

July 26, 2021

Honourable Devin Dreeshen
Minister of Agriculture and Forestry
Office of the Minister
229 Legislature Building
10800 – 97 Avenue
Edmonton, AB T5K 2B6
Via email: AF.minister@gov.ab.ca

RE: Inclusion of agriculture in K to 12 curriculum and programs of study

Dear Minister Dreeshen:

Alberta's crop sector seeks your support for the inclusion of agriculture in Alberta's school curriculum and Programs of Studies for all applicable grades and subjects. Agriculture is one of the biggest economic drivers in Alberta. Educating future generations about food literacy contributes to a viable agriculture sector, and helps to improve the overall economy, health, and environmental sustainability of natural resources in Alberta's communities.

In reference to the letter submitted to Hon. Adriana LaGrange dated July 26, 2021, we seek your support in asking **Alberta Education to establish an agriculture and natural resources education advisory group**. Stakeholders from our commodity organizations, Agriculture for Life¹ and Inside Education² are willing to collaborate, advise and provide input and examples of how fact-based agricultural content relating to the general and specific learner outcomes can be applied to Alberta's Program of Study across all grades and subjects.

Our future leaders should be well versed in the science and economic drivers behind agriculture, Alberta's number one renewable resource. If students can be given accurate and credible information relating to agriculture, they will make more informed life decisions. They will have a deeper appreciation of agriculture in their own lives and the lives of others. Our organizations need your support on our request to Minister LaGrange and Alberta Education.

The crop sector includes organizations, Alberta Canola, Alberta Irrigation Districts Association, Alberta Pulse Growers, Alberta Sugar Beet Growers, Alberta Oat Growers Commission, Alberta Wheat and Barley Commissions, Potato Growers of Alberta, and the Alberta Beekeepers Commission. Our organizations are directed and funded by elected producers to represent the interests of over 20,000 farmers and commercial honey producers across Alberta in the areas of research, education and extension, policy development and advocacy.

On behalf of the groups who are united in this request, please ensure all correspondence is sent to Tara Baycroft, Agriculture and Education Coordinator with Alberta Canola. She can be contacted by email at tara@albertacanola.com or phone at 780-993-5740.

¹ Agriculture for Life (**Ag for Life**) is a charitable organization dedicated to building a greater understanding and appreciation of agriculture and its fundamental connection to life. Agriculture Education programs are designed to give students a real awareness of agriculture and food production (www.agricultureforlife.ca).

² **Inside Education** is a non-profit education organization that supports multiple perspective environmental and natural resources education in Alberta. Agriculture Education programs supports teachers and inspires students to explore how agriculture connects land, water, food, and people to form the basis for endless learning. (www.insideeducation.ca)

Sincerely,



Kevin Serfas, Chair



Tara Sawyer, Chair



Jeremy Olthof, President



Margo Jarvis Redelback,
P.Ag., Executive Director



Brad Boettger, Chair



Robert Semeniuk, Chair



Gary Tokariuk, President



Todd Hames, Chair



Russ Van Boom, Chair









Luree Williamson, CEO



Cc: Hon. Adrianna LaGrange, Minister of Education
Mr. Andre Tremblay, Deputy Minister of Education
Mr. Shannon Marchand, Deputy Minister of Agriculture and Forestry
Ms. Luree Williams, CEO, Ag For Life
Mr. Steven Mclsaac, Executive Director, Inside Education

APPENDIX A:

Examples of Where To Include Agriculture In The Current Program of Studies (Division I)

	Unit/Topic	General Learner Objective (GLO)	Specific Learner Outcome (SLO)	EXAMPLES OF WHERE AGRICULTURE COULD APPLY
 KINDERGARTEN SCIENCE	Environment and Community Awareness	<ol style="list-style-type: none"> The child demonstrates curiosity, interest and a willingness to learn about the environment and community. The child uses materials in the environment and community and becomes aware of how others use materials. 	<p>The student:</p> <ol style="list-style-type: none"> becomes aware of the five senses and how they are used to explore, investigate and describe the world explores and investigates objects and events in the environment shows awareness of similarities and differences in living things, objects and materials recognizes the need to care for materials, and uses materials without wasting them begins to use some technology appropriately in learning activities and to communicate with others becomes aware of the importance of protecting the environment 	<p>Educators can utilize the Alberta Wheat and Barley Commissions' Resource: "Wally and Betty's Grain Gallery". The resource introduces students to the wheat and barley crops, how the crops are produced, what wheat and barley is utilized for in the food value system and the science behind wheat and barley production. Educators can talk about the diversity of agriculture and how farmers are reliant upon each other with students (e.g., a grain grower might help to provide feed for another farmer's cattle in a feedlot while the plants may rely on the nutrients from the fertilizer produced by the cattle. Discussion about what a farming community might look like, and the groups acting as a community to ensure they are practicing sustainable farming for future generations.</p> <p>In addition, students could explore their five senses by planting seeds from one of the crops – learning about the feel of soil, the temperature and light needed to grow the plant, the textures of the leaves/roots, the care needed to nurture a plant, how food is grown, and the importance of sustainable farming/ not wasting resources.</p> 
 GRADE 1 ENGLISH LANGUAGE ARTS (ELA)	<ol style="list-style-type: none"> Discover and Explore Clarify and Extend 	<ol style="list-style-type: none"> Students will listen, speak, read, write, view and represent to explore thoughts, ideas, feelings and experiences. 	<p>Students will:</p> <ol style="list-style-type: none"> Discover and Explore: Express ideas and develop understanding: <ul style="list-style-type: none"> share personal experiences that are clearly related to oral, print and other media texts talk with others about something recently learned make observations about activities, experiences with oral, print and other media texts activities Clarify and Extend: Consider the ideas of others: <ul style="list-style-type: none"> listen and respond appropriately to experiences and feelings shared by others Extend understanding: <ul style="list-style-type: none"> ask questions to get additional ideas and information on topics of interest 	<p>Educators can utilize Alberta Wheat and Alberta Barley's Resource: "Wally and Betty's Grain Gallery" to introduce students to wheat and barley production, the science behind how these crops are produced, and how these commodities are utilized for in the food value system. A class discussion could occur where students identify how flour is used in their homes to make various family traditional recipes. If students have visited or live on a wheat and/or barley farm, they could share their lived experiences on being raised a wheat and barley farm. After playing the game and utilizing wheat and barley's app, students could complete a class or independent project. The teacher could explain the milling process, using the milling activity. Students could prepare and share their baked product at school or with their families. Students could share the cultural association the baked good may have.</p> <p>Similarly, educators can encourage and lead class discussion around personal experiences with sugar, talking about various packaging, advertisements, and media campaigns that the students would have seen on their food, snacks, or television. Conversation could also include the use of alternative sweeteners: where they have seen them advertised, and why they might use them. Teachers could also utilize and adapt the resource about Alberta Sugar Beet Growers, to make the resource grade appropriate for students. Teachers could then engage students in conversation and activities about how sugar is locally grown and refined, and the significance of the '22' stamp on the bag, indicating the sugar is a locally produced product.</p>
 GRADE 2 HEALTH	Wellness Choices – Personal Health	<p>Students will make responsible and informed choices to maintain health and to promote safety for self and others.</p> 	<p>Students will:</p> <ol style="list-style-type: none"> classify foods according to Canada's Food Guide to Healthy Eating, and apply knowledge of food groups to plan for appropriate snacks and meals 	<p>When teaching Canada's new food guide, teachers could have their students create a fun menu, including all the food groups, utilizing some of the various resources for ideas: Alberta Pulse's "Easy Peas-y Cookbook for Kids", Canola Eat Well Recipes; Alberta Wheat and Barley's Life's Simple Ingredients; and Alberta Sugar Beet Growers list of recipes. Teachers can check out Potato Growers of Alberta, and the Alberta Bee Keepers Commission for additional recipe references. Teachers can discuss different sources of nutrients and what foods they are found in that are produced by the agriculture industry in Alberta. Educators can also utilize Alberta Pulse Growers Resource: "Pulse Cafe" to spark discussion, exploration and investigation of examples that illustrate decisions and understandings about nutrition, food and farming.</p>
 GRADE 3 SCIENCE	Topic A: Rocks and Minerals	<ol style="list-style-type: none"> Demonstrate knowledge of materials that comprise Earth's crust, and demonstrate skill in classifying these materials. 	<p>Students will:</p> <ol style="list-style-type: none"> recognize and describe the various components within a sample of soil; e.g., clay, sand, pebbles, decaying plants; and describe differences between two different soil samples 	<p>Teachers can utilize "Beneath the Soil" from Learncanola.com to introduce students to components of soil. Teachers would then introduce the different growing regions of Alberta based on the different soil types. Teachers could make or access a soil kit to share with students. The soil kit might lead to the introduction of Topic E: Animal Life Cycles. Educators would next have students engage in a class discussion or research how people, animals, plants, and insects depend on the various types of crops produced from the various soil for various reasons (e.g., growth, development, shelter).</p>

APPENDIX A:



Examples of Where To Include Agriculture In The Current Program of Studies (Division II)

	Unit/Topic	General Learner Objective (GLO)	Specific Learner Outcome (SLO)	EXAMPLES OF WHERE AGRICULTURE COULD APPLY
4 GRADE 4 SOCIAL STUDIES	4.2: The Stories, Histories and Peoples of Alberta	Students will demonstrate an understanding and appreciation of the role of stories, history and culture in strengthening communities and contributing to identity and a sense of belonging.	Students will: 4.2.1 recognize how the diversity of immigrants from Europe and other continents has enriched Alberta's rural and urban communities (CC, I, TCC)	<p>Teachers could utilize and adapt the resources about Alberta Sugar Beet Growers from the the Galt Museum's "The Sweet Beets of Southern Alberta" and Apega's "Sweet Story: Made-in-Alberta Sugar" to make the resources grade appropriate for students. Teachers could then use historic information related to Alberta sugar beet production to reinforce what students are learning regarding Alberta's past, the growth of communities, and culture.</p> <p>Teachers can use the "Fields of Home StoryScapes" mini-unit to reinforce what students are learning in Social Studies about Alberta's and Canada's geographic characteristics, agricultural ways of life and activities of people who live in different regions and areas. The StoryScapes approach also emphasizes communication and collaborative skills within the Social Studies Program of Studies.</p>
5 GRADE 5 MATH	Number	1. Develop number sense.	Students will: 7. demonstrate an understanding of fractions by using concrete, pictorial and symbolic representations to: create sets of equivalent fractions; compare fractions with like and unlike denominators [C, CN, PS, R, V]	<p>Teachers can utilize Alberta Wheat and Alberta Barley's "Sugar Cookie" recipe, to teach students about fractions. To make this activity cross-curricular, teachers can use the resources from Alberta Wheat, Alberta Barley, and Alberta Sugar Beets to educate students about flour is produced and how sugar is refined. Cross curricular activities can target general and specific learner outcomes across other subjects. For example, they could have the students create, organize and complete a bake sale project. The money raised money could be donated for a meaningful cause to the students, or to a cause benefiting members in the whole school community.</p>
6 GRADE 6 ENGLISH LANGUAGE ARTS (ELA)	3.1 Plan and Focus	3. Students will listen, speak, read, write, view and represent to manage ideas and information.	Students will: 3.1 Plan and Focus Focus attention: <ul style="list-style-type: none"> distinguish among facts, supported inferences and opinions use note-taking or representing to assist with understanding ideas and information, and focusing topics for investigation Determine Information needs: <ul style="list-style-type: none"> decide on and select the information needed to support a point of view develop and follow their own plan for accessing and gathering ideas and information, considering guidelines for time and length of investigation and presentation 	<p>Teachers can have students research various topics including: food production; sustainability; what the future of farming looks like and what the various commodity groups produce. Potato Growers of Alberta has a great resource on how potatoes are produced and processed titled, "Alberta Potato Industry April 2021". Here are a few suggested educational websites they could go to for further information: Alberta Sugar Beet Growers; Learn Canola; Alberta Pulse Growers; Alberta Wheat; and Alberta Barley.</p>



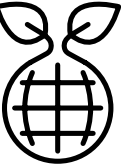

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Examples of Where To Include Agriculture In The Current Program of Studies (Division III)

	Unit/Topic	General Learner Objective (GLO)	Specific Learner Outcome (SLO)	EXAMPLES OF WHERE AGRICULTURE COULD APPLY
<p>7</p> <p>GRADE 7 SCIENCE</p>	Unit B: Plants for Food and Fibre (Science and Technology Emphasis)	1. Students will investigate plant uses and identify links among needs, technologies, products and impacts.	<p>Students will:</p> <p>1.4. investigate practical problems and issues in maintaining productive plants within sustainable environments, and identify questions for further study (e.g., investigate the long-term effects of irrigation practices or fertilizer use)</p> 	<p>Teachers can have students research topics about food production and sustainability and can go to the various commodity group websites for further information: Alberta Sugar Beet Growers; Learn Canola; Alberta Pulse Growers; Alberta Wheat and Alberta Barley. Additionally, students can refer to Journey 2050 for additional information. Alberta Sugar Beet Growers video referencing Dammer Dikers is great resource.</p>
<p>8</p> <p>GRADE 8 MATH</p>	Patterns and Relations (Patterns)	1. Use patterns to describe the world and to solve problems.	<p>Students will:</p> <p>1. graph and analyze two-variable linear relations (C, ME, PS, R, T, V) [ICT: P2–3.3]</p>	<p>Teachers can incorporate information about the weekly growth of sugar beets from the “Weekly Sugar Beet Growth” video series. Students could research the amount of average water or light and graph the growing days against the average amount of water or lights the sugar beets need. Students could also graph the average growth of the sugar beet, as per the video series.</p> 
<p>9</p> <p>GRADE 9 ENGLISH LANGUAGE ARTS (ELA)</p>	Knowledge and Employability: 2.4 Create Original Texts	2. Students will listen, speak, read, write, view and represent to comprehend and respond personally, critically and creatively to oral, print and other media texts.	<p>Students will:</p> <p>2.4.1 Generate ideas</p> <p>a. take ownership of text creation by selecting a topic, concept or idea that is personally meaningful, engaging and based on personal experience and/or prior knowledge (R, S, W, L, V, Rp)</p> <p>b.1. apply appropriate prewriting strategies to generate ideas and focus a topic; e.g., discussion, brainstorm, webs, outlines, journals, graphic organizers and technology (W, L, S, Rp)</p> <p>b.2. apply appropriate prewriting strategies to explore, develop and justify their own ideas, opinions and point of view and develop new ideas and determine the scope of writing (W, L, S, Rp)</p> <p>c. create oral, print and other media texts related to issues encountered in their own life (W, S, Rp)</p>	<p>Teachers could create an open-ended project that is of interest to their students, or that has some personal connection to the student: environmental stewardship; the use of biotechnology in crops; the difference between organic and non-organic crops; the future of farming, etcetera. Teachers and students could utilize various resources: Alberta Sugar Beet Growers; Learn Canola; Alberta Pulse Growers; Alberta Wheat, Alberta Barley; Potato Growers of Alberta; and Journey 2050 to gather and collect evidence to support their position. Students could use their research to create a presentation via text or multi-media. Final projects could be shared with their peers. Some very specific examples student could research might be: “The History of the Marquis Wheat”, or more in-depth information about bees and honey production.</p>


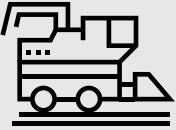
APPENDIX A:

Examples of Where To Include Agriculture In The Current Program of Studies (Division IV)

	Unit/Topic	General Learner Objective (GLO)	Specific Learner Outcome (SLO)	EXAMPLES OF WHERE AGRICULTURE COULD APPLY
<p>10</p> <p>GRADE 10 SOCIAL STUDIES</p>	<p>Key Issue: To what extent should we embrace globalization?</p> <p>Related Issue 4: To what extent should I, as a citizen, respond to globalization?</p>	<p>GLO: Students will assess their roles and responsibilities in a globalizing world.</p>	<p>Students will:</p> <p>4.4 explore various understandings of quality of life (GC)</p> <p>4.5 analyze impacts of globalization on children and youth (awareness of global issues, employment issues, identity) (GC, C, PADM, ER, I)</p> <p>4.6 analyze impacts of globalization on women (gender issues, labour issues, opportunities for entrepreneurship) (GC, C, PADM, ER, I)</p> <p>4.7 evaluate relationships between globalization and democratization and human rights (GC, PADM)</p> <p>4.8 analyze how globalization affects individuals and communities (migration, technology, agricultural issues, pandemics, resource issues, contemporary issues) (GC, LPP)</p>	<p>Teachers could reference various open-ended topics: food security; environmental sustainability; biotechnology; varying regulations on food production and trade, and equal workplace opportunities. Educational agricultural references could be utilized to develop projects that would have students critically think about their roles and responsibilities when acting as a global citizen: Alberta Sugar Beet Growers; Learn Canola; Alberta Pulse Growers; Potato Growers of Alberta; Alberta Wheat and Alberta Barley.</p> 
<p>10</p> <p>GRADE 10 CTS-FOODS (FOD)</p>	<p>1070: Farm to Table</p> <p>2. Identify and describe the basic steps and procedures involved in producing a plant or an animal commodity.</p> 	<p>2. Identify and describe the basic steps and procedures involved in producing a plant or an animal commodity.</p>	<p>Students will:</p> <p>2.1 explore a plant's or an animal's physical growth requirements</p> <p>2.2 describe plant or animal health</p> <p>2.3 identify equipment and buildings required</p> <p>2.4 describe the role of the producers throughout the stages of production</p> <p>2.5 explore consumer perceptions of agriculture production of products</p> <p>2.6 identify and address one or more myths related to farming (e.g., hormones, food value of organic versus conventional products, brown eggs versus white eggs)</p>	<p>Teachers could reference the various following educational websites: Alberta Sugar Beet Growers; Learn Canola; Alberta Pulse Growers; Alberta Potato Growers "Alberta Potato Industry April 2021"; Alberta Wheat and Alberta Barley. Teachers could then utilize the various resources from the websites to meet both the specific learner outcomes and general learner outcomes for this CTS credit. For example, on Alberta Sugar Beet Growers, teachers could utilize "Harvest Explanations" and "Equipment Explanations", to describe the equipment and buildings needed in producing sugar beets. By visiting the commodity resource pages, teachers could utilize info to discuss the importance of GMO crops in creating a sustainable food supply.</p>
<p>11</p> <p>GRADE 11 BIOLOGY 20</p>	<p>Unit A: Energy and Matter Exchange in the Biosphere</p> <p>2. Students will explain the cycling of matter through the biosphere.</p>	<p>2. Students will explain the cycling of matter through the biosphere.</p>	<p>Students will:</p> <p>(20–A2.1k) explain and summarize the biogeochemical cycling of carbon, oxygen, nitrogen and phosphorus and relate this to general reuse of all matter in the biosphere</p> <p>(20–A2.1sts) explain that science and technology have both intended and unintended consequences for humans and the environment (SEC3) [ICT F3–4.1]</p>	<p>Teachers could include information about nutrients needed in canola production from the "Shaking It Up with AB Canola" presentation. Information about needing nitrogen to grow pulses can be found in the "Pulses Farm to Fork Workbook" to address the various nutrient and matter cycles utilized by canola and pulse plants. Furthermore, the cycling of nitrogen can be discussed and studied in the production of sugar beets. Students may learn the importance that various crops hold by maintaining and extracting nutrients. Teachers can also utilize various resources from Alberta Sugar Beet Growers, Alberta Wheat, and Alberta Barley.</p>

APPENDIX A:

Examples of Where To Include Agriculture In The Current Program of Studies (Division IV)

	Unit/Topic	General Learner Objective (GLO)	Specific Learner Outcome (SLO)	EXAMPLES OF WHERE AGRICULTURE COULD APPLY
11 GRADE 11 CALM 20	Career and Life Choices	3. Career and Life Choices: students will develop and apply processes for managing personal, lifelong career development.	Students will: C4. develop strategies to deal with the transition from senior high school to post-secondary education/training and/or the world of work: assess existing opportunities for work experience, cooperative education, and volunteer and paid part-time work; use the community in a search for information and experience through career mentoring, job shadowing, investigative interviewing, networking and personal research; analyze the career paths of others C5. develop a quality career portfolio: assess a wide range of career possibilities; build a personal occupational profile, including information gathered while envisioning possible futures, examining future employment trends and researching possible career choices.	Teachers can utilize Alberta Wheat's Life's Simple Ingredients , and Alberta Sugar Beet Grower's " Do You Speak Farmer? " to discuss the importance of creating gender diversity in workforces, encouraging students not to shy from roles within opposing gender dominated fields. (E.g., women in agriculture). Additionally, the previously mentioned resources along with others can be utilized for career research for future projects and assignments in the agriculture sector.
12 GRADE 12 CTS-NAT ENVIRONMENTAL STEWARDSHIP	ENS3120: Water Management 2	2. Student will explain how industrial, personal and environmental uses affect water resources. 	Students will: 2.1 explain how industrial, personal and environmental practices may affect the water resource at local, regional and global levels, including but not limited to: 2.1.1 land clearing and soil cultivation 2.1.2 use of chemical fertilizers and pesticides 2.1.3 irrigation and draining practices 2.1.4 overgrazing and animal wastes 2.1.5 resource processing 2.1.6 depletion of aquifers 2.2 describe the effects of erosion and siltation on water quality 2.3 relate specific industrial, personal and environmental practices to physical, chemical and biological changes that occur in a water resource and 2.4 debate an issue regarding the impacts of industrial, personal or environmental use on water supply and/or water	Teachers could reference the " Dammer Diking " Sugar Beets video, exemplifying how sugar beet producers work to conserve water. Regarding development of content and introduction of some of the topics (e.g., soil erosion, water usage, land clearing, spraying, and sustainability) teachers could include content addressed in the specific and general learner outcomes using the following websites: Alberta Sugar Beet Growers ; Learn Canola ; Alberta Pulse Growers ; Alberta Wheat , and Alberta Barley . 
12 GRADE 12 BIOLOGY 30	Unit C: Cell Division, Genetics and Molecular Biology	3. Students will explain classical genetics at the molecular level.	Students will: (30–C3.1sts) explain that science and technology have both intended and unintended consequences for humans and the environment (SEC3) [ICT F3–4.1]	Teachers can utilize Learn Canola, " Let's Talk Biotech "; Alberta Wheat, " The History of the Marquis Wheat "; " 5 Wheat Facts You Might Not Know ", and " FAQ's " About Sugar Beets Growers. These resources will introduce GMO's; explain the direct environmental benefits related to the use of GMO crops; address the societal concerns of corporations being able to patent genes, including the gene for herbicide resistance in canola, food organisms and tree cloning for reforestation.