

# Finding Alberta Beef



Places, Spaces and Stories  
about Beef Cattle Farming  
and Ranching in Alberta for  
Elementary Classrooms

Grade 2/Grade 3

TEACHING RESOURCE

Making Connections to Land  
and Environments



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The **Finding Alberta Beef** teaching resources provide curriculum-based activities and supports for a mini-unit that focuses on the contributions and vitality of agriculture in Alberta. Activities encourage students to explore cattle farming and ranching in Alberta. From family farms and ranches, passed down through generations, to new, state-of-the-art feeding and breeding operations, Alberta's farmers and ranchers are proud of their industry.

The many authentic photos and stories used in these learning resources share the land, resources, experiences and stewardship that are part of Alberta cattle farming and ranching families.

It is our hope that students develop understandings of the ways of life involved in raising cattle and contributing to Alberta's and Canada's food system while respecting the different choices that people make about their food. Alberta Beef Producers is proud to support education and provide the **Finding Alberta Beef** resources for teachers and students in Kindergarten to Grade 5 Social Studies, Science and Health/Wellness programs.

The **Finding Alberta Beef** elementary resources were conceptualized and developed for Alberta Beef Producers by the education experts and design team at **InPraxis Learning**, led by:

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Alberta Beef thanks our teacher reviewers, who provided valuable suggestions and feedback during the development of the **Finding Alberta Beef** program resources.

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Alberta Beef also thanks the cattle farmers and ranchers who have shared stories and photos that are used in these resources.

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Readers should be aware that Internet websites offered as citations and/or sources for further information may have changed or disappeared between the time this was written and when it is read. Teachers are cautioned that all websites listed in this resource should be checked for appropriateness and suitability before being provided to, or used with, students.

Every effort has been made to acknowledge sources used in the **Finding Alberta Beef** resources. In the event of questions arising as to the use of any material, we will be pleased to make the necessary corrections in future versions.



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# contents

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## introduction..... 5

Find an overview of the general outcomes supported by this resource on page 6 or by [clicking here](#).

## how to use this resource..... 7

Using the **Finding Alberta Beef** features..... 7

Find out about features in this resource that include meeting diverse student needs, building competencies and assessment strategies on page 7 or by [clicking here](#).

Preparing to integrate this mini-unit..... 8

Preparing the **Finding Alberta Beef** infographic and template..... 10

Find advance preparation suggestions on page 8 or by [clicking here](#).

## meeting curriculum needs..... 11

Specific learning outcomes, competencies, literacy and numeracy charts..... 12

[Click here or go to page 12 to find charts for tracking specific learning outcomes supported by the activities for the guiding question](#), How are farmers and ranchers connected to land and place?

[Click here or go to page 14 to find charts for tracking specific learning outcomes supported by the activities for the guiding question](#), Where does our food come from?

[Click here or go to page 16 to find charts for tracking specific learning outcomes supported by the activities for the guiding question](#), How do beef cattle grow in their environment?



### **Finding Alberta Beef**

provides a mini-unit that can be integrated into Alberta Social Studies, Science and Health/Wellness curriculum. This resource is focused on the cattle farming and ranching industry in Alberta.

Those students who do not eat beef or other meats for personal, cultural or religious reasons can be asked to focus on examples of plant-based agriculture as a point of comparison. Students can be asked to consider how all types of agriculture are important human activities. Consider student and family sensitivities when making decisions about using or adapting these activities.

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assessing student learning..... 19

[Click here or go to page 20 to find learning checklists for four groups of criteria statements: building understanding, researching and creating, expressing and sharing and working together.](#)

teaching and learning activities..... 23

How are farmers and ranchers connected to land and place?..... 24

[This guiding question encourages students to explore ways that individuals and communities are connected to the land and places through human activities and ways of life. Click here to go to the activities that support this guiding question.](#)

Features and Activities..... 24

Stories of Place..... 27

Responsibility Boards..... 30

Where does our food come from?..... 31

[This guiding question asks students to investigate the benefits that result from agriculture, including our food supply. Students make connections to explore where healthy food choices come from. Click here to go to activities that support this guiding question.](#)

Benefits Bubble Map..... 31

Shop for a Meal..... 33

Food Labels..... 34

How do beef cattle grow in their environment?..... 36

[This guiding question asks students to investigate the characteristics and life cycle of beef cattle and explore how agricultural environments help them meet their needs. Click here to go to activities that support this guiding question.](#)

Growth and Change..... 36

Weigh Scale Posters..... 37

Meeting Needs..... 38

teacher background notes..... 41

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# introduction

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Over the course of the school year and across different subject areas, students explore topics and concepts that are connected in one way or another to agriculture. The food production system and its implications for nutritional health and well being, rural communities and ways of life, and the use of resources and industries that produce, move and trade products are all part of daily lives.

For generations, Canadians have had access to a nutritious, safe and affordable food supply and consumer products. These products have their roots on Alberta's farms and ranches and are a result of the vitality and importance of agriculture. Agriculture involves food production, research, transportation infrastructure, government policy and sound environmental practices.

The **Finding Alberta Beef** resources provide integrated mini units that centre on the importance of agriculture, specifically the impact that beef production has on Canadian and Alberta communities, individuals and quality of life. These resources are designed to support the competencies and specific learning outcomes in Alberta's **elementary Social Studies, Science and Health/Wellness** programs of study. Many activities also reinforce **literacy** and **numeracy** skills. This resource supports learning in **Grade 2 and Grade 3 Social Studies, Science and Health/Wellness**.

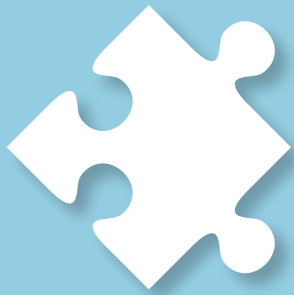


## COMPONENTS

**Finding Alberta Beef for Grade 2 and Grade 3** includes the following components:

- **Finding Alberta Beef**  
Grade 2/Grade 3  
Teaching Resource
- **Making Connections to Land and Environments**  
Grade 2/Grade 3 Student  
Learning Pages
- **Finding Alberta Beef** Grade 2/Grade 3  
Infographic

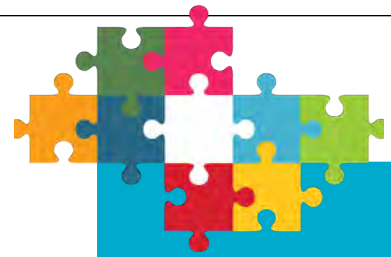




This **Finding Alberta Beef Grade 2/Grade 3** resource meets **general outcomes and benchmark skills** in Social Studies, Science and Health/Wellness programs of study, the competencies and literacy and numeracy. These resources also have been developed to provide support to learning outcomes identified in the Alberta Education Draft K-4 curriculum and will be updated as this curriculum progresses.

| Grade 2  | Grade 3   |
|--|---|
| <p><b>Social Studies 2.1: Canada's Dynamic Communities</b><br/>Students will demonstrate an understanding and appreciation of how geography, culture, language, heritage, economics and resources shape and change Canada's communities.</p> | <p><b>Social Studies 3.1: Communities in the World</b><br/>Students will demonstrate an understanding and appreciation of how geographic, social, cultural and linguistic factors affect quality of life in communities in India, Tunisia, Ukraine and Peru</p>                                 |
| <p><b>Science Topic A: Exploring Liquids</b><br/>2-5 Describe some properties of water and other liquids, and recognize the importance of water to living and nonliving things</p>   | <p><b>Science Topic E: Animal Life Cycles</b><br/>3-10 Describe the appearances and life cycles of some common animals, and identify their adaptations to different environments<br/>3-11 Identify requirements for animal care</p>   |
| <p><b>Health/Wellness Choices</b><br/>W-2.5 Classify foods according to Canada's Food Guide, and apply knowledge of food groups to plan for appropriate snacks and meals</p>   | <p><b>Health/Wellness Choices</b><br/>W-3.5 Apply guidelines from Canada's Food Guide to individual nutritional circumstances; e.g., active children eat/drink more<br/>W-3.3 Examine that individuals grow through similar stages of development at different rates and at different times</p> |

| Grade 2  | Grade 3   |
|--|---|
| <p>Critical thinking and creative thinking<br/>Geographic thinking<br/>Decision making and problem solving<br/>Research and information<br/><br/>Oral, written and visual literacy<br/><br/>Media literacy</p>   | <p><b>Grade 2/3 Social Studies Benchmark Skills</b><br/>Evaluate ideas and information from different points of view<br/>Create and use a simple map to locate communities studied in the world<br/>Apply new ideas and strategies to contribute to decision making and problem solving<br/>Make connections between cause-and-effect relationships from information gathered from varied sources<br/><br/>Organize and present information, such as written and oral reports, taking particular audiences and purposes into consideration<br/><br/>Compare information on the same issue or topic from print media, television, photographs and the Internet</p> |
| <p><b>Grade 2 Science Inquiry</b><br/>2-1 Investigate, with guidance, the nature of things, demonstrating an understanding of the procedures followed<br/>2-2 Recognize pattern and order in objects and events studied; and, with guidance, record procedures and observations, using pictures and words; and make predictions and generalizations, based on observations</p> | <p><b>Grade 3 Science Inquiry</b><br/>3-1 Investigate the nature of things, demonstrating purposeful action that leads to observations and inferences<br/>3-2 Identify patterns and order in objects and events studied; and, with guidance, record observations, using pictures, words and charts; and make predictions and generalizations, based on observations</p>   |



# how to use this resource

This **Finding Alberta Beef Grade 2/Grade 3** Teaching Resource encourages students to explore and build understandings around three guiding questions:

- **HOW ARE FARMERS AND RANCHERS CONNECTED TO LAND AND PLACE?**
- **WHERE DOES OUR FOOD COME FROM?**
- **HOW DO CATTLE GROW IN ALBERTA ENVIRONMENTS?**

Teaching and learning activities provide students with the opportunity to learn more about agriculture, and the cattle and beef production industry, in a context that is curriculum-relevant and connected to their daily lives.

Student learning sources are organized around conceptual knowledge and understandings. Each learning source is focused on one of the twelve conceptual learnings, and provides illustrative examples and individual, group or whole class learning activities.

Teaching and learning activities support learning outcomes in Social Studies, Science and Wellness curriculum as well as the competencies, literacy and numeracy. A [curriculum overview](#) is provided on [pages 11 to 17](#).

## using the **Finding Alberta Beef** features

The teaching and learning activities in this resource are supported by the **Finding Alberta Beef Learning Pages** and **Infographic**.

**Learning Pages** provide suggestions and active learning strategies to reinforce, connect, extend and focus learning on cattle and beef production in Alberta communities, beef as a nutritious food choice and the ways that agriculture is part of people's daily lives.

## CONCEPTUAL LEARNING

### ONE

People have connections to the land.

### TWO

The activities of farmers and ranchers are connected to the environment.

### THREE

Cattle are recyclers.

### FOUR

Farmers and ranchers take actions to protect land and places.

### FIVE

The activities of farmers and ranchers provide benefits for people.

### SIX

Foods come from farming and ranching.

### SEVEN

Nutrition information comes from food labels.

### EIGHT

People make different choices about the food they eat.

### NINE

Living things grow and change.

### TEN

Cattle have a life cycle.

### ELEVEN

Cattle depend on the environment to live and grow.



## FINDING ALBERTA BEEF INFOGRAPHIC

The **Finding Alberta Beef Infographic** provides a series of puzzle pieces with images, words, phrases and sentences. These puzzle pieces connect to the activities in the **Learning Pages**.



## USING DIGITAL FORMATS

Some sections in this teaching guide and many student learning pages include fillable fields. These fillable fields allow learning pages to be completed digitally and saved in shared classroom folders. To use fillable PDFs, students will need PDF readers on their computers or devices. **Adobe Reader** is a free download or app. PDF files stored in **Google Drive** folders provide an option to open the PDF and use the fillable fields with **Lumin PDF**. Go to [www.luminpdf.com](http://www.luminpdf.com) for more information.

The following features are found throughout the teaching activities in this resource.



**BUILD COMPETENCIES** sidebars highlight opportunities to reinforce the competencies, literacy and numeracy in the context of subject-centred learning activities.



Suggestions for meeting the different learning needs of students are provided in the **MEET DIVERSE LEARNING NEEDS** feature. These suggestions include approaches that can be used to meet different grade level learning outcomes.



The **ASSESS LEARNING** features provide strategies for formative and summative assessment of student learning. These strategies can be used with the **Finding Alberta Beef Learning Checklists** provided in the **assessing student learning** section on **pages 19 to 21**.



**TEACHER NOTES** are also provided throughout the teaching and learning activities section of this resource. These include references to additional sources, background notes and teaching tips.

**TEACHER BACKGROUND** on cattle ranching and beef production is provided on **pages 41 to 49** of this resource. The background information provides additional support for implementing the learning activities throughout this resource.

## preparing to integrate this mini unit

Consider the following suggestions for integrating the **Finding Alberta Beef Learning Pages** and **Infographic** into the learning process.

- Display the PDF version of the **Learning Pages** and **Infographic** on an interactive whiteboard or with a document camera.
- Provide small groups of students with a group copy of the **Learning Pages** and **Infographic**.
- Work with the class in circle time using a print copy of the **Learning Pages** and **Infographic**.
- Provide the **Learning Pages** and **Infographic** as a learning centre activity.

**Review the teaching and learning activities that follow and select or adapt those that best meet the needs of your students.**





Select and prepare the **Finding Alberta Beef Learning Pages** for students. The **Learning Pages** can be printed or copied for individual, partner or small group learning. They have been designed for use with both Grade 2 and Grade 3 students. Suggestions for targeting specific grade levels are provided with the teaching activities.

Some of the **Learning Pages** include cards that can be cut out and laminated in advance for students. These cards can be prepared as a permanent class set.

Start a picture collection of visuals, photographs and illustrations that represent urban and rural communities, cattle farms and ranches, beef production and food products. Include different types of illustrations related to healthy activities and food choices from **Canada's Food Guide**, collected from magazines, advertisements or Internet sources, including vegetables and fruits, protein foods and whole grain foods.



## SUPPORTING RESOURCES

Additional information and resources on **Canada's Food Guide** can be found on the **Health Canada** website at <https://food-guide.canada.ca/en/>.

Some education websites can provide clip art of different types of foods. For example, **Pics4Learning** provides a section containing free food images at [www.pics4learning.com](http://www.pics4learning.com).

A variety of authentic photos from Alberta cattle farms and ranches are provided throughout all **Finding Alberta Beef** resources, including many **photo cards** that can be cut out and shared with and by students. All grade levels can be accessed on the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources).

## preparing the infographic and template



The **Finding Alberta Beef Infographic** is provided in formats that allow you to print it double or single-sided on 8.5 x 11 paper or on 11 x 17 paper.

Please see the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources) to find PDF versions of letter and tabloid sized infographics. You may also choose to shrink and print the tabloid version in landscape format on 8.5 x 11 paper. Both formats can be printed and folded in half to create a mini-booklet for students.



The **Finding Alberta Beef Infographic** template can be used by students to create illustrations or use the fillable fields to write their own text. Blank areas in the template, as well as individual puzzle pieces, include these fillable fields.

Alternatively, students can be encouraged to create infographics with their own illustrations or by cutting and pasting photos they find from various sources.

The template can be printed on 11 x 17 paper or on two 8.5 x 11 pages. Please see the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources) to find a PDF version of the infographic template.



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# meeting curriculum needs

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This section provides an overview of the guiding questions and activity focus supported by this resource. Guiding questions and the activities support specific learning outcomes in **Social Studies**, **Science** and **Health/Wellness** programs of study. Outcomes from **Alberta's Literacy and Numeracy Progressions** are also identified with each guiding question. The checklist format allows you to monitor and identify those learning outcomes you cover with the activities you select.

It is important to note that cattle are raised to provide food for people. They are not pets. Consider ways to address questions that students may have:

- In the activities that students do, ensure that time is provided to discuss the differences between raising animals and plants for human consumption and those kept as pets.
- Discuss ways to respect the different choices that people make about their food sources. For example, people from some cultures consume foods that other cultures may not find appealing.
- Explore the ways that people who raise animals for human consumption ensure that the animals are well cared for and respected for their importance in providing nutritious and safe food sources. Explore ways that farmers also protect the environment.



Please use caution with students who are not ready to make the connection that beef comes from cattle. Be respectful of student's food choices and their dietary preferences, needs, cultural and family traditions.

**We encourage you to review and select teaching activities most suitable for your students. We also suggest you integrate sources of information that also reflect alternative dietary choices, such as vegetarian or vegan, or that respect cultural choices and traditions that avoid meat if appropriate for your students.**



Specific learning outcomes from **Grade 2** and **Grade 3** Alberta programs of study are supported by the activities for each of the three guiding questions in this resource.

## 1 HOW ARE FARMERS AND RANCHERS CONNECTED TO LAND AND PLACE? COMPETENCIES



In this guiding question, students **manage information** to build understandings of land and places and apply **critical thinking** to make comparisons and determine patterns and relationships. They focus on **personal growth and well-being** by making connections to Alberta farming and ranching communities and develop **collaboration** and **communication** skills by working and sharing in groups.

- Students explore connections between the natural environment and human activities in prairie communities, specifically those involving cattle farming and ranching.
- Students develop understandings of economic characteristics in prairie communities, focusing on natural resources, occupations and goods and services involved in agriculture.
- Students share ideas about and demonstrate responsibility for natural and human-made environments.

| CONCEPTUAL KNOWLEDGE  | PROCEDURAL KNOWLEDGE   | LITERACY AND NUMERACY  |
|---|--|--|
| <p><b>GRADE 2 Social Studies</b></p> <p><b>2.1.1 Appreciate the physical and human geography of the communities studied:</b></p> <p>Appreciate how a community's physical geography shapes identity (I, LPP)</p> <p>Appreciate the diversity and vastness of Canada's land and peoples (CC, LPP)</p> <p>Value oral history and stories as ways to learn about the land (LPP, TCC)</p> <p>Demonstrate care and concern for the environment (C, ER, LPP)</p> <p><b>2.1.2 Investigate the physical geography of an Inuit, an Acadian, and a prairie community in Canada by exploring and reflecting the following questions for inquiry:</b></p> <p>What geographic factors determine the establishment of each community (e.g., soil, water and climate)? (LPP, TCC)</p> <p>How does the physical geography of each community shape its identity? (CC, I)</p> <p><b>2.1.4 investigate the economic characteristics of communities in Canada by exploring and reflecting upon the following questions for inquiry:</b></p> <p>What kinds of natural resources exist in the communities (e.g., fishing, agriculture, mining)? (ER, LPP)</p> | <p><b>GRADE 2 Social Studies</b></p> <p><b>2.5.1 Develop skills of critical thinking and creative thinking:</b></p> <p>Compare and contrast information from similar types of electronic sources, such as information collected on the Internet</p> <p><b>2.5.3 Develop skills of geographic thinking:</b></p> <p>Use a simple map to locate communities studied in Canada</p> <p><b>2.5.7 Apply the research process:</b></p> <p>Participate in formulating research questions</p> <p>Access and retrieve appropriate information from electronic sources for a specific inquiry</p> <p>Organize information from more than one source</p> <p>Draw conclusions from organized information</p> <p><b>2.5.8 Demonstrate skills of oral, written and visual literacy:</b></p> <p>Create visual images for particular audiences and purposes</p> <p>Display data in a problem-solving context</p> | <p><b>DIVISION I LITERACY</b></p> <p><b>Develop Questions</b></p> <p>Through guided activities, students determine a purpose and develop questions to explore topics and search for useful sources of information.</p> <p><b>Background Knowledge</b></p> <p>Students make connections to their background knowledge to support understanding of a new idea or topic.</p> <p><b>Vocabulary</b></p> <p>Students use an increasing amount of high-frequency vocabulary and acquire new vocabulary related to learning experiences (e.g., describe, compare, life cycle, province).</p> <p><b>Purpose</b></p> <p>Students organize texts for different purposes (e.g., to inform, persuade or entertain).</p> |

| CONCEPTUAL KNOWLEDGE   | PROCEDURAL KNOWLEDGE   | LITERACY AND NUMERACY  |
|--|--|--|
| <p><b>GRADE 2 Social Studies</b></p> <p>What are the occupations in each of the communities? (ER)</p> <p>What kinds of goods and services are available in the communities? (ER)</p> <p>What impact does industry have on the communities (i.e., agriculture, manufacturing)? (ER, LPP)</p>  | <p><b>GRADE 2 Social Studies</b></p> <p><b>2.S.9 Develop skills of media literacy:</b></p> <p>Identify key words from gathered information on a topic or issue</p> <p>Compare information on the same topic or issue from print media, television and photographs</p>  | <p><b>DIVISION 1 NUMERACY</b></p> <p><b>Magnitude</b></p> <p>Students interpret and compare quantities expressed as whole numbers in their environment.</p> <p><b>Using Numbers</b></p> <p>Students use numbers to indicate position or value in their environment (e.g., first, second, third, currency, music notes).</p>  |
| <p><b>Grade 3 Social Studies</b></p> <p><b>3.1.1 Appreciate similarities and differences among people and communities:</b></p> <p>Demonstrate an awareness of and interest in the beliefs, traditions and customs of groups and communities other than their own (CC)</p> <p><b>3.1.2 Examine the social, cultural and linguistic characteristics that affect quality of life in communities in other parts of the world by exploring and reflecting upon the following questions for inquiry:</b></p> <p>How does the physical geography influence the human activities in the communities (e.g., availability of water, climate)? (CC, LPP)</p> <p><b>3.1.4 Examine economic factors that shape communities in other parts of the world by exploring and reflecting upon the following questions for inquiry:</b></p> <p>What are the main goods and services produced by the communities studied (i.e., agricultural activities, manufacturing activities)? (ER, GC)</p> <p>What goods and services do the communities import from and export to other parts of the world? (ER, GC)</p> | <p><b>Grade 3 Social Studies</b></p> <p><b>3.S.1 Develop skills of critical thinking and creative thinking:</b></p> <p>Evaluate ideas and information from different points of view</p> <p>Compare and contrast information from similar types of electronic sources, such as information collected on the Internet</p> <p><b>3.S.3 Develop skills of geographic thinking:</b></p> <p>Create and use a simple map to locate communities studied in the world</p> <p><b>3.S.4 Demonstrate skills of decision making and problem solving:</b></p> <p>Support proposed ideas, strategies and options with facts and reasons</p> <p><b>3.S.7 Apply the research process:</b></p> <p>Make connections between cause-and-effect relationships from information gathered from varied sources</p> <p>Organize information from more than one source</p> <p>Process information from more than one source to retell what has been discovered</p> <p>Draw conclusions from organized information</p> | <p><b>Patterns and Relationships</b></p> <p>Students recognize patterns in their environment and daily routines (e.g., calendar, seasons).</p> <p><b>Measurement</b></p> <p>Students select and use basic measuring instruments to complete a task (e.g., ruler, calendar, stopwatch, thermometer).</p> <p><b>Location and Direction</b></p> <p>Students navigate and create directions and geographic representations using basic techniques (e.g., oral directions, gestures, basic maps, story maps).</p> <p><b>Interpretation and Representation of Spatial Information</b></p> <p>Students interpret and create models and labelled diagrams to represent spatial information (e.g., number line, diagrams of life cycles).</p> |

## 2 WHERE DOES OUR FOOD COME FROM? COMPETENCIES



In this guiding question, students **manage information** to build understandings of nutrition and food choices and apply **critical thinking** to make comparisons. They focus on **personal growth and well-being** by considering their own food choices and develop **collaboration** and **communication** skills by working and sharing in groups.

- Students develop understandings of the origins of food products and the nutritional implications of their food choices.
- Students analyze nutrition information and make comparisons of different foods.

### CONCEPTUAL & PROCEDURAL KNOWLEDGE

#### Grade 2 Health/Wellness

**W-2.5** Classify foods according to Canada’s Food Guide to Healthy Eating, and apply knowledge of food groups to plan for appropriate snacks and meals

#### Grade 3 Health/Wellness

**W-3.5** Apply guidelines from Canada’s Food Guide to Healthy Eating to individual nutritional circumstances; e.g., active children eat/drink more

### LITERACY AND NUMERACY

#### DIVISION I LITERACY

##### Background Knowledge

Students make connections to their background knowledge to support understanding of a new idea or topic.

##### Vocabulary

Students use an increasing amount of high-frequency vocabulary and acquire new vocabulary related to learning experiences (e.g., describe, compare, life cycle, province).

#### DIVISION 1 NUMERACY

##### Magnitude

Students interpret and compare quantities expressed as whole numbers in their environment.

##### Using Numbers

Students use numbers to indicate position or value in their environment (e.g., first, second, third, currency, music notes).

| CONCEPTUAL KNOWLEDGE   | PROCEDURAL KNOWLEDGE   | LITERACY AND NUMERACY   |
|--|--|---|
| <p><b>GRADE 2 Social Studies</b></p> <p><b>2.1.4 investigate the economic characteristics of communities in Canada by exploring and reflecting upon the following questions for inquiry:</b></p> <p>What kinds of goods and services are available in the communities? (ER)</p> <p>What impact does industry have on the communities (i.e., agriculture, manufacturing)? (ER, LPP)</p> | <p><b>GRADE 2 Social Studies</b></p> <p><b>2.S.1 Develop skills of critical thinking and creative thinking:</b></p> <p>Compare and contrast information from similar types of electronic sources, such as information collected on the Internet</p> <p><b>2.S.7 Apply the research process:</b></p> <p>Draw conclusions from organized information</p> <p><b>2.S.8 Demonstrate skills of oral, written and visual literacy:</b></p> <p>Create visual images for particular audiences and purposes</p> <p>Display data in a problem-solving context</p> <p><b>2.S.9 Develop skills of media literacy:</b></p> <p>Identify key words from gathered information on a topic or issue</p> | <p><b>DIVISION 1 LITERACY</b></p> <p><b>Background Knowledge</b></p> <p>Students make connections to their background knowledge to support understanding of a new idea or topic.</p> <p><b>Vocabulary</b></p> <p>Students use an increasing amount of high-frequency vocabulary and acquire new vocabulary related to learning experiences (e.g., describe, compare, life cycle, province).</p> <p><b>DIVISION 1 NUMERACY</b></p> <p><b>Magnitude</b></p> <p>Students interpret and compare quantities expressed as whole numbers in their environment.</p> |
| <p><b>Grade 3 Social Studies</b></p> <p><b>3.1.4 Examine economic factors that shape communities in other parts of the world by exploring and reflecting upon the following questions for inquiry:</b></p> <p>What are the main goods and services produced by the communities studied (i.e., agricultural activities, manufacturing activities)? (ER, GC)</p>                         | <p><b>Grade 3 Social Studies</b></p> <p><b>3.S.1 Develop skills of critical thinking and creative thinking:</b></p> <p>Compare and contrast information from similar types of electronic sources, such as information collected on the Internet</p> <p><b>3.S.7 Apply the research process:</b></p> <p>Make connections between cause-and-effect relationships from information gathered from varied sources</p> <p><b>3.S.7 Apply the research process:</b></p> <p>Draw conclusions from organized information</p>  | <p><b>Using Numbers</b></p> <p>Students use numbers to indicate position or value in their environment (e.g., first, second, third, currency, music notes).</p>   |

### 3 HOW DO BEEF CATTLE GROW IN THEIR ENVIRONMENT? COMPETENCIES



In this guiding question, students **manage information** to investigate an animal life cycle, apply **critical thinking** to assess relationships between living things and their environment and **problem solve** to share ideas about their and others' responsibilities. They focus on **personal growth and well-being** by making connections between agriculture, the environment and the food system and develop **collaboration** and **communication** skills by working and sharing in groups.

- Students explore needs that influence growth in the life cycle of beef cattle.
- Students investigate the relationship of cattle to their environment, including the importance of and need for water.

| CONCEPTUAL KNOWLEDGE   | PROCEDURAL KNOWLEDGE   | LITERACY AND NUMERACY   |
|--|--|---|
| <p><b>Grade 2 Science</b></p> <p><b>Topic A: Exploring Liquids</b></p> <p>2–5 Describe some properties of water and other liquids, and recognize the importance of water to living and nonliving things.</p> <p>6. Predict that the water level in open containers will decrease due to evaporation, but the water level in closed containers will not decrease.</p> <p>8. Recognize that water is a component of many materials and of living things.</p> <p>9. Recognize human responsibilities for maintaining clean supplies of water, and identify actions that are taken to ensure that water supplies are safe.</p> | <p><b>Grade 2 Science</b></p> <p><b>Topic A: Exploring Liquids</b></p> <p><b>Focus</b></p> <p>Ask questions that lead to exploration and investigation</p> <p>Identify one or more possible answers to questions asked by themselves and others. Ideas may take the form of predictions and hypotheses</p> <p><b>Explore and Investigate</b></p> <p>Use, with guidance, print and other sources of information provided</p> <p><b>Reflect and Interpret</b></p> <p>Describe what was observed, using captioned pictures and oral language</p> <p>Identify applications of what was learned</p> | <p><b>DIVISION I LITERACY</b></p> <p><b>Develop Questions</b></p> <p>Through guided activities, students determine a purpose and develop questions to explore topics and search for useful sources of information.</p> <p><b>Access</b></p> <p>Students gather information from a limited number of source to respond to a problem, question or topic</p> <p><b>Background Knowledge</b></p> <p>Students make connections to their background knowledge to support understanding of a new idea or topic.</p> <p><b>Vocabulary</b></p> <p>Students use an increasing amount of high-frequency vocabulary and acquire new vocabulary related to learning experiences (e.g., describe, compare, life cycle, province).</p> <p><b>Purpose</b></p> <p>Students organize texts for different purposes (e.g., to inform, persuade or entertain).</p> |



| CONCEPTUAL KNOWLEDGE   | PROCEDURAL KNOWLEDGE  | LITERACY AND NUMERACY   |
|--|---|---|
| <p style="text-align: center;"><b>Grade 3 Science</b></p> <p style="text-align: center;"><b>Topic E: Animal Life Cycles</b></p> <p><b>3–10 Describe the appearances and life cycles of some common animals, and identify their adaptations to different environments.</b></p> <p><b>3–11 Identify requirements for animal care.</b></p> <p>2. Observe and describe the growth and development of at least one living animal, as the animal develops from early to more advanced stages.</p> <p>6. Demonstrate awareness that animals require different habitats in order to meet their basic needs of food, water, shelter and space.</p> <p>10. Demonstrate knowledge of the needs of animals studied, and demonstrate skills for their care.</p> | <p style="text-align: center;"><b>Grade 3 Science</b></p> <p style="text-align: center;"><b>Topic E: Animal Life cycles</b></p> <p><b>Focus</b></p> <p>Ask questions that lead to exploration and investigation</p> <p><b>Explore and Investigate</b></p> <p>Identify, with guidance, sources of information and ideas and, with guidance, access information and ideas from those sources</p> <p><b>Reflect and Interpret</b></p> <p>Record observations and measurements, using captioned pictures and charts, with guidance in the construction of charts</p> <p>State an inference, based on observations</p> | <p style="text-align: center;"><b>DIVISION 1 NUMERACY</b></p> <p><b>Magnitude</b></p> <p>Students interpret and compare quantities expressed as whole numbers in their environment.</p> <p><b>Patterns and Relationships</b></p> <p>Students recognize patterns in their environment and daily routines (e.g., calendar, seasons).</p> <p><b>Measurement</b></p> <p>Students select and use basic measuring instruments to complete a task (e.g., ruler, calendar, stopwatch, thermometer).</p> |



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# assessing student learning

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The assessment checklists that follow can be used to assess students' understandings and skill development as they engage in the learning activities in each inquiry. The criteria statements can provide a basis for diagnostic, formative and summative assessment of students. These checklists can be applied in a number of different contexts.

- All specific learning outcomes from Alberta programs of study identified in the **meeting curriculum needs** section on **pages 11 to 17** correlate to the checklists provided in this resource.
- Criteria statements can be recombined and reorganized to create focused checklists or rubrics to evaluate student attainment of specific outcomes.
- Criteria statements can be used as a starting point or guideline for student self-assessment, can support students in creating their own checklists or rubrics and can be used to provide feedback to students. Criteria statements can be developed as "I can" statements.
- The statements can be used to communicate student learning to parents.
- The checklists can be photocopied for each student, and their learning progress tracked as they complete each inquiry. Alternatively, checklists can be selected as an area of assessment focus and used specifically to monitor and record student growth.



## **Finding Alberta Beef**

checklists reflect learning outcomes from the Alberta Social Studies, Science and Wellness/Health programs of study. Four checklists are included:

- **Building Understandings**
- **Researching and Creating**
- **Expressing and Sharing**
- **Working Together**

Criteria statements reinforce the Alberta competencies as well as literacy and numeracy progressions.



## checklist 1: Building Understandings



**CRITICAL THINKING**

**PROBLEM SOLVING**

**CULTURAL AND GLOBAL CITIZENSHIP**

| LEARNING CRITERIA   | Yes | Often | Sometimes | Not yet |
|---|-----|-------|-----------|---------|
| Identifies and describes features of prairie and other rural communities, including the role of farms and ranches |     |       |           |         |
| Describes ways that people use a range of natural resources   |     |       |           |         |
| Makes connections between human activities and industries within a community and its physical characteristics     |     |       |           |         |
| Describes how the availability of agricultural goods and services contribute to ways of life                      |     |       |           |         |
| Illustrate the growth and development of cattle in their life cycle   |     |       |           |         |
| Describes the needs of cattle as they grow and develop in agricultural environments                               |     |       |           |         |
| Describes the importance of water to living things  |     |       |           |         |
| Apply guidelines in Canada's Food Guide to plan appropriate meals and snacks                                      |     |       |           |         |

## checklist 2: Researching and Creating



**MANAGING INFORMATION**

**CREATIVITY AND INNOVATION**

| LEARNING CRITERIA   | Yes | Often | Sometimes | Not yet |
|---|-----|-------|-----------|---------|
| Finds and combines information and examples from more than one source   |     |       |           |         |
| Uses graphic organizers to record observations and organize and compare ideas and information                         |     |       |           |         |
| Uses maps to locate communities   |     |       |           |         |
| Identifies connections between human activities, actions or events and their effects on ways of life and environments |     |       |           |         |
| Draw conclusions or make inferences by summarizing information provided   |     |       |           |         |
| Make predictions or pose ideas in response to questions   |     |       |           |         |

### checklist 3: Expressing and Sharing



**CREATIVITY AND INNOVATION**

**COMMUNICATION**

**PERSONAL GROWTH AND WELLBEING**

| LEARNING CRITERIA  | Yes | Often | Sometimes | Not yet |
|--|-----|-------|-----------|---------|
| Shares ideas and learning about the impact of agriculture on prairie or global communities with others |     |       |           |         |
| Creates visual images to illustrate ideas and share with others  |     |       |           |         |
| Communicates through discussion and images   |     |       |           |         |
| Pose questions and examples to support ideas and opinions  |     |       |           |         |

### checklist 4: Working Together



**COMMUNICATION**

**COLLABORATION**

| LEARNING CRITERIA   | Yes | Often | Sometimes | Not yet |
|---|-----|-------|-----------|---------|
| Contributes ideas to group activities and encourages contributions from others  |     |       |           |         |
| Works effectively in groups by fulfilling responsibilities and completing tasks |     |       |           |         |



# teaching and learning activities

The activities that follow are organized around three guiding questions and include suggestions for exploring prairie communities, land, place, environment, economic characteristics and nutrition with individual, small group and whole class learning.

- HOW ARE FARMERS AND RANCHERS CONNECTED TO LAND AND PLACE?
- WHERE DOES OUR FOOD COME FROM?
- HOW DO CATTLE GROW IN ALBERTA ENVIRONMENTS?



Watch for suggestions for using the **Student Learning Pages** and integrating the **Finding Alberta Beef Infographic** into teaching and learning activities.

Additional sources and weblinks are included in the activities as well as in the **Teacher Background Notes** on pages 41 to 49.

Plan to highlight the photos of Alberta cattle farmers and ranchers, land and environments found throughout the learning pages. Additional photos, including photo cards, are included in other grade level resources, all provided on the Alberta Beef website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources).



## HOW ARE FARMERS AND RANCHERS CONNECTED TO LAND AND PLACE?

THIS GUIDING QUESTION ENCOURAGES STUDENTS TO EXPLORE WAYS THAT INDIVIDUALS AND COMMUNITIES ARE CONNECTED TO THE LAND AND PLACES THROUGH HUMAN ACTIVITIES AND WAYS OF LIFE.

### features and activities

#### SOCIAL STUDIES

Write the following words on the board:


- Prairie
- Hills
- Soil
- Stream
- Forest
- Grassland

Ask students to share what they know about each and what these words have in common. Then, invite students to identify natural features of communities they have lived in or learned about. How do these natural features affect how people live and what they do? (*Encourage students to discuss how these features affect the ways communities develop and what people who live in them do.*)

Provide students with **Learning Page 1: People have connections to the land.** This learning page has a series of activities that invite students to explore relationships that people, including farmers, ranchers and Indigenous people, have to the land and places in Alberta.

Start by exploring the introduction with students. Discuss the definition of features and the supporting photos provided in the introduction in the learning page. Have students work individually or with a partner to focus on a prairie or global community and complete the sentence stems in each spoke of the **environment wheel** in the first activity. Encourage students to add some of their own illustrations to support their sentences. Invite students to share their environment wheels with each other and compare their responses. Then, ask the class to respond to questions such as the following:

- How do you think the features in different parts of Alberta affect activities and work that people do? How do you think features in other communities affect activities and the work that people do?



### MEET DIVERSE LEARNING NEEDS

As students identify and discuss different natural features, have them first create quick sketches to illustrate their understanding of each concept. Then, share and discuss illustrations and ideas with the class to reinforce concepts.

Encourage students to use prior knowledge and learning about other communities in Alberta to consider the influence of natural features to human activities.



- How do you think these features might have affected the activities of First Nations peoples in the past and in the present?
- What kind of environmental features would cattle farmers and ranchers need? Why do you think this?



**Grade 2** students can be asked to compare the natural features referenced on the learning page with features in their own environments and/or communities. **Grade 3** students can be asked to locate examples of natural features on a map of Alberta and compare them to natural features in global communities they are learning about. What is alike and different in these communities?

Have students then use the Alberta map, sentences and images in the second part of the learning page to explore the connection between natural features and farms or ranches in Alberta. Ask students to continue to work individually or with their partners and use the examples of cattle farms and ranches to identify examples of natural features they would expect to find.

Provide time for students to share their responses, asking questions such as the following:

- Why did you identify these natural features in this area?
- How did these natural features affect the types of activities people do/did?
- In what ways are people connected to the land?

Extend this learning by asking students to identify the natural features that influenced ways of life and relationships with land and places of different Indigenous peoples, using the last activity in **Learning Page 1**. Students can be asked to create **illustrated examples** to represent natural features they may find in each of the areas described in the examples.



This section of the learning page can also be used to reinforce cardinal directions, using the circle descriptions and the compass rose provided.

**Alberta Beef** provides more detailed profiles on the three families featured on the learning page that can provide some teacher background for class discussion. Videos can be accessed in the **Supporting Resources** section on the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources). Preview videos before sharing with students. You may choose to share some segments of these videos without the sound if the content is too advanced. Students can view images of the land and the human activities represented in the videos.



## BUILD COMPETENCIES

### PROBLEM SOLVING

Reinforce geographic thinking skills by having students compare the location of the three communities featured in the learning page with other communities in Alberta or with global communities.



## ASSESS

Ask students to respond verbally to sentence stems such as those below:

- People have connections to the land like . . .
- Protecting the environment is important because . . .
- Cattle farmers and ranchers take care of the land and places when . . .
- Natural features like . . . are important to protect because . . .

Videos are included for each of the following families:

- The Chattaway family
- The Weder family
- The Radau family

The video on the Weder family webpage is more general, but does show the Weder family starting at the timestamp 11:45.



**Ducks Unlimited** is referenced in one of the family farm examples. Find information on their initiatives and relationship with cattle farmers and ranchers on their website at [www.ducks.ca/places/alberta/](http://www.ducks.ca/places/alberta/). Find a story about an Alberta cattle ranch that can provide some background at [www.ducks.ca/stories/landowners/natural-habitat-improves-grazing-land-for-cattle-ranchers/#](http://www.ducks.ca/stories/landowners/natural-habitat-improves-grazing-land-for-cattle-ranchers/#).

An additional perspective on the relationship between sustainability and conservation efforts and cattle farming and ranching can be found on the **Cows and Fish** website at <http://cowsandfish.org/>.

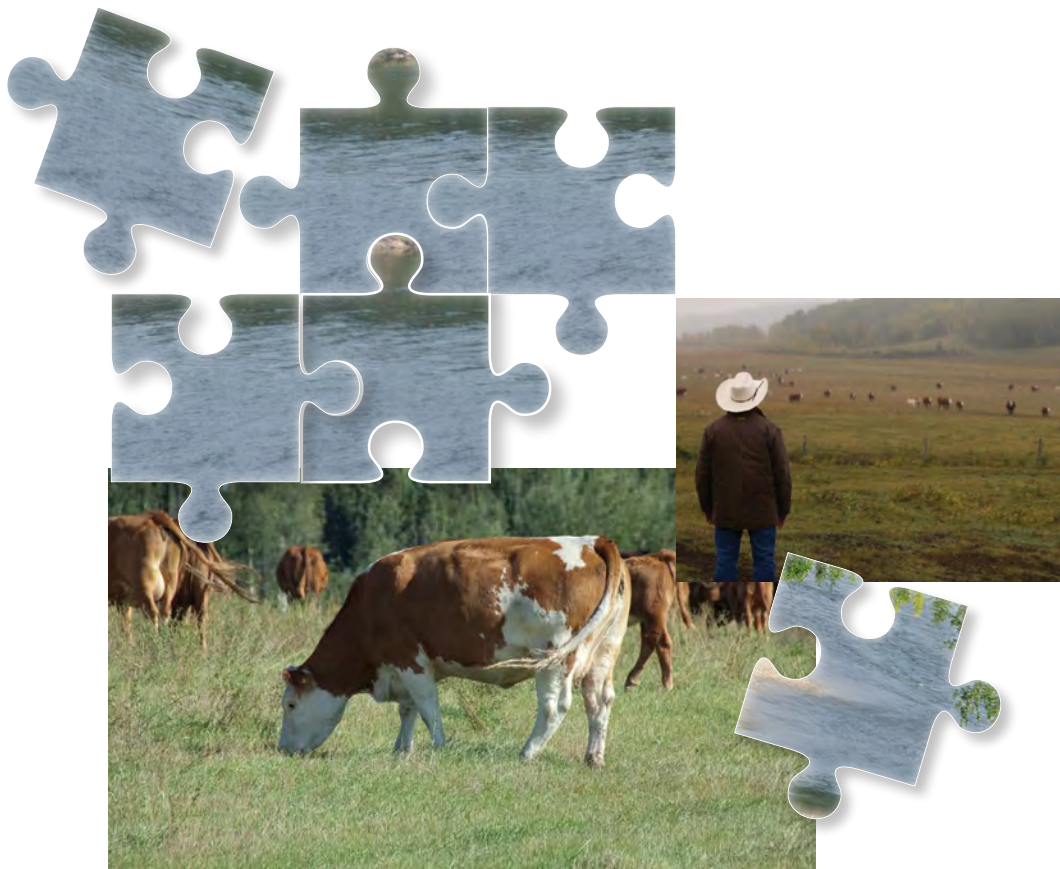
A variety of photos from Alberta cattle farms and ranches are included in the **Finding the Beef** resources at all grade levels. These resources can be accessed on the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources).

Background information and resources to support foundational knowledge about Indigenous peoples can be found on the **Empowering the Spirit** website at [www.empoweringthespirit.ca](http://www.empoweringthespirit.ca). Information on the learning page was based on <http://empoweringthespirit.ca/wp-content/uploads/2019/08/History-of-First-Nation-Peoples-in-Alberta.pdf>.



## FINDING ALBERTA BEEF INFOGRAPHIC

Challenge students to find and identify natural features in the **Finding Alberta Beef Infographic**, including prairie grasslands, hills, rocky areas, forests, wildlife and water features. Ask students to talk about ways that people might use and depend on these features. Use this discussion to introduce or reinforce the concept of natural resources that are part of agricultural environments.



## stories of place

### SOCIAL STUDIES

Organize students into small groups. Provide each group with **Learning Page 2: The activities of farmers and ranchers are connected to the environment**. Provide shared or partner reading time for students to explore the short story examples of the connections that cattle farmers and ranchers have to the environment and the actions – past or present – that they take to look after the land and places on which they live(d) and work(ed).

Have students underline or highlight examples of connections to the land and environment that they find in the stories. Prompt students to work with their partners to describe these connections in the **speech bubbles** in the learning page. Discuss with questions such as the following:

- How do these cattle farmers and ranchers see their contributions to the land? How do they identify with places around them? How do they create a sense of belonging?
- What goods and services do these cattle farming and ranching families provide?
- What do you think are the benefits that come from the connection that these cattle farmers and ranchers have to the land?



## BUILD COMPETENCIES

### LITERACY

Reinforce literacy skills with the short story examples in the learning page. Extend this learning by sharing **picture books** such as the examples below to introduce and/or reinforce conceptual understandings.

**Country Kid, City Kid** by Julie Cummins tells the story of two children, one who lives on a farm with cows, horses and a dog, and the other who lives in a busy city surrounded by skyscrapers.

**City Dog** by Karla Kuskin takes children along in a poem about a city dog's first trip to the country.

**Why Do Cows Moo? And Other Farm Animal Questions** by Catherine Ripley tells a story about a child's trip to a farm and the animals she encounters there.

**Farmer Joe's Hot Day** by Nancy Wilcox Richards introduces children to the work that a farmer does.

**Tiger's New Cowboy Boots** by Irene Morck and illustrated by Georgia Graham is an Alberta book that tells a story about a cattle drive.



## BUILD COMPETENCIES

MANAGE INFORMATION  
CRITICAL THINKING  
NUMERACY

Focus on managing information and critical thinking. Do a think aloud that models the process of finding information from photos. Ask students to talk about different types of information they can get from a photo.

Use the cycle diagram to focus on numeracy skills by talking through the process of sequencing events or actions.



## MEET DIVERSE LEARNING NEEDS

Students can be asked to use the **cycle diagram in different contexts, comparing** how the concept of recycling works for different animals or for people in local and global communities.

After students complete and discuss the ideas they wrote in the speech bubbles, extend their learning by asking them to think about ways that cattle farmers and ranchers are connected to their communities. Record sentences such as those below on the board. Challenge students to work as a whole class or with a partner to finish each sentence stem.

- Farming and ranching is also connected to people who live in other communities, like cities and towns, because \_\_\_\_\_
- Rural and urban communities are connected when \_\_\_\_\_
- Goods and services provided by farming and ranching families are like or different in local and global communities because \_\_\_\_\_



Work with **Grade 2** students to identify the location of the farms and ranches described in the learning pages. Have **Grade 3** students use a map of Alberta to locate the area in which these farms and ranches are found. Grade 3 students can also use the speech bubbles to identify the contributions that farmers and ranchers in global communities make, including goods and services they provide. Use classroom resources to find examples from these global communities.



**National Geographic** provides an article on cattle ranching in global communities, including connections to the land and its features. Find this article at [www.nationalgeographic.org/encyclopedia/ranching/](http://www.nationalgeographic.org/encyclopedia/ranching/).

Use **Learning Page 3: Cattle are recyclers** to explore the idea that the animals raised by cattle farmers and ranchers are also connected to the environment. Although they meet their needs with resources from the environment, they also contribute to its sustainability. Have students work with a partner to complete the **cycle diagram** activity. Students can cut out the photos provided to sequence them in the cycle diagram or can create their own illustrations or text descriptions.

Provide each group with **Learning Page 4: Farmers and ranchers take actions to protect land and places**. This learning page is designed as a follow up to the story examples on **Learning Page 2**. Have each group cut out the **photo cards** provided on the learning page or prepare them in advance. Students can be asked to match and group these photos in a number of ways:

- Match the photos that illustrate features they might expect to find in the ranching stories in **Learning Page 2**.
- Select photos that they could sequence to create a story or description of the connections between people, land and places.

- Group the photos to describe the difference between natural features and human made features.

**Learning Page 4** also provides fillable fields under each photo. Students can be asked to create their own **photo captions** for selected images.



Some of these photo cards are also provided in the **Finding Alberta Beef Kindergarten/Grade 1 Learning Pages**. The photo card sets can be combined and used to extend this activity or create additional activities focused on rural communities and the land and resources in Alberta. This resource can be accessed on the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources).

Students can also be asked to find and add their own photos or illustrations that represent the natural features that are found on different farms and ranches.

- What types of natural features can you identify?
- What other resources can you identify?
- Can you tell where these photos are located in Alberta? How do you know this?

As a class, discuss their learning with questions such as the following:

- What do you know about ways of life on a ranch or farm?
- How are your ways of life alike or different from the ways of life of these farmers and ranchers?
- How do these farmers and ranchers feel about what they do to make a living? How do you know this?



Cattle ranches represent some of the strongest and healthiest ecosystems in the world. They are compatible with many wildlife, landscapes and habitats.

Cattle use land that is not suitable for growing crops because it is too dry, wet, rocky, cold or hilly. Keeping this land as grassland is good for the soil and water quality. Cattle are ruminant animals and have four stomachs, which enables them to convert coarse vegetation into high quality protein. Cattle also produce manure, which is a natural fertilizer for growing crops.

Feeding grain to cattle does not deprive anyone of an adequate diet. Cattle are typically only fed grain for a short period to produce more tender and flavourful beef. Much of the grain eaten by cattle is coarse grain that cannot be used for human consumption.



## MEET DIVERSE LEARNING NEEDS

Encourage students to share prior experience and knowledge about farms and ranches as they discuss the questions as a class.

Alternatively, write questions on the board and ask students to discuss them in small groups. Guide groups through each question, one at a time. Have groups check in with the whole class as they finish discussing each question.

## responsibility boards

### SOCIAL STUDIES

Create a **responsibility-focused bulletin board** in the classroom, using bulletin board space or poster paper, on which students share ideas about what people can do to demonstrate responsibility for the land, features and places in their communities and the environment around them. If classroom space is limited, have students create **personal posters**.

Invite students to work with a partner to complete illustrated “I can...” **word art statements** that reflect what they do – or can do – to take responsibility for their communities and environments. Add the illustrated “I can...” word art statements to the responsibility board or to their personal posters.

Ask students to add “We can...” word art statements to the board or posters that reflect what others – including farmers and ranchers – do to take responsibility for communities and the environment. Support students in making connections between human activities and the extent to which these activities should consider the environment.

With the class, discuss questions such as the following:

- Why is it important to think about environmental factors, such as streams or natural grass lands, when they are used for an activity such as agriculture?
- How should people work together to look after the environment?
- How do you think a healthy environment makes a community a better place to live and work? (*Encourage students to consider different types of communities as they discuss this question, including rural and urban; local and global communities.*)



### FINDING ALBERTA BEEF INFOGRAPHIC

Challenge students to find examples in the **Finding Alberta Beef Infographic** that represent the responsibilities that cattle farmers and ranchers have to meet the needs of their cattle and protect the environment. Encourage students to consider the relationship between cattle needs and what the environment on farms and ranches provides. Use the sentences that describe cattle characteristics to guide students in identifying cattle needs.



## BUILD COMPETENCIES

### COLLABORATION

Consider student needs by choosing alternative grouping arrangements, such as:

- Grouping students who understand concepts related to care of the environment into independent small groups to brainstorm ideas and create their “We can...” illustrations or word art
- Organizing student learning buddies or parent help to support students as they create their illustrations or word art.

Provide options for students to develop a role play or demonstration of their “We can...” statements.

## WHERE DOES OUR FOOD COME FROM?

THIS GUIDING QUESTION ASKS STUDENTS TO INVESTIGATE THE BENEFITS THAT RESULT FROM AGRICULTURE, INCLUDING OUR FOOD SUPPLY. STUDENTS MAKE CONNECTIONS TO EXPLORE WHERE HEALTHY FOOD CHOICES COME FROM.

### benefits bubble map

**SOCIAL STUDIES, WELLNESS/HEALTH**

Have students use **Learning Page 5: The activities of farmers and ranchers provide benefits for people** to learn about the food production cycle and consider the benefits that come from agriculture. Remind students that there are different types of farms and ranches found in Alberta.

Work with the class to brainstorm the types of foods that come from these different farms. (*For example, cattle ranches for beef and products like leather; dairy farms for milk and all the products made from milk; orchards that grow apples to make juice and apple pies; pig farms for pepperoni, bacon, and ham; grain farms that grow corn for fuel or corn syrup for soda and wheat for bread; cotton farms for blue jeans; and tree farms for paper and landscaping. In fact, there are different kinds of farm and ranches for nearly every type of product.*)



**Agriculture and Agri-Food Canada** provides an overview of Canadian food products in **We Grow a Lot More than You May Think**, found at [www.agr.gc.ca/eng/canadian-agri-food-sector/we-grow-a-lot-more-than-you-may-think/?id=1251899760841](http://www.agr.gc.ca/eng/canadian-agri-food-sector/we-grow-a-lot-more-than-you-may-think/?id=1251899760841). Find the PDF version at [www.agr.gc.ca/resources/prod/doc/info/pdf/aafc-aac\\_brochure\\_mar2013\\_eng.pdf](http://www.agr.gc.ca/resources/prod/doc/info/pdf/aafc-aac_brochure_mar2013_eng.pdf).

Ask students to write **summary statements** in the **photo captions boxes** on the learning page to summarize the main activities that happen in each stage of the food production cycle of bringing food from “farm to plate.”

Create a **food cycle diagram** on the board and ask students to share their photo caption summary sentences. List their examples in the appropriate parts of the cycle.



Use the diagram on the following page to help you guide students in summarizing a food cycle. The activities represented in the diagram are referenced in the learning page. Find additional information on the beef production cycle on the **Agriculture and Agri-Food Canada** website in **Canadian Beef** at [www.agr.gc.ca/eng/food-products/explore-canadian-food-products/canadian-beef/?id=1425926780820](http://www.agr.gc.ca/eng/food-products/explore-canadian-food-products/canadian-beef/?id=1425926780820).



## BUILD COMPETENCIES

### MANAGE INFORMATION

Focus on critical thinking by using this activity to practice cause and effect relationships. Use connecting words like “make” to describe the relationship between farmer’s and rancher’s activities and food products. Use connecting words like “use” to describe the relationship between food and byproducts to the needs that are met with them.



## MEET DIVERSE LEARNING NEEDS

Extend student’s learning by exploring examples of cattle byproducts in addition to the food products that come from cattle. Information on byproducts is provided in the **Teacher Background Notes** section at the end of this guide on **pages 48 and 49**.

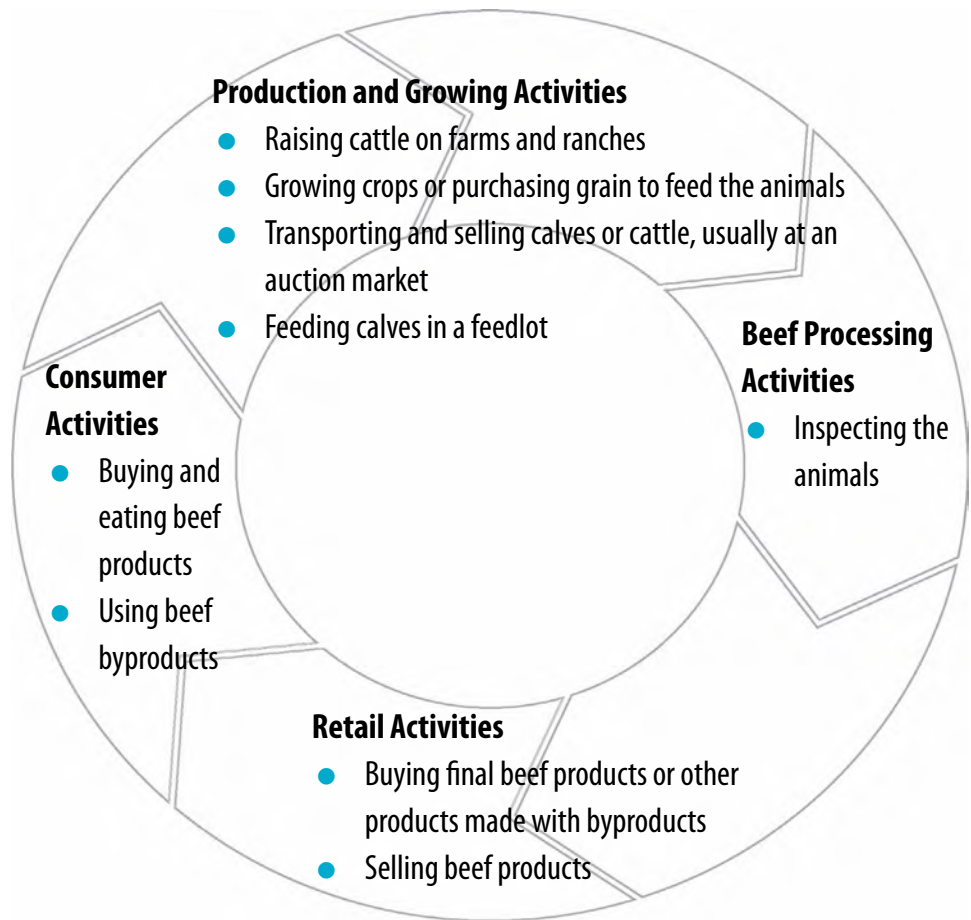


## MEET DIVERSE LEARNING NEEDS

Focus specifically on concepts of goods and services by asking students to respond to the question, What products and jobs come from farming and ranching? What specific examples of products are related to beef cattle farming and ranching?

Ask students to brainstorm examples of products they use on a daily basis. Work with them and prompt by suggesting categories such as food, personal care, clothing, medicine, household items and school supplies. Link their examples back to the food cycle diagram you've created on the board.

Challenge **Grade 3** students to compare the products and jobs in Alberta agricultural communities to those they may have identified in global communities.



This activity provides a simple introduction to the idea of a food cycle, which involves the process of raising animals and growing plants on farms and ranches that eventually end up on our plates.



The **Alberta Cattle Feeders Association** provides background information on the seven stages of beef cattle production at <https://cattlefeeders.ca/the-7-stages-of-beef-cattle-production/>, including descriptions of the different roles involved in each stage. This information is suitable as teacher background.

Introduce the second activity in the learning page by encouraging students to think about and identify examples of the benefits we get from agriculture.

Have students continue with the second activity, using what they have learned to create a **triple circle map** that reinforces cause and effect relationships. Students are asked to draw or describe examples of agricultural activities, the food that comes from them and the benefits that come from agriculture and the resulting food products.



Have students reflect on and respond to the following question:

- How do the activities involved in beef production connect to your lives? *(Encourage students to think about what beef producers contribute. Rural students may have personal experiences or comparisons to share and urban students can be encouraged to consider how the jobs of beef producers may be similar to jobs they and their families do. The beef production industry makes products that they depend upon. Urban students can also be encouraged to make comparisons to their own activities.)*



## FINDING ALBERTA BEEF INFOGRAPHIC

Use the **Finding Alberta Beef Infographic** to focus on and discuss how the photos and text fit into the beef production cycle - the role of farmers and ranchers in raising cattle and looking after their needs.

## shop for a meal

### WELLNESS/HEALTH

Provide students with a collection of grocery flyers. Have them cut out pictures of nutritious food choices that can be used to make up a balanced meal. Prepare **class posters** for each type of food referenced in **Canada's Food Guide**, with samples of food illustrations on each poster.

- Fruits and vegetables
- Protein foods
- Whole grain foods

Provide students with **Learning Page 6: Foods come from farming and ranching** and ask them to choose from each type of food to create a nutritious meal.

Use a **carousel sharing strategy** to have students “shop” from each poster to fill the **grocery cart** template on the learning page. Tell students that they must make sure they choose at least two foods from each type of food.



## BUILD COMPETENCIES PERSONAL GROWTH AND WELLBEING

Focus on personal growth and well being by asking students to talk about how they make healthy lifestyle choices that include nutritious foods.



## MEET DIVERSE LEARNING NEEDS

In a **carousel sharing strategy**, groups visit stations or posters to each contribute their ideas to different topics or focus questions. Each group is given an equal amount of time at each station or poster and then asked to move on to the next one.

Ask students to share their filled grocery carts with a partner or in a small group. As a class, discuss the **fast facts** on the second part of the learning page. Ask students to share what they have learned about the importance of making choices that support wellbeing.



Encourage **Grade 3** students to compare food that is raised and grown in Alberta communities with those raised and grown in global communities.

## food labels


### WELLNESS/HEALTH

Ask students how we know that foods are nutritious choices? Some students may identify food labels, while others may connect nutritious choices to the types of foods identified by **Canada's Food Guide**. Introduce students to a discussion of food labels with questions such as the following:

- Where do you see nutrition facts food labels? Do you notice them on foods you eat?
- Do your family members read them?
- What kind of information do you think you can get from a food label?
- What are some of the ways food companies use words and images on food packaging to catch your eye and make you want to buy it? How do you think a nutrition facts food label could help you figure out whether it's a healthy choice?
- Why do you think **Canada's Food Guide** warns people that food messages used on packaging and in ads can affect food choices?

Provide students with **Learning Page 7: Nutrition information comes from food labels**. Use the learning page for a class discussion, with questions such as the following. Focus on the basic information provided on nutrition labels, including fat, carbohydrates, protein and vitamins.

- Which of the food labels in the learning page tells you that this food is a good source of protein? How do you know this?
- How can you tell which nutrients are provided by different foods?
- Which of the food labels tell you that this food may be better if only eaten in moderation? How do you know this?



**BUILD  
COMPETENCIES**  
NUMERACY  
COLLABORATION

Encourage students to bring food labels from home or find examples online. Have students use the **t-chart** in the learning page to sort and place the food labels in two columns. Alternatively, create a class wall chart. Use the first column for examples of food labels that show nutritious food choices and examples of food labels that show why some foods should be avoided or limited. Have them point out and compare the nutrient values of different foods.

Extend the activity by asking students to bring in a food label and work with a small group to identify the protein, vitamin and mineral values indicated on the label.

Challenge students to match the labels with each food listed on the learning page. Encourage them to make connections back to the fast facts in **Learning Page 6**.



The food labels in the learning page provide a sampling of a few different food products. The seven labels displayed include:

Peanut butter (orange)

Olive oil (yellow)

Frozen fruit (pink)

Hamburger – extra lean (red)

Milk 2% (blue)

Vegetable juice – low sodium (green)

Chocolate bar with nuts (teal)

Then, have students use **Learning Page 8: People make different choices about the food they eat**. Ask students to fill in the **puzzle pieces** with nutritious food choices they could make in different places and times.



Ask **Grade 2** students to share ideas about different types of food choices that people make, including family preferences, vegetarian and allergies. Encourage students to also share examples of animal products that many families use to provide protein sources. Ask **Grade 3** students to focus on ways that different settings – like home, school and restaurants – influence different food choices. These learning pages include fillable fields if students use written responses to the activities.



## MEET DIVERSE LEARNING NEEDS

As an alternative to **Learning Page 7**, have students collect and bring examples of different food labels to class. Use these labels to identify basic information about protein sources and healthy choices.



## ASSESS

Have students use **I Can** statements to describe the steps they take to make healthy food choices. Have **Grade 2** students focus on different eating behaviours and **Grade 3** students focus on different eating settings.

## HOW DO BEEF CATTLE GROW IN THEIR ENVIRONMENT?

THIS GUIDING QUESTION ASKS STUDENTS TO INVESTIGATE THE CHARACTERISTICS AND LIFE CYCLE OF BEEF CATTLE AND EXPLORE HOW AGRICULTURAL ENVIRONMENTS HELP THEM MEET THEIR NEEDS.

### growth and change

#### SCIENCE

Ask students to describe what will happen as they grow and develop. Encourage students to consider what will change as they grow. Work together to complete a **class comparison chart** like the one below:

| These physical characteristics will stay the same through my whole life | These physical characteristics will change as I grow |
|---|--|
|   |  |

Provide students with **Learning Page 9: Living things grow and change** and ask them to work with a partner to create the same chart for cattle. This **t-chart** is included in the learning page.

| These physical characteristics will stay the same as cattle grow and develop | These physical characteristics will change as cattle grow and develop |
|--|---|
|  |   |

After completing the charts, discuss the following questions with students:

- What do we need as we grow and develop? (*Encourage students to consider physical needs, such as nutritious foods, water and shelter, as well as emotional needs, such as a safe and caring environment in which to grow.*)
- What do cattle need as they grow and develop? (*Cattle also need food that meets their nutritional needs, such as grass and barley, shelter, water and sometimes medical attention.*)
- Does everyone grow at the same time? Why? (*Point out that everyone does not grow at the same rate and that growth can depend on our body characteristics, the nutrients we get as we develop and our activities.*)
- Do all cattle grow at the same rate? Why? (*Beef farmers and ranchers work to raise cattle to be the proper weight to bring them to market. However, animals can also grow at different rates.*)



**MEET DIVERSE LEARNING NEEDS**

Depending on the learning support that individual students need to complete the activity on the student resource, organize them to work with a partner, a small group, with a learning buddy or individually.

Explore the life cycle of beef cattle using **Learning Page 10: Cattle have a life cycle**. Work with students to use the **photo cards** to identify characteristics they see and sequence the cards and the provided sentences on a **life cycle diagram**.

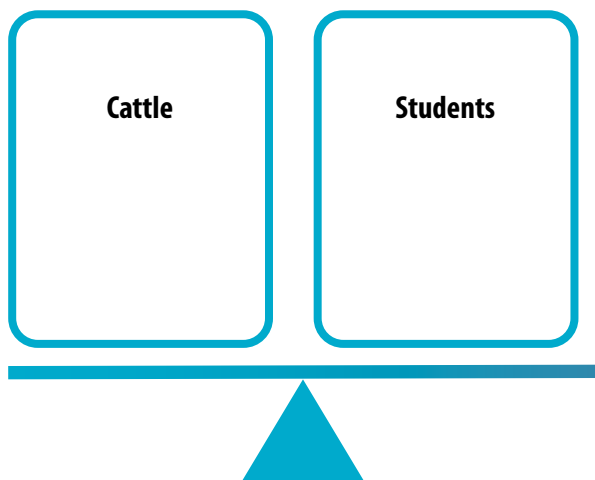
Work with students to make connections between their life cycle diagrams and the physical changes that animals experience as they grow. Revisit the **t-chart** completed in **Learning Page 9**. Ask students if they can add any additional information to their life cycle diagrams from the characteristics they previously identified.

## weigh scale posters

### SCIENCE

Ask students to revisit the names used for cattle at different stages of growth from **Learning Page 9**. Create a poster with two **balance weigh scales** and display it on the board or on a bulletin board. On one side of each weigh scale, place a picture and record the weight of a calf and of a market-ready steer:

- A calf weighs about 36 kilograms, or 80 pounds, when it is born.
- A market-ready steer weighs about 590 kilograms or about 1300 pounds.



Ask students to predict how many students it would take to equal each weight. Then, weigh each student and record the total weight of students in the class. Have students figure out how many of them it would take to equal the weight of a calf and a market-ready steer. *(If the total does not equal 590 kilograms, ask students from another classroom to weigh in!)*

If possible, photograph the group of students that represent each weight or record a list of names and place the photograph or list on the other side of the weigh scale. Ask students to revisit their predictions!



### MEET DIVERSE LEARNING NEEDS


Have students compare the life cycle of beef cattle to life cycles of other animals. What is alike and what is different?

Students can also be encouraged to note the differences between life cycles of animals that are relatively simple and do not change very much as they grow, except getting larger, and those that undergo a **metamorphosis** (a significant change in their physical characteristics or habits).



### MEET DIVERSE LEARNING NEEDS

Work with students who need additional practice with addition skills before completing the “weigh in” activity.



**BUILD  
COMPETENCIES**  
NUMERACY

Reinforce numeracy skills by asking students to identify the skills they apply to this activity.



If appropriate with your students, discuss why cattle are raised for food and other byproducts. Tell students that over 95 percent of the animal is used and not wasted.

Why should cattle and other animals that provide sources of food not be thought of as pets? *(Animals raised for production are not the same as those raised for pleasure. There are many factors that influence the perception of animals that are acceptable to eat for food and those that are not. These factors can include cultural beliefs, religion, values, taste preferences, availability of food, historical and market trends. For many, meat is an important part of a nutritious diet and beef contains 14 essential nutrients. Millions of byproducts are made from animals, including clothing, cosmetics and sports equipment. Cattle production contributes to the economy, to healthy bodies and to daily human activities.)*

## meeting needs

### SCIENCE

Provide students with **Learning Page 11: Cattle depend on the environment to live and grow**. Ask students to think about the ways that characteristics of cattle – like all other living things – allow them to meet their needs in the environments in which they live.

Invite students to revisit and share what they have learned about farm and ranch environments. What do these environments provide for cattle? What do farmers and ranchers ensure is provided for the cattle they raise? Have students work with a partner to explore the information and photos in the learning page, recording questions that they could ask a cattle rancher about each photo.

Work with students to identify features in agricultural environments from the story that are essential for cattle and how farmers and ranchers meet these essential needs. *(For example, students can be guided to identify the use of pastures for grass, the provision of hay and other grains, the use of water troughs and solar power to keep water fresh and the provision of shelters and windbreaks.)*



Have **Grade 2** students focus on the importance of water for living things, such as cattle. They can also explore the ways in which cattle's senses help them live in their environments. **Grade 3** students can be asked to compare what they learn about cattle to other mammals. Connect this learning to what students are learning about the classification of plants and animals with similar characteristics.

Have students create the **cattle profile** in the learning page with their own illustrations and captions. Encourage students to apply what they have learned about characteristics of cattle described in the learning page. Encourage students to also add examples from the stories they have explored.



## FINDING ALBERTA BEEF INFOGRAPHIC

Students can find sentences that describe the needs of cattle on different puzzle pieces on the **Finding Alberta Beef Infographic**. They can use this information to add to the cattle profiles they complete in **Learning Page 11**.



## FINDING ALBERTA BEEF INFOGRAPHIC

The **Finding Alberta Beef Infographic** can provide a starting point for the creation of a student project. Ask students how they can “put the puzzle pieces together” to share their learning. Provide the blank puzzle template at the end of the **Student Learning Pages** to students. Challenge them to create their own infographic with pictures, words or phrases that illustrate their learning.



## ASSESS

Ask students to respond in writing or verbally to sentence stems such as those below:

- Cattle depend on the environment for . . .
- Farms and ranches are connected to the natural environment because . . .
- Farming and ranching provides benefits for people when . . .
- Water is an essential need for . . .





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# teacher background notes

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Beef animals are ruminants and like all ruminants they have four compartments to their “stomach.” When ruminants swallow grass or other vegetation the feed goes into the first section of the “stomach,” called the rumen. Here it is broken down by billions of micro-organisms.

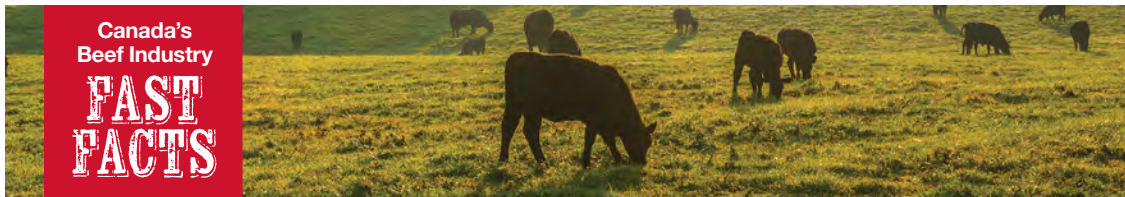
It is this feature that allows ruminants to digest tough cellulose and convert it to usable food. When the rumen is full, the animal will lie down to rest. During this time it will burp up portions of food from the rumen. These portions, called “cud,” are brought back up into the mouth, chewed into a pulp and swallowed again. The chewed food goes on through the other three “stomachs” where it is digested. Other ruminant animals are dairy cattle, sheep, goats and bison.



## the cattle industry in Alberta

The Alberta cattle industry began in the late 1800s with English and American settlers discovering the many advantages that make Alberta an ideal location to raise cattle. These frontier producers found ways to prosper in the Canadian climate by using progressive management practices and by being early adapters of technology.

With more than five million head of cattle, Alberta is the largest cattle producing province in Canada and has the fourth largest cattle herd of all provinces or states in North America, just behind Texas, Kansas, and Nebraska.



### PRODUCTION

Canada's Beef Industry

**FAST FACTS**

June 2019



CANADIAN BEEF

**59,784**



**Farms and Ranches with Beef Cattle**  
2016 Agriculture Census

**11.45 million**



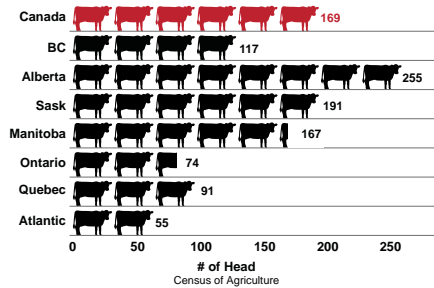
**Total Cattle and Calves Down 1% from 2018**  
(includes 1.4 million dairy cattle)  
Statistics Canada

**3.66 million**

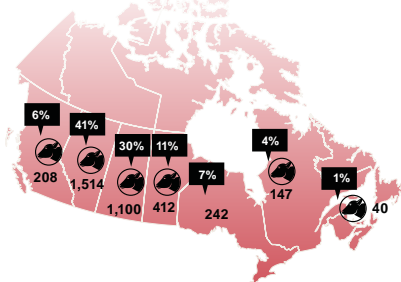


**Beef Cows Down 1% from 2018**  
Statistics Canada

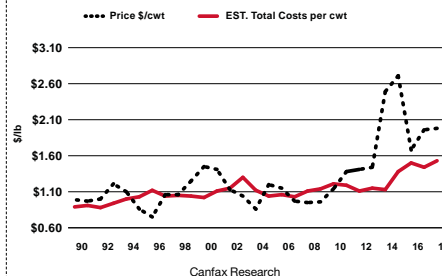
#### Average # of Beef Cattle per Farm May 10, 2016



#### Beef Cows by Province January 1, 2019 (beef cows = 3.66 million) All inventories in 1,000 head



#### Average Cost of Production vs. Average Returns on an Alberta 550 lb Calf

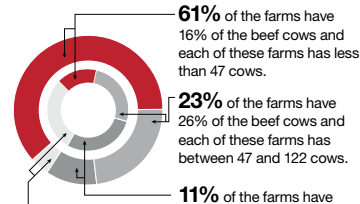


#### Did you know...

The average beef cow herd size in Canada is 69.

2016 Agriculture Census

There are a lot of small cattle farms...



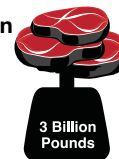
4% of the farms have 29% of the beef cows and each of these farms has over 273 cows.  
2016 Agriculture Census

Canada fed 2.9 million cattle in 2018 (finished to market weight) up 1% from 2017.

Canfax, Statistics Canada, AAFC

Western Canada finishes 76% of all fed cattle in Canada. Canfax

In 2018, Canada produced 3.08 billion pounds of beef, up 2.7% from 2017.



3 Billion Pounds

Canfax, Statistics Canada

Cattle and calf cash receipts in 2018 totaled \$9.07 billion, steady with 2017. Statistics Canada

Beef production contributed \$18 billion to Canada's GDP (2014-2018 average).

Canfax, Statistics Canada

Alberta is one of the world's most successful beef exporters, shipping a yearly average of \$1.5 billion of beef all over the globe. Of Alberta's 2018 beef exports, 73 percent was sold to the United States, 7 percent to Hong Kong, 7 percent to Japan and 13 percent to other countries. These countries or regions included Mexico, Mainland China and South Korea.

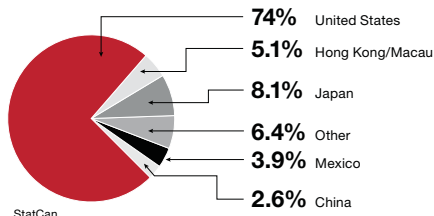


Alberta Beef provides information and infographics on beef production at [www.albertabeef.org/consumers/industry-info](http://www.albertabeef.org/consumers/industry-info).

## WHERE CANADA TRADES

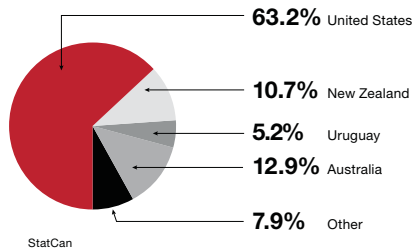
### Beef Exports – 2018

879 million pounds (399 million kg)



### Beef Imports – 2018

391 million pounds (177 million kg)



In 2018, Canada exported **44.6%** of total beef and cattle produced in Canada.

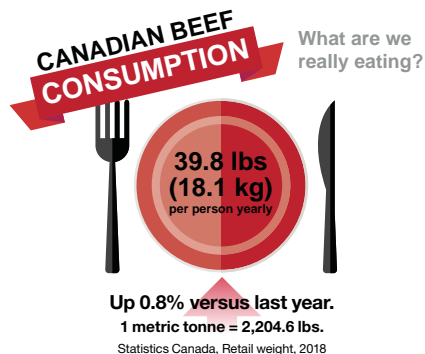
Statistics Canada, Canfax, AAFC

On a net basis (subtracting out imports), **Canada exported 30%** of its beef and cattle production in 2018.

Statistics Canada, Canfax, AAFC

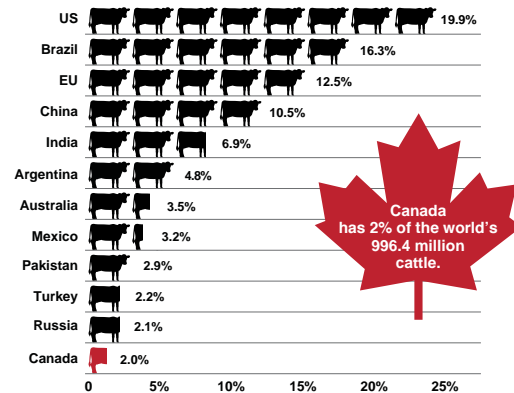
Canadian beef exports were valued at **\$2.75 billion** in 2018, up 14% from \$2.41 billion in 2017.

Statistics Canada



## WHERE CANADA FITS

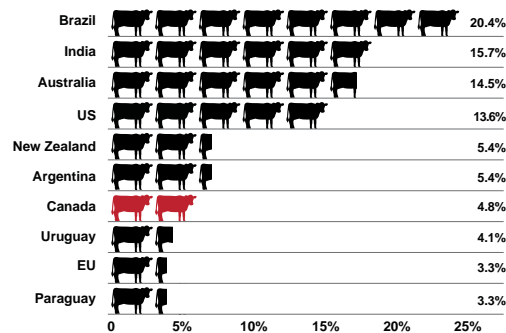
### Top 12 Beef Producing Nations – 2019f



Canada produces 2% of the world's beef supply. Worldwide Beef Production is projected at 63 million metric tonnes in 2019. USDA

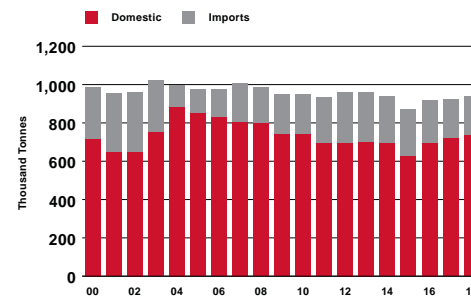
### Top 10 Beef Exporting Nations 2019f

(excludes live slaughter exports)



Total world exports in 2019 are projected at 10.8 million metric tonne and Canada is projected to be the 7<sup>th</sup> largest beef exporter in the world (excluding live cattle exports). USDA

### Canadian Beef Consumption



Canadian's consumed 941,280 tonnes of beef in 2018

Statistics Canada

Infographics provided by Canada Beef:  
[www.canadabeef.ca](http://www.canadabeef.ca)

## producing beef

Beef cattle production is Alberta's largest agricultural sector, providing \$4.9 billion in farm cash receipts annually or 36 percent of Alberta's farm production income.

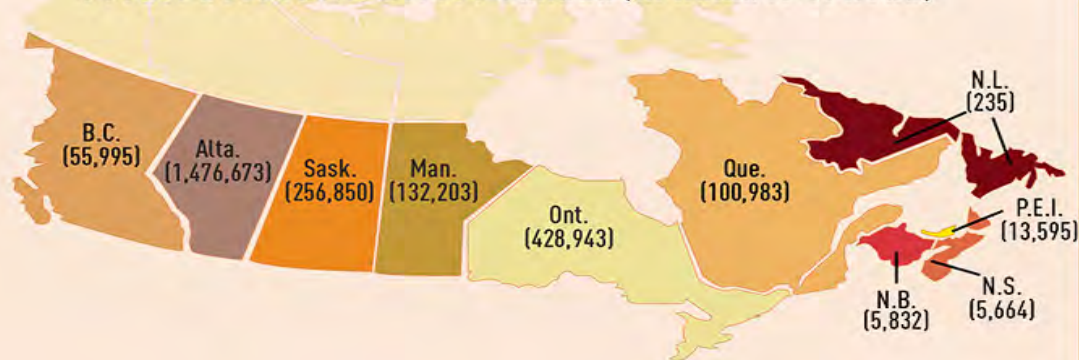
- 46 percent (18638) of Alberta farms have beef cattle
- Alberta cattle and calf numbers – 5 207 000 head (42 percent of Canadian total)
- Canada cattle and calves – 12 531 000
- Alberta has 1 866 000 breeding beef cows and heifers (42 percent of Canadian total)
- Alberta feeds nearly 2 000 000 cattle each year with total annual beef production of over 900 000 tonnes
- Alberta averages 93 beef cows per cattle farm
- Alberta has 21 127 243 hectares of farmland
- 30 percent of all Alberta farmland is natural land for pasture
- 10 percent of all Alberta farmland is tame or seeded pasture land
- Alberta federal and provincial inspected plants processed 2 365 000 head of cattle or roughly 74 percent of Canadian total in 2018

Infographic excerpt from Statistics Canada: *Livestock in Canada*. <https://www150.statcan.gc.ca/n1/pub/11-627-m/11-627-m2017011-eng.htm>

Alberta had more feeder beef cattle than all other provinces combined in 2016, with almost 1.5 million head.

### Alberta leads in beef

#### Feeder beef cattle across Canada (in number of head)



For every milk-producing cow in Canada there were 4 beef cows.



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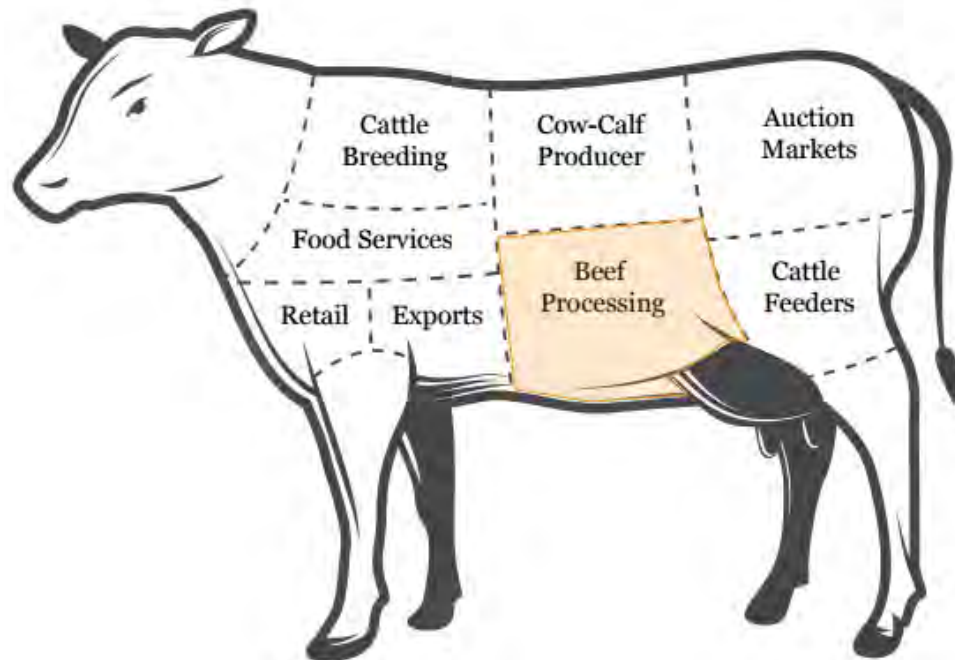
There are many different people and jobs involved in beef production. Some examples include:

- Ranchers (cow/calf operators)
- Backgrounding operators
- Feedlot operators
- Veterinarians
- Machinery dealers
- Feed and fertilizer sales persons
- Auctioneers
- Truckers
- Packing plant workers
- Meat graders, inspectors and butchers



The **Alberta Cattle Feeders Association** provides background information on the seven stages of beef cattle production at <https://cattlefeeders.ca/the-7-stages-of-beef-cattle-production/>, including descriptions of the different roles involved in each stage.

Image from Alberta Cattle Feeders Association.



## sustainability and environment

The beef production industry has a strong commitment to protection and sustainability of the environment. The beef industry uses practices for forage, grazing and beef production that can benefit the environment including maintaining plant and wildlife habitats, reducing soil erosion and protecting watersheds.

Every living organism produces greenhouse gases (GHG), but cattle produce more than some other livestock because rumen bacteria produce methane as they digest feed. Additional greenhouse gases come from manure and fossil fuel use. However, beef production in Canada accounts for only .04 percent of global greenhouse gas emissions.

Pastureland removes greenhouse gases from the air and stores them in the soil. Removing cattle from these lands would put the land at risk for conversion to other land uses that could release more GHGs.

Cultivating land can release up to 59 percent of carbon previously stored in the soil. Grasslands and pastures also store carbon, protect marginal lands from tillage and erosion, provide habitat for wildlife and promote biodiversity.

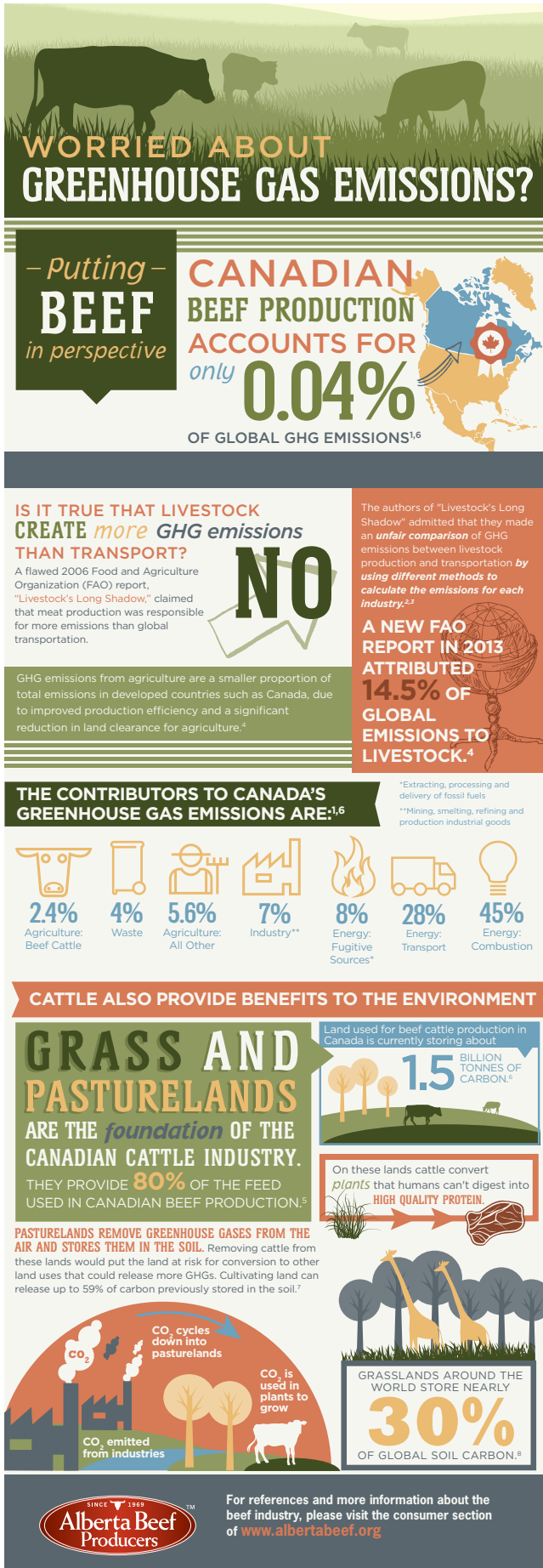
Alberta beef farmers and ranchers are committed to producing beef in an environmentally sustainable manner. Alberta Beef supports policies, programs and educational efforts that uphold this vision. They also formally recognize beef producers who have incorporated environmental protection into their management strategies.



Find the full infographic on the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources).

**Canada Beef** provides information and resources, including videos, about cattle and the environment at <https://canadabeef.ca/whycanadianbeef/>. This source is suitable for teacher background. **Canada Beef** also provides an infographic that provides environmental and nutritional information about beef at [https://canadabeef.ca/wp-content/uploads/2019/10/RS9895\\_CB\\_Environment.Nutrition-Infographic-Sheet\\_REV.pdf](https://canadabeef.ca/wp-content/uploads/2019/10/RS9895_CB_Environment.Nutrition-Infographic-Sheet_REV.pdf).

**Canadian Cattlemen's Association** provides a number of resources on environmental issues and nutrition, suitable for teacher background, at [www.cattle.ca/cca-resources/](http://www.cattle.ca/cca-resources/).



## nutrition

Meat products contain nutrients that are essential for health. Lean meats, including beef, help you meet your needs for protein, vitamins, and minerals. **Canada's Food Guide** includes leaner meats as a protein choice in a healthy diet. Other healthy choices include grains, vegetables and fruits and milk products.

Beef is a complete protein. This means that the all essential protein building blocks, called amino acids, are found in beef.

Beef also provides a healthy source of dietary fats. Fat is an important nutrient for normal body functions and energy. Fat helps our body absorb fat-soluble vitamins such as A, D, E and K. Some fats are essential, because our body cannot make these fats. It is recommended that an adult's diet have 20 to 35 percent of total calories from fat.

Beef provides nutrients important to the body. One serving of cooked lean beef provides:

- About half of the protein requirements for a teen
- Enough vitamin B<sup>12</sup> to exceed requirements
- An excellent source of zinc and niacin
- A source of iron, thiamine and riboflavin

Nutritional values of foods can be affected by different factors, including geographic location, season and the soil used to grow plants and feed to raise animals. For example, cows fed mostly on pasture in the summer produce butterfat higher in Vitamin A than in the winter.

Nutritional values can also be affected by the ways in which foods are manufactured or processed, including the use of heat, light, oxygen, enzymes or microorganisms.



Find the full infographic on the **Alberta Beef** website at [www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources).

The **Think Beef** website provides a series of resources, including nutritional information, infographics and recipe booklets suitable for children at <https://thinkbeef.ca/resources/>.



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## cattle byproducts



If appropriate for your students, you may want to share some examples of the byproducts that come from beef cattle. When discussing byproducts with students, it is also important to note that, in some cases, technology has been developed that also allows for synthetic substitutes to be used in products that traditionally contained animal byproducts.

Edible beef byproducts are products that can be consumed. The majority of edible beef byproducts contain gelatin. Gelatin is made from cartilage, tendons and bones and can be found in products like:

- Hard cheese
- Jello
- Canned meats
- Ice cream
- Gummi bears
- Marshmallows
- Mayonnaise
- Gum
- Yogurt

Variety meats are edible organs and glands of a beef animal, and can include heart, tongue, liver, kidney, tripe (stomach walls), and testicles (Rocky Mountain or Prairie Oysters). Variety meats are edible byproducts.

Inedible beef byproducts are made from the hide, fat, bones and entrails. Products from the hide can include leather boots, luggage and shoes.

Products made from fat include:

- Deodorants
- Fabric softeners
- Plastics
- Shaving cream
- Detergent
- Floor wax
- Shampoo
- Candles
- Crayons



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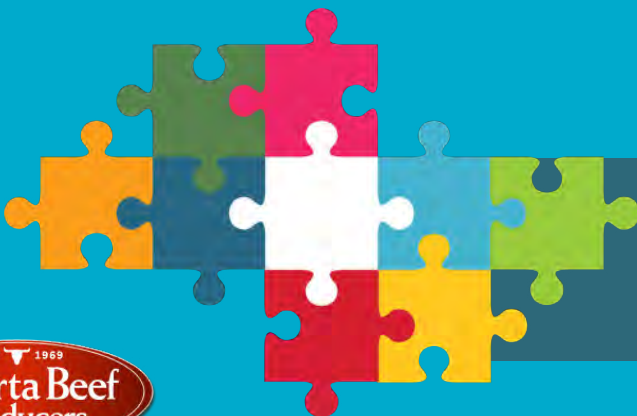
Byproducts made from the bones include toothpaste and bone china.

Byproducts made from entrails include violin strings.

Additionally, beef byproducts can be made from leftover meat portions, including pet foods.

The medical world also relies on the byproducts from cattle to produce a number of medications and treatments. Prior to the 1980s, people with diabetes relied totally on insulin supplies extracted from beef and pork pancreases.

Byproducts from cattle also assist in the treatment of anemia, allergies, parathyroid deficiencies, respiratory diseases, jaundice, rheumatoid arthritis and leukemia.



[www.albertabeef.org/consumers/resources](http://www.albertabeef.org/consumers/resources)