p>K.3.10.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).</p>