

# **Education for Sustainable Development**

Kindergarten to Grade 12  
Correlation Chart Template and  
Kindergarten Tool Kit





EDUCATION FOR  
SUSTAINABLE DEVELOPMENT

Kindergarten to Grade 12  
Correlation Chart Template and  
Kindergarten Tool Kit

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recommending them for student use.

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# INTRODUCTION AND BACKGROUND INFORMATION

This education for sustainable development (ESD) template will assist teachers in the development of their own ESD activities by incorporating the ESD learning outcomes from the correlation charts (see [www.edu.gov.mb.ca/k12/esd/correlations/index.html](http://www.edu.gov.mb.ca/k12/esd/correlations/index.html)) or from curriculum documents.

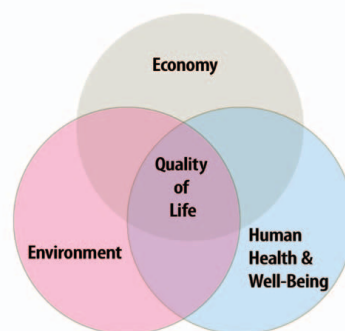
## Background Information

### *Definition: Education for Sustainable Development*

Education for sustainable development involves changing the way we live our lives by understanding and incorporating key themes of sustainable development—such as poverty alleviation, human rights, health and environmental stewardship, and climate change—into the education system. ESD is a complex and evolving concept that requires learning about key themes from a social, cultural, environmental, and economic perspective, and exploring how those factors are interrelated and interdependent. The Venn diagram below represents the interrelationship of the themes.

### *Manitoba Vision: Education for Sustainable Development*

Students will become informed and responsible decision makers, playing active roles as citizens of Canada and the world, and will contribute to social, environmental, and economic well-being and an equitable quality of life for all, now and in the future.



### *Key Characteristics: Education for Sustainable Development*

The *United Nations Decade of Education for Sustainable Development 2005-2014 – Draft International Implementation Scheme* identifies the following six main characteristics of ESD:

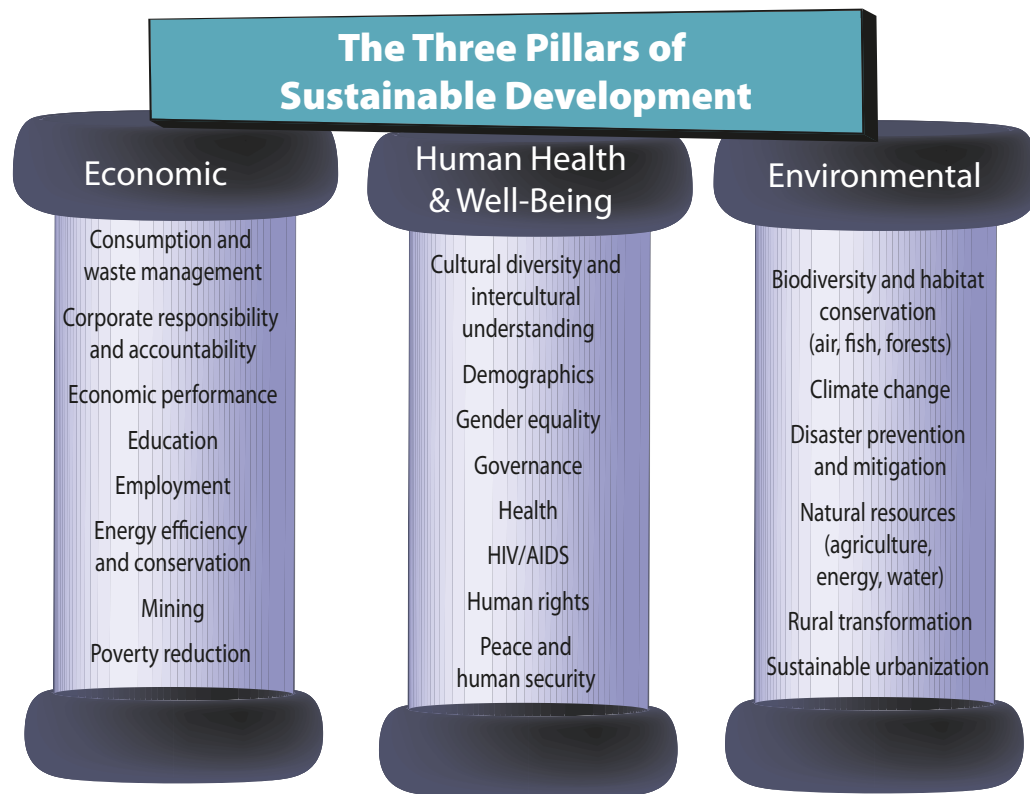
- Interdisciplinary and holistic: Learning for sustainable development is embedded in the whole curriculum, not as a separate subject.
- Values driven: It is critical that the assumed norms (i.e., the shared values and principles underpinning sustainable development) are made explicit so that they can be examined, debated, tested, and applied.
- Critical thinking and problem solving: Learning leads to confidence in addressing the dilemmas and challenges of sustainable development.
- Multi-methods: Words, art, drama, debate, experience—different pedagogies model the process. Teaching that is geared simply to passing on knowledge should be recast

into an approach in which teachers and learners work together to acquire knowledge and play a role in shaping the environment in their educational institutions.

- Participatory decision making: Learners participate in decisions on how they are to learn.
- Locally relevant: ESD addresses local as well as global issues and uses the language(s) that learners most commonly use. The concept of sustainable development must be carefully expressed in other languages. Languages and cultures say things differently, and each language has creative ways of expressing new concepts. (UNESCO 16)

## The Three Pillars of Sustainable Development

ESD activities should include or relate to the three pillars of sustainable development: economic, human health and well-being, and environmental.

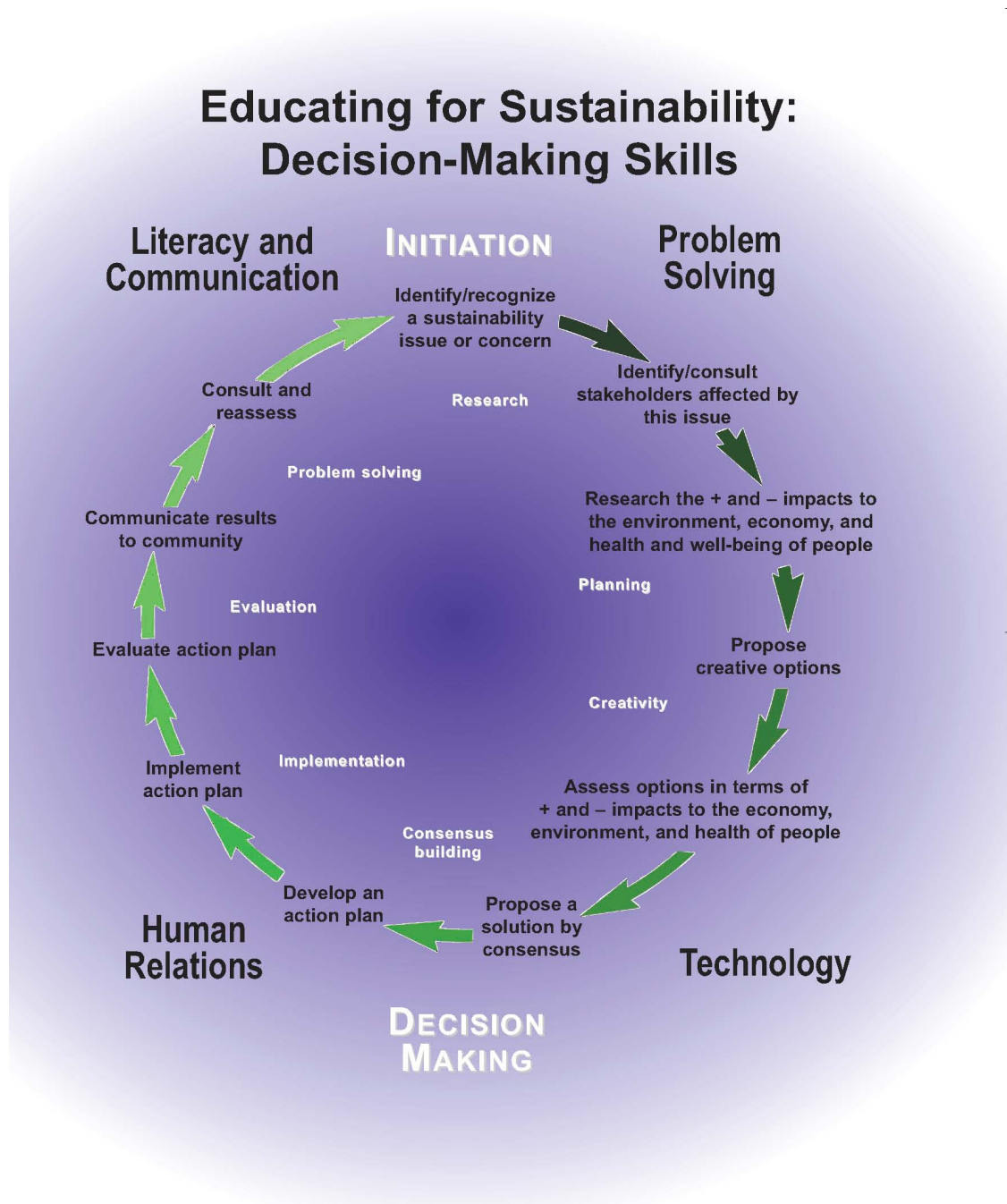


Dividing sustainable development into these three pillars helps us understand the breadth of the concept, but in reality these three categories are so interrelated that they cannot be so easily distinguished.

A definition for each of the themes is available at [www.edu.gov.mb.ca/k12/esd/definitions.html](http://www.edu.gov.mb.ca/k12/esd/definitions.html).

## Decision-Making Model: ESD\*

The ESD decision-making model is a useful tool to examine a sustainability problem.



\* Source: Manitoba Education and Training. *Education for a Sustainable Future: A Resource for Curriculum Developers, Teachers, and Administrators*. Available online at [www.edu.gov.mb.ca/k12/docs/support/future/sustaineducation.pdf](http://www.edu.gov.mb.ca/k12/docs/support/future/sustaineducation.pdf).

# RESOURCES

## Manitoba Education

Sustainable development concepts can be integrated into the curriculum for the following subject areas:

- Social studies
  - Science
  - Physical education/health education
  - English language arts
- Mathematics
  - Arts education
  - Technology education

Each subject area has specific learning outcomes and suggested teaching approaches. Links to curricula and resources for each subject area are provided in the chart below.

Curricula	Website
Sustainable Development*	<a href="http://www.edu.gov.mb.ca/k12/esd/index.html">www.edu.gov.mb.ca/k12/esd/index.html</a>
Social Studies	<a href="http://www.edu.gov.mb.ca/k12/cur/socstud/index.html">www.edu.gov.mb.ca/k12/cur/socstud/index.html</a>
Science	<a href="http://www.edu.gov.mb.ca/k12/cur/science/index.html">www.edu.gov.mb.ca/k12/cur/science/index.html</a>
Physical Education/ Health Education	<a href="http://www.edu.gov.mb.ca/k12/cur/physlth/index.html">www.edu.gov.mb.ca/k12/cur/physlth/index.html</a>
English Language Arts **	<a href="http://www.edu.gov.mb.ca/k12/cur/ela/index.html">www.edu.gov.mb.ca/k12/cur/ela/index.html</a>
Mathematics	<a href="http://www.edu.gov.mb.ca/k12/cur/math/index.html">www.edu.gov.mb.ca/k12/cur/math/index.html</a>
Arts Education (Dance, Drama, Music, Visual Arts)	<a href="http://www.edu.gov.mb.ca/k12/cur/arts/index.html">www.edu.gov.mb.ca/k12/cur/arts/index.html</a>
Technology Education	<a href="http://www.edu.gov.mb.ca/k12/cur/teched/index.html">www.edu.gov.mb.ca/k12/cur/teched/index.html</a>

## Education for Sustainable Development Website

ESD is not a separate subject area; rather, it is a way of integrating sustainable development concepts into subject-area learning. The ESD page on the Manitoba Education website provides

- newsletters

\* The ESD page on the Manitoba Education website provides information on ways to integrate sustainable development concepts into the curriculum.

\*\* The full English language arts curriculum is not available online due to copyright restrictions.

- charts that correlate sustainable development concepts with K-10 student learning outcomes in social studies, science, and physical education/health education.
- grants
- parent brochures
- posters (K-4) and (5-12)
- resources (including connections to appropriate organizations)
- a definition of ESD
- contacts

## Additional Resources for Social Studies, Science, and Physical Ed/Health Ed

### Social Studies

A list of resources that support the social studies curriculum is provided at [www.edu.gov.mb.ca/k12/cur/socstud/supporting/index.html](http://www.edu.gov.mb.ca/k12/cur/socstud/supporting/index.html).

Manitoba Education has also published the *Social Studies Field-Based Experience Guidebook*, which can be found at [www.edu.gov.mb.ca/k12/cur/socstud/fbe\\_guidebook/index.html](http://www.edu.gov.mb.ca/k12/cur/socstud/fbe_guidebook/index.html).

### Science

A list of resources that support the science curriculum is provided at [www.edu.gov.mb.ca/k12/cur/science/scires.html](http://www.edu.gov.mb.ca/k12/cur/science/scires.html). The Science Teachers of Manitoba (STAM) resource links are also arranged by grade and cluster. For example, Kindergarten Cluster 1: Trees (see [www.stam.mb.ca/stam\\_kindergarten\\_links.html](http://www.stam.mb.ca/stam_kindergarten_links.html)) has 19 links, including an interactive game. One of the sites helps in identifying trees that might be found on your playground.

### Additional Science Resources

**LSF (Learning for a Sustainable Future):** *Resources for Rethinking: Exemplary Sustainability Resources Reviewed by Teachers for Teachers.*

Available online at [www.resources4rethinking.ca](http://www.resources4rethinking.ca).

**Environment Canada:** *Free Educational Resources for Teachers.* Available online at [www.ec.gc.ca/education/Default.asp?lang=En&n=D3D10112-1](http://www.ec.gc.ca/education/Default.asp?lang=En&n=D3D10112-1).

**NAAEE (North American Association For Environmental Education):** *Choice Picks for Teachers.* Available online at <http://eelink.net/pages/Teachers>.

### Physical Education/Health Education

Resources to support the physical education/health education curriculum are provided at [www.edu.gov.mb.ca/k12/cur/physlth/index.html](http://www.edu.gov.mb.ca/k12/cur/physlth/index.html). Manitoba Education has published *YouthSafe Manitoba: School Field Trip Resource*, which sets out safety standards for outdoor education, including field trips. Copies were mailed to schools when it was published in 2004, and additional copies may be ordered from the Manitoba Text Book

Bureau at [www.mtbb.mb.ca](http://www.mtbb.mb.ca). Schools may have also developed their own standards for field trips, which should be reviewed before students are taken out of the building.

## Searching for Resources

Web search engines can also provide links to a large number of useful resources. The search terms *tree*, *kindergarten*, and *sustainable games* produced the following result: <http://wilderdom.com/games/descriptions/HugATree.html>.

## Out-of-Classroom Activities

### Research

Students learn to relate, value, and appreciate the beauty and importance of the natural environment when they have opportunities to be in nature. Richard Louv's *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder* highlights the significance of out-of-classroom activities and the importance of engaging students' "Wow of Nature" affective domain.

### Value

An old Chinese Proverb adopted by outdoor education enthusiasts summarizes the relevance of out-of-classroom activities, including field trips.

I hear and I forget

I see and I remember

I do and I understand

Out-of-classroom activities are a very useful way to help students make emotional connections with aspects of sustainable development.

### Safety

In addition to the document *YouthSafe Manitoba: School Field Trip Resource* (2004), divisional guidelines and, in some cases, school safety guidelines should be consulted and followed when pursuing out-of-classroom activities.

*Bowman Kindergarten Nature Walks* provides useful information for schoolyard walks involving Kindergarten students, including a detailed rationale and an activity guide that includes safety and pre- and post-preparation information for teachers. It can be found at [http://bowman.lexingtonma.org/bigbackyard/grade\\_k/KFPTGuide.pdf](http://bowman.lexingtonma.org/bigbackyard/grade_k/KFPTGuide.pdf).

### Places to Visit

The schoolyard is an excellent place for students to visit, but there are many other places that can provide curriculum-relevant sustainable development experiences. You may know of excellent places to visit in your own neighbourhood. The next two resources provide some suggestions.

The *Social Studies Field-Based Experience Guidebook* published by Manitoba Education lists possible field trips organized by grade level. The listings include the name of the relevant social studies cluster, the setting, and contact information for the site, appropriate grades for site use, a description of available activities, and social studies specific learning outcomes relevant to the site. It is available online at [www.edu.gov.mb.ca/k12/cur/socstud/fbe\\_guidebook/full\\_document.pdf](http://www.edu.gov.mb.ca/k12/cur/socstud/fbe_guidebook/full_document.pdf).

Green Map also lists ecologically significant sites, initiatives, and organizations in the Winnipeg area. While not set up as a field trip list, it contains gems such as parks that could be relevant for visits. Plans are being developed to expand the coverage to all of Manitoba. It can be found at [www.greenmap.org/greenhouse/en/node/3397](http://www.greenmap.org/greenhouse/en/node/3397).

# ESD LEARNING EXPERIENCE TEMPLATE

When planning an ESD learning experience or working within the curricular outcomes, it is helpful to incorporate the following information and pedagogy.

<b>Checklist Criteria for an ESD Activity</b>	
<b>Activity meets criteria</b>	<b>Criteria</b>
	The activity
	■ addresses economic factors
	■ addresses human health and well-being (social-cultural factors)
	■ addresses environmental factors
	■ is value driven
	■ provides critical thinking and problem solving opportunities
	■ allows for "multi-methods": words, art, drama, debate, experience
	■ engages in participatory decision making
	■ addresses locally relevant as well as global issues
	■ uses culturally appropriate language



## Template Format

This is a standard format that may be modified to meet individual needs.

<b>Template Format with Descriptions</b>
<b>Grade Level</b> —Identify the grade or grades involved in the activity.
<b>Guiding Questions</b> —Use guiding questions to focus the activity. It is often useful to start with what you want the students to learn, and then work backwards to craft the activities so that they meet the objectives.
<b>Subjects</b> —Design activities so they meet curriculum objectives. While the activities will focus on sustainable development objectives, other learning objectives will also often be met.
<b>Setting</b> —Establish the setting information. This helps in planning the activity (e.g., inside the classroom, outside on the schoolyard, or off of school property).
<b>Duration</b> —Establish how long it will take to complete the activity to give an idea of the approximate amount of time it will require.
<b>Group Size</b> —Exchange ideas in small groups for at least part of the time.
<b>Vocabulary</b> —List curriculum words and additional words that are relevant to the activity. Vocabulary teaching methods include word splashes, word/picture card matching, definition lists, crossword puzzles, and explaining the word’s definition at the required time.
<b>Materials</b> —Provide a list of items required for the activity.
<b>Safety</b> —Review school and divisional policies. If students are travelling beyond the classroom, visit proposed areas beforehand to ensure there are no safety hazards.
<b>Preparation</b> —Review the steps listed in the Preparation section regarding getting ready for the activity.
<b>Activity</b> —Review the step-by-step method for doing the activity in the Activity section.
<b>Debriefing</b> —Ask the student pre-planned affective and cognitive questions in the debriefing session after the activity.
<b>Post Activities</b> —Engage in post activities (sometimes called follow-up activities) after the activity. Sometimes post activities are separate from the main activity, sometimes they are included in the main activity, and sometimes they are part of the extensions.
<b>Extensions</b> —Review the list of activities related to the main activity. They may include follow-up activities.

## Template Format (Blank)

**Grade Level**

**Guiding Questions**

**Subjects**

**Setting**

**Duration**

**Group Size**

**Vocabulary**

**Materials**

**Safety**

**Preparation**

**Activity**

**Debriefing**

**Post Activities**

**Extensions**

# KINDERGARTEN TOOL KIT

## Teacher Background Information

### Kindergarten to Grade 4: ESD Themes

ESD involves preparing students to live sustainably and to establish lifelong sustainable development practices. ESD focuses on the following three themes in Kindergarten to Grade 4:

Students will

- demonstrate respect and concern for other people in the local community and in other places in the world
- demonstrate concern for all of the living things in our environment, and the understanding that human survival is dependent on the environment
- respect the natural environment while participating in physical activity

### Kindergarten: ESD Concepts

The following general ESD concepts are addressed in Kindergarten.

Students will

- identify ways in which humans and animals use trees
- learn to contribute to groups and communities
- recognize that people all over the world have the same basic needs
- appreciate the beauty and importance of the natural environment, and learn how it influences their daily lives
- respect the natural environment while participating in physical activities

### Kindergarten: ESD Connections to Selected Social Studies, Science, and Physical Education/Health Education Clusters

#### **Key Concepts**

The following are key concepts from the social studies, science, and physical education/health education curricula: quality of life, needs, environment, constructed environment, natural environment, and safety.

#### *Social Studies*

In social studies, under Skills for Active Democratic Citizenship, students are to develop the skill of making “decisions that reflect the care, concern, and responsibility for the

environment” (see [www.edu.gov.mb.ca/k12/cur/socstud/foundation\\_k/index.htm](http://www.edu.gov.mb.ca/k12/cur/socstud/foundation_k/index.htm), page 44).

The clusters provide a means to develop skills. In Kindergarten Social Studies Cluster 3: The World Around Me, “Students study the world around them, exploring the physical environment of their local neighbourhood and learning that they live in a country called Canada. They learn that although all people have the same basic needs, they have different ways of meeting those needs” (see [www.edu.gov.mb.ca/k12/cur/socstud/foundation\\_k/index.html](http://www.edu.gov.mb.ca/k12/cur/socstud/foundation_k/index.html), page 43).

Students investigate their needs and the needs of others, and how these needs are met. One area of quality of life that is sometimes overlooked is the beauty and importance of the natural environment. Kindergarten is an ideal age to provide opportunities for students to enjoy the beauty of nature.

### *Science*

In Kindergarten Science Cluster 1: Trees, “an investigation of trees capitalizes on students’ curiosity about the world around them. Students’ observations of trees, including their seasonal changes, are complemented by a study of basic parts and uses of trees.” They also develop the understanding of how some of the food and shelter needs for life forms are met by parts of trees (see [www.edu.gov.mb.ca/k12/cur/science/found/kto4/kc1.pdf](http://www.edu.gov.mb.ca/k12/cur/science/found/kto4/kc1.pdf), page K.2).

### *Physical Education/Health Education*

In the Physical Education/Health Education Attitude section, the idea of respecting the natural environment while engaged in physical activity is first introduced (see [www.edu.gov.mb.ca/k12/cur/physhlth/foundation/k-movement.pdf](http://www.edu.gov.mb.ca/k12/cur/physhlth/foundation/k-movement.pdf), page K-40).

In Physical Education/Health Education Kindergarten Section 3: Safety, “The student will demonstrate safe and responsible behaviours to manage risks and prevent injuries in physical activity participation and in daily living” (see [www.edu.gov.mb.ca/k12/cur/physhlth/foundation/k-safety.pdf](http://www.edu.gov.mb.ca/k12/cur/physhlth/foundation/k-safety.pdf), page K-53). Students need to be safe when they are in the natural and constructed environment. The concept of respect for the environment is introduced. The consequence of not respecting the natural environment affects quality of life. Connections to the economy can be introduced by explaining that it takes time and money to fix or replace something that has been damaged.

It is important that students’ basic need of safety be met for all in classroom and out-of-classroom experiences.

### *Other Subjects*

Other subjects may be involved in the sustainable development activities, such as English language arts, mathematics, art, and music. Mathematics and English language arts develop the literacy and numeracy skills to enable learning about the ESD themes. Arts education (dance, drama, art, and music) provide opportunities to express the ESD themes.

Note: When using the web form of the curriculum documents, the Internet page number displayed is sometimes different than the print page number. In this document, the web page is listed first, and then the print page.

Note: The social studies Apply sections (especially pages 157 and 145 of *Kindergarten Social Studies: Being Together: A Foundation for Implementation*, found at [www.edu.gov.mb.ca/k12/cur/socstud/foundation\\_k/index.html](http://www.edu.gov.mb.ca/k12/cur/socstud/foundation_k/index.html)) will provide opportunities for students to be active citizens and take positive action incorporating the three sections of the sustainable development Venn diagram.

# APPENDIX A

## Potential ESD Themes

<b>Grade</b>	<b>Potential Theme and Cluster Connections</b>	<b>Potential Theme and Cluster</b>
Kindergarten	Needs	Trees
	Social Studies <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 3: The World Around Me</li> </ul> Science <ul style="list-style-type: none"> <li>■ Cluster 1: Trees</li> </ul> Physical/Health Education <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 3. Safety</li> </ul>	Social Studies <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 3: The World Around Me</li> </ul> Science <ul style="list-style-type: none"> <li>■ Cluster 1: Trees</li> </ul> Physical/Health Education <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 3. Safety</li> </ul>
Grade 1	Needs/Wants	Weather Safety Needs
	Social Studies <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 2: My Environment</li> </ul> Science <ul style="list-style-type: none"> <li>■ Cluster 4: Daily and Seasonal Changes</li> </ul> Physical/Health Education <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 3. Safety</li> </ul>	Social Studies <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 2: My Environment</li> </ul> Science <ul style="list-style-type: none"> <li>■ Cluster 4: Daily and Seasonal Changes</li> </ul> Physical/Health Education <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 3. Safety</li> </ul>
Grade 3	Needs: Worldwide	Responsibilities: Soils
	Social Studies <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 2: Exploring the World</li> </ul> Science <ul style="list-style-type: none"> <li>■ Cluster 4: Soils in the Environment</li> </ul> Physical/Health Education <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>	Social Studies <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 2: Exploring the World</li> </ul> Science <ul style="list-style-type: none"> <li>■ Cluster 4: Soils in the Environment</li> </ul> Physical/Health Education <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>

Grade 4	Sustainability: Manitoba's Plants & Animals	Aboriginal Peoples' Relationships with the Land
	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 3: Living in Manitoba</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 1: Habitats and Communities</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Cluster 3: Living in Manitoba</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 1: Habitats and Communities</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>
Grade 7	Human Actions: Climate Change	Human Actions: Ecosystems
	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Skills: Managing Information and Ideas</li> <li>■ Skills: Critical and Creative Thinking</li> <li>■ Cluster 4: Human Impact in Europe or in the Americas</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 1: Interaction within Ecosystems</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Skills: Managing Information and Ideas</li> <li>■ Skills: Critical and Creative Thinking</li> <li>■ Cluster 4: Human Impact in Europe or in the Americas</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 1: Interaction within Ecosystems</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>

Grade 9	Quality of Life in Canada	Electricity Issues in Manitoba
	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Skills: Critical and Creative Thinking</li> <li>■ Cluster 4: Canada: Opportunities and Challenges</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 0: Overall Skills and Attitudes</li> <li>■ Cluster 3: The Nature of Electricity</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Skills: Critical and Creative Thinking</li> <li>■ Cluster 4: Canada: Opportunities and Challenges</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 0: Overall Skills and Attitudes</li> <li>■ Cluster 3: The Nature of Electricity</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>
Grade 10	Resource Extraction	Bioaccumulation
	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Skills: Critical and Creative Thinking</li> <li>■ Cluster 2: Natural Resources</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 1: Dynamics of Ecosystems</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>	<p>Social Studies</p> <ul style="list-style-type: none"> <li>■ Skills: Active Democratic Citizenship</li> <li>■ Skills: Critical and Creative Thinking</li> <li>■ Cluster 2: Natural Resources</li> </ul> <p>Science</p> <ul style="list-style-type: none"> <li>■ Cluster 1: Dynamics of Ecosystems</li> </ul> <p>Physical/Health Education</p> <ul style="list-style-type: none"> <li>■ 1. Movement</li> <li>■ 4. Personal and Social Management</li> </ul>



## 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](http://www.edu.gov.mb.ca/k12/esd/correlations/index.html).

Kindergarten (Themes: Needs, Trees)		
Social Studies	Science	Physical/Health Education
<p><b>Skills: Active Democratic Citizenship</b></p> <p>0-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p><b>Cluster 3: The World Around Me</b></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><b>Cluster 1: Trees</b></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><b>1. Movement</b></p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>3. Safety</b></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><b>Skills: Active Democratic Citizenship</b> 1-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p><b>Cluster 2: My Environment</b> 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><b>Cluster 4: Daily and Seasonal Changes</b> 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><b>1. Movement</b> A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>3. Safety</b> 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><b>Skills: Active Democratic Citizenship</b> 3-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p><b>Cluster 2: Exploring the World</b> 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><b>Cluster 4: Soils in the Environment</b> 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><b>1. Movement</b> A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>4. Personal and Social Management</b> 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><b>Skills: Active Democratic Citizenship</b></p> <p>4-S-103 Make decisions that reflect care, concern, and responsibility for the environment.</p> <p><b>Cluster 3: Living in Manitoba</b></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><b>Cluster 1: Habitats and Communities</b></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><b>Movement</b></p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>4. Personal and Social Management</b></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><b>Skills: Active Democratic Citizenship</b></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><b>Skills: Managing Information and Ideas</b></p> <p>7-S-207A Use traditional knowledge to read the land.</p> <p><b>Skills: Critical and Creative Thinking</b></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><b>Cluster 4: Human Impact in Europe or the Americas</b></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><b>Cluster 1: Interactions Within Ecosystems</b></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><b>1. Movement</b></p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>4. Personal and Social Management</b></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><b>Skills: Active Democratic Citizenship</b></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><b>Critical and Creative Thinking</b></p> <p>9-S-306 Analyze prejudice, racism, stereotyping, and other forms of bias in the media and other information sources.</p> <p><b>Cluster 4: Canada: Opportunities and Challenges</b></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><b>Cluster 0: Overall Skills and Attitudes</b></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><b>1. Movement</b></p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>4. Personal and Social Management</b></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><b>Cluster 3: The Nature of Electricity</b></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"><b>Social Studies</b></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><b>Skills: Active Democratic Citizenship</b></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><b>Skills: Critical and Creative Thinking</b></p> <p>10-S-306 Analyze prejudice, racism, stereotyping, and other forms of bias in the media and other information sources.</p> <p><b>Cluster 2: Natural Resources</b></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><b>Cluster 1: Dynamics of Ecosystems</b></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><b>1. Movement</b></p> <p>A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>3. Safety</b></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>

# APPENDIX C

## Sustainable Development Specific Learning Outcomes, Curriculum Pages, and Blackline Masters

Sustainable Development Student Learning Outcomes	Curriculum Pages	Blackline Masters*
<b>Social Studies</b>		
<b>Skills Active Democratic Citizenship</b>		
S-103 Make decisions that reflect care, concern, and responsibility for the environment.	<i>Kindergarten Social Studies: Being Together: A Foundation for Implementation</i> , pages 44, A14, A24, and C1	K.3.2 a, b, c, d
<b>Cluster 3: The World Around Me</b>		
KL-012 Describe characteristics of the local physical environment. Include: natural and constructed elements.	pages 48, 120, and 128-133	K.3.2 b
KL-013 Give examples of how the natural environment influences daily life. <i>Examples: work, play, clothing...</i>	pages 48, 120, and 128-133.	K.3.2 c
KG-020 Recognize that people all over the world have the same basic needs. <i>Examples: food, clothing, shelter...</i>	pages 50, 121, and 144-146	K.3.5 a, b, c, d
KG-021 Recognize that they may have different ways of meeting their basic needs than people in other parts of the world.	pages 50, 121, and 144-146	K.3.5 a, b, c, d
VL-003 Appreciate the beauty and importance of the natural environment.	pages 48, 120, and 128-133	K.3.2 a,
VG-005 Demonstrate interest in the larger world beyond their immediate environment.	pages 50, 121, 134, and 136	nil
<b>Science</b>		
<b>Cluster 1: Trees</b>		
K-1-02 Identify ways in which humans and other animals use trees. <i>Examples: humans eat apples and walnuts; birds make their homes in trees; deer eat leaves, bark, and tender twigs...</i>	<i>Kindergarten to Grade 4 Science: A Foundation for Implementation</i> , pages K.2 and K.3	None

\* Social studies blackline masters can be found at [www.edu.gov.mb.ca/k12/cur/socstud/foundation\\_k/blms/index.html](http://www.edu.gov.mb.ca/k12/cur/socstud/foundation_k/blms/index.html).

<b>Physical/Health Education</b>		
<p><b>1. Movement</b> A.1.6 Appreciate and respect the natural environment while participating in physical activity.</p> <p><b>3. Safety</b> 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><i>Kindergarten to Grade 4 Physical Education/Health Education: A Foundation for Implementation,</i> page K-40 pages K-60 and K-61</p>	<p>None</p>

## APPENDIX D

### Sustainable Development Activity #1: Uses of Trees

**Grade Level:**

Kindergarten



**Guiding Questions:**

Students consider the following five guiding questions:

- What are my needs?
- What is the environment around me?
- Why is the environment important, especially trees?
- How can I safely explore my environment?
- How can I help?

**Subjects:**

- Social Studies Skills: Active Democratic Citizenship
- Social Studies, Cluster 3: The World Around Me
- Science, Cluster 1: Trees
- Physical Education/Health Education, Attitude Section
- Physical Education/Health Education, Section 3: Safety
- English Language Arts
- Arts Education (Music, Visual Arts)

**Setting:**

Inside and outside

**Duration:**

- 1A. Tree Song and Poem (two to three half-hour periods)
- 1B. Schoolyard Nature Walk (three to four half-hour periods with a half-hour outside)
- 1C. Taking Action: Tree Needs (Water) (one to two half-hours, three to four times a school year)

**Group Size:**

- Tree Song and Poem: classroom, individual
- Schoolyard Walk Activity: two to five students

**Vocabulary:**

Trees, maple, the names of the types of tree in your schoolyard, rubbing, branches, roots, bark, trunk, wood, leaves, altitude

**Materials:**

Tree song, tree poem, paper, run-off sheets, soft lead pencil, scissors, and glue

**Safety:**

1. Check and follow divisional and school policies for taking students beyond the classroom.
2. Obtain all relevant permissions to take your students on a nature walk in the schoolyard.
3. Walk the schoolyard, looking for safety concerns and appropriate trees, before you take the student outside.
4. Consult Bowman Kindergarten Nature Walks for safety advice (see [http://bowman.lexingtonma.org/bigbackyard/grade\\_k/KFPTGuide.pdf](http://bowman.lexingtonma.org/bigbackyard/grade_k/KFPTGuide.pdf)).

**Preparation****1A. Tree Song and Poem**

If you have a favourite tree song or poem, feel free to substitute for the examples provided. The sample song and poem can be found on the Can Teach website at [www.canteach.ca/elementary/songspoems52.html](http://www.canteach.ca/elementary/songspoems52.html). The site has many other resources.

1. Print out the song “Growth of a Tree” for display.
2. Print out a copy of the poem “Trees” for each student.

**1B. Schoolyard Nature Walk**

1. Obtain a sheet of paper and a sharpened soft lead pencil for each student.
2. Get the students looking forward to going on a nature walk. Bowman Kindergarten Nature Walks suggests asking students questions such as “Who

likes to explore and discover outdoors?” and “How do scientists learn about nature?”

3. Guide the students to tell you what safety rules are important for a nature walk.
4. Guide the students to tell you how they can respect nature when going on a nature walk.
5. Have the students practise a Seton sit or stand in the classroom.\*
6. Prepare your follow-up question to be used after the walk.

### 1C. Tree Needs (Water)

1. Obtain enough buckets or sufficient length of garden hose to reach from the water supply to the trees.
2. Read the articles about watering  
(see [www.toronto.ca/trees/pdfs/Treesneedwater.pdf](http://www.toronto.ca/trees/pdfs/Treesneedwater.pdf),  
[www.ottawa.ca/residents/healthy\\_lawns/forestry/water\\_tree\\_en.html](http://www.ottawa.ca/residents/healthy_lawns/forestry/water_tree_en.html), and  
[www.extension.org/pages/Watering\\_Evergreen\\_Trees\\_and\\_Shrubs](http://www.extension.org/pages/Watering_Evergreen_Trees_and_Shrubs)).

## Activity

### 1A. Tree Song and Poem

1. Sing the song “Growth of a Tree” with the students  
(see [www.canteach.ca/elementary/songspoems52.html](http://www.canteach.ca/elementary/songspoems52.html)).
2. Read the poem “Trees” to the students.  
(see [www.canteach.ca/elementary/songspoems52.html](http://www.canteach.ca/elementary/songspoems52.html))
3. Ask students: “In the poem and song, what are the uses of trees?” (e.g., food, shelter, beauty, play..)
4. Ask students: “What use birds and other animals make of trees?” (e.g., food, shelter, beauty, play..)
5. Ask students to draw a picture of a tree on the page with the poem “Trees.”  
(see [www.canteach.ca/elementary/songspoems52.html](http://www.canteach.ca/elementary/songspoems52.html))

### 1B. Schoolyard Nature Walk

1. Brainstorm with the students about safety and environmental respect before embarking on the nature walk.
2. Take the students on a nature walk on the playground.
3. Have them examine a tree by smelling, touching, and making a bark rubbing.

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\* A Seton sit or stand is when a person stays in one place for a period of time using the senses of hearing, sight, and smell to observe the details of one small area of interest. The action is named after Earnest Thompson Seton, Manitoba’s first official naturalist.

4. Have students find an interesting area to do a Seton walk or stand. Two to three minutes is a good period of time.
5. Collect leaves from the ground, seeds, and other flat items of interest for rubbing to be done in the classroom.

Hint: If you wish to preserve leaves or other flat objects so they do not crumble and so you can see the details and both sides of the object, cover the objects with clear sticky paper, which is available from craft shops and dollar stores.

### 1C. Taking Action: Tree Needs (Water)

If there is not enough rainfall, water the trees. After the broadleaf trees have dropped their leaves, it is a good time to give the evergreens a watering before winter.

### Debriefing Questions

#### Affective questions

- Which part did you enjoy the most?
- Would you like to do this again?
- What was the neatest thing you saw, heard, felt, smelt?

#### Cognitive questions

- What did you learn about \_\_\_\_?
- What uses do you make of trees?
- What uses do the birds and other animals in our schoolyard have for trees?

### Extensions

1. If the students examine their tree several times in the fall and spring, they can record changes in the tree and its use by animals.
2. Involve the students in tree planting. Information is available from the Manitoba Forestry Association or Manitoba Hydro. Manitoba Hydro has tree-planting programs, including a forest enhancement project. Information is available at [www.hydro.mb.ca/environment/forest\\_enhancement/eligible\\_projects.shtml](http://www.hydro.mb.ca/environment/forest_enhancement/eligible_projects.shtml). Manitoba Forestry Association activities include tree planting and the distribution of seedlings. For more information, see [www.thinktrees.org](http://www.thinktrees.org)
3. Contact the Manitoba Forestry Association for current National Forestry Week activities and Trees for Tomorrow at [www.thinktrees.org](http://www.thinktrees.org).
4. Have the student become involved in the April 22 Earth Day.

## Sustainable Development Connections in Assignment

This assignment connects with the following Kindergarten ESD concepts:

Students will

- identify ways in which humans and animals use trees
- appreciate the beauty and importance of the natural environment, and learn how it influences their daily lives
- respect the natural environment while participating in physical activities (see [www.edu.gov.mb.ca/k12/esd/pdfs/k-4\\_brochure.pdf](http://www.edu.gov.mb.ca/k12/esd/pdfs/k-4_brochure.pdf), page 3)
- learn to contribute to groups and communities (see [www.edu.gov.mb.ca/k12/esd/pdfs/k-4\\_brochure.pdf](http://www.edu.gov.mb.ca/k12/esd/pdfs/k-4_brochure.pdf), page 3)

This assignment also makes connections to an appreciation of sustainable development by providing opportunities to stimulate the affective domain.

The connections to quality of life of the Venn diagram come from the intersection of the appreciation of nature, physical activity, and meeting the needs for food and shelter. Human survival is dependent on the environment. Thus, the environment aspect of sustainable development is demonstrated. The economy section of the Venn diagram is referenced by the uses we make of trees and tree products such as food and shelter.

One of the essential skills of arts education (music) is to have “Students connect music to contexts of time, place, and community, and understand how music reflects and influences culture and identity” (see [www.edu.gov.mb.ca/k12/cur/arts/framework/index.php](http://www.edu.gov.mb.ca/k12/cur/arts/framework/index.php), page 1). The Quality of Life connection is made through the environment connection of time, place, and community, and the culture and identity part of human health and well-being.



### Sustainable Development Activity #2: Needs

**Grade Level:**

Kindergarten

**Guiding Questions:**

The following are six guiding questions to be considered from the student's perspective:

- What are my needs?
- What are the needs of other people in the world?
- What is the environment around me?
- Why is the environment important to me?
- How can I safely explore my environment?
- How can I help?

**Subjects:**

- Social Studies Skills: Active Democratic Citizenship
- Social Studies Cluster 3: The World Around Me
- Science, Cluster 1: Trees
- Physical Education/Health Education, Attitude Section
- Physical Education/Health Education, Section 3: Safety
- English Language Arts
- Arts Education (Visual Arts)

**Setting:**

Indoors

**Duration:**

2A. K-4 Sustainable Development Poster

- one to two half-hour periods for activities
- 1-4, one to two half-hour periods for Activity 5

2B. Needs in Other Places in Canada and the World: one to two half-hour periods

**Group Size:**

three to five students

**Vocabulary:**

food, shelter, safety, appreciate, beauty, house, barn, trees, berries, crosswalk, tomatoes, flowers, litter, wetlands, garden, bicycle helmet, school bus, bus stop, natural environment, constructed environment, litter

**Materials:**

magazines, scissors, glue, run-off sheets of picture chart, picture cards, and needs sheets, gloves, and compostable garbage bags or reusable containers

**Safety:**

1. Check and follow divisional and school policies for taking students beyond the classroom.
2. Walk the area to determine any safety hazards.
3. Designate a specific area of the schoolyard rather than the whole schoolyard.
4. Use gloves to avoid cuts and scrapes.

**Preparation:****2A. K-4 Sustainable Development Poster**

1. Obtain a large copy of the K-4 Sustainable Development Poster. If one is not available in your school, the order form for a free large poster copy (one per class) can be found at [www.edu.gov.mb.ca/k12/esd/pdfs/sk-4\\_order\\_form.pdf](http://www.edu.gov.mb.ca/k12/esd/pdfs/sk-4_order_form.pdf). The poster can also be printed from the website.
2. Print out copies of the following material on 8.5 × 11 paper for each student and yourself:
  - The K-4 Sustainable Development Poster (see [www.edu.gov.mb.ca/k12/esd/poster.html](http://www.edu.gov.mb.ca/k12/esd/poster.html))
  - The chart from this activity (pages 38–40 in this document)
  - The sets of the picture cards for this activity (pages 41–43 in this document)
    - Cut the pages to separate the cards.
    - Put each set of cards in a container.

## 2B. Needs in Other Places in Canada and the World

1. Obtain magazines that have pictures of safety, food, shelter, and clothing in Canada and around the world.
2. Print one set of Needs sheets for each student (pages 44–47 in this document).

## 2C. Taking Action: Schoolyard Cleanup

1. Review the items in the safety section.
2. Obtain a supply of gloves and compostable garbage bags or reusable containers.
3. Take pictures of the area to be cleaned up.

A suggestion is that the 2A, 2B, and 2C activities are ideal opportunities to involve older students to mentor the Kindergarten students.

**Hint:** Small gardening gloves can be stored in the classroom and used for continued cleanup.

## Activity

### 2A. K–4 Sustainable Development Poster

1. Ask students, “What do people need to live?” Lead them to answer: safety, food, shelter, and clothing.
2. In groups, have students look at the K–4 Education for Sustainable Development Poster.
3. Using a large copy of the poster,
  - have a few students pick up a picture card from you
  - have the students bring the card to the large poster
  - have students find the part of the poster that matches the student’s card
  - ask the student or another member of the class whether the matched part of the poster shows a basic need
  - ask students to explain what is beautiful in that card
  - ask students whether the picture shows a constructed environment, a natural environment, or both natural and constructed environments
4. Using the 8.5 x 11 letter-size poster,
  - have the students work in groups to match their picture card to their 8.5-x-11-inch poster by holding the picture card and pointing to the matching part of the poster
  - have each group member take a turn matching a picture card to the poster
5. Have students complete “Picture Chart: Needs” by checking off the appropriate boxes. You might ask them to explain to their group their reasons why they put their checkmarks where they did.

## 2B. Needs in Other Places in Canada and the World

1. Review the understanding of needs by using examples from the large sustainable development poster.
2. Provide a set of magazines, scissors, and glue to the group.
3. Provide copies of the needs sheets to each student.
4. Each student selects one picture for each of the four needs.
5. The student cuts out the picture and glues it on his/her sheet.
6. The student explains to the other group members why the picture was selected.

## 2C. Taking Action: Schoolyard Cleanup

1. Ask students how they feel when they see litter.
2. Brainstorm with students about safety and the environment.
3. Respect rules before going to the designated area of the schoolyard.
4. Have students pick up litter and put the litter in the compostable garbage bags or reusable containers.
5. Take pictures of the students cleaning up.
6. Make a picture display of the area before the clean-up, during the cleanup, and after the cleanup.

Hint: Use gardening gloves.

### Debriefing questions:

#### **Affective questions**

- Which part did you enjoy the most?
- Would you like to do the activities again?
- How do you feel after you cleaned up the schoolyard?

#### **Cognitive questions**

- What did you learn about \_\_\_\_?
- What uses do trees have in other countries?
- Do people in other countries have the same needs as you?
- How can you reduce litter?

### **Extensions:**

1. Have the students take home the small poster, the picture sheets, and the chart and the needs sheets. Ask the students to explain to a parent/guardian and/or older sibling why they put their checkmarks where they did.
2. Have the students draw a picture of their favourite part of their environment and explain why they made that choice.

### **Sustainable Development Connections in Assignment**

This assignment connects with the ESD concepts highlighted for Kindergarten.

Students will

- identify ways in which humans and animals use trees
- recognize that people all over the world have the same basic needs
- appreciate the beauty and importance of the natural environment and learn how it influences their daily lives
- respect the natural environment while participating in physical activities (see page 3 at [www.edu.gov.mb.ca/k12/esd/pdfs/k-4\\_brochure.pdf](http://www.edu.gov.mb.ca/k12/esd/pdfs/k-4_brochure.pdf).)

### **Activity #2: Needs**

This activity helps students make connections to sustainable development.

Students will

- become aware that the need for beauty is met by their environment
- sharpen their observation-of-the-environment skills by differentiating between constructed and natural environments (This helps them learn that people affect the environment.)
- understand that things on earth are connected
- identify ways in which some of their needs are met by trees and other parts of the environment.
- learn to contribute to groups and communities (see page 3 at [www.edu.gov.mb.ca/k12/esd/pdfs/k-4\\_brochure.pdf](http://www.edu.gov.mb.ca/k12/esd/pdfs/k-4_brochure.pdf).)





The quality of life section of the sustainable development Venn diagram comes from the intersection of the three parts of sustainable development. The human health & well-being and environment sections are activated by showing how our needs of food and shelter are met by trees and other plants. human health & well-being is also strongly represented by the emphasis on safety, such as wearing bicycle helmets and using crosswalks. Also, growing flowers shows the importance of nature. The inclusion of the economic circle is triggered by the inclusion of the constructed environment.

## PICTURE CHART: NEEDS

Put a checkmark in the boxes that match the picture. The needs boxes include human and other animal needs.

Picture Part	Need: Food	Need: Shelter	Need: Safety	Appreciation: Beauty	Constructed Environment	Natural Environment
						
						
						
						

Picture Part	Need: Food	Need: Shelter	Need: Safety	Appreciation: Beauty	Constructed Environment	Natural Environment
						
						
						
						

Picture Part	Need: Food	Need: Shelter	Need: Safety	Appreciation: Beauty	Constructed Environment	Natural Environment
						
						
						
						



SUSTAINABLE DEVELOPMENT PICTURE CARDS



SUSTAINABLE DEVELOPMENT PICTURE CARDS



SUSTAINABLE DEVELOPMENT PICTURE CARDS



NEEDS: SAFETY

NEEDS: FOOD

NEEDS: CLOTHING

NEEDS: SHELTER







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## REFERENCES

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