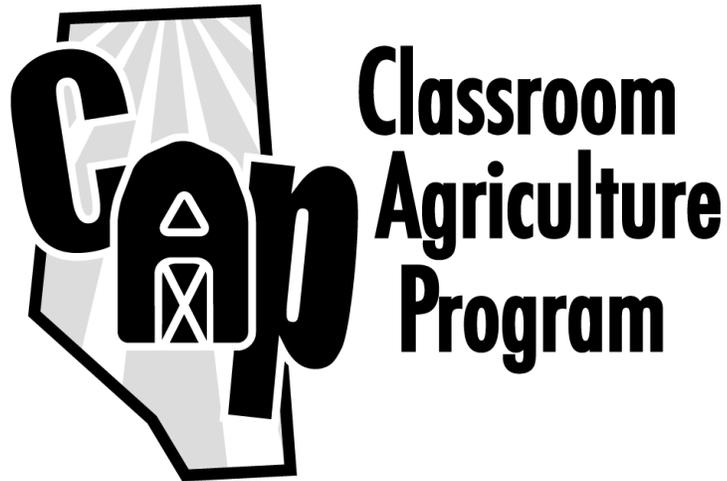


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MISSION:

To provide Alberta students with quality, comprehensive agriculture learning experiences,
aligned with the Alberta Program of Studies

Presentation Manual

for

VOLUNTEERS

Updated February 2019

Ag for Life



INTRODUCTION

Our sincere thanks for being a volunteer for the Classroom Agriculture Program (CAP).

Traditionally, Albertans who didn't themselves live on a farm had grandparents or relatives who did. As society has become more urbanized, that situation no longer exists, and agriculture is becoming more and more removed from its roots—making your presentation all the more important in helping the students connect with agriculture and food.

You now have the opportunity to speak to our future consumers and educate them on the importance of the agri-food industry. Almost all of our everyday experiences can be traced back to agriculture, from food to clothes to movies to the tires on our automobiles. This is your chance to open children's eyes to agriculture.

This Presentation Manual is to be used as a springboard full of ideas and inspiration for your presentation.

Volunteers are encouraged to:

1. Adapt the following information to their own operation and experiences, as well as agriculture in general, remembering that personalizing the presentation is what makes the program unique and exciting;
2. Use the "Grow with Agriculture" DVD as part of your presentation. DVD's or USB sticks are available from your zone coordinator or the General Manager. It is also available on our website.
3. Use visual aids and hands-on/engaging materials whenever possible;
4. Explain where food comes from; help students connect with agriculture and food. Use at least one example of "Where Food Comes From" – explaining the path the food product takes from farm to table.
5. Talk about the opportunities in agriculture and the economic and environmental impact of agriculture in Alberta.
6. Use at least one example that relates to Alberta's agriculture industry to Grade 4 curriculum.

Inspire students to discover more about agriculture following your presentation.

Special Thank You

To the Minister of Agriculture and Forestry
And the Minister of Education
for recognizing the importance of this program.

Once you meet with your zone coordinator you should receive:

1. Cellophane package for each classroom. Includes contact information for the school, activity booklets for the students and a resource kit for the teacher.
2. Volunteer Presentation Kit. Includes resources and commodity contact information.
3. CAP video “Grow With Agriculture”

Next Steps:

1. Phone the classroom teacher to make an appointment for your CAP presentation. Presentations occur between February and June.
2. In the event that you are **unable to do a presentation**, please **PHONE YOUR ZONE COORDINATOR**. They will make arrangements for the classroom to receive the program either by another volunteer or by mailing the resources directly to the teacher.
3. Upon completion of a CAP presentation, contact your Zone Coordinator to report your experience.
4. Complete and return the Volunteer Evaluation (included in the Volunteer Presentation Kit or online www.classroomagriculture.com).

If you need advice or have questions about the program, feel free to call me or your Zone Coordinator (if you do not know who your Zone Coordinator is I will tell you).

Thank you for your commitment to attend your designated schools and passion for spreading the story of agriculture to grade four students. Your time and effort is greatly appreciated.

Sincerely,

Don George, CAP General Manager
587-877-2544
gm@classag.ca

THEME

The CAP theme is “**Grow with Agriculture**” which suggests agriculture is a part of students’ daily lives and a key contributor to their growth and to the growth of Alberta’s economy. You are promoting a greater understanding and an appreciation of agriculture.

ACTIVITY BOOKLETS

The children will each receive their own copy of the CAP activity booklet. This booklet compliments grade four curriculum and will provide the children with a wide range of valuable agriculture-related learning opportunities.

VIDEO

Each volunteer has the option of using a video called Grow With Agriculture. Although it is only nine minutes long, the video contains thought-provoking agriculture-related content. You can receive the video from your zone coordinator or myself. It is also on our website under the schools and teachers pulldown menu or on you tube.

FIRST STEPS – PLAN EARLY

As soon as you receive the materials from your Zone Coordinator and **prior to March 31**, please **contact the grade four teacher(s)** involved to arrange a convenient time to do your presentation. This initial contact is the perfect time to discuss curriculum connection ideas with the teacher. Your presentation should be **one hour** in length and should occur **between February and June**.

If you are having difficulty arranging the time or, if for some reason, you cannot do the presentation, please contact your Zone Coordinator.

Either another volunteer will deliver the presentation, or the Teacher’s Package and activity booklets will be mailed directly to the teacher. The children deserve something.

You may be required to complete security clearance for volunteers, and this must be done a couple of weeks before your session. The teacher will advise you when you make contact.

VOLUNTEER EVALUATION FORM

Please complete and return your Volunteer Evaluation Form. Your input will be very influential in the growth and further development of CAP. The evaluation is available in this kit, or online at www.classroomagriculture.com.

When you have delivered your assigned CAP presentation(s), please let your Zone Coordinator know. When they hear from you, your name will go into a draw for a prize.

*Thank you again for volunteering with the Classroom Agriculture Program.
Best wishes for every success with your presentations and please feel welcome to call your
Zone Coordinator at any time.*

WHO TO CALL ABOUT AGRICULTURE

TOPIC	AGENCY	CONTACT INFORMATION
Agriculture in General	Alberta Agriculture and Rural Development	1-866-822-7677 www.agric.gov.ab.ca
Barley	Alberta Barley Commission	(800) 265-9111 www.albertabarley.com
Beef Cattle	Alberta Beef Producers	(403) 275-4400 www.albertabeef.org
Chickens	Alberta Chicken Producers	(780) 488-2125 www.chicken.ab.ca
Canola	Alberta Canola Producers	(780) 454-0844 or (800) 551-6652 www.canola.ab.ca
Dairy Cattle	Alberta Milk	(877) 361-1231, 3327 www.moo2you.ca
Deer, Elk & Bison	AB White-tail and Mule Deer Assoc.	(403) 746-5151 www.albertadeer.com
	Alberta Elk Commission	(780) 980-7582 www.albertaelk.com
	The Bison Centre	(780) 986-4100 www.bisoncentre.com
Eggs	Egg Farmers of Alberta	(403) 250-1197 www.eggs.ab.ca
Education	Olds College	1-800-661-6537 www.oldscollege.ca
Farm Animal Care	Alberta Farm Animal Care	(403) 932-8050 www.afac.ab.ca
Farm Safety	Alberta Farm Safety Centre	403-752-4585 www.abfarmsafety.com
Food Safety	Food Safety Network	(866) 503-7638 www.foodsafetynetwork.ca
Goats	Alberta Goat Breeders Association	(780) 878-3814 www.albertagoatbreeders.ca
Horses	Horse Industry Association of Alberta	(403) 948-8521 www.albertahorseindustry.ca
Irrigation	Eastern Irrigation District	(403) 362- 1400 www.eid.ca
Pesticides & Environment	AGCare	(519) 837-1326 www.agcare.org
Pigs	Alberta Pork	(780) 474-8288 www.albertapork.com
Potato	Potato Growers of Alberta	(403) 223- 2262 www.albertapotatoes.ca
Pulse (Legumes)	Alberta Pulse Growers	(780) 986-9398 www.pulse.ab.ca
Lamb	Alberta Lamb Producers	(403) 948-8533 www.ablamb.com
Turkey	Alberta Turkey	(780) 465-5755 www.albertaturkey.com
Veterinarians	Alberta Veterinary Medical Association	(780) 489- 5007 www.abvma.ca
Wheat	Alberta Wheat Commission	(855)917-3711 www.albertawheat.com

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General Presentation Suggestions:

The key to a good experience is student involvement. Reading a prepared speech involves only the reader and not the students. The time and energy put into the preparation of your presentation will directly influence your success.

You are encouraged to develop your own presentation using your personal knowledge and experiences of agriculture, as well as some of the information supplied in this Presentation Manual. This material was never intended to be used verbatim - but as a resource.

Explain to the students about the partners involved in the industry as well as how you fit into the industry. Teachers appreciate it when you include hands-on aides as well as visual aides.

Here are some suggestions:

1. Ask some questions to find out their knowledge level, e.g. "What do you think of when you hear the word 'farm' or 'agriculture'?"
2. Keep agricultural terminology or scientific terms to a minimum so students are not overwhelmed or lost in terms they may not understand or relate to.
3. Smile, and relax; easier said than done, but worth it.
4. Use nametags for students. Ask teachers to have nametags ready, or bring some in. This makes presentation/discipline easier if you can identify students. Also, students like to be called by name.
5. Wear a nametag yourself or write your name on the board so that students can call you by name.
6. Admit it if you don't know the answer to a question. Say you will find out and let them know - and do so.
7. Some issues that might come up and that you should prepare for:
 - environment, e.g. global warming, world hunger, destruction of the rainforest;
 - animal welfare, e.g. horses that died at Stampede; animals in cages...
 - food vs. fuel – why are you using crops for fuel rather than feeding those who are hungry?
 - food safety – use of steroids, antibiotics, pesticides
 - remember it's ok to say to the students that is something you should research yourself
8. Remember your goal is to teach, inform and provide experiences for the students that they might not otherwise receive. You are the expert in this area but you must plan ahead and be prepared.
9. If possible, set up in the library, gym or lunch room and have the classes come to you. Talk to the teacher ahead of time to set this up.
10. **Ask the teacher to remain in the classroom throughout your entire presentation.**
11. Remind the teacher to fill out the evaluation form (in the teacher kit or online).

If you choose to talk about Agricultural “PARTNERS” ...

A “Partner” is defined as those people who are not farmers or ranchers, but whose occupations help farmers in doing what they do – e.g. banker, agronomist, accountant, input sales person, vet, etc.

1. Choose the partners you wish to talk about and relate them to a student’s family, - do any of you know people who are truck drivers, sign makers, waiters or waitresses....
2. Give each student a card with an occupation on it, i.e. truck driver, veterinarian, bank manager, etc.. Then say “Who am I?” and read out a job description. The student with the appropriate card holds up their hand, i.e. “What size of loan do you think you’d need to buy a new swather Jim?” Answer: bank manager.
3. Role playing: Cut out pictures of people; let students pick one; have them act out occupation for the rest of the class to guess. Or, put occupations on pieces of paper; have students draw one, and then act it out or give visual hints.
4. One person plays a farmer/rancher and a second person takes the part of a partner, i.e. vet, truck driver, teacher, banker.
5. Poster of a cattle drive (along a road). Road signs could be partners that one would meet along the way to market. Pictures can be used at each road sign.
6. Day in the life of a farmer, spouse, and kids who help out on the farm, if appropriate. Dress the part.
7. Discuss the farm and marketing partners, i.e. farmer needs the truck to go into town to see the insurance agent. Farmer also needs the truck to haul in hay. Display on white background paper pictures of day adventures. Use black background paper to show night adventures, i.e. calving, calling the vet or trucker, taking agricultural classes, harvesting, etc.
8. Make a poster showing a day in the life of a producer during the busiest time of year or, make your entire presentation around a day in your life, using opportunities to bring in partners.
9. Make a poster, or timeline showing the partners involved getting the animals from pasture to plate or crops from seed to grocery store product. Emphasize that animals grown for food are NOT pets.
10. Dress up as each partner discussed, using a hat or prop to illustrate occupation.
11. Cut out silhouettes of people and paste on cards to pass around to students so they can take on role of the occupation on their card.

Visual Aide Suggestions...

1. Use the CAP video Grow With Agriculture which is available from your Zone Coordinator or the General Manager. Talk with the teacher ahead of time and let them know you plan to show a video. The video is available in both DVD and memory stick format, it is also on our website and most teachers can access the internet and stream the video directly from the website.
2. Use the CAP poster as part of your presentation. Posters are available from your zone coordinator or from the General Manager.
3. To have a visual presence, create a poster with pictures for each concept; this would also act as a guideline for you. *This works well only if the students are around you while you are teaching.* When students are in their desks, the pictures would be too small to use as teaching tools but would add interest as displays.
4. A “Multi-Media Library Catalogue” which lists all video productions geared specifically to students is available from the Alberta Agriculture and Forestry Film library. Videos are also available from the Alberta Milk Producers, the Albert Egg Producers and the Irrigation Districts. Shorter video introductions are available from the Alberta Canola Producers.
5. Set up a display using Alberta-produced food either pictorially or actual.
5. Some presenters have made their own videos with great success. This is a skill you may want to also try.
6. Demonstrate a “Food Recipe.” (See pages 6 and 7 for ideas.)
7. Bring in samples or by-products. (See page 10 for details.)
8. Bring in samples of grains and encourage the students to touch and smell each one.
9. Contact Agrium to get seed cups that you can leave with the class. Email: sustainability@nutrien.com or phone: 403-225-7782. Ask about seed survivor material.

Food Recipe Ideas...

Dirt for Dessert

***NB** *Before taking this to class, contact teacher for possible peanut or other allergies. Substitute chocolate wafers for peanuts if necessary.*

Materials needed: glass bowl, spoon, spatula, cups and spoons for each student to taste the dirt.

Ingredients needed: crushed graham wafers (rocks and sand)

2 packages instant chocolate pudding	crushed Oreo cookies (dry topsoil)
jellybeans (rocks)	yellow coloured coconut (straw)
2 - 250 mL containers milk (rain)	whipped cream (snow)
gummy worms (worms)	(or use vanilla yogurt or
multi-coloured chipits (fungi and bacteria)	marshmallow creme)
peanuts (beetles)	

Before the talk: Package, label and seal small quantities of graham wafers, jellybeans, milk, gummy worms, peanuts, chipits, crushed Oreo cookies and coconut. Hand these packages out to various children and tell them not to let the worms, bacteria, etc., escape.

Story: Today we will be making dirt. When the earth was a lot younger than it is now, in fact over 10,000 years ago, there was what was called an ice age. Just one of many, but the last one we had was around then. There were huge blocks of ice that fell down into where we live and as this ice and water tumbled along and crushed the gravel and rocks, it made sand. Later more erosion was caused by wind, heat, cold and water. The rocks were worn down forming minerals, sand, silt and clay. Grass grew and dried, tree leaves fell forming organic matter. They didn't do this all by themselves. They had help from worms, beetles, fungi and bacteria. As the leaves and grass go through worms, etc., they go through changes and come out as enriched soil - the organic matter.

1. So first we have rocks and sand - graham crackers and jelly beans.
2. We also have to have air and rain (we are using milk today) to make the plants grow. Have child holding milk come to front and add to pudding (be sure to stir).
3. Put chocolate pudding on top of crumbs (organic matter). Have other children come to front and add ingredients one at a time.
4. There is always dry soil on top (crushed Oreo cookies). Last but not least we have straw on the grain fields or grass on the pasture lands. Here we will use coconut. This straw helps the farmer keep his soil at home and not blow away or lost to water erosion. When the worms etc., work over winter it is turned into more organic matter. In winter, we have a snow cover to help produce more moisture and helps keep the soil warmer (whipped cream). Put aside to decompose.
5. The farmer and his partners are concerned caretakers of the environment and value its natural resource. Every day is earth day for a farmer or rancher because his/her living depends on it.

The grand finale: everyone gets to eat the dirt! This will feed approximately 30 students.

Other Food Ideas

- grind your own wheat, and then make buns, pancakes using the resulting flour
- provide muffins using ingredients from Alberta – barley flour; canola oil; oats; rhubarb, carrots or Saskatoon's; granulated sugar; pumpkin seeds (if there are no allergies in the class)...
- analyze a hamburger from a local fast food restaurant
- discuss the agricultural ingredients grown in Alberta that are used to make a pizza – flour, canola oil, salt, for the dough; tomatoes, garlic, onions and parsley for the tomato sauce; toppings to include meat, vegetables from Alberta (hamburger, chicken, sausage, mushrooms, peppers, etc.) and cheese.

Classroom Management Suggestions...

Most classes are pretty excited about having a visitor come into the classroom. Children being the perceptive critters they are, realize instantly when someone enters the room confidently. (So even if you are feeling like you'd like to bolt, fake it). Generally speaking, Grade 4 is a very cooperative age, so your experience should be great!

A few suggestions you might find helpful:

1. Bring kids to the front of the room around you. This makes for better contact with students; you sit on a chair and students on the floor. Have the teacher help you get the students organized. RULES to be stated before you begin to speak:
 - a. hands must be kept to themselves,
 - b. must sit on the floor, not kneel or sprawl; and,
 - c. if they don't cooperate they will be asked to go and sit at their desk.
2. State attention rule: You will clap once to gain attention. The class should respond by clapping twice. The room is to remain quiet after clapping to attention.
3. Before starting, remind them to raise their hand and wait their turn; however if hands go up while you are talking and you find it distracting, do not be afraid to ask them to put their hands down until you are finished.
4. These kids are used to various visual aides. Do not let that scare you. Little bits of trivia related to your topic or an occasional joke or sensational fact will keep their attention.
5. If you find you are getting off the topic with questions, do not be afraid to say "we are getting off the topic and we have a time limit".
6. Make sure the teacher stays in the room not only for discipline reasons, but you will have more chances to follow-up.
7. Take only 1 classroom at a time. Any more than 30 students can cause discipline problems, plus it is more difficult to show visual aides, and answer questions. If they ask you to combine classes, you can suggest that two presentations will need to be done. Or if you comfortable with a larger group that is up to you.
8. Some students may test you – DO NOT let them throw you. You are the adult: remain in control; be firm and positive.

Games...

A Slice of Soil

Supplies: a large apple OR a large orange
a paring knife section cutter
(Instead of cutting through whole orange, section off skin and peel in front of class)

Introduction:

One of the most important natural resource that covers much of the earth's land surface is soil. All living things depend on it as a source of food, either directly or indirectly.

Our food producing land remains the same and yet the world population continues to grow. Consequently, each person's food portion becomes smaller and smaller. It is the responsibility of this generation to use the soil wisely to ensure the future. The following demonstration will show how little of the earth's surface is actually used for food production as compared to growing population.

Procedure:

1. Cut the apple into four equal parts. Three (3) parts represent the oceans of the world. The fourth (4th) part represents the land area.
2. Cut the land section in half lengthwise. Now you have two $1/8$ pieces. One section represents land such as deserts, swamps, Antarctica, Arctic and mountain regions. The other $1/8$ section represents land where man can live but may not grow food. (Man can grow gardens, but gardens won't feed the entire world.)
3. Slice this $1/8$ section lengthwise into four equal parts. Three of these $1/32$ sections represent the areas of the world which are too rocky, too wet, too hot, or where soils are too poor for production, as well as areas developed by man.
4. Carefully peel the last $1/32$ section. This final small bit of peeling represents the soil of the earth - on which mankind depends for food production.
5. Questions for class discussions:
 - What if this valuable topsoil which humans depend upon should suddenly disappear? What then?
 - What will happen if the world's population continues to grow while our earth's topsoil remains the same?
 - What ways can you and your family help conserve precious soil in your own backyard?

Name That Tool:

A popular way of introducing something new to students is to present them with some “Mystery Objects” related to the new topic. Bring farm tools, safety equipment, and/or small components of farm machines to the classroom. Encourage small groups to brainstorm about how the tools might be used. From what type of farm did they come? Do they relate to any of the other tools? Could they be used for something else? Questions like these can help students develop observation and problem-solving skills. Despite the title above, the actual name of the object is rarely important, although it may give some insight into how a tool is used.

A single tool can also be put on display, with students invited to submit suggestions as to use. Students can also be encouraged to provide items to stump their friends.

A classroom version of “Bluff” allows students to invent possible uses for a tool and present each of them to the class, along with the correct use. Class members vote for the most convincing explanation.

Other ideas:

1. Invite a local soil conservation person to join you in the classroom to discuss what special things are being done to save the soil; or
2. Make a graph based on this lesson, depicting the portion of land used to grow our food versus all the other areas of the world such as water or land regions.

Samples & By-Products...

The majority of the following list of sample items can be found at farm equipment or supply stores. As you purchase or borrow a tool, get a full description of how it is used. Talk to the manager and tell him what you are using it for, they will often give you a discount.

Sample Items:

fence insulator	curry comb	SMV sign
teat dip	draw bar pin	ear protectors (noise reduction)
chick waterer	bugs sweep net	wrenches
salt lick	moisture tester	rubber gloves
soil thermometer	hoof pick	
soil depth seeder	rain gauge	

By-Products:

Make a poster listing parts and by-products or bring in as much of the following by-products as you can.

For example **Animal By-Products include:**

a. By-products are used in all sorts of mechanical items. Chemical manufacturers use numerous fatty acids from inedible beef fats and proteins for all sorts of lubricants and fluids such as:

- animal feed
- cement blocks
- explosives
- fertilizers
- high gloss for magazines
- industrial cleaners
- lubricants
- molds for plastics
- printing inks
- whitener for paper

b. Edible By-Products include the following:

- candies
- chewing gum
- clarification agent
- juice, wine and beer
- consommé
- Pet food
- cookies
- "Light" products
- marshmallows
- mayonnaise
- oleo shortening
- Doggie treats
- pate
- sausage casings
- yogurt
- gelatin for salads
- ice cream

c. The medical world also relies on this resource for the pharmaceuticals it produces and uses. Some of these products are:

- Sodium levothyroxine
- Heparin
- Trypsin
- Chymotrypsin
- Corticotrophin
- Deoxyribonuclease
- Fibrinolysin
- Parathyroid hormone
- Pancreatin
- Thrombin
- Thyroxine
- Glucagon

d. Inedible By-Products include the following:

- bone china
- bonemeal biscuits
- boots and shoes
- candles
- cosmetics
- crayons
- shampoo/conditioner
- doggie chews
- textiles
- glue
- leather sporting goods
- luggage
- paints
- violin strings
- photographic film
- plastics
- detergents
- soaps
- floor wax
- upholstery
- asphalt
- car polishes and waxes
- hydraulic brake fluid
- rubber tires
- textiles for car upholstery
- deodorants
- shaving cream
- fabric softeners
- toothpaste
- insecticides

The **Canola By-Products** Tupperware Kit can be borrowed from The Alberta Canola Commission. You will need to contact Canola well ahead of time. These kits could include the following items:

- plastic tubing
- lip balm
- bath oil
- soap
- hand cream
- oil lubricant
- fertilizer sample in sealed container
- plastic wrap like Stretch & Seal
- biodiesel additive
- biodiesel

Connecting Your Presentation to the Alberta Education Curriculum...

With direct reference to the Alberta Learning Program of Studies, this information has been edited and prepared to assist you in connecting your presentation specifically to the grade 4 curriculum content. The classroom teacher should be able to give you further assistance with curriculum connections if you need additional help. Please note that the curriculum is currently under review, these suggestions are from the curriculum currently being used. The new curriculum is scheduled to come out in about 2021.

SOCIAL STUDIES

TOPIC A:

ALBERTA: ITS GEOGRAPHY AND PEOPLE

- natural resources (this topic should be discussed)
- importance of soil and water
- diversity of agriculture
- importance of agriculture in people's daily lives
- economic importance
- capital and technology intensive
- production, processing, marketing, and diversity
- natural resource conservation
- independence as related to access to natural resources
- partners in agriculture
- producer, processor, distributor, marketers and consumer/user
- conservation – natural resources
- geographic regions/the environment – the effect on people re: agricultural initiatives

ALBERTA: IT'S PEOPLE IN HISTORY

- farm life of a pioneer
- factors that influenced settlement in Alberta, including natural resources

SCIENCE

TOPIC A:

WASTE AND OUR WORLD

Plant and animal waste and how the agricultural industry recycles them - the 3 R's – Reduce, Reuse, Recycle

Example: Identify plant and animal wastes, and describe how they are recycled in nature. For example, plant leaves serve as a source of food for soil insects, worms and other creatures. The wastes of these animals may then be further broken down by molds, fungi and bacteria.

TOPIC B:

WHEELS AND LEVERS

- basic components of simple machines: how they are assembled, how they operate, how they are used. Using farm equipment as an example, demonstrate pulley systems, gear systems, wheel-to-wheel contact, a belt or elastic, a chain, cogs or gears. This could involve “Farm Safety” concept.

TOPIC C:

PLANT GROWTH AND CHANGES

- different plants and their uses
- importance of plants to us and the natural environment
- research leads to changes in lifestyle and industry
- adaptation and modification of the environment in food production
- intensive nature of agriculture
- partners in agriculture
- producer, processor, distributor, marketers and consumer/user

HEALTH

WELLNESS CHOICES

- Analyze the need for variety and moderation in a balanced diet (e.g. role of proteins, fats, carbohydrates, minerals, water and vitamins)

MATH

- estimating
- grids
- metric
- predicting
- tables
- rounding off
- directions (N.E., etc.)
- measurement (length, volume, height, perimeter, etc.)
- numeral writing,
- e.g. 90 hectares, etc.
- money
- graphs

LANGUAGE ARTS

- chart writing and reading
- recordkeeping
- story writing, reading and telling
- oral and written reports
- research (books, internet, etc.)
- song and poetry writing
- listening to stories and poetry

The following “Questions and Issues” can lead to a discussion relating to the grade four curriculums. The focus will be on farming, ranching and agriculture.

QUESTIONS:

How do Albertans make use of their natural resources (in agriculture)?

What is the effect of technology on the location, development and use of natural resources?

Do the natural resources in Alberta supply all our needs?

How does our way of using natural resources affect/influence our environment?

Are we conserving our resources for future generations?

ISSUES:

Should people make major changes in their physical environment to meet their needs?

Should resource development be allowed regardless of location or previous designation of land use, e.g., provincial park, agricultural land, historical site, wildlife sanctuary?

How should we use natural resources in ways that best benefit Albertans and others?

Should we use our natural resources without limitations?

Current Food and Agriculture Issues...

At some point during your presentation, the children or teacher may ask some questions regarding current issues of the day, which in some cases may be controversial. *At any time please feel free to have the teacher contact the organizations listed on the Resource Page in this Presentation Manual for answers regarding their particular issue.*

DAIRY

- Are there hormones added to milk?
 - o No. The administration of artificial growth hormones, such as bovine somatotropin (bST), to dairy cows is not permitted in Canada.
- Does Canadian milk contain antibiotics?
 - o Antibiotics are only given to a cow when she is sick. When a cow receives antibiotics, she must be clearly identified and her milk properly discarded for a mandatory withdrawal period until the medication has cleared the cow's system
- Does my milk contain GMO?
 - o Some dairy cows may consume genetically modified feed such as canola meal, but genetically modified crop is regulated by the government organizations and evaluated for its safety. There is no scientific evidence showing that genetically modified feed affects milk yield or milk composition. An important thing to note about cows eating GM food is that it does not change an animal's (or a person's) genetics. The cow's milk is not GMO. A comparison can be made to diabetics taking insulin; the person does not become GMO. A dairy-related comparison is that a cow fed chocolate doesn't make the milk that comes out of that cow chocolate milk
- Should I drink organic milk vs. conventional milk?
 - o This is a personal decision as both conventional and organic milk are healthy choices. They both contain the same 16 essential nutrient. They also comply with the same food safety regulations so both are pasteurized and free of antibiotic residues. The main difference is that organic milk is produced by cows that are fed organically-grown feed that is grown without synthetic pesticides, herbicides or fertilizers.

<https://albertamilk.com/ask-dairy-farmer/>.

IRRIGATION

Should we take some water from rivers to grow food for people or should we leave all the water in the rivers so there will be more fish?

If you say that we should use some of the water to grow food, how much of the river should we use to grow food and how much should we leave for fish?

Should we use water to grow potatoes that are made into French fries and potato chips, or should all the water be used to grow only healthier food like broccoli and carrots?

Irrigation districts are farmer cooperatives that supply water to farmers so they can grow food. Should an irrigation district be allowed to supply some of their water to towns and cities so people can have it for drinking water instead? If yes, should the irrigation district be able to charge a fee for the water the town or city uses?

Who should pay to buy equipment that will help a farmer save water so more water is left in the rivers: the farmer, the government, your mom or dad when they buy groceries, or a combination of these?

Pork

- Nutrition:** Pork is nutritious and a recommended part of a healthy diet. The fat in pork is trans-fat free and mostly mono- and poly-unsaturated, so trimmed pork is suitable for even cholesterol-lowering or heart-healthy diets. Lean pork, when trimmed of visible fat, is nutrient-dense, satisfying and good for you. How lean is Canadian pork? A new national nutrient study shows that Canadian pork is leaner than ever and can play an essential role in a healthy diet. The new study indicates that some pork cuts are leaner than chicken. (<http://www.canadapork.com/en/industry-information/nutritional-facts>)
- Hormones and Antibiotics:** Keeping animals healthy is a top priority for farmers and veterinarians. Antibiotics are used by farmers and vets only to treat sick pigs and prevent disease. Health Canada sets maximum levels that can be left in food, and these limits are set at levels far below the amount that could pose a health concern. Pork sold in Alberta is healthy and safe to eat. Added hormones are not allowed in the production of pork in Canada. All mammals produce hormones naturally, so animal products will contain some trace amounts of hormones; not enough to affect a human.
- Food safety:** Work and research is constantly being done to find better ways to care for animals. We take animal welfare seriously. Producers realize the vital interest they have in raising healthy, well-cared-for animals. Alberta Pork works alongside our producers to ensure that the health and safety of animals is priority. Studies show that pigs are more susceptible to diseases and less productive when they are subjected to stress from extreme heat or cold temperatures. Healthy, unstressed animals are better for both the farmer and the consumer.
- Why are most pigs raised indoors rather than in open pastures?** Pig farms are generally quite different than the traditional image many people have of pigs wallowing in the mud. Years ago, pigs would lie in the mud to protect themselves from overheating and biting insects. Hogs today are raised in a variety of humane and safe ways to protect them from weather and pests. Many hogs are kept indoors in buildings where the pork producer can control temperature, humidity and other environmental factors. These buildings are well-lit and clean so the hogs can be better cared for, reducing the risk of extreme weather conditions.

Sample Volunteer Presentation #1 ...

by John Portail, Strathmore

1. My approach is to introduce the students to the crops and livestock produced in the Wheatland County.
2. I also explain the responsibilities of Alberta Agriculture, Food and Rural Development specialists and how they strive to help rural clients help themselves in their everyday activities.
3. I've collected numerous specimens over my years as a DA and use them to illustrate my talk. This fosters class participation as I encourage questions throughout my talk.
4. **Soils** - Bag a shovel slice of soil from a stubble field, and soil from native range - compare the root development, the organic matter levels. Illustrate impact of erosion by removing the stubble, which leaves bare soil prone to blowing. Also illustrate the thin layer of organic matter on the soil surface. You can also illustrate sandy versus clay soils by putting them in different jars and pouring water on them to watch different rate of moisture penetration. Irrigation, salinity can be discussed here as well.
5. **Crops** - Bag (1 lb) seed of the major crops - wheat, barley, oats, canola, rye, triticale, flax, lentils, mustard, etc. Compare them. Match them with their plant form. Plants can easily be dried by inserting a sample in a file folder and placing it under a couple of heavy books. The sample will dry without losing its colour and the leaves will show their configuration if care has been taken to flatten a couple of leaves out in file folder. The dried plant specimen is then ready to insert in a labeled plastic bag for showing to your CAP class for years to come. It is helpful to show plants in flower for further student recognition in the field.
6. **Canola and Triticale** - These are two examples of agricultural research achievements. This is a good introduction to the importance of supporting agriculture research. Also illustrates importance of education. I ask the class "Where do scientists come from?" The answer of course is from schools, grade four students will eventually become scientists, lawyers, politicians, environmentalists, consumers, farmers and ranchers. They all affect agriculture; therefore it is important that they are informed about the impact of their actions on the future of the farm, and of the food supply.
7. **Fertilizers** - Examples can illustrate N P K, the three main crop nutrients. Manure can also be mentioned. This is also a place for green manure, and alfalfa as inoculated legumes fix nitrogen in the soil.
8. **Pest Control** - This follows naturally. I have numerous specimens of weeds, insects and diseased plants that raise much interest. Particular "hits" include a tomato hornworm, bertha armyworm, diamond back insects, cutworms, black widow spider, rusty grain beetles, giant water bugs, boxelder bugs, strawberry root weevils, grasshoppers, crickets. Canola taken from a field infested by army worms illustrates their negative impact.

In the weeds, it's easy to show the significance of wild oats, green foxtail, Canada thistle, toadflax, quackgrass, kochia, to name a few. Among the crop diseases, it is possible to find specimen of cereals affected by root rot, smutty or ergoty seed, crops deficient in nitrogen, canola affected by stem rot. I also discuss the impact of hail destruction, by showing a hailed crop specimen. This is where I also discuss the various pest control methods and it gives the class an opportunity to consider the pros and cons of chemicals. We usually have a short discussion about this.

9. **The Unusual Attracts - Rat Specimen** - I have a specimen of a Norway rat that I have presented in a jar for many years. I find that it is a hit with my classes and a useful way to end my presentation. It's an opportunity to address this major pest and our good fortune that Alberta is rat free. I also show a preserved salamander, which enables a short discussion about amphibians. Teachers are most cooperative in my presentations. They enable me to encourage the class to form a horseshoe around my work table where they can have a closer look at the samples that I show them.
10. **Farm Machinery** - Pictures of farm equipment can be shown throughout the talk as appropriate. They can be found at machinery dealers, in farm magazines, calendars, etc. I strive to give credit to my suppliers where I show their pictures. Machinery also leads to the numerous skills that a farmer must have to be successful. It can be expanded upon in the livestock sector.
11. **Livestock** - I have poster sized pictures of the various beef breeds, and a poster of a dairy farm, a ewe and her lamb, and a sow in a farrowing crate. Livestock associations were helpful in securing these pictures. Agricultural calendars are another source. Generally agri-businesses are very cooperative in putting together materials for a CAP talk. Materials to illustrate items made from beef and other livestock by products are easy to find around the house.
12. **Feeds** - Feed cost is a major cost of livestock production. Samples of prepared feeds and their ingredient tags can be obtained from feed mills. One can also bag rolled barley, alfalfa hay, grass hay, silage, native range (explain the various plants and their significance in feed value and growth persistence). I have a sample of a large round bale of barley greenfeed which had been baled too wet and heated. There is a striking difference in the parts taken from the outside, the middle and the central core of the bale. While the outside is yellow, the center is chocolate brown and smells like tobacco. One can also talk about the importance of balanced rations and the ingredients which go into them.
13. **Marketing** - This is an important topic, but more difficult to illustrate. One can relate the various occupations involved in the marketing process, i.e. the auctioneer, the trucker, showing related pictures. One can also mention the export destination of various agriculture products. A brief discussion of economics of farming can be done keeping in mind the level of student understanding.

Sample Volunteer Presentation #2 ...

by Rich Smith, Environmental Engineer

PARTNERS

To make a connection between agriculture and people involved, I wear multiple layers of clothing. On the bottom, I have jeans and a plaid shirt, clothes I often wear at work. The next layer is a suit to represent lawyers, bankers, accountants and producers at meetings. On top of the suit, I wear a lab coat for veterinarians and scientists. The top layer consists of the coveralls and rubber boots worn by people working in livestock facilities or processing plants. The children really enjoy the strip tease aspect of this illustration, especially when I get to the end and tell them not to let me take any more clothes off because I don't have anything underneath.

LAND

For the land segment, I created a Superman-like character called Super Soil. Super Soil is a heroic version of Sam Soil, a person who fights the evil force that would destroy our soils. I tell the children that I spend most of my time as Rich Smith, an agricultural engineer, but when I talk about soils; I slip into the nearest phone booth (or behind a portable blackboard in a classroom) and quickly change into Super Soil. My costume is very simple; a brown turtleneck, a black cape, a piece of paper with SS on it pinned to the shirt and a cap with soil conservation on it. I mention that my costume is in soil colours rather than the flashy red and blue of Superman. I cover most of the land material as Super Soil, talking about Wendy Water as my Lois Lane, pollution as my Lex Luthor and manure as one of my favorite foods. I always get quite a reaction to the last comment. I am fairly bald and can use my own head to show the effects of erosion on soil (nothing grows).

VISUAL AIDES AND PRESENTATION

Since I move around a lot myself, I don't use a large number of visual aides. I have found the Alberta Agriculture Conservation Farming and Water Management posters to be very helpful in explaining farming operations. I have a few pieces of toy farm equipment that I show the children and I also pass around bagged samples of grains and oilseeds. My silage sample sparked a lot of interest because the bag could not contain the smell.

I like to have a portable blackboard so I can put the posters on one side and write down the children's ideas on the other side. Turning the board around adds movement to the presentation. I have a few lame jokes about cows that my son told me when he was in grade two or three - the kids groan, but enjoy the break. Last year, I added a "rap" about agriculture to my presentation. When I got to the end of the clothes removal and the children had all agreed that I looked like someone involved in agriculture, I told them that they were wrong. I was actually a rap star: M. C. Agriculture, the CAP rapper.

Sample Volunteer Presentation #3 ...

by Don George, CAP General Manager

- I begin by introducing myself and asking “why is Agriculture important”?
 - You may get some interesting answers, but eventually they come around to food.
 - I then ask one or two of the kids what they had for breakfast or lunch that day. I then break that down to show that everything they eat comes from a farm or ranch. If a student says they had a peanut butter and jam sandwich, I say ok lets’ look at that. Where does the bread come from? The usually know this one, bread comes from wheat, the peanut butter comes from peanuts grown on a farm, the jam comes from fruit grown on a farm or orchard.
 - I finish this section by asking, “Can you name anything that you eat that does not come from a farm?” Most classes will say candy, which I respond that candy is almost all sugar and sugar is made in southern Alberta at the sugar factory in Taber and is made from sugar beets grown on the farm.
- Next I ask the kids if they like movies, and I show the DVD “Grow with Agriculture” available from the zone coordinators, both in DVD and memory stick format. It’s a good idea to tell the teacher ahead of time that you intend to show a video.
- After the video, I divide the class into 5 groups – again a good idea to let the teacher know your plan for doing this.
 - Each group is given a sample of grain, I use wheat, oats, barley and canola. The grain samples can be obtained from most country grain elevators. If you tell the manager why you want it, there is usually no cost. I also give each group a hand held magnifying glass, that I picked up at the dollar store.
 - I have also picked and mounted a plant of each type of grain. Allow the students to try and guess which seed belongs to which plant. Once the students have had some time to look at the sample I lead a discussion about what the grain is used for.
- I finish the presentation with a bag of byproducts from cattle.
 - Items in my bag include: lipstick, a football, dice, paint, gum, crayons, soap, an empty ice cream container, a bicycle tube, a box of Jell-O, a bag of marshmallows and tooth paste.
 - As I pull each item from my bag, I ask the students if this comes from cows. I put them in 2 piles depending on the consensus from the class. Once the bag is empty, I say actually everything here comes from cows.
 - I usually let each student have a couple of marshmallows.

Quick Facts About ALBERTA'S AGRICULTURE...

The following pages will provide you with information on **FUN FACTS, ENVIRONMENTAL ASPECTS, PRODUCTION and RURAL CONNECTIONS**

COMMODITY: BARLEY

FUN FACTS:

- Barley was a favorite grain of the ancient Egyptians, and the seafaring Vikings. Christopher Columbus brought barley to North America from Europe in 1493 and it has been cultivated here ever since. Barley was the staple food of the Roman Gladiators. The Latin name for barley is *Hordeum vulgare* and it derives directly from the Latin word for gladiators, *Hordearii*.
- Barley was one of the earliest cereals used for food.
- Barley is currently being studied for its many health benefits for people.
- Apart from its use in brewing, barley malt is commonly used for flavour and colour in many types of food products.

ENVIRONMENTAL ASPECTS:

- Farmers are maintaining sustainable production practices to ensure the continuing productivity of the land for future generations.
- Research is ongoing to find varieties that: adapt to environmental factors (e.g. drought, frost); are resistance to pests and diseases; have increased yields; have higher feed quality (livestock); have greater nutritional benefits (human consumption); and have improved processing and cooking traits.

PRODUCTION:

- Of the 10 to 11 million tonnes of barley produced in Canada each year, Alberta produces between 5½ to 6 million tonnes. Canadian production of barley ranks in the top 3 around the world.
- Almost every farmer in Alberta grows some barley in their regular crop rotations. There are 49,431 farms in Alberta, with a total farm population of 155,095. Our total provincial farm acreage covers an area slightly more than eight PEI's in size!

RURAL CONNECTIONS:

Alberta has a reputation for growing the best quality barley in the world. Barley is one of the main feed grains in Alberta and contributes enormously to the success of the livestock industry. Barley fed beef and pork are prized exports and rank among the best in the world for quality.

Barley is also a human food. Pot barley and pearl barley can be used in soups, stews, salads, casseroles and puddings. Barley flour can be used in baking. It also is a good source of energy and protein and provides many vitamins and minerals. Research has shown that barley can help regulate glucose levels in people with Type II diabetes, and it can lower blood cholesterol in people with high levels.

For more information go to:

www.albertabarley.com

COMMODITY: BEEF CATTLE

FUN FACTS:

How many gummi bears can you get from one beef animal? *Gummi bears are made from cattle?* Yes. It's true. The gelatin that goes into making gummi bears is made from the bone and hide of cattle. But it's certainly not the only ingredient that goes into the making of this popular gummi treat. So, to find the answer to the original question, University of Alberta Animal Science 200 students Casey Jacobs and Andrew Toma traded in their school books for cookbooks and did some experimenting of their own.

The students used the original gummi bear secret recipe and made a batch of gummi bears. Based on these experiments, the duo came up with a mathematical equation to answer their question. If a 600 kg beef animal nets 96 kg of bone and 36 kg of hide, 18.3 kg of pure gelatin can be produced. This translates into 73 kg of manufactured gelatin, which can be made into 500,412 delicious gummi bears – more than enough to satisfy your sweet tooth.

ENVIRONMENTAL ASPECTS:

- The beef cattle industry may have the closest connection to the environment of any livestock sector.
- The foundation of the Alberta beef industry is our vast area of grassland where grazing cattle convert forage into meat. Maintaining the health of these grasslands and protecting the water that flows through them are very important environmental issues for our industry.
- Our confined feeding operations require secure water supplies for the cattle to drink and for irrigation of the forage that the cattle eat. Producers recognize that the manure produced by these operations provides a good opportunity to recycle plant nutrients and organic matter into the soil, but also know that the manure must be managed carefully to protect the environment around these sites.
- The beef industry and our producers are well aware of the importance of protecting and enhancing our environment. We are involved in many initiatives designed to promote good stewardship of our air, soil, and water resources.

PRODUCTION:

There are approximately 26,500 beef cattle producers in Alberta (2009); Alberta has the most cattle of any province – there are 5.5 million head out of a Canadian total of 13.18 million (September 2009). Alberta finishes 65.4 % of the total Canadian fed cattle production (2009).

RURAL CONNECTIONS:

Veterinarians, auctioneers, butchers, grain producers, truck drivers

For more information go to:

www.albertabeef.org

COMMODITY: CANOLA OIL, SEED, MEAL

FUN FACTS:

- In some Mexico City grocery stores, small canola plants are sold in bunches to consumers, as treats for their pet finches or canaries.
- Canola oil can now be made into bio-degradable plastics at the University of Alberta.
- Cows fed canola meal (what is left over after crushing the oil from the seed) produce more milk than those fed other animal feeds.

ENVIRONMENTAL ASPECTS:

Farmers use thermometers to check the temperature of the soil so that the canola seeds can be planted in soil that is not 'too cold'. When seeds are cold they do not grow well, and sometimes, they do not grow at all.

Each spring, many canola farmers plant the canola seeds directly into the stubble (leftover dried plant stems from the previous year) to prevent the loss of the land's healthy top soil.

PRODUCTION:

- Hoola Hoops can be a great farming tool – by placing a hoola hoop on the ground, the farmer can count the number of plants inside the hoop and know whether there will be enough plants that in growing they will be able to protect themselves from weeds, and to protect the soil from blowing away.
- Bright, yellow pans are sometimes placed in the fields to attract the bugs that like to eat canola plants. The more bugs in the yellow pan, the more danger that there is for the canola plants.

RURAL CONNECTIONS:

- Canola provides the bright canola fields that colour the Alberta countryside and make visitors go 'Ah!' when they travel during the summer months.
- Alberta grows about 30% of the canola planted in Canada.
- Farmers can sell their canola to three crushing plants in Alberta – one in Lloydminster, another in Fort Saskatchewan, and another in Lethbridge. These plants will crush the canola seed to make canola oil.
- Farmers can also sell their seed to companies that will then sell it to companies in Japan, Mexico, the United States, China or Pakistan.

For more information go to:

www.canola.ab.ca

www.learncanola.com

COMMODITY: CHICKEN

FUN FACTS:

- chicken raised for meat are not the same type of chicken that produce table eggs;
- all Alberta producers follow the On-Farm Food Safety Assurance Program to ensure a safe, wholesome and nutritious product;
- fertilized eggs are shipped to hatcheries where the eggs are incubated and hatched into chicks;
- chicks are sold and quickly transported to poultry farms within 24 hours of being removed from their incubators;
- poultry barns are specially designed and controlled for ventilation, light and temperature;
- birds are carefully watched and kept warm during the first few weeks. As the birds grow feathers, the heat is gradually decreased in the barn;
- birds are allowed to move freely throughout the barn – cages are not used;
- birds can eat and drink at will. The poultry diet consists of cereal grains, protein and vitamin supplements. The use of growth hormones is strictly prohibited;
- mature birds are transported to a processing plant in specially equipped trucks to ensure swift and human transportation;
- after each flock of birds, the barn is totally cleaned and disinfected to prevent the spread of disease from one flock to another;
- the majority of Alberta chicken are processed at processing plants in Edmonton, Calgary, Lethbridge, and Wembley;
- every bird is inspected for health and wholesomeness by a federal inspector;
- 80% of chicken is sold fresh (not frozen);
- Refrigerated trucks deliver fresh, processed poultry everyday to local grocery stores.

ENVIRONMENTAL ASPECTS:

- Environmental Farm Plan

PRODUCTION:

- there are 273 certified chicken farms (2005)
- the average farm produces 189,000 chickens/year (2005)
- approximately 115 million kilograms of chicken is produced/year (2005)
- chicken broilers are chickens weighing an average of 2.21 kg
- roasters are larger chickens weighing an average of 3.16 kg

RURAL CONNECTIONS:

Industry partners include breeders, catchers, poultry specialists, feed companies, farm suppliers, veterinarians, processors, government inspectors, stores, restaurants, hotels, foodservice customers, and hatcheries.

For more information go to:

www.chicken.ab.ca

COMMODITY: DAIRY

FUN FACTS:

- Holstein cows are typically black and white, make up 95% of the Canadian dairy herd and originate from Holland.
- In a year, based on 305 milking days, an average dairy cow produces over 9,000 liters of milk - about 30 liters a day.
- Milk naturally contains 90% water.
- A cow drinks about 100 liters (about a bathtub full) of fresh water a day. Albertans drink almost 100 liters of milk per year
- Cows eat food that is very high in fibre. Partially-chewed food forms balls of cud the size of tennis balls (in the first of the cows four stomach compartments). When the cows are resting they bring the cud back up into their mouths and finish chewing it. Cows chew their cud for about 8 hours a day.
- Cows have four compartments to their stomachs: the rumen, reticulum, omasum and abomasums.
- As of December 1, 2017, there are 521 dairy farms and approximately 75,000 dairy cows in Alberta.
- Roughly 65,125 of those cows are being milked on any given day

Animal Care:

Responsible animal care is the number one priority of the dairy farmer. It's in the farmer's best interest to ensure that the cows are comfortable. Cows that are well cared for grow better, are healthier and produce more milk. The proper care of a dairy cow includes feeding, watering, providing shelter and monitoring their health and safety. In Alberta, the Alberta Farm Animal Care (AFAC) ensures that livestock industries work together for the responsible care of animals. Proaction is also a program across Canada that ensures high quality milk and excellent standards and practices.

PRODUCTION:

In order for a cow to make milk, she must first give birth to a calf. A heifer is a young cow that has not yet had a calf. When she is about 18 months old, the dairy farmer will breed her so that she will have a calf and then start to produce milk. All cows are bred so they have a calf once a year. Most dairy cows are bred using artificial insemination (A.I.). A.I. has been used since the mid 1950's to improve the overall health and milk production of the cow. It is not stressful for the cow. A cow is pregnant for approximately 280 days (nine months). Birth is a natural process and in most cases unaided by the dairy farmer. In rare cases farmers assist the cow if she is having difficulty. When the cow's udder is full, it is time for milking. On most farms cows are milked twice a day. Raw milk is picked up and transported by a milk hauler, who is also a licensed milk grader, and delivered to the dairy processing plants every two days.

RURAL CONNECTIONS: Some 3,000 people are employed directly by dairy producers. Dairy producers are dependent on veterinarians, auctioneers, feed companies, dairy processors, farm suppliers, animal nutritionists, grocery stores and restaurants, researchers. **For more information go to:**

<https://albertamilk.com/ask-dairy-farmer/>

Partner: Alberta Irrigation Districts Association (AIDA)

INDUSTRY SECTOR: IRRIGATION

FUN FACTS:

- Irrigation has been used in Alberta since the late 1880's.
- There are 13 irrigation districts in Alberta located within the South Saskatchewan River Basin.
- There is 578,000 hectares (1.4 million acres) of irrigated land within irrigation districts. This represents 82% of the irrigated land in Alberta and 70% of the irrigated land in Canada.
- Water is moved from diversions on source rivers to farmers' fields through 8,000 kilometers of canals and pipelines and 57 storage reservoirs.
- Irrigation districts rehabilitate distribution infrastructure by replacing canals with buried pipelines, lining canals and adding automated control structures and measuring sites. These actions reduce water lost to evaporation, seepage and operational spill.

PRODUCTION & ECONOMICS:

- Irrigation, carried out on only 4.7% of the province's cultivated land base produces 19% of Alberta's farm products.
- Irrigation annually contributes \$3.6 billion to provincial GDP.
- Over 50 different crop varieties are grown under irrigation, including high value crops such as potatoes, sugar beets, seed canola and sweet corn.
- Irrigation supports a large value-added processing sector, which in turn contributes \$1.7 billion to provincial GDP.

ENVIRONMENTAL:

- Between 2005-2015 the irrigation sector improved their conservation, efficiency and productivity by 48%.
- During the period 2005-2015 irrigation sector diversions decreased by 0.6 billion m³ resulting in a 26% increase in efficiencies. Water savings realized are a result of ongoing rehabilitation activities and on-farm investments in more efficient irrigation systems.
- In partnership with Ducks Unlimited almost 32,000 hectares (80,000 acres) of wetlands have been constructed within irrigation districts. The wetlands provide critical habitat to numerous wildlife species.

SOCIAL:

- Irrigation infrastructure supplies municipal water access for 50,000 residents of southern Alberta, including 50 rural communities.
- Irrigation storage reservoirs allow plenty of opportunities for water-based recreation including boating, swimming, and fishing.
- During periods of low water supply (drought), irrigation districts have committed to sharing water for human use and livestock sustenance.

RURAL CONNECTIONS:

Irrigation farmers and workers, irrigation district staff, consulting engineers, irrigation and farm equipment dealers, fertilizer and chemical suppliers, seed suppliers, food-processing facility workers.

COMMODITY: EGGS

FUN FACTS:

- Eggs are one of nature's most nutrient-dense foods. One large Grade-A egg contains 6g of protein and only 70 calories. Egg yolks are one of the few foods naturally containing Vitamin D.
- You can tell what a hen eats by the colour of the yolk. Yolk colour can range from pale yellow to deep orange. A light-yellow yolk signifies wheat was the main or only grain in the hen's diet, while a dark yellow yolk indicates corn was the main or only grain in the diet. Colour doesn't affect flavor, or nutritional value.
- The shell has 6,000-8,000 tiny pores, which allow air and flavors to pass through. A good reason for keeping eggs in their original egg carton in the fridge is to prevent any strong smells from cheeses, meats, onions, etc. from affecting the flavor of the eggs!
- The difference between white and brown eggs is just the colour of hen they're from. White eggs are from white-feathered breeds, while brown eggs come from brown-feathered breeds.

PRODUCTION:

- Alberta has more than 170 registered egg farmers who care for over 2 million hens, who in turn lay about 50 million dozens (or about 600 million) eggs a year.*
- Hens lay an average of about 300 eggs each year.
- Eggs available at grocery stores across the province are fresh, and almost all of them are from local egg farms right here in Alberta.
- Eggs in the grocery store are fresh! Most eggs get to the grocery store within 10 days of being laid.
- Food safety and animal welfare are top priorities for egg farmers. They work hard to ensure consumers get safe, fresh, high quality eggs, by following mandatory on-farm programs.
- Egg laying hens are housed a variety of ways in Canada. Every housing system is designed to provide a clean environment, fresh food and water, and protection from predators. Additionally, every indoor housing system provides consistent temperature, humidity and lighting. Canadian egg farmers are continuously seeking to improve the care and well-being of their hens.

ENVIRONMENTAL CONNECTIONS:

- Eggs are environmentally-friendly. After you finish eating the egg, you can use the eggshell for compost and reuse the egg carton for use in crafts, such as a container for growing plant seedlings.
- Egg Farmers of Alberta launched the Canadian egg industry's first environmental program in 2014. The Producer Environmental Egg Program (PEEP) is intended to help egg farmers better identify their impacts on the environment and facilitate the use of best practices. This will help to ensure that resources are being managed in a sustainable and environmentally responsible manner.

RURAL CONNECTIONS:

- Egg farming is an integral part of Alberta's agricultural sector. Egg farming families help feed Albertans, and are a vital part of many rural communities throughout the province.

*2015 Statistics

- Section #10 – Not all eggs are equal
- In general, the only factor that impacts the nutritional content of an egg is what the hen eats, not the housing system or quality of care
- In Canada, all eggs sold at retail go from the farm to a grading station, which is certified by the Canadian Food Inspection Agency, where they are washed, inspected, graded (weighed) and packaged – no eggs at retail are ever dirty or low quality
- The ‘bottom line’ statement about where the hen was raised having an effect on the quality (and nutritional content) of the eggs is simply incorrect

Section #11 – How to choose eggs for the best nutritional value

- Per above, how/where hens are raised has absolutely no impact on the quality of the egg or the egg’s nutritional content; the hen’s diet is the only factor that impacts nutritional content of the eggs they lay
- The use of steroids and hormones in the layer industry is illegal in Canada, and has been for decades – the casual comment about hens probably being treated with hormones is blatantly incorrect, at least in Canada
- As for antibiotics, they are very rarely used in the layer industry in Canada. If they are used to treat a sick flock, they are administered by poultry veterinarians, in compliance with the Canadian Food Inspection Agency. The eggs from those hens are not allowed to be sold until the veterinarian and CFIA confirm that residual antibiotics are no longer present in the eggs.
- Pastured eggs are typically called “free range” eggs in Canada.
- Omega-3 eggs can come from hens raised in any type of hen housing system in Canada, not just conventional cage systems.
- Once again, the ‘bottom line’ statement is incorrect, as only the feed has an impact on the nutritional content of eggs. Various studies in North America, as well as an independent study by a Canadian investigative journalism program (CBC’s Marketplace, back in 2016), regularly confirm this to be true. Free-range (pasture) eggs do tend to be slightly different, but that is due to the hens eating whatever they are able to find on the range (ie: bugs), and the differences are so insignificant that those eggs use the same nutritional labels as all other eggs (excluding omega-3 eggs and various vitamin-enhanced eggs, where feed modifications are deliberately used to alter the nutritional composition of those eggs).
- **For more information go to:** www.eggs.ab.ca

COMMODITY: PORK

Alberta Pork is a non-profit organization representing all of Alberta's hog producers. Alberta Pork educates the public about the pork industry, and represents producers' interests to the government, the industry, the media, and the general public.

FACTS:

- There are more than 650 pork producers in Alberta
- Pork is one of the most popular sources of meat in the market
- Alberta produces approximately 2.8 million pigs per year
- 1 million tons of pork is sold, 70% of this going to other countries (exported)
- Pigs don't actually like to be dirty; if they are kept outdoors they roll in the mud to protect their skin from insects, sun, and environmental factors. Some farmers house their pigs to protect them even further from these conditions
- Pigs grow very quickly bulking from 1kg at birth to 115kg in only 6 months
- The pig's fast reproductive and growth rate made them the ideal farm animal for settlers coming to Canada and is a popular source of protein around the world
- For every 1 kg of food that a pig eats, he gains a ½ kg
- Pigs weigh 54 kg 115 kg (280 lbs.) at market weight when they are about 6 months old. At this point they are considered an adult animal
- Pigs are omnivores (they eat both veggies and meat), in Alberta pigs are fed wheat and barley
- A sow produces 2.3 litters of pigs a year, average 12 piglets per litter
- Pigs have an incredible sense of smell, even better than dogs
- There are more than 400 breeds of pigs
- Pigs come in all colours, sizes, and patterns

TERMS:

BOAR intact male hog, **BARROW** neutered male pig, **SOW** female which has had at least one litter of piglets, **MARKET** or **FINISH HOG** a pig that weighs between 220 and 20 lbs. and is approximately 6 months old, **FARROW** to give birth to piglets, **FEEDER PIG** young pigs 6-10 weeks old being raised for pork, **GILT** young female pigs that have not yet produced a litter, **HOG** a pig that weighs at least 120 pounds, **LITTER** all of the offspring from a single farrowing, **RUNT** small or weak pig in a litter, **SWINE** term used for all pigs

ENVIRONMENTAL ASPECTS:

- Hog manure is used as a great fertilizer for farming, it acts like a multi-vitamin for the soil and supplements the crops that they grow.
- All producers have a manure management plan that supports other farms in the community.

PRODUCTION:

- Bio-security is extremely important in the hog industry. Just like us, animals can get sick. Bio-security protects our pigs by making sure no diseases come to the barn.

RURAL CONNECTIONS:• Alberta pork producers are a part of the rural community and help directly, and indirectly create jobs across Canada such as: transportation, grain farmers, barn workers, veterinarians, butchers, production plant workers, packers, pork specialists, farm suppliers, restaurants, hotels, foodservice customers, auctioneers, scientists, and researchers.

COMMODITY: PULSES (Peas, Lentils, Dry beans, Faba beans, and Chickpeas)

FUN FACTS

- Pulse is a Latin word that refers to the edible seeds of legumes, like lentils, beans, peas and chickpeas.
- Pulses help build the quality and productivity of the soil.
- 90% of peas are marketed as human food (largest export markets are India and China).
- Peas are also a good food source for pigs, cattle and chickens.
- Most of the lentils and dry beans are consumed as human food, with a majority being exported.
- Pulses have high fibre and are low in fat content. They are very healthy and excellent for gluten-free, diabetic and vegetarian meals.
- Pulses can help lower cholesterol.
- Athletes should eat more pulses because research shows it improves endurance and energy levels.

ENVIRONMENTAL ASPECTS

- Pulses (also referred to as legumes) are unique among grain crops in their ability to partner with certain soil bacteria to take nitrogen, an essential plant nutrient, from the air and turn it in to a form that can be used by plants and may leave extra nitrogen in the soil for the following crops.
- Pulses play a key role in improving soil quality.
- Pulses enhance and improve soil bio-diversity.
- Pulses reduce the dependency on chemical fertilizers.
- Pulse crops have a lower carbon footprint than most other crops grown on the prairies.

PRODUCTION

- Canada is the world's largest exporter of pulse crops.
- It is estimated that pulse production returned approximately \$135 million farm-gate to agriculture in Alberta in 2008.
- In 2016, over 2 million acres of pulses were grown in Alberta.

RURAL CONNECTIONS

- There are approximately 4700 producers in Alberta that grow pulse crops.
- Numerous private and coop grain buyers, traders, and processors.
- There are similar grower organizations across Canada including the Manitoba Pulse & Soybean Growers, Saskatchewan Pulse Growers, Ontario Bean Growers, Pulse Canada and the Canadian Special Crops Association. Pulse Canada helps to look for trade partners' worldwide.

For more information go to:

www.pulse.ab.ca

Alberta Veterinary Medical Association

FUN FACTS:

Veterinarians ensure that animals are healthy and happy. There are close to 1,000 veterinarians working in over 400 veterinary hospitals in Alberta. Over 157 of those hospitals are directly involved with livestock agriculture.

ENVIRONMENTAL ASPECTS:

- Veterinarians provide a comprehensive range of services that prevent problems with the health of livestock which in turn keeps the environment safe of disease and contamination. Many serious diseases can be prevented with an optimum disease prevention program. Each herd's requirements are unique, and require a customized program that a veterinarian can help to develop. Internal and external parasites including the irritation of face and horn flies pose significant problems in cattle herds. The parasites vary from area to area and control programs are customized by veterinarians for individual situations.
- Laboratory services are provided by veterinarians to help diagnose medical problems quickly and efficiently. A post mortem is carried out by veterinarians to determine the cause of death, and allow the producer to determine if the death could have been prevented, or if it poses a disease threat to the rest of the herd and perhaps contamination of the environment. Veterinarians are responsible for the appropriate disposal of dead animals so as not to contaminate the environment.

PRODUCTION:

- Recent studies show that animals that are treated humanely are better producers. Veterinarians are active in animal welfare, participating in organizations such as the Animal Farm Animal Care Association (AFAC) and the Alberta Society for the Prevention of Cruelty to Animals (ASPCA).
- Managing the overall health of a herd can often be the difference between a marginal operation and a highly successful one. Veterinarians offer comprehensive management services and advice about: Early Pregnancy Diagnosis, Bull Evaluations, Calf Scours Prevention, Nutrition, Herd Record Keeping and Data Analysis, Disease Prevention, Implant Programs, Parasite and Pest Control, and Selection Assistance with the purchasing of animals.

RURAL CONNECTIONS:

Alberta veterinary hospitals provide 24-hour service for all patients. When an emergency occurs, the farmer will receive a quick response and an accurate diagnosis will be provided when he or she has a regular working relationship established with a veterinarian. Many people living and working in the rural areas of Alberta have close connections with their veterinarian.

For more information go to:

www.abvma.ab.ca

COMMODITY: Wheat

The Dirt on wheat:

- Wheat is the third largest production crop in the world and the largest crop grown in Canada.
- Wheat is grown on approximately 6.8 million acres of land in Alberta and 24 million acres in Canada.
- Alberta produces 8.3 million tonnes of wheat annually.
- Alberta farmers grow both spring and winter wheat.
- Alberta's wheat feeds consumers both internationally and at home.
- Farmers seed wheat in the spring and harvest it in the fall.
- Wheat is the largest crop in Canada with approximately 24 million acres grown each year and 6.8 million of those wheat acres are grown in Alberta.
- There are more than 14,000 wheat farmers in Alberta.
- Wheat is a common ingredient in many of the foods we know and love! We often have wheat in our kitchens in the form of flour.
- Pasta is made from a specific type of wheat called "durum." Durum is grown in Southern Alberta.
- Farmers use big machines called "combines" to harvest wheat.
- Wheat is one of the many types of grains.
- When wheat starts to grow, it is actually green in colour! It eventually turns to gold in the heat of the summer sun.

Wheat growing season:

- Spring wheat is planted in early May and takes approximately 100-120 days to grow.
- Farmers use a **seeder** to plant the seeds in straight rows while fertilizing the land at the same time, adding nutrients into the soil that will help to grow healthy wheat.
- In June, wheat starts to sprout up from the ground. It requires substantial rainfall to stimulate growth. Into July, the "**head**" of the wheat where the seeds are stored starts to come out – the seeds are the most important part of wheat because they eventually turn into our food. In August, wheat starts to turn from green to gold in the heat of the summer sun.
- **Harvest** starts around August/September, depending on the farmer's location in Alberta and what the weather was like that season. **Combines** are used to cut the wheat off the field and separate the seeds from the **chaff**.
- Farmers store their wheat in **grain bins** on their farms until its ready to be sold. The wheat is then loaded onto trucks through an **auger** and hauled off to a grain elevator.

At the grain elevator:

At the elevator the farmer and grain company work together to sell the wheat to mills that will to make it into flour. From there, Alberta's wheat is purchased through both domestic and internal markets to be used as a common ingredient in many of the foods we know and love.

For more information go to:

www.albertawheat.com

COMMODITY: TURKEY

FUN FACTS:

- A baby turkey is called a POULT, a male turkey is called a TOM, a female turkey is called a HEN, a group of turkeys is called a FLOCK;
- Turkeys are raised in specially designed barns with carefully controlled temperature and ventilation. A proper climate is always maintained to ensure maximum comfort level for the birds;
- The birds have access to food and water at all times, they are fed a healthy diet of corn, soybean meal, wheat and other ingredients as well as vitamins and minerals;
- The 'gobble, gobble' sound is a season call (Spring and Fall) that only the adult male turkey makes;
- The female turkey makes a soft clucking sound, and never gobbles;
- Male turkeys love to gobble when they hear loud sounds, they also love to gobble when they settle in for the night;
- A gobbling turkey can be heard a mile away on a still day;
- Turkeys have great hearing – but no external ears;
- Turkeys have a wide field of vision (270 degrees) and they can see colours;
- Turkeys have a poor sense of smell but have an excellent sense of taste;
- Charles Dickens' The Christmas Story is credited for popularizing the serving of turkey for Christmas dinner;
- Turkey is an excellent source of protein and is available in your local grocery store year round in a variety of cuts as well as the whole bird.

MARKETING:

- The turkey industry operates under a uniquely Canadian marketing system called Supply Management;
- With Supply Management, farmers and processors work together to match what is grown, processed and marketed with what consumers need and want;
- Supply Management ensures local food production and ensures that farmers receive their returns from the marketplace without relying on subsidies or taxpayer dollars;
- When farmers receive a fair return, this allows them to re-invest in their farms and investment helps ensure that Canadians enjoy safe, high quality turkey products at good prices year round, from Canadian farms.

PRODUCTION:

- Turkeys are marketed between 11 and 17 weeks of age;
- Turkeys are transported to a processing plant in specially equipped trucks to ensure swift and humane transportation;
- The majority of Alberta's turkey is processed at processing plants located in Edmonton and Lethbridge;
- Every bird is graded for quality and inspected for health by an inspector of the Canadian Food Inspection Agency.

RURAL CONNECTIONS:

- There are 28 licensed turkey farms in Alberta;
- Approximately 19 Million kilograms of turkey is produced per year in Alberta.

For more information, go to: <https://ab.canadianturkey.ca/>

Membership List:

Agriculture for Life

Ph: 1-888-931-2951

agricultureforlife.ca

Alberta Barley Commission

Ph: 403.219.6261

albertabarley.com

Alberta Beef Producers

Ph: 403-275-4400

albertabeef.org

Alberta Canola Producers Commission

Ph: 780-454-0844

canola.ab.ca

learncanola.com

Alberta Chicken Producers

Ph: 780-488-2125

chicken.ab.ca

Egg Farmers of Alberta

Ph: 403-250-1197

eggs.ab.ca

Alberta Pulse Growers Commission

Ph: 780-986-9398

pulse.ab.ca

Alberta Veterinary Medical Association

Ph: 780-489-5007

abvma.ca

Alberta Irrigation Projects Association

Ph: 403-328-3063

Alberta Milk

Ph: 877-361-1231, 3327

moo2you.ca

Alberta Pork

(780) 474-8288

albertapork.com

Alberta Institute of Agrologists

Ph: 780-435-0606

albertaagrologists.ca

Alberta Turkey Producers

Ph: 780-465-5528

Ab.canadianTurkey.ca

Alberta Wheat Commission

Ph: 855-917-3711

albertawheat.com

Eastern Irrigation District

Ph: 403-362-1400

eid.ca