

# Environmental, Energy and Climate Change Education in Alberta's Draft K-6 Curriculum

## Analysis and Recommendations, September 2021

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Submitted by the following organizations and working group members



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## Introduction

In the spring of 2020, Alberta Education released the draft K-6 curriculum for all subjects and sought feedback on the draft, with plans to pilot it in the 2021/22 school year and fully implement it in the fall of 2022. The Alberta Council for Environmental Education (ACEE) along with a working group of environmental, energy and climate change educators reviewed the draft curriculum. The working group consisted of the following stakeholders:

- Kathy Worobec, Senior Education Advisor; Wyatt Schierman, Environmental Education Program Coordinator - Alberta Council for Environmental Education
- Jennifer Janzen - Executive Director, Alberta Tomorrow
- Dick Holland (Instructor, Faculty of Education); Stephen MacKinnon (Educational Consultant) - GreenLearning Canada Foundation
- Valerie Miller, PhD
- Alberta Youth Leaders for Environmental Education students - Isiri Jayathilake and Subashini Thangadurai

Since 2014, the Alberta Council for Environmental Education (ACEE) has been gathering research, conducting interviews with thought leaders and offering workshops to create the [Curriculum for a Sustainable Future](#) - a document that outlines what students need to know to be environmental, energy and climate literate. This document was used by the working group along with their own experience of engaging students in environmental, energy and climate change education as part of their review and feedback. The working group completed their review from June 2021 to September 2021 and met virtually three times during that time period.

The working group helped answer the following questions regarding the draft K-6 curriculum for the subjects of science, social studies, and physical education and wellness in relation to environmental, energy and climate change education:

- How is it providing better/deeper opportunities for environmental, energy and climate change education and leading to engaged environmental stewards?
- How well does it align with child educational development (age-appropriateness) for environmental topics?

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- How have the recommendations from the Curriculum for a Sustainable Future been incorporated?

We used the following sub-questions to guide our feedback:

- What are the strengths?
- What needs improving?
- What is missing?

This report is a compilation of the working group's review of the draft K-6 curriculum. Other environmental education organizations joined in submitting this collective response from the environmental education community. This report was submitted to the Minister of Education, Hon. Adrianna LaGrange and Alberta Education senior staff leading curriculum development in September 2021. This document was also shared publicly to help individuals or other organizations provide their own feedback on the draft K-6 curriculum.

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## Executive Summary

In the review of the draft K-6 curriculum for the subjects of science, social studies, and physical education and wellness, some content regarding environmental stewardship, energy and climate change was added; however, we found that there is much to be improved with this content and many important aspects of environmental, energy and climate change education that have not been included. It is imperative that the new curriculum addresses environment, energy and climate change education to help students cope with the increases in eco-anxiety that we are witnessing among youth (as revealed in the image below and on Pg. 11) and to prepare students for their future; a future which will require them to understand complex and challenging issues and to help make decisions both locally and globally. Environmental education is well-suited to provide the meaningful and relevant context to help students make sense of their learning, to help build skills to make meaningful contributions to their communities and to give them hope for their future.

“I think that’s the problem, is that we don’t know how we can help. And then everybody keeps putting it on us like: “All right, figure it out”. But we don’t know how to figure it out because we haven’t found that out yet.”  
(Grade 10, rural student)

confusion

anxiety

apathy



In this report, we’ve outlined why environmental, energy and climate change education is needed in curriculum and how this also supports the outcomes for learning as outlined in the Ministerial Order for Student Learning. We’ve also provided additional information on the need for curriculum to include these topics as Alberta, Canada and the international community address the many challenges faced by the world today. All of this demonstrates that the curriculum needs to provide more environmental, energy and climate change education, which Alberta’s new curriculum must address if we are to prepare students with the knowledge, skills and understanding they need for their future.

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Curriculum is not updated often or quickly so this is an extremely important time to ensure that this need is met for Alberta students, especially with the release of the [Intergovernmental Panel on Climate Change's Sixth Assessment Report \(2021\)](#) stating "recent changes in the climate are widespread, rapid, and intensifying and unprecedented in thousands of years". Below we've outlined our key recommendations for revisions and/or additions to improve the draft K-6 curriculum that includes general recommendations along with subject-based recommendations. We also highlighted the draft content that presents opportunities for environment, energy and climate change education. Also included in this report, is more detailed information including subject and grade-specific feedback. The detailed grade-specific recommendations were used to create the general and subject recommendations (below). We are asking Alberta Education to incorporate these recommendations as they finalize the Alberta K-6 curriculum.

### General recommendations

- **Increasing educational opportunities that prioritize solutions and promote students taking action**, especially when discussing environmental, energy and climate impacts, to provide students with the knowledge and skills to address these complex issues and give them hope (reduce eco-anxiety).
- **Less focus on knowledge and more focus on skills, attitudes and behaviors**, especially those outlined as integral to environmental education (e.g. critical thinking).
- **Ensuring there are more opportunities for systems thinking and cross-curricular or interdisciplinary learning** for environmental topics in each grade to help students understand the interconnections of Earth and human systems.
- **Ensuring Indigenous perspectives**, especially for environmental topics (connection, kinship, and stewardship of the land, land reclamation, ecological restoration, etc.) are provided as integral learning and not just as add-ons.
- **Emphasizing learning in nature/the outdoors in all grades and subjects not just in physical education and wellness in the early years**, all of which has been shown to improve academic performance, personal well-being, social skills development, ecological understanding and motivation/engagement in learning.

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## Science recommendations

- 1) **Revising the content regarding climate change** to be specific about its impacts, what is causing it, the fact that it is anthropogenic and occurring at a far more alarming rate than what occurs naturally and that there are solutions, and explaining the greenhouse gas effect and its connection to many of the other topics linked to it throughout the Science curriculum.
- 2) **Reinforcing the importance of respecting nature and living things**, as well as that humans are part of nature and continuing this care for the environment beyond the early grades as well as the exploration of their natural world.
- 3) Building the foundation for **understanding the importance of biodiversity and increasing instruction on environmental stewardship** are necessary in ensuring resilience of the environment to support all life (e.g. not just learning about bodies of water but watersheds and the importance of wetlands for water quality and biodiversity, the importance of plants and wildlife for biodiversity).
- 4) Revising the wording in skills and procedures for scientific methods to **remove language that implies a distrust of science and scientists (dishonestly recording data)**. Students should learn to think critically and understand rigour in data collection, the peer review process, ways of presenting, and learn how to address misinformation, especially with regards to social media and news, without using language like “honest” or “dishonest”.
- 5) **Increasing instruction on electricity** as a form of energy, how it is generated, its use, its conservation and its environmental impacts.
- 6) **Increasing instruction on the connection between consumption and production of waste**, environmental impacts of waste, energy used in production and handling waste, product life cycle and circular economy.
- 7) **Increasing instruction on agricultural beneficial management practices**, especially as they cover fertilizer, chemical use and methane production, as well as new, forward-thinking practices, such as permaculture or regenerative agriculture.

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## Social Studies recommendations

- 1) **Revising the content regarding climate change** to be specific about its impacts, what is causing it, the fact that it is anthropogenic and occurring at a far more alarming rate than what occurs naturally and that there are solutions, and explaining the greenhouse gas effect and its connection to many of the other topics linked to it throughout the Social Studies curriculum.
- 2) **Increasing education on environmental/climate change history** to help understand that there are changes over time and to explore possible future pathways (e.g. how human relationships with land have changed, what past and present land uses impact the environment, ecology and the loss of biodiversity, and the extensive time in which anthropogenic climate change has been known to be occurring, yet never meaningfully addressed.)
- 3) **Increasing education on Indigenous perspectives**, as well as other societies' and religious groups' perspectives, on environmental preservation, and connection to the land.
- 4) **Ensuring students learn both about the advantages and disadvantages (and trade-offs) of Alberta's resource economy**, including its impacts upon the environment and on society (including Indigenous populations).

## Physical Education and Wellness recommendations

- 1) **Creating stronger connections to the benefits of spending time in nature** in all grades by enhancing the personal well-being and active living sections (including active transportation).
- 2) **Healthy food choices could include growing our own food and how gardening, growing and gathering connect us to the land and the origin of food.** Students should learn about native species, pollinator-attracting plants (and the importance of pollinators), and Indigenous knowledge of native foods and plants.
- 3) **Exploration of the impacts of our food choices** - environmentally, socially and economically.
- 4) **Healthy living and access to food needs to include connections to how climate change may affect access to food.**



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## Existing opportunities for environmental, energy and climate change education in the Draft K-6 Curriculum

- Focus on respect for living things, balance of nature (Science and Social Studies).
- Observing local environments, using their senses in the outdoors and outdoor activities (Science and Physical Education & Wellness).
- Understanding the food chain and healthy eating (Science and Physical Education and Wellness).
- Developing an action plan that helps with conservation efforts in a local environment (Science).
- Broader focus and understanding on all energy resources, considering advantages and disadvantages of different energy sources, and conservation of scarce resources (Science and Social Studies).
- Weather and climate (Science).
- How Alberta's economy has diversified over time, why it is beneficial and necessary for Alberta's economy to continue to diversify in the future (Social Studies).
- Different geographical landforms, main bodies of water and climate zones of Canada (Social Studies).
- Understanding different countries' carbon footprints (Social Studies).
- Scientific Methods (Science) and Critical Thinking (Social Studies).

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## Why is environmental, energy and climate change education important for Alberta students?

There are many reasons why environmental, energy and climate change education is important for Alberta students and we've outlined four of the top reasons below:

1. To achieve the outcomes for learning as outlined in the Ministerial Order for Student Learning (August, 2020).
2. To ensure that Alberta remains competitive as we move forward in addressing global initiatives such as climate change, the United Nations Sustainable Development Goals and UNESCO's Education for Sustainable Development that requires environmental, energy and climate literate citizens.
3. Extensive research outlines the benefits of environmental education such as improved academic performance, personal health and well-being.
4. Alberta youth polling and focus groups results demonstrate the need for this education and the demand for more education in these areas by students.

### Ministerial Order for Student Learning (August 2020)

The [Ministerial for Student Learning](#) (August, 2020) recognizes the importance of environmental stewardship, *"Students will demonstrate an understanding of economic development and entrepreneurship, and will recognize the responsibility we all share for environmental stewardship and sustainability."* Ensuring the curriculum provides opportunities for students to understand and take responsibility for environmental stewardship is crucial to achieve this outcome.

### Global Initiatives

The global initiatives that demonstrate the need for environmental and sustainability education include the need for responding to climate change as addressed in the [Intergovernmental Panel on Climate Change Sixth Assessment Report \(2021\)](#) the United Nations [Sustainable Development Goals \(SDGs\)](#) and the United Nation Educational, Scientific, and Cultural Organization (UNESCO) [Education for Sustainable Development \(ESD\)](#). ESD is recognized as an integral element of SDG Goal 4 on quality education and a

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key enabler for the remaining 16 SDGs, while environmental, energy and climate change education are key components for addressing both climate change and sustainable development.

## Benefits of Environmental Education

Research has outlined the many benefits of environmental, energy and climate change education for enhancing student learning, personal well-being and health. The North American Association of Environmental Education partnered with Stanford University through a review of academic literature and peer-reviewed studies and identified their [key findings](#). The review found clear evidence that environmental education provides a variety of benefits providing students with:

- **Knowledge gains** across multiple disciplines, including environmental issues, science, mathematics and more.
- **Emotional and social skills** such as self-esteem, character development, teamwork and leadership skills.
- **Environmentally friendly behaviour** such as reducing water use, increasing recycling and participating in community clean ups.
- **Academic skills** such as critical thinking, oral communication, analytical skills, problem solving and higher-order thinking.
- **Motivation to learn** including enthusiasm for and interest in school.
- **Civic interest and engagement** including feelings of civic responsibility, empowerment and ability to take action.

## Alberta Youth Polling and Focus Group Results

In 2020, ACEE conducted [youth polling](#) and [youth focus group workshops](#) and the findings from this demonstrate that students need and want environmental, energy and climate change education. Key findings include:

- **9 in 10 youth have a moderate to extreme level of concern** when considering the environment and climate change.
- **Over two thirds of youth agree** that educating students about **climate change should be a high priority in schools**.

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- When it comes to protecting the environment, one of the **top barriers** cited by youth include, **“I don’t know what to do”**.
  - Students have a **poor understanding of energy systems**, especially energy sources, energy production, the relationship between fossil fuel use and climate change, and energy solutions.
  - Students are **concerned about nature, wildlife and their own future** and feel that the responsibility to fix environmental problems has fallen on them.

The youth polling and focus groups illustrate that many Alberta students are experiencing ‘eco-anxiety’ or feelings of hopelessness and we as Albertans need to **ensure that the new curriculum provides students with learning that moves them from confusion, anxiety and apathy toward learning that helps them feel prepared, informed and optimistic**. The North American Association for Environmental Education Guidelines for Excellence - K-12 Education outlines that, *“Environmental education is key to creating a sustainable future and environmental education engages students in meaningful investigations of how to ensure environmental quality, social equity and economic prosperity.”*

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## What are the key components of what students need to learn in these areas to prepare them for their future?

There has been much work to identify the key components for environmental education and the need for these components in the curriculum to support and prepare students for the environmental challenges they will face. We have provided a summary from three sources below:

### Learn for our Planet

UNESCO's [Learn for our Planet](#) (2021) publication was prepared to understand how environmental issues are being integrated into education policies and curricula. The study reviewed national documents and interviews with key education stakeholders and a global survey of educators. *"The results are stark: We are not doing enough to ensure that what we learn helps us to address the environmental challenges that we face."* - Stefania Giannini, Assistant Director-General for Education, UNESCO. Their summary of findings and recommendations align with some of the recommendations that have been outlined in this document. Recommendations include:

- More emphasis should be given to environmental themes in education, with a particular need to expand integration of climate change and biodiversity across the curriculum.
- Environmental learning should be integrated across the curriculum, with a holistic pedagogy that goes beyond an exclusive cognitive knowledge focus and aims to engage students socially and emotionally through action-oriented learning and participation.
- All levels of the education system should include plans with environment-related themes to show high-level prioritization and the impact of the direction of learning content as well as to promote whole-sector approaches to sustainability.
- All teachers and school leaders should be versed in [Education for Sustainable Development](#), including in relation to environmental education, climate change and biodiversity. They should be prepared to put into practice their expertise in this area using transformative learning approaches.

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- School engagement with environmental issues should go beyond teaching and supporting environmental action in students, and involve action within schools and by administrators.
  - Indigenous knowledge should be better included in environmental learning, with broad consultation of Indigenous groups.
  - National and intergovernmental environmental and educational actors should better collaborate to raise ambitions and advocate action through global benchmarks, regulations, policies, programmes and events.

### Key Principles for Environmental Education

The North American Association for Environmental Education has outlined essential underpinnings of environmental education in the [K-12 Environmental Education: Guidelines for Excellence \(2019\)](#). These core key principles inform the approach to environmental education and curriculum should provide the framework for this type of education, as they have in many other school districts across the continent. The core key principles are:

- **Systems and systems thinking** - systems thinking helps make sense of a large and complex world.
- **Human well-being** - human well-being is inextricably bound with environmental quality. Humans are part of the natural order.
- **Equity and inclusion** - environmental education instruction is inclusive, respectful and equitable, and designed to employ the talents of people with different backgrounds, experiences and perspectives.
- **The importance of where one lives** - beginning close to home, learners connect with, explore and understand their immediate surroundings.
- **Roots in the real world** - learners develop knowledge and skills through direct experience with their natural world, current environmental issues and society.
- **Integration and infusion** - disciplines from the natural sciences, social sciences, and the humanities are connected through the environment and environmental issues.

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- **Lifelong learning** - critical and creative thinking, decision-making and communication, as well as collaborative learning, are emphasized. These skills are essential for active and meaningful learning, both in school and over a lifetime.
  - **Sustainability** - learning is future oriented and focussed on environmental, social and economic responsibility as drivers of individual and institutional choices.

## Curriculum for a Sustainable Future

In 2020, ACEE conducted workshops, online surveys and worked with a reviewer group to analyze this information and assist with updating the [Curriculum for a Sustainable Future](#) (CSF). The CSF organizes what students need to learn to become environmentally, energy and climate literate into four key themes. Each theme identifies key concepts and student learning outcomes that are then linked to subjects and grade division levels.

1. We Depend on Our Environment - Key Concepts:
  - a. Humans are part of nature: we depend on ecosystems and on the network of interactions among organisms and within and among ecosystems.
  - b. Earth's natural systems are constantly changing from both natural and human causes.
  - c. Exploration, discovery and knowledge of the natural and built environment where we live develops a sense of place and supports locally-based stewardship and citizenship.
  - d. Direct experiences with nature develop emotional, psychological, behavioural and physical well-being, as well as a sense of wonder and appreciation for natural beauty.
  - e. Biological diversity varies according to geography and is essential for healthy ecosystems.
  - f. Human life is reliant upon the health of our natural environment and this requires an ethic of respect, kinship, and stewardship for the natural environment.
2. Energy in Our Lives - Key Concepts:
  - a. Energy sources and processes used to transform energy sources into usable energy in our daily lives; how we consume and measure energy.

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- b. Flows of energy and matter in systems.
  - c. Human energy systems have changed over time and will continue to change.
  - d. Our food choices and systems have implications for our health and the health of others; and economic, social and environmental impacts.
3. Our Energy, Environment and Climate Evolution - Key Concepts:
- a. Impacts of our energy choices on the environment, society and quality of life (health, knowledge and standard of living) at both the local and global level.
  - b. Economic prosperity from energy resource development will change over time and can have positive and negative social and environmental impacts.
  - c. Our production and consumption of carbon-rich fossil fuels along with other industrial and agricultural activities create a variety of greenhouse gases which are changing the Earth's atmosphere.
4. Our Sustainable Future - Key Concepts:
- a. Imagining and creating a sustainable future requires an understanding of the evolution (over time) of economic, societal and environmental impacts and the role of decision-making and action at the personal, local, national and global level.
  - b. Energy and climate change policies need to address the impacts on the environment, society and the economy.
  - c. Cultural, biological, social and economic diversity creates resilience and must be respected and valued.
  - d. Quality of life is a subjective term that is influenced by many factors including: democratic rights, health, education, environment, social conditions and programs, community, personal well-being, economy and employment.



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## Summary Analysis and Feedback for Science Curriculum

**Question 1) How is this providing better/deeper opportunities for environmental, energy and climate change education and leading to engaged environmental stewards?**

### **What are the strengths?**

- Students are partially taught to demonstrate respect for living things, the importance of both one's connection to place and protecting all aspects of nature, and are encouraged to observe local environments and to use their senses in the outdoors.
- Students gain an understanding of the food chain, are taught some of the ways in which individual and group actions can impact the environment and are provided instruction to implement an action plan that helps with conservation efforts in a local environment.
- Students are taught the difference between weather and climate.
- Students are taught about science as a process, how it works, the steps involved with the scientific method, etc.
- Students develop a broader understanding of energy resources and consider disadvantages and advantages for the different energy sources.

### **What could be improved?**

- Increasing instruction on anthropogenic climate change (what it is, what is causing it, including on how human production and consumption of carbon-rich fossil fuels along with other industrial and agricultural activities creates a variety of greenhouse gases, which are changing the Earth's atmosphere). The current curriculum does not fully explain the greenhouse gas effect, and leaves doubt as to whether climate change is human-caused or not and an emphasis on climate solutions would help students deal with anxiety about their future.
- Adding context about natural causes of climate change and the fact that it occurs at a much slower rate of change and over longer time periods than what is occurring due to anthropogenic climate change.
- Reinforcing that humans are part of nature and respect for nature in general (which means leaving a healthy world for future generations) and that we depend on ecosystems/ecosystem services, which also includes life essentials like land for food, resources for energy, clean air and water.
- Increasing integration with the environmental themes found in other sections of the curriculum, particularly in the Social Studies and Physical Education and Wellness sections.
- Incorporating more Indigenous perspectives, especially perspectives/ideas/concepts involved with resource management, ecological restoration and land reclamation.

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- Expanding instruction on soil, as it is the foundation of ecosystem development and an integral non-renewable resource.
  - Increasing skills development and instruction involved with solutions including gardening, composting, vermicomposting, conservation, energy efficiency, and low carbon energy (such as solar panels, wind turbines, etc.)
  - Increasing instruction on the individual and community values gained by students when observing local environments using their senses in the outdoors and collecting data.
  - Increasing instruction on how energy resources are transformed and distributed (energy systems) and less on non-renewable vs. renewable energy sources when learning about energy content (specifically in Grades 5 and 6). The mention of direct vs. processing of energy resources needs refinement and this could be more focussed on the transformation of energy into energy we need. Students should understand that our energy production and use has evolved and will continue to evolve and the reason for the current evolution is to reduce carbon emissions, furthered by the rapidly decreasing cost of alternatives to fossil fuels. This will build the foundation for deeper energy literacy instead of the simplistic knowledge of energy as non-renewable or renewable.
  - Increasing instruction on electricity and the electrical grid, especially as it relates to the multiple energy sources for producing electricity (solar, wind, natural gas, nuclear, etc.), for a greater understanding of energy systems.
  - Increasing instruction of the energy systems and what energy is necessary to sustain life, with students learning about what produces, transports and stores energy in their home or community; and what energy sources and processes are used to transform energy sources into usable energy; and understand energy transitions over time (past, present and future).
  - Increasing instruction on different types of energy - potential, kinetic, electrical, chemical, etc.

### **What is missing?**

- Human production and consumption of carbon-rich fossil fuels along with other industrial and agricultural land uses create a variety of greenhouse gases that are changing the Earth's atmosphere and life on Earth.
- Biodiversity and its importance/connection to the environment and climate change. The importance that both cultural and biological diversity creates resilient and adaptable natural, social and economic systems.
- Local and international approaches and solutions to addressing climate change.
- A focus on Alberta's natural regions and the actions students can take in their local environment to help mitigate climate change.
- Instruction on new, forward-thinking agricultural practices. Instead of still referencing large scale agricultural practices using direct seeding, crop rotation, the curriculum could include instruction on concepts like permaculture or regenerative

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agriculture, as well as agricultural practices that cover fertilizers, chemical use and methane production.

**Question 2) How well does it align with child educational development (age-appropriateness)?**

**What could be improved?**

- There are concerns over the abundance of content memorization throughout the Science draft curriculum, which could become problematic/overwhelming.
- Determining the advantages of renewable and non-renewable energy resources including from economic, environmental, and climate change perspectives is too advanced for this age group and there has been nothing that they've learned by this stage to provide them with the knowledge and understanding to conduct this analysis.

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## Summary Analysis and Feedback for Social Studies Curriculum

**Question 1) How is this providing better/deeper opportunities for environmental, energy and climate change education and leading to engaged environmental stewards?**

### **What are the strengths?**

- Students are taught how Alberta's economy has diversified over time, and gain some important knowledge on why it is beneficial and necessary for Alberta's economy to continue to diversify in the future.
- Students are taught about the basics about the balance of nature and respect for the environment.
- Students are taught about the different geographical landforms, main bodies of water and climate zones of Canada.
- Students are taught about different countries' carbon footprints.
- Students are taught the importance of the conservation of natural resources and knowledge on the distribution and difference between renewable and non-renewable resources.
- Students are taught about Alberta's history as a resource economy and gain knowledge on Alberta's energy economy.
- Students are required to research and write a report on Canada's Arctic, and can focus their report on its climate and weather, physical landforms, geographic boundaries, etc.

### **What could be improved?**

- Lessening the emphasis on Alberta's oil and gas history, or if this history is to stay, then increasing the emphasis on the environmental impacts of the oil and gas industry, while increasing instruction on renewable energy sources, the energy transition, and the importance of sustainability.
- Increasing instruction on how past and present land uses impact the environment, while also instructing students with viable solutions to address environmental and climate change threats.
- Increasing instruction on the cultural significance of the environment from different societies and communities discussed in curriculum, including those from Indigenous Canadians.
- Increasing instruction (as students in British Columbia receive) to learn about resources and economic development in different regions of Canada, including learning about fish and marine resources, forests, energy resources, etc. and learn about how Indigenous Canadians balance economic development with traditional uses of the land.

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- Limiting the memorization of different locations and names of landforms/bodies of water etc.
  - Increasing the instruction on why the environment is important and necessary to protect, while helping foster student's direct experience and appreciation of nature.
  - Increasing instruction on how Canada and its provinces contribute to other countries' carbon footprints (putting our waste in other countries, misusing other countries' labour for our wants, exploitation of other countries, etc.).
  - Increasing instruction on how different climate zones are impacted by anthropogenic climate change.
  - Increasing the use of terms like biodiversity, environmental stewardship, and anthropogenic climate change throughout the curriculum.

### **What is missing?**

- Instruction on anthropogenic climate change and the importance of the struggle against climate change in terms of human health, health of the planet and health of the economy.
- An understanding of an ecological worldview and land-based learning.
- Environmental/climate change history - it is vital for students to understand both our past and present environmental relationship and how to sustain a healthy relationship.
- The integration of environmental themes across other subjects, particularly in Science and Physical Education and Wellness.
- The connection between the environment and being money-wise (e.g. learning to balance the values of sometimes paying more for products/services that reduce one's environmental impact, investing more in the short-term to save in the long-term, etc.)
- Key skills for the development of environmental awareness, including:
  - plant and animal identification
  - sustainable food sources, what is in season, growing their own food etc.
  - sustainability skills in their home and community around the house such as using less energy and water, collecting rainwater to water outdoor plants, walking/biking for transportation

### **Question 2) How well does it align with child educational development (age-appropriateness)?**

#### **What could be improved?**

- Some of the material that students learn in Grade 1 about natural disasters, as well as Alberta's resource history and economy in Grade 3, could be introduced later.
- There is no progression of skills through the K - 6 years which would help teachers and students build on what they have learned and practiced.

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- There is no overall scheme for what is learned when, which makes it difficult for teachers to sort out material that is grade appropriate and may result in students learning things over and over.
  - There is no plan for how climate change, its history and its effects are to be taught - e.g. what is taught at what grade level.

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## Summary Analysis and Feedback for Physical Education and Wellness Curriculum

**Question 1) How is this providing better/deeper opportunities for environmental, energy and climate change education and leading to engaged environmental stewards?**

### **What are the strengths?**

- Students gain increased instruction with the promotion of outdoor activities in a way that was not present in the previous curriculum.
- Students gain increased instruction surrounding the food chain, healthy eating, the promotion of volunteering activities to benefit the common good, etc.

### **What could be improved?**

- The introduction of more education and the promotion of outdoor activities could be expanded to all grades in this curriculum draft. Personal well-being and active living could be enhanced by creating stronger connections to the emotional, mental and physical benefits of spending time in nature at all grades.
- There should be more promotion of skills vs. the current focus of the memorization of content.
- The promotion of Indigenous perspectives on environmental topics and overall stewardship of the land.
- There should be more integration of environmental themes across other subjects, particularly in Science and Social Studies (e.g. making the link between healthy eating/whole foods with understanding ecosystems in Science and in planning a shopping trip in Financial Literacy in Social Studies; Civics in Social Studies could be connected with volunteering in Physical Education and Wellness).

**Question 2) How well does it align with child educational development (age-appropriateness)?**

### **What could be improved?**

- There are no specific recommendations about the age-appropriateness of the environmental, energy and climate education content.

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# Science Curriculum - Grade Specific Feedback

## Grade 1 Science

### What are the strengths?

- Overall there is some improvement in Science for Grade 1. There are more direct connections to the environment and opportunities for observing the seasons, using the five senses and references to spending time in nature (observe the same local environment over time, describe various environments from information gathered through the senses).
- There is reference to the responsibility to care for the environment by showing respect and protecting all aspects of nature, identifying personal and group actions that help care for the environment, discussing the benefits of spending time in nature, the sense of responsibility of Indigenous peoples connection to place, traditional knowledge and practices for future generations.
- Learning about plants and animals and ones native to Alberta and Canada. The basic needs of plants and animals and that they require an environment to meet their needs.

### What needs improving?

- The understanding that humans are living things and also have the same needs as other animals (e.g. food, water, air and shelter).
- The promotion of the importance of diversity to ensure our environment's health, including through the use of instructional examples, as well as the promotion of the interdependence of the world's living organisms.
- With the listing of plants and animals native to Alberta and Canada, there could be further improved instruction around biodiversity.
- Increased mention of energy originating from the sun and being used by humans.

### How well does it align with age-appropriateness?

- The environmental, energy and climate content that students learn in this grade appears age-appropriate.

## Grade 2 Science

### What are the strengths?

- Overall, the instruction in Grade 2 Science on environmental, energy and climate topics represents an improvement from the previous curriculum.
- Learning about landforms and bodies of water, building a connection to place, learning Indigenous names of places and landforms.



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- Demonstrating respect and care and Indigenous perspectives of plants and animals being equal to humans (a non-anthropogenic view of nature) and using only what you need.

#### **What could be improved?**

- Reducing the emphasis on how humans are the overseers of the environment. We are part of the environment instead of being the ones that manage or oversee the environment (anthropogenic view).
- There is no mention of climate change in "Human behaviour that can negatively affect plants and animals includes" as there should be.
- Indigenous perspective limited to areas like the names of landforms instead of a more meaningful, in-depth look into Indigenous knowledge and perspective on environmental stewardship.
- When referencing bodies of water and the flow of water, the curriculum could also include terms and discussions on watersheds and water cycles.
- When studying bodies of water, there could also include instruction on flooding and stormwater (as well as including flooding instruction during mapping activities).

#### **How well does it align with age-appropriateness?**

- The environmental, energy and climate content that students learn in this grade appears age-appropriate.

### **Grade 3 Science**

#### **What are the strengths?**

- The introduction of the importance of glaciers in maintaining our major rivers.
- An understanding of the food chain and the actions that can be taken to protect plants and animals (understanding of human activities and their impact on the land). An understanding and the observing of plants and animals. The mention of diverse plants and animals in different environments.

#### **What could be improved?**

- The following statement is not accurate: "The Earth is warming up from natural and human causes which is melting the remaining glaciers faster." The Earth warms and cools from natural causes but their influence is too small and too slow to explain the rapid warming currently occurring which is human-caused. This needs to be revised.
- The instruction of soil, what it consists of, and that the upper layer of Earth's crust is changing. There is no connection to the importance of healthy soil to provide the basic necessities for many animals and humans. Students could explore different types of soils and its impacts on plants.
- Simply gaining instruction on the food chain does not provide the context of how this relates to an ecosystem and how changes in the food chain can impact the overall ecosystem.

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- There is no mention of climate change in "Energy: Understandings of the physical world are deepened through investigating matter and energy" as there should be.
  - Increased/additional referencing of biodiversity, ecosystems and interdependence in "Diverse plants and animals can be found in Canada's". There should also be more instruction and investigation on diverse plants and animals in this topic, and more room to explore how the diversity of plants and animals has benefits for sustaining life along with other medicinal, cultural and spiritual values.
  - An increase of skills development, including the growing of plants as a classroom activity.
  - The increased usage and integration of Indigenous perspectives.
  - Scientific Methods: Skills & Procedures introduces "identifying possible issues that may occur during an investigation including dishonestly recording and communicating data". The intent of this might be good but it conveys distrust around science. The focus could be on helping students understand the importance of rigour and peer-reviewed research in a way that is appropriate for Grade 3 students.

#### **How well does it align with age-appropriateness?**

- Examining Earth's layers, the history of landscapes on Earth can be explained through examining their layers. This doesn't seem age-appropriate and there isn't really any explanation of the depth teachers should cover.
- Ensure the content regarding glaciers is age-appropriate. Glaciers can be a complex topic and the vastness may be hard for Grade 3 students to grasp unless they experience visiting a glacier.

### **Grade 4 Science**

#### **What are the strengths?**

- Waste management was kept and mainly improved. There is some new content on Earth's systems and their interconnectedness, a focus on conservation and protection of Earth's systems, Indigenous conservation practices - giving and taking only what you need. The benefits of provincial and national parks. And it is great to see "Create a plan to implement a conservation practice in a local environment."
- "Describe examples of personal actions that contribute to conservation in daily life" is also beneficial for students to increase their knowledge on conservation while increasing their own individual agency.

#### **What could be improved?**

- There is an emphasis on dealing with problems we already have in this grade, as opposed to prioritizing proactive thinking to prevent problems before they arise.
- "Climate change" is missing from the list for "Changes made to one system that can impact another system..." and should be included.

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- When students learn to "Investigate natural resources found locally" they should also learn how humans and other organisms depend on natural resources.
  - The definition of "conservation" should include the prevention of the wasteful use of a resource.
  - The Guiding Question on Matter is very focussed on materials. This could be the exploration of how ecosystems manage matter/waste and then it could be extended to how humans manage waste and ways we could mimic ecosystems to not produce waste that can't be managed. Or, it could at least be reworded to state, "How can materials be managed safely and waste be reduced and managed responsibly?" The 5Rs are treated equally when reducing waste needs to be the main priority. It is important we make the connection between consumption and waste and the personal consumption decisions individuals make, while stressing the many impacts of waste on the environment and utilizing the Waste Management Hierarchy/Order: prevention > reuse > repurpose > recycling > recovery > disposal to landfills.
  - When discussing waste, important concepts of land reclamation and ecological restoration need to be instructed to students so they can learn how to heal the land after it has been used.
  - Again, students in this grade would benefit from more Indigenous knowledge and perspectives on sustainable living practices in balance with the Earth.
  - Magnetism should include the role of magnetism in motors and generators.

#### **How well does it align with age-appropriateness?**

- The environmental, energy and climate content that students learn in this grade appears age-appropriate.

### **Grade 5 Science**

#### **What are the strengths?**

- The energy section provides a broader look at energy over that in the current electricity unit.
- The weather and climate section is an improvement over the focus on just weather in the current curriculum.
- Recording and representing local weather data, gaining instruction on weather maps.
- The student knowledge gained on how all of Canada's provinces and territories use different energy resources.

#### **What could be improved?**

- The focus on renewable or non-renewable in this grade is not the most important thing to know about energy sources, nor is it the focus that should be used when instructing on these topics.
- Instead, students need to learn more on how energy resources are transformed and distributed (energy systems). The mention of direct vs. processing of energy

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resources needs refinement and this could be more focussed on the transformation of energy into energy we need. Students should understand that our energy use has evolved and will continue to evolve and the reason for the current evolution is to reduce carbon emissions. This will build the foundation for deeper energy literacy instead of the simplistic knowledge of energy as non-renewable or renewable.

- Increased instruction for students to Identify common objects/items that require energy to construct or operate them.
- There could be an understanding of how our energy use has changed over time and will continue to change, all while preparing students for their energy future that will continue to change.
- The curriculum should be revised to note that climate has an effect not only on human and animal activity, but on all living organisms and nonliving things.
- “Gather data honestly”. The intent of this might be good but it conveys distrust around science. The focus could be on helping students understand the importance of rigour and peer-reviewed research in a way that is appropriate for Grade 5 students.
- The energy resources section and the section on climate should make note of the greenhouse gas effect, while the climate effect/affect/influence section should also explicitly make mention of climate change.

#### **How well does it align with age-appropriateness?**

- Most of the content is age-appropriate for students in this grade.
- A more age-appropriate understanding would be to learn about the systems for transporting and distributing energy and to develop a better understanding of how we use energy - what items we use on a daily basis, what items use the most energy, etc.

### **Grade 6 Science**

#### **What are the strengths?**

- There is more energy and climate change content. The energy content explores important aspects in considering energy use and students develop an understanding of how we use energy to meet our needs and wants.
- The ecosystem unit allows a broader understanding of all ecosystems - current curriculum has a focus on wetlands (Grade 5) and trees and forest (Grade 6).
- The inclusion of climate change content.
- Includes societal, environmental, climate and economic impacts.
- Propose ideas that will help humans address climate change in Canada and the world.
- Investigate short and long-term impacts of the use of renewable and non-renewable energy resources.
- Construct a device that uses one energy resource to solve a problem or respond to a need.

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- Investigate short and long-term impacts of the use of renewable and non-renewable energy resources.
  - Propose ideas that will help humans address climate change in Canada and the world.
  - Collaboration between scientists and traditional Knowledge Keepers provides a broader understanding of the effects of weather on people and the environment.

### **What could be improved?**

- The climate change segment describes both natural and human-made processes that contribute to climate change but doesn't explain the distinction between the two - natural processes are small differences over long periods of time and are not the cause of the rapid changes we are currently seeing from human-made changes. This may lead to the continued misunderstanding of the importance of addressing climate change.
- "Responsible management of energy resources can include" and "minimal disruption of the natural environment" does not include climate change, as it should.
- "Including ice ages and global warming or cooling" downplays the importance and relevance of climate change.
- Indigenous cultural and spiritual connection to living and non-living things should be included in learning about biotic and abiotic components of ecosystems.
- Directly or processed energy resources seems to be a meaningless distinction. All energy requires some infrastructure to make it usable, and there doesn't seem to be any real purpose in learning this (furthermore, biofuel requires processing, though it is not labeled as an example of a processed energy resource).
- "Choosing" is not quite the right word in "Factors to consider when choosing which energy resources."
- "Daily needs and wants that require energy resources include" should include production of goods and services.
- Pollution is different from greenhouse gas production/emissions. Our youth narratives discussions outlined that students often confuse or lump all environmental concerns together. The distinction between pollution and emissions related to climate change should be made.

### **How well does it align with age-appropriateness?**

- "Discuss the scientific, environmental, and economic considerations around energy distribution and use in the province of Alberta" is largely beyond Grade 6 students and should be a discussion on how and why energy is distributed and the environmental impacts.
- "Identify the scientific and economic reasons why fossil fuels, including oil and natural gas, are currently the principal energy resources used in Alberta" would require a lot of teaching for the students to understand. These are huge and very

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broad tasks to cover. There also isn't a progression of learning in the previous grades that prepares them for this deeper/complex understanding.

- Some of the concepts for climate change are beyond a Grade 6 level (e.g. students may be able to propose ideas that will help humans address climate change in in Canada and the world, but may not be able to make the distinction between short-term and long-term impacts of the use of renewable and non-renewable energy resources, etc.).

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# Social Studies Curriculum - Grade Specific Feedback

## Grade 1 Social Studies

### What are the strengths?

- Under the topic of Geography, students gain knowledge on the balance of nature and respect for the environment, as well as an understanding of the conservation of scarce resources.
- Students will recognize the value of natural conservation and the management of scarce resources.
- Under the organizing idea of Economics, students gain knowledge of the unequal distribution of resources, including both renewable and non-renewable resources. They also gain skills to distinguish between renewable and non-renewable resources.
- Introduction into the differentiating perspectives about the environment (e.g. local Indigenous groups). Students also gain understanding about the significance that the environment holds to different people (e.g. Indigenous connection to the land).
- Students gain knowledge on how different societies and communities view the world through varying creation stories.

### What needs improving?

- In the current curriculum, found under the General Outcome 1.1 My World: Home, School and Community, and in the draft science section, students are taught the importance of caring/showing respect for the environment. This should be reinforced in the Social Studies draft curriculum as well.
- Students could learn more about how stories and land can hold personal meaning, how land sustains people and holds personal meaning, and that we are part of our environment and our role in caring for our environment, as well as both animals and plants.
- While the inclusion of "balance of nature and respect for environment" is a strength in the draft curriculum, the section could include more detail and focus on skills development.

### How well does it align with age-appropriateness?

- Under the topic of Geography, students gain knowledge on natural disasters and their impacts and this could be overwhelming for many students and lead to anxiousness and add to 'eco-anxiety' as natural disasters are often seen as the environment. The focus on solutions or actions we can take helps students address the feelings of anxiety.

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## Grade 2 Social Studies

### What are the strengths?

- There is very little opportunity for students to learn about the environment, energy and climate for Grade 2 students in Social Studies. At best, there are some indirect linkages to environmental education under the organizing idea of Financial Literacy that could be made, with students learning shopping skills, including a consideration for the quality, nutrition and balance of diet they are consuming.

### What could be improved?

- In Financial Literacy there is a focus on shopping and being money wise - with little consideration of needs vs. wants (may need a reminder of what they learned in Grade 1) - shopping for food only mentions supermarkets or grocery stores but could reference growing one's own food (cheapest) or purchasing locally grown food (farmer's market - mentioned in Phys Education & Wellness).
- If learning about shopping and being money-wise, students could be introduced to the impacts of shopping and consumerism on the environment.
- The Guiding Question, 'What do we need to know about shopping at the supermarket or local grocery?' should be reworded. As it is, it just reinforces students as future consumers. An example of an improved rewording would be "How can you provide for your most basic needs (food) in the most cost effective manner with the least environmental impact?"
- The British Columbia curriculum has some examples of how environmental considerations could be included. For instance, in Grade 2, students in British Columbia learn about how different actions affect the environment. They also learn about how different economic activities, individual ways of life, recreational activities, and community sizes all impact the environment.
- Students in British Columbia also learn about different community values regarding conservation and protection of the environment and what types of environmental challenges people face in different communities (e.g. natural disasters, climate change, lack of natural resources, etc.), along with the rights and responsibilities of individuals regionally and globally, to the protection of the environment, which could be further reinforced in Alberta's curriculum.
- Students could learn more about how connections to land and place can foster a sense of belonging, how Indigenous Canadians acknowledge the importance of respectful relations with land and place, and how names of places, including those of natural features, reflect connections to land and place.
- Students could learn about seasonal foods and living in harmony with nature.
- Students can learn the difference between native and invasive species and the benefits of native species.



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### **How well does it align with age-appropriateness?**

- What little links to environmental, energy and climate education that students do learn is age-appropriate.
- When learning about civilizations there should be greater exploration on how each society views the land/environment.

## **Grade 3 Social Studies**

### **What are the strengths?**

- Under the organizing idea of Economics, students gain knowledge on Alberta's history as a resource economy, its exportation of products like oil and gas and coal, as well as Alberta's discovery of oil in Leduc and the subsequent post-World War 2 oil boom. Students will also learn knowledge of how Alberta's economy has diversified over time, as well as important knowledge on why it is beneficial and necessary for Alberta's economy to continue to diversify in the future.

### **What could be improved?**

- Knowledge in the Economic topic is all about Alberta and its resource economy in the past and the present, with little instruction about the future ideas for economic diversification and what is driving Alberta's need to diversify its economy.
- Increased discussion of the challenges involved with Alberta's resource economy, including an age-appropriate discussion on all its advantages and disadvantages.
- "Why might it be a good idea to diversify" requires a rewording so that it is clear that there is an urgent need to diversify.
- Reinforcing ideas that people's actions can have an impact on land and place, how individuals and groups have a responsibility to protect the natural environment, how Indigenous traditional practices have protocols that demonstrate respect for and relationships with land and place, and how the location and availability of natural resources can influence relationships with land and place.
- Under the current curriculum, under the General Outcome 3.2 Global Citizenship, students were to reflect upon questions like: "What are some environmental concerns that Canada and communities around the world share?" This focus on global citizenship in the current curriculum, at this grade level, is valuable and should continue onwards in the draft curriculum for the benefit of future students.
- The draft curriculum could include more opportunities for students to spend more time outside, discovering and documenting the features of their local natural environment and of natural resources. (e.g. could include creating natural calendars, participating in 'pen pal' programs such as iEARN, planting/gardening, participating in citizen science programs such as Project Wild's tracking migration of birds and other species).
- Identifying the places their food comes from and how to examine and describe how indigenous peoples are connected to the land.

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**How well does it align with age-appropriateness?**

- Some of this information, including the details of Alberta's history as a resource economy, and oil and gas history is introduced too early for Grade 3 students.

**Grade 4 Social Studies****What are the strengths?**

- Under the draft curriculum, there are no direct links, and very few if any indirect links, introduced to topics related to the environment, energy and climate in Grade 4.

**What could be improved?**

- Under the current curriculum, General Outcomes 4.1 Alberta: A Sense of the Land and 4.3 Alberta: Celebrations and Challenges, students gain an appreciation and understanding of the variety and abundance of natural resources in Alberta, how Albertans deal with competing demands on land use (e.g. conservation, solar and wind power, recreation, agriculture, oil exploration, forestry), and the environmental significance of national and provincial parks and protected areas in Alberta. Even though some of this information has been transferred to the Science section, some of it could still remain and be reinforced in the Social Studies section.
- Students could learn more about how the choices and decisions that affect land and place are shaped by our relationships with land and place, and how the different views on the use and management of land and natural resources can inform choices and decisions. They could also learn about how traditional Indigenous environmental knowledge considers the impact of land use for future generations.
- The History section does not acknowledge the dependence of the people on the land and the environment.
- The Geography section overly prioritizes the memorization of content and does not nurture analytical thinking skills, nor does it include historic and present-day environmental influences facing Alberta and Canada.
- There can be a greater discussion on how agriculture practices impacts the environment, both negatively and positively, while providing space for a discussion on viable solutions to negative impacts.

**How well does it align with age-appropriateness?**

- What little links to environmental, energy and climate education that students do learn is age-appropriate.

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## Grade 5 Social Studies

### What are the strengths?

- Under the organizing idea of Geography, students gain knowledge about the different geographical landforms, main bodies of water and climate zones of Canada.
- Students are required to research and write a report on Canada's arctic, and can focus their report on its climate and weather, physical landforms, geographic boundaries, etc.
- Students are required to conduct internet research to investigate the Indigenous names of bodies of water and the reasons why Europeans renamed them.

### What could be improved?

- The subject material in this grade appears more focussed on the memorization of names/locations and other content as opposed to students learning about the benefits of the natural environment and its resources, as under the current curriculum.
- When gaining an understanding of the definition of climate and Canada's climate zones, students should be learning more about anthropogenic climate change (including when learning about the Arctic and writing their individual reports).
- In other provinces of Canada, as in British Columbia, for instance, students at this age are expected to learn about resources and economic development in different regions of Canada, including learning about fish and marine resources, forests, energy resources, etc. and learn about how Indigenous Canadians balance economic development with traditional uses of the land. There is room for Albertan students to similarly gain more instruction on these subjects.
- In Geography, student focus should not only be on the labelling of maps but also on looking at resource development, population demographics and migration and trends in sustainability, along with other links to climate change and its physical effects.
- There is no evidence that students will learn about traditional uses of land and resources.

### How well does it align with age-appropriateness?

- The environmental, energy and climate content that students learn in this grade appears age-appropriate.

## Grade 6 Social Studies

### What are the strengths?

- Under the organizing idea of Economics, students gain knowledge comparing countries by their carbon footprints, which will allow students to delve deeper into

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environmental, energy and climate topics of education. Besides this, there is little subject material with direct links for students to learn about the environment, energy and climate.

### **What could be improved?**

- In other provinces of Canada, as in British Columbia:
  - Students are expected to learn about the urbanization and migration of people, which includes land usage, access to water, pollution and waste management, etc.
  - Students also learn about economic policies and resource management, with sample sub-topics including deforestation, mining, oil and gas, fisheries, etc.
  - They also learn about international cooperation and responses to global issues, including environmental issues, fisheries management, and resources use and misuse, etc. and are expected to respond to questions like: “How should societies balance economic development with the protection of the environment?” There is room for Albertan students to similarly gain more instruction on these concepts.
- Students could also be learning more about how Indigenous peoples have developed and maintain a unique relationship with the land and bring different ways of contributing to natural and cultural heritage.
- When learning about different countries and their carbon footprints, students need an increased understanding of anthropogenic climate change and what activities can impact it to properly analyze these national carbon footprints.
- The Financial Literacy section is based upon conventional economics and does not examine the Triple Bottom Line which takes into account profits as well as people and the planet.
- The History section neglects to examine the interactions with and interdependence of the environment with human choices and this should be included.
- The Religion section does not acknowledge that many world religions promote the view that humans must respect nature and take responsibility for its protection, which should be incorporated into the curriculum.

### **How well does it align with age-appropriateness?**

- What little links to environmental, energy and climate education that students do learn is age-appropriate.

### **Additional/Non-Specific Recommendations:**

- By organizing the Social Studies draft curriculum around the five topics of Civics, Geography, Financial Literacy, Economics, History, this inherently does not provide environmental, energy and climate education the prioritization it deserves.
- The separation of Knowledge and Understanding (which are combined in other Provinces) seems to mean that Behaviour/Attitudes has been omitted. This is important in so many areas of human development, but is particularly important for

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sensitivity to the environment, appreciation of animals and nature, and developing habits of sustainability.

- There are no guiding curriculum documents for teachers except ones that are subject-based. In Ontario, for example there are separate documents that help teachers implement environmental education across the curriculum and they are mandated to include environmental awareness in every grade and in every subject. Adding/increasing the use of policy documents such as these would be helpful. There isn't an overall "Scope and Sequence" document that accompanied the draft (there were earlier versions of Scope and Sequence so we encourage these to be available for classroom educators etc. Two approaches that are used in other provinces are using case studies and using PBL (Problem-Based Learning). Case studies help students see specific application of concepts and not always seeing things in a theoretical framework. Even more common is using problem-based learning where students tackle real world challenges using what they have learned in class.

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# Physical Education and Wellness Curriculum - Grade Specific Feedback

## Grade 1 Physical Education and Wellness

### What are the strengths?

- The importance of adventurous play, which includes experiencing challenging activities in outdoor learning environments.
- That different whole foods are found in nature.
- The connection between physical activity and mental health.

### What needs improving?

- Students could receive more education on how natural environments, including parks and playgrounds contribute to well-being.
- Students could gain knowledge on their relationship to the land and gain Indigenous perspectives on their relationships to the land.
- They could also learn about how being physically active every day can be enjoyable and be achieved in different ways at home, at school, or in the community, and how the local community includes spaces for indoor and outdoor activities, including natural spaces.
- Students could gain further knowledge on how whole foods, found in nature or grown locally, are nutritious and have a smaller environmental impact.
- Students could incorporate Indigenous physical activity and ways of learning on the land.

### How well does it align with age-appropriateness?

- There are no concerns over the age-appropriateness of the content in this category.

## Grade 2 Physical Education and Wellness

### What are the strengths?

- Students gain knowledge on the factors influencing physical activity, which include natural environments.
- They also learn about different physical activity experiences on the land, which include hunting, trapping, fishing, gathering, nature walks and hiking.

### What could be improved?

- Students could explore school nutrition policies, guidelines, and resources to support healthy food choices such as gardening and growing our own food that also provide the connection to the land and the origin of food.

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- Students could learn more about how communities include people, land, animals and plants, all of which have specific responsibilities which contribute to community well-being.
  - The impact of natural and built environments, including parks, recreation centres, and playgrounds, in the community.
  - Active living could include active transportation as a way to create an active lifestyle.
  - Classroom activities that could be put into practice include gardening and the growing of plants, while incorporating native species, pollinator-attracting plants, Indigenous knowledge and organic practices.

#### **How well does it align with age-appropriateness?**

- There are no concerns over the age-appropriateness of the content in this category.

### **Grade 3 Physical Education and Wellness**

#### **What are the strengths?**

- Students gain knowledge on how diverse environments can present opportunities (and barriers) for activity living, and that each season offers different opportunities for active living.

#### **What could be improved?**

- As mentioned previously, students could learn more about natural and built environments, including parks, recreation centres, and playgrounds, and their contribution to the well-being of the community.
- Students could also be taught actions that reflect compassion, respect, kinship and stewardship for the environment and others (e.g. planting a pollinator garden, reducing and cleaning up litter).

#### **How well does it align with age-appropriateness?**

- There are no concerns over the age-appropriateness of the content in this category.

### **Grade 4 Physical Education and Wellness**

#### **What are the strengths?**

- There are no strengths for environmental education.

#### **What could be improved?**

- Continue the connections for adventurous and risky activities in the outdoors to create connections to place.

#### **How well does it align with age-appropriateness?**

- There are no concerns over age-appropriateness as there is little to no subject material on environmental, energy and climate education.

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## Grade 5 Physical Education and Wellness

### What are the strengths?

- There are almost no strengths of improved environmental education in this section.
- The only tentative link to environmental, energy or climate content that can be found is under the organizing idea of character development, in which students learn about the importance of volunteering and its contribution to the common good, which could reinforce the benefits of environmental stewardship, when instructed in the appropriate way.

### What could be improved?

- Continue the connections for adventurous and risky activities in the outdoors to create connections to place.

### How well does it align with age-appropriateness?

- There are no concerns over the age-appropriateness of the content in this category.

## Grade 6 Physical Education and Wellness

### What are the strengths?

- Under the organizing idea of Healthy Eating, students gain knowledge on factors that determine access to food, which includes climate, season, cost, individual budget, food-preparation skills and location.
- They also learn about the different locations one can access food, including the land, farms, gardens, grocery stores, farmers' markets and restaurants. These topics can be related to environmental stewardship, energy and climate.
- As in the previous grade, students learn about the benefits of volunteerism, which, depending on its instruction, could reinforce the benefit of contributing to the environment as part of the common good.

### What could be improved?

- Improved instruction for students to learn about how anthropogenic climate change is negatively affecting humans' access to food.
- As students learn about the different locations where one can access food, the curriculum could be further reinforced to state that an individual can shrink their carbon footprint by purchasing food from local communities and growing their own food. Students examine access to food and its effect on making decisions related to nutrition.
- Not all processed food is more expensive than whole foods, so the curriculum could benefit from more nuance in its wording.



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- Students could receive more outdoor education, while learning that direct experiences with nature develops emotional, mental, psychological, behavioural and physical well-being, a sense of wonder, and appreciation for natural beauty.
  - Students could also gain and demonstrate skills to enjoy nature safely in various weather conditions based on the premise, "There is no bad weather, just inappropriate clothing."

**How well does it align with age-appropriateness?**

- There are no concerns over the age-appropriateness of the content in this category.