

Feeding **TODAY** with **TOMORROW** In Sight

**NOVEMBER 18, 2020**



## MESSAGE FROM THE MINISTER

It is encouraging to see events such as these being adapted to meet the needs of students and teachers across Alberta, despite the challenges arising from COVID-19.

I commend Agriculture for Life for hosting an informative and diverse Education Symposium focusing on agriculture. Providing teachers and students with opportunities to come together with their rural neighbours and learn about Alberta's rich agricultural industry and heritage is essential to the long-term well-being of our industry.

Along with topics of urban agriculture, sustainability, innovation and technology, I was also pleased to see that you will be discussing careers in agriculture with the students. Inspiring Alberta's youth to explore career opportunities available to them in agriculture is of particular importance to me. As Minister of Agriculture and Forestry, I am focused on growing and diversifying the agriculture sector as part of Alberta's economic recovery. This plan will only be possible with a skilled workforce ready to take up agriculture's challenges now and in the future. Agriculture for Life's Education Symposium is an important building block for the agriculture industry.

I wish all the teachers, students and panelists participating in Agriculture for Life's virtual Education Symposium a fruitful day filled with exploration and learning.

Honourable Devin Dreeshen  
Minister, Agriculture and Forestry



ALBERTA  
EDUCATION

*Office of the Minister*



## **Message from the Honourable Adriana LaGrange Minister of Education**

Alberta's government is proud to support Agriculture for Life's virtual education symposium for teachers and educators interested in agriculture education.

This symposium provides a wonderful opportunity to come together to learn about the importance of agriculture, the environment and Alberta's economy.

All students in Alberta deserve an education that prepares them for success, no matter where they live. We want rural communities to remain vibrant and for rural students to continue to receive a high quality education.

Alberta Education is proud to offer the Green Certificate Program so that students can develop the knowledge, skills and attitudes needed to enter a variety of agriculture-related programs that may lead to a credential in the agribusiness.

Agriculture education is an important part of our heritage, and it is vital to ensuring a vibrant future for students, schools and communities across our great province.

Adriana LaGrange  
Minister of Education

November 2020



# INSIGHTS IN AGRICULTURE

## Feeding Today with Tomorrow In Sight



<p>8:30 a.m. – 8:45 a.m.</p>	<p><b>Welcome!</b></p> <p>Ag for Life, Alberta representative for Agriculture in the Classroom Canada, is proud to present our third annual Teachers' Agriculture Education Symposium – virtually of course! We are looking forward to a great day of learning, and gaining insights into the agriculture sector in Alberta and beyond.</p> <p>From local best practices in sustainable crop and livestock production, to the role of entrepreneurship and innovation in achieving global food security, our line-up of renowned experts and farm operators are ready to engage, educate and inspire you to bring agriculture to life in the classroom!</p>
<p>8:45 a.m. – 9:30 a.m.</p>	<p><b>Keynote Address:</b> Dr. Megan Racey “The Nutrition Babe”</p> <p>Dr. Racey will discuss critical concepts in youth science literacy and critical thinking strategies, particularly as they relate to perceptions of agriculture, food and nutrition. A champion of our Canadian agri-food sector, she will speak to the current state of public trust in the industry and address common trends and misconceptions about our food systems.</p> <p>Educators will be provided with recommended resources to address science literacy concepts in the classroom.</p>
<p>9:30 a.m. – 10:20 a.m.</p>	<p><b>Alberta Ag 101: What’s Growing in the Field?</b></p> <p>Join our select group of crop production experts and producers for an overview of the diverse crop production sector in Alberta. Presenters will discuss best practices and production methods common in crop production, highlighting several of our Alberta producers to illustrate their commitments to sustainably growing a plentiful, safe and healthy food supply for Alberta and beyond.</p> <p>To conclude the session, Ag for Life will review the Journey 2050 school program as a suggestion for implementing session concepts into the classroom.</p>
<p>10:20 a.m. – 10:35 a.m.</p>	<p><b>Break</b></p> <p>Take a few minutes for yourself or join an informal teacher chat to share your thoughts, ideas and be inspired by like-minded educators!</p>
<p>10:35 a.m. – 11:20 a.m.</p>	<p><b>Feeding the Future: Emerging Technologies in Agriculture</b></p> <p>Dr. Kevin Folta, Professor, Horticultural Sciences Department, University of Florida</p> <p>Dr. Folta will address the role of emerging technologies in achieving the goal of sustainably feeding the world. From new advancements in biotechnology, to big data, to robotics and automation, learn how the challenges of modern agriculture can be met and mitigated with innovative practices and technologies.</p> <p>To conclude the session Ag for Life will review the Junior Reporter program as a suggestion for implementing session concepts in the classroom.</p>



<p>11:20 a.m. – 12 p.m.</p>	<p><b>Food Extremes: The Paradox of Food Insecurity and Food Waste</b></p> <p>Modesta N Abugu, Cornell Alliance for Science</p> <p>In the session, Modesta will discuss the paradoxical issues of food insecurity and food loss/waste, and their respective causes and impacts on our global and local communities. She will share how access to innovative practices and technologies can bring about change, and how we as consumers and educators can be part of the solution.</p> <p>To conclude the session Ag for Life will review the Nourishing Minds classroom resource as a suggestion for implementing session concepts in the classroom.</p>
<p>12 p.m. – 12:40 p.m.</p>	<p><b>Lunch break</b></p>
<p>12:40 p.m. – 1:30 p.m.</p>	<p><b>Alberta Ag 101: What’s Grazing in the Field?</b></p> <p>Join our select group of animal agriculture experts and producers for an overview of the diverse livestock sector in Alberta. Presenters will discuss best practices in animal agriculture, highlighting several of our Alberta producers and their commitments to high standards of animal care and environmental sustainability, as they produce quality proteins and animal by-products for Alberta and beyond!</p> <p>To conclude the session Ag for Life will review AITC Canada’s snapAG Infographics as a recommended resource for exploring animal agriculture in the classroom. Click on 'snapAG' below to learn more.</p> <div data-bbox="305 1062 623 1178">  </div> <div data-bbox="406 1232 513 1308">  </div> <div data-bbox="540 1243 1169 1306"> <p>JUST OVER 40% OF AGRICULTURAL ACRES IN CANADA ARE USED FOR LIVESTOCK PRODUCTION.<sup>2</sup></p> </div> 
<p>1:30 p.m. – 2 p.m.</p>	<p><b>Agriculture in the Classroom</b></p> <p>Get a glimpse into the inner-workings of “The Farm” – an innovative education model integrating academic curriculum with hands-on, student led projects in food production and agriculture.</p> <p>Engage students, encourage ownership and build community with meaningful real-world connections and collaborations. But don’t take our word for it! Hear from the students themselves as they share their experiences with agriculture education and inspire others to get growing in the classroom!</p>
<p>2 p.m. – 2:15 p.m.</p>	<p><b>Break</b></p>

2:15 p.m. –  
3 p.m.

### **Growing Opportunities in Ag: Alternatives and Entrepreneurship**

Keith Driver, CEO Enterra Feed Corp.

Keith will discuss the opportunities in agricultural entrepreneurship and share his experiences developing sustainable alternative agriculture operations. Enterra Feed is one of the largest producers of insect-based ingredients from Black Soldier Fly larvae. EarthRenew is a producer of high-value organic fertilizers produced by upcycling livestock manures. Other ventures include Rocky Mountain Shrimp Farm and AeroFodder.

Challenge your students to become real-world innovators and change-makers by registering your class for the Sustainable Youth Challenge!

3 p.m. –  
3:30 p.m.

### **Growing Insight: Expert Panel Q&A**

Don't miss this valuable chance for educators and select students to ask your burning questions about agriculture and food production! Our expert panel of session speakers will gather to share and discuss their insights on topics from the day, led by your questions, comments and queries.

To conclude the session, Ag for Life will review recommended classroom resources and programs to highlight the growing opportunities in the agriculture sector and encourage students to consider a career in agriculture and food production.

Contact our Education Specialist Nancy Kelner at [nkelner@agricultureforlife.ca](mailto:nkelner@agricultureforlife.ca) to submit student questions in advance.



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# SPEAKER PROFILES

## Dr. Megan Racey

“The Nutrition Babe”



Dr. Megan Racey is passionate about nutrition and sharing research to bridge the gap between academia and the public. Specifically, she is interested in how to best share complicated nutrition research into digestible, easy-to-understand formats to improve and optimize human health.

She completed her PhD at the University of Guelph in the department of Human Health and Nutritional Sciences where she worked directly with dairy farmers, adolescents and schools to communicate dairy products and alternatives as foods for health. She also completed her Master of Science and Bachelor of Science at Guelph.

Through her consulting experience she has worked directly with stakeholders across the agri-food sector from farm to fork to create impact from research and help inform evidence-based decision making. You can find her battling misinformation and consumer misconceptions about health, nutrition and the agriculture sector across social media platforms as “The Nutrition Babe”.

## Dr. Kevin Folta

Professor, Horticultural Sciences Department  
University of Florida



Kevin M. Folta is a professor in the Horticultural Sciences Department at the University of Florida. His research program examines how light signals are sensed in plants and how different parts of the spectrum can change shelf life and high-value fruit and vegetable traits. His group also uses novel genomics approaches to identify genes related to flavour and disease resistance, and is discovering novel molecules that may be the next generation of herbicides and antibiotics.

He has been recognized for his efforts in science communication, with lectures and workshops that guide scientists and agricultural producers in changing public perception about food production. He has been also been recognized with the prestigious CAST Borlaug Award in Agricultural Communications in 2016, the Ag Pro Person of the Year in 2017, as well as the American AgriWomen Association Vertas Award in 2019. He received his PhD from the University of Illinois at Chicago in 1998.

## Modesta N Abugu

Cornell Alliance for Science



Modesta Nnedinso Abugu is a fellow of the Cornell Alliance for Science and a graduate student in the Horticultural Sciences Department, University of Florida. For her masters research, she is using molecular markers to breed for improved flavour in tomatoes at Dr. Harry Klee's lab.

Modesta is passionate about communicating science for impact, especially through promoting access to innovative agricultural tools for smallholder farmers. She has organized and promoted multiple outreach projects where she engaged policymakers, the media, scientists and other stakeholders to understand the potentials of agricultural biotechnology and enhance evidence-based decision making. She was part of the inaugural cohort of the Alliance for Science Global Leadership Fellows Program at Cornell University in 2015. She now helps to lead and advance the communication strategies as well as train other cohorts on grassroots organizing and strategic communications. Modesta is also a 2020 Convivon Scholar of the American Society of Plant Biologists (ASPB).

## Keith Driver

CEO Enterra Feed Corp.



Keith Driver is a serial entrepreneur in the clean-tech and ag-tech spaces, with experience across North America. He has served in leadership positions in several technology companies over the past 20 years. His experience includes founding, senior marketing, technical and management roles, focused on emerging products and technologies. This has included fish farms, carbon trading, used oil re-refining, cryptocurrency mining, animal feed production, insect larvae for protein production and organic fertilizer production.

Currently, Keith serves as the CEO for Enterra Feed Corporation as well as leading a number of other ag-related ventures. Keith holds two degrees in engineering and an MBA, and has served as a sessional instructor at both of his Alma Mater's, the University of Calgary and the University of Guelph.



## Journey 2050

Understanding modern agriculture and the role it plays in the world is more essential than ever. Journey 2050 is a FREE sustainable agriculture education program that allows schools to experience agriculture like it has never been taught before.

When you choose Journey 2050 for your students, a dedicated Ag for Life staff member will help facilitate the program. The Ag for Life expert delivers up to two hours out of the seven hour experience and enables the teacher to complete the rest through the online experience.

Click [HERE](#) to learn more about the program.



## Junior Reporter

With the new Junior Agriculture Reporter Program students will be on the front lines reporting on agriculture-related stories. From crafting an engaging lead to writing a compelling story, students will learn the ins and outs of agriculture journalism. Through this program students will also flex their critical thinking skills, research skills, deepen their communication skills and encourage social responsibility.

Contact us to learn more about the program.



## genAG

genAG is a unique career exploration program for high school students. In groups, students will compete in provincial marketing competitions for a chance to win prizes and be profiled on the AITC Canada website, Ag for Life website and social media!

Teachers committing their classes to this program will have student groups develop and implement a creative marketing idea that promotes ag-sector careers to students in their school. Groups will create and submit their genAG marketing presentations that showcase the evolution of their marketing ideas, and how these ideas came to be. The top three groups in each province will advance to the Provincial Final.

Click [HERE](#) to learn more about the program.

# sustainable Youth Challenge

## Sustainable Youth Challenge

This comprehensive virtual program engages junior high students to learn about the role of agriculture innovation in achieving the UN's 17 Sustainable Development Goals. Students explore a variety of curated multi-media resources to gain understanding of key concepts in sustainable development and identify the role of agriculture as the uniting thread of the SDGs. Students will follow design process thinking to research ideas, concepts, and case studies related to the annual challenge question, then work in collaborative groups to draft and present a proposal detailing one solution.

Click [HERE](#) to learn more about the program.



## Nourishing Minds

Nourishing Minds is a scalable, online or in-class program focusing on a wide variety of topics in agriculture, for students in grades 7–12 across Alberta. This program encourages students to think critically about agriculture and the role it plays in their lives.

Click [HERE](#) to learn more about the program.

## ***Calling all teachers!***

Are you looking to expand your students CANnowledge? Check out **Learncanola.com** for great resources for all grades and subjects!

Connect with us on our social media accounts for other canola related fun facts:

 @LearnCanola

 @learnaboutcanola

 @learncanola

**LEARN  CANOLA.COM**

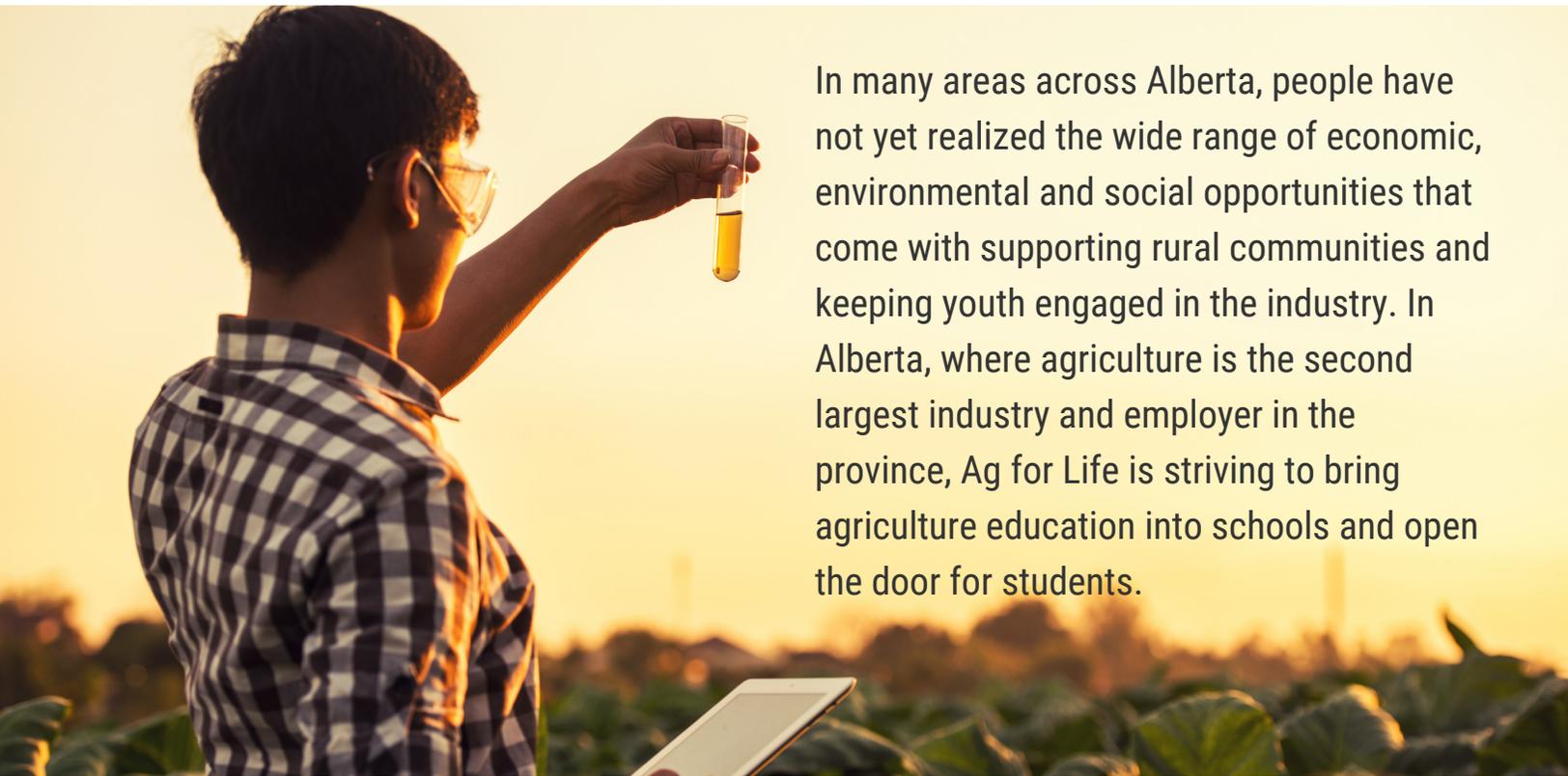


# A TEACHER'S PERSPECTIVE

An Interview with Cathy Price  
Teacher, Golden Hills School Division



Agriculture in Alberta is over a century old. When settlers realized the opportunities the land held, they saw a future for their families and livelihoods. Farming has been a staple in the province ever since, but the industry's reach is often underestimated. In the 1980s, the general consensus was that being a farmer was the only job in agriculture, and if you weren't one, then you'd better move to the city. This myth still holds true today.



In many areas across Alberta, people have not yet realized the wide range of economic, environmental and social opportunities that come with supporting rural communities and keeping youth engaged in the industry. In Alberta, where agriculture is the second largest industry and employer in the province, Ag for Life is striving to bring agriculture education into schools and open the door for students.



In 2017, Ag for Life realized the lack of professional development opportunities for teachers in the area of agriculture, and the first Education Symposium was born. In the past three years, we have tested many formats and models to make sure we are meeting the needs of our teachers. Although agriculture is not an official part of the Alberta curriculum, it relates closely to many subjects, and teachers are realizing the benefits of incorporating the industry into their lesson planning. Some schools are even going as far as becoming agriculture-based. Teaching students about agriculture shows them the potential for future careers but also helps them become conscious consumers, connecting where their food comes from and how they can influence the food system through their buying habits.

Since Ag for Life's incorporation in 2011, teachers like Cathy Price have been a champion for agriculture education and showing students the opportunities that exist within the industry. Having grown up around agriculture and been a teacher in Golden Hills School Division for seventeen years, Price has seen a shift in attitude surrounding the opportunities in agriculture and the potential for employment it holds.



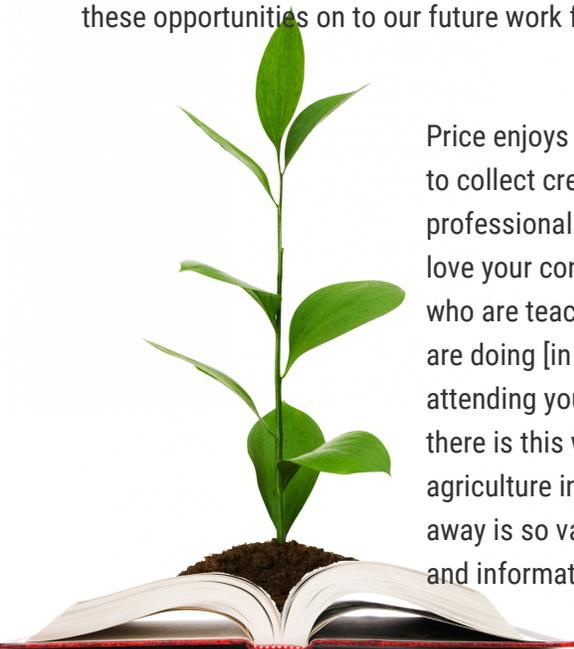
This is especially true within her classroom, where Price has seen the impact of Ag Education firsthand. "Today's students are far more likely to express interest in a wider range of careers in agriculture than they were when I first started teaching," Price states. "It used to be that students interested in agriculture would just identify careers as farmers and veterinarians.

*Today, students are exploring a much broader range of possibilities in Ag Engineering, Ag Bio Technology, Agricultural Law, and so much more. Even better, all students, not just those who grew up on a farm, are seeing value in pursuing careers in agriculture."*

This shift is attributed to intentionally integrating agriculture into a variety of courses. From using agricultural examples to enhancing math and science lessons to bringing her classes to the Ag for Life Education Symposium for students, Price believes that all students can benefit from Agriculture Education. "Incorporating agriculture in my classroom has opened up options for my students like I've never imagined and I love passing these opportunities on to our future work force."



Price enjoys attending the Ag for Life Education Symposium, because it is a great opportunity to collect credible sources to guide her lesson planning and to network with industry professionals and teachers interested in incorporating agriculture into their classrooms. "I love your conferences for so many reasons," Price remarks. "I love being able to meet people who are teaching agriculture across the province and [hearing about the] different things they are doing [in their classrooms]. I had no idea [how much was going on] until I started attending your event. That's the biggest thing—realizing I'm not doing this on my own, but that there is this whole network of other teachers who are like-minded and excited about agriculture in their classroom. Being able to walk away with ideas that I can put to use right away is so valuable, and Ag for Life's Education Symposium provides a wealth of resources and information."



# SCIENCE LITERACY

By: Nutrition Babe

As a science communicator, we need to be better storytellers. Why? Because humans are much more likely to believe stories as evidence rather than science itself.

These stories are known as "Anecdotal Evidence" and were a recent #SciCommunity topic!

Anecdotal evidence is using an "anecdote," or short account of a particular incident, to support a scientific claim. It is a conclusion drawn from personal experience. And while it might be valid, it is not proven.

There are many ways of knowing, and storytelling is an important part of knowledge sharing in many cultures. However, the danger comes when we believe someone's testimony as opposed to understanding the complex data and scientific evidence. On the scale of scientific evidence and strength, anecdotes are way, way, wayyyy down at the bottom and are considered the weakest form of evidence.

Anecdotes are SO common when it comes to food and farming.

"I felt better when I ate organic!"

"I lost weight and look better after trying XYZ diet."

"My grandma smoked and drank everyday and lived to 95—they must not be that bad!"

But these personal experiences are NOT EQUAL to evidence.

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1. Could it be a placebo effect? You think you're eating better and know you should feel better if you do, so you make yourself think this is true.

2. What else changed? When you focused on organic foods or a particular diet, did your fruit and vegetable consumption increase and ultra-processed or fast food intake decrease? Are you drinking more water, sleeping better, etc.?

Anecdotes favour resolution and are often incomplete. They focus on a \*single\* reason for why something works, which ignores the myriad of other reasons why it might have worked (or might not be true!)

You know what does consider all sides? Science!

Especially systematic reviews and meta-analyses, which look at the totality of science.

So yes, stories and testimonials are important, but they should never ever outweigh the consensus of the scientific literature.

# CONNECTING AGRICULTURE TO THE CURRICULUM

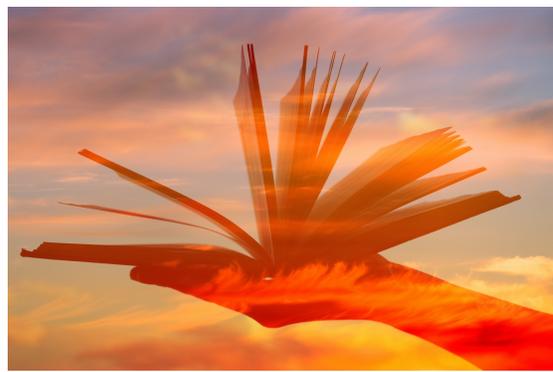


As future stewards of the planet, knowledge and experience in the field of agriculture will help students successfully carry out this important duty. According to a United Nations' report from 2017, ***“the current world population of 7.6 billion is expected to reach 8.6 billion in 2030, 9.8 billion in 2050, and 11.2 billion in 2100.”***<sup>1</sup>

For most students, they are at least two generations removed from the farm, and agriculture and food production are not part of their daily lives. Feeding the anticipated population growth will require the promotion and understanding of the agricultural food value chain and the encouragement of students to choose careers within the industry. Connecting students with agriculture and food is fun and provides an opportunity to capture student interest in creative ways.



Resources are currently in place to help incorporate agriculture-related topics within the Alberta curriculum. In 2019, the Canadian Agricultural Partnership (CAP) created two guides, *Connecting Agriculture to Alberta Junior High School Curriculum* and *Connecting Agriculture to Alberta Senior High School Curriculum*, that are very informative and user friendly. The two guides provide “an overview of connections to agriculture that can be developed around Alberta competencies. Agricultural topics and themes can be drawn from concepts identified in general and specific learning outcomes in curriculum documents. Activities can then be developed to integrate and support increased understanding of concepts related to food production and consumption, food safety, agricultural issues, and sustainability.”<sup>2</sup> Both publications provide a Theme Map for each educational link, including Topic Overview, Subject Area, Unit Concepts, and Guiding Questions, to draw from while building an assignment. Alberta curriculum objectives are most frequently linked in these publications to Science and Social Studies.



Other countries also provide educational material to enrich the school curriculum with agricultural knowledge and understanding. Creative ideas are presented in the two examples below that can be easily tied to different subject areas in the Alberta Programs of Study.

- LEAF Education, out of the UK, has created the “Countryside Classroom”:

<https://www.countrysideclassroom.org.uk/>

- The American Farm Bureau Foundation for Agriculture lists numerous student learning activities:

<https://www.agfoundation.org/>

For other connections to subjects not found in the CAP resources, agriculture-related assignments can be developed by creating an easy-to-use lesson plan template. This provides a location to document curriculum outcomes and make a general plan for an assignment. As the plan progresses, information is added to the Teacher Instruction, Student Assignment, and Marking Rubric sections. See next page for template example.



## Real Conversations with Real People about Animal Health

**Raised with Care: Stewardship Sessions** features veterinary experts, in conversation, discussing the health and welfare issues producers face when working with livestock, and offers students the opportunity to learn about positive stewardship practices and food safety.

Visit [raisedwithcare.ca](https://raisedwithcare.ca) to watch any of the sessions below:



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**BACKYARD AGRICULTURE**



**COMPANION ANIMAL HEALTH**



with **Daryl McIntyre**

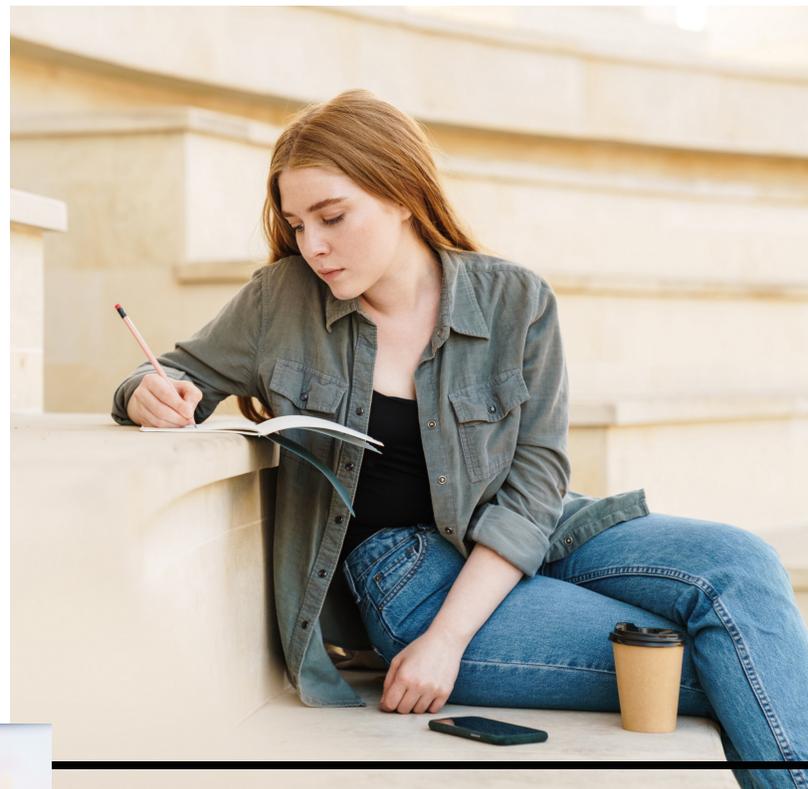
<b>Subject Area:</b>		<b>Grade:</b>
<b>Title:</b>		
<b>LearnAlberta Programs of Study General Learner Outcomes:</b>		
<b>Specific Learner Outcomes:</b>		
<b>Student Learning Objectives:</b>	<b>Students will:</b>	
<b>Assessment:</b> (Observation, written assessment, performance assessment)	<b>Students will provide evidence of learning by:</b>	
<b>Materials:</b> (Includes videos)		
<b>Learning Resources:</b>	<ul style="list-style-type: none"> <li>• Alberta Education Programs of Study</li> </ul>	
<b>TEACHER INSTRUCTIONS:</b>		
<b>STUDENT ASSIGNMENT:</b>		
<b>MARKING RUBRIC:</b>		



Connecting agricultural topics to other subjects not found in CAP, such as English Language Arts and Fine Arts, provides an opportunity to get creative. Both curriculums allow freedom to freelance with topics as long as they are tied to the wide range of objectives listed in the Alberta Programs of Study.

An example for ELA is “Harvest Poetry Tea Time.” Students work on objectives that focus on poetry writing and celebrate their writing accomplishments by sharing their poems at a “Tea Time.”

This assignment allows students to share their gained knowledge about the harvest season. In Art, numerous imaginative ideas can be found on sites like Pinterest, where videos are often found to demonstrate a process. Printmaking, using watercolour markers and Styrofoam, is a project example where students draw farm animals to illustrate print content. Researching farm animals to draw is fun, and it brings student attention to the wide variety of farm animals available to choose from.





Incorporating agriculture in the classroom is a great opportunity to help students acquire an expanded knowledge and understanding of the industry that human life depends upon. Experiencing hands-on field trips can also be linked to these types of assignments. By including ag-related topics in lesson plans, we can open doors that direct students to career opportunities in the agriculture industry. Even if students do not pursue a career within the industry, there is still value in becoming a conscientious and informed consumer.

# pig SCIENCE CENTRE

LOCATED AT THE UNIVERSITY OF ALBERTA'S  
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Alberta Pork's  
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and we will record a response from a real Alberta Pork producer.

Alberta Pork's Pig Science Centre includes educational  
resources and fun activities for students in all grades K-12.



## Cited Sources

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<https://www.un.org/development/desa/en/news/population/world-population-prospects-2017.html>
2. Canadian Agricultural Partnership—Connecting Agriculture to Alberta Curriculum, 2019.  
AgABCurriculum\_JuniorHigh\_Feb\_2019.pdf

Ag *for* Life

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