

Alberta Canola Producers Critical Issues Guides
Urbanization and Agriculture:
Past Development, Future Tensions
Exploring Critical Issues Series
Agriculture in Education
Teaching and Learning Resource

The roots of most Canadian rural communities are in agriculture. Today, Canada is no longer an agrarian nation. And in this change, we are losing the connection to the food that we eat – where it comes from, what is required to provide our ‘daily bread’, and the independence that our forefathers knew came with being able to grow enough to feed one’s self.

But more importantly, we are losing the resources that allow Canada to produce its food, and the citizenship that values regional cuisine made from foods that are produced in the areas where they live.

These resources are meant to ‘re-connect’ a population pulled to the city with the industrial revolution, with an appreciation for the resources that agriculture needs, if ‘made in Canada’ food is to continue to be a reality.

The websites in this resource were current as of the printing date of this publication. It is, however, beneficial to preview all websites before asking students to use them. Every effort has been made to acknowledge sources used in this resource. Should any question arise from the use of any material, we will be pleased to make the necessary corrections in future printings.

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Urbanization and Agriculture: Past Development, Future Tensions
A Teaching and Learning Resource for Grade 7 Social Studies

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Introduction and Overview

Agricultural communities have changed dramatically in the past century. This resource explores changes in western Canadian agriculture, beginning with the establishment of farms and continuing with the role of immigration and technology, in the context of issues related to urbanization, land use and future trends. As farming communities diminish and technology changes the direction of the industry, questions about the future of the family farm arise. Student research concludes by asking them to come to their own conclusions about decisions that will influence the future of farming in western Canada.

A Critical Issues Approach

Issues that are relevant and meaningful to students support a constructivist, inquiry-based approach to learning. Critical issues frame learning around key questions that pose problems that intrigue and interest students, and set a focus for motivated learning. Posed effectively, critical issues ask students to develop and apply critical thinking skills and look at multiple perspectives, consider alternatives, and recognize that challenges can often involve many different solutions.

This teaching and learning resource is developed around a critical issues approach and promotes inquiry-based learning and critical thinking. The exploration of issues is framed around inquiry questions that are relevant and meaningful to students, engage them in deliberative research and promote social participation skills.

Curriculum Support

This resource supports Alberta's Grade 7 Social Studies program of studies. It addresses selected values and attitudes as well as knowledge and understanding outcomes that relate to the issues involved in this topic. This resource also develops processes and skills, including critical thinking and creative thinking, historical thinking, decision making and problem solving, research and information inquiry, oral, written and visual literacy. A curriculum correlation chart follows. Specific charts are provided with each lesson in this resource, indicating those outcomes on which each lesson focuses.

Urbanization and Agriculture: Grade 7 Social Studies Curriculum Connections

Critical Issue

How has urbanization affected agricultural decisions, production and technology?

Related Inquiries and Issues

- To what extent is agriculture important to ways of life in Alberta and in the Canadian west?
- How has agriculture influenced ways of life and communities in the past?
- What does urbanization have to do with agriculture?
- What has happened to the family farm?
- How has technology changed agricultural practices and ways of life?

7.2 Following Confederation: Canadian Expansions

General Outcome

Students will demonstrate an understanding and appreciation of how political, demographic, economic and social changes that have occurred since Confederation have presented challenges and opportunities for individuals and communities.

Values & Attitudes

7.2.3 appreciate the challenges that individuals and communities face when confronted with rapid change (I, CC, LPP)

Knowledge & Understanding

7.2.5 evaluate the impact of Confederation and subsequent immigration on Canada from 1867 to World War I by exploring and reflecting upon the following questions and issues:

- to what extent was agricultural activity a key factor in the population growth of western Canada? (TCC, LPP, ER)

7.2.7 critically assess the impact of urbanization and technology on individual and collective identities in Canada by exploring and reflecting upon the following questions and issues:

- what impact has increased urbanization had on rural communities in Canada? (LPP, CC)
- in what ways did technological advances contribute to the development of Canada (e.g., aviation, farming equipment, radio transmissions, electronics, multimedia)? (ER, PADM)

Skills & Processes

7.S.1 develop skills of critical thinking and creative thinking:

- critically evaluate ideas, information and positions from multiple perspectives
- demonstrate the ability to analyze local and current affairs
- re-evaluate personal opinions to broaden understanding of a topic or an issue
- generate creative ideas and strategies in individual and group activities

7.S.2 develop skills of historical thinking:

- analyze historical issues in order to form or support an opinion
- use historical and community resources to organize the sequence of historical events
- distinguish cause, effect, sequence and correlation in historical events, including the long and short-term causal relations of events

7.S.4 demonstrate skills of decision making and problem solving:

- predict outcomes of decision-making and problem solving scenarios from multiple perspectives
- propose and apply new ideas and strategies to contribute to problem solving and decision making, supported with facts and reasons

7.S.6 develop age-appropriate behaviour for social involvement as responsible citizens contributing to their community:

- support and participate in activities and projects that promote the well-being and meet the particular needs of their community

7.S.7 apply the research process:

- develop a position supported by information gathered through research
- draw conclusions based upon research and evidence
- organize and synthesize researched information
- formulate new questions as research progresses
- integrate and synthesize concepts to provide an informed point of view on a research question or an issue

7.S.8 demonstrate skills of oral, written and visual literacy:

- communicate information in a clear, persuasive and engaging manner, through written and oral means
- use skills of informal debate to persuasively express differing viewpoints regarding an issue

7.S.9 develop skills of media literacy:

- analyze the impact of television, the Internet, radio and print media on a

particular current affairs issue

- examine the values, lifestyles and points of view represented in a media message

The Critical Issue

To what extent has urbanization affected agricultural decisions and ways of life?

Related Inquiries

- To what extent is agriculture important to ways of life in Alberta and in the Canadian west?
(Lesson One)
- How has agriculture influenced ways of life and communities in the past? (Lesson Two)
- What does urbanization have to do with agriculture? (Lesson Three)
- What has happened to the family farm? (Lesson Four)
- How has technology changed agricultural practices and ways of life? (Lesson Five)

In their inquiry into this critical issue, students explore agricultural growth and change in historical as well as contemporary contexts. They examine ways that agriculture has drawn people to western Canada and affected the growth of rural communities. They also explore the factors that influenced this growth, such as the railway and technology. Students apply this historical context to current issues in agriculture, including urbanization and changes to the family farm.

The Process

This resource is structured around inquiry questions that form the basis for exploring the critical issue. Each inquiry question provides a focus for a lesson and for deliberative research. Each lesson also contains “I can...” statements that set a context for researching the essential learnings of the lesson, provide criteria for assessment and help students focus their learning. These statements can be shared with students at the beginning of each lesson.

Each of the lessons in this resource provides activities that introduce and explore topics in a 50- to 60-minute class period. Additional activity suggestions provide opportunities to extend the lesson and further develop research and inquiry skills. An overview of instructional strategies is provided with each activity. These instructional strategies include cooperative learning and inquiry. Rubrics can be used to assess many of the products that students create in the lessons. A number of sample rubrics are provided at the end of this section of the resource, as well as a template for creating customized rubrics.

Each of the lessons is self-contained and provides the instructional process, activity ideas, briefing notes and other handouts. Therefore, teachers may choose lessons they are interested in to support the Grade 7 Social Studies program, and select any of the activities from the lessons.

Briefing Notes

Each of the lessons centres on a topic introduced through a Briefing Notes handout. Each briefing note provides students with an opportunity to connect their prior knowledge and understandings to the topic through Predict questions. Many of the briefing notes also provide research questions and web links that encourage research and the exploration of multiple viewpoints and opinions on issues relating to agriculture.

The briefing notes format provides an opportunity for students to take on a variety of research roles. Each lesson contributes to research that students gather to explore the critical issue. Students should be encouraged to come back to the critical issue when the lessons have been completed.

At-a-Glance

The following provides an overview of the sequence of the lessons, inquiry focus, instructional strategies, curriculum connections and assessment focus in this resource.

Lesson One: The Importance of Agriculture

In Lesson One, students explore past and present connections to agriculture in Alberta and in western Canadian society. Students share examples of why they think agriculture is an important aspect of ways of life in Alberta and western Canada. Lesson One provides students with an overview of the importance of agriculture in order to understand the critical issues introduced in the other four lessons.

Inquiry Focus:

To what extent is agriculture important to ways of life in Alberta and in the Canadian west?

Instructional Strategies:

- Cooperative Learning Board Share
- Concept Web
- KWHL Chart
- Collage

Curriculum Connections:

7.2 Following Confederation: Canadian Expansion

General Outcome

Students will demonstrate an understanding and appreciation of how political, demographic, economic and social changes that have occurred since Confederation have presented challenges and opportunities for individuals and communities.

Skills & Processes:

7.S.1 develop skills of critical thinking and creative thinking:

- critically evaluate ideas, information and positions from multiple perspectives
- demonstrate the ability to analyze local and current affairs
- generate creative ideas and strategies in individual and group activities

7.S.4 demonstrate skills of decision making and problem solving:

- predict outcomes of decision-making and problem-solving scenarios from multiple perspectives

7.S.9 develop skills of media literacy:

- examine the values, lifestyles and points of view represented in a media message

Assessment Focus: (I Can... Statements)

Lesson One encourages students to demonstrate their learning by developing understandings such as the following:

- I can discuss how agricultural activities affect ways of life today.
- I can identify and discuss current and local issues and media messages related to agricultural practices, production and human activities.

Lesson Two: History in Review

In Lesson Two, students examine some of the important events in the settlement of the west that connect to agriculture in Alberta and throughout western Canada. Students explore ways that agriculture influenced the railway, immigration and population growth in the Canadian west. Lesson Two encourages students to develop an appreciation of the importance of agriculture to the growth of western Canada, both past and present. This lesson builds on the overview from Lesson One of the importance of agriculture today.

Inquiry Focus:

How has agriculture influenced ways of life and communities in the past?

Instructional Strategies:

- Brainstorming Questions
- File Folder Research
- Cooperative Learning Carousel
- Poster Advertisement

Curriculum Connections:

7.2 Following Confederation: Canadian Expansion

General Outcome

Students will demonstrate an understanding and appreciation of how political, demographic, economic and social changes that have occurred since Confederation have presented challenges and opportunities for individuals and communities.

Knowledge and Understanding:

7.2.5 evaluate the impact of Confederation and subsequent immigration on Canada from 1867 to World War I by exploring and reflecting upon the following questions and issues: To what extent was agricultural activity a key factor in the population growth of western Canada? (TCC, LPP, ER)

Skills & Processes:

7.S.1 develop skills of critical thinking creative thinking:

- generate creative ideas and strategies in individual and group activities

- 7.S.2 develop skills of historical thinking:
- analyze historical issues in order to form or support an opinion
 - use historical and community resources to organize the sequence of historical events
- distinguish cause, effect, sequence and correlation in historical events, including the long and short-term causal relations of events
- 7.S.4 demonstrate skills of decision making and problem solving:
- predict outcomes of decision-making and problem solving scenarios from multiple perspectives
 - propose and apply new ideas and strategies to contribute to problem solving and decision making, supported with facts and reasons
- 7.S.7 apply the research process:
- formulate new questions as research progresses

Assessment Focus: (I Can... Statements)

Lesson Two encourages students to demonstrate their learning by developing understandings such as the following:

- I can identify and describe ways that agricultural activities were used to bring new immigrants to Canada.
- I can evaluate the causes and effects of media messages of the time on new immigrants.
- I can assess the contributions and changes that new immigrants brought to Canadian agricultural practices and ways of life.

Lesson Three: Urbanization

In Lesson Three, students explore how urbanization in Alberta and western Canada has changed the balance between rural and urban society. The farms that used to “dot the landscape” in western Canada have been replaced by large cities, particularly the growing cities of Edmonton and Calgary, with populations of about 1 million each. Lesson Three encourages students to understand the impact that increased urbanization has had on rural communities in Canada. Drawing on the overarching critical issue of how urbanization affects agricultural decisions, production and technology, this lesson provides students with an opportunity to explore perspectives on urbanization.

Inquiry Focus:

What does urbanization have to do with agriculture?

Instructional Strategies:

- Statistical Analysis
- Retrieval Chart
- Cooperative Learning Stand and Share
- Community Participation

Curriculum Connections:

7.2 Following Confederation: Canadian Expansion

General Outcome

Students will demonstrate an understanding and appreciation of how political, demographic, economic and social changes that have occurred since Confederation have presented challenges and opportunities for individuals and communities.

Values and Attitudes:

7.2.3 appreciate the challenges that individuals and communities face when confronted with rapid change (I, CC, LPP)

Knowledge and Understanding:

7.2.7 critically assess the impact of urbanization and technology on individual and collective identities in Canada by exploring and reflecting upon the following questions and issues: What impact has increased urbanization had on rural communities in Canada? (LPP, CC)

Skills & Processes:

7.S.1 develop skills of critical thinking and creative thinking:

- critically evaluate ideas, information and positions from multiple perspectives

7.S.4 demonstrate skills of decision making and problem solving:

- predict outcomes of decision-making and problem solving scenarios from multiple perspectives

7.S.6 develop age-appropriate behaviour for social involvement as responsible citizens contributing to their community:

- support and participate in activities and projects that promote the well-being and meet the particular needs of their community

7.S.7 apply the research process:

- draw conclusions based upon research and evidence
- organize and synthesize researched information
- formulate new questions as research progresses

Assessment Focus: (I Can... Statements)

Lesson Three encourages students to demonstrate their learning by developing understandings such as the following:

- I can identify and describe the causes and effects of urbanization.
- I can compare the causes and effects of urbanization with changes that agricultural communities and industries have experienced.
- I can draw conclusions about the impact of urbanization.

Lesson Four: Change

In Lesson Four, students explore how family farms, which once made up the majority of the rural population in western Canada, are declining. Students investigate some of the causes and effects of these changes.

Inquiry Focus:

What has happened to the family farm?

Instructional Strategies:

- Class Discussion
- Teaching a Lesson
- Futures Wheel
- Paired Investigation and Research

Curriculum Connections:

7.2 Following Confederation: Canadian Expansion

General Outcome

Students will demonstrate an understanding and appreciation of how political, demographic, economic and social changes that have occurred since Confederation have presented challenges and opportunities for individuals and communities.

Values and Attitudes:

7.2.3 appreciate the challenges that individuals and communities face when confronted with rapid change (I, CC, LPP)

Knowledge and Understanding:

7.2.7 critically assess the impact of urbanization and technology on individual and collective identities in Canada by exploring and reflecting upon the following questions and issues: What impact has increased urbanization had on rural communities in Canada? (LPP, CC)

Skills & Processes:

7.S.1 develop skills of critical thinking and creative thinking:

- critically evaluate ideas, information and positions from multiple perspectives

7.S.4 demonstrate skills of decision making problem solving:

- predict outcomes of decision-making and problem solving scenarios from multiple perspectives

7.S.7 apply the research process:

- organize and synthesize researched information
- formulate new questions as research progresses

7.S.8 demonstrate skills of oral, written and visual literacy:

- communicate information in a clear, persuasive and engaging manner, through written oral means

Assessment Focus: (I Can... Statements)

Lesson Four encourages students to demonstrate their learning by developing understandings such as the following:

- I can compare the development of urban and rural communities.
- I can summarize the reasons for change that has resulted from urbanization.
- I can evaluate the impact of urbanization on agriculture and rural communities.

Lesson Five: Technology

In Lesson Five, students examine the relationship between technological advancements and the agricultural industry. This includes an understanding of the role of pesticides and herbicides, chemical fertilizers, genetic breakthroughs in plant and animal production, developments in seed research, and improved harvesting techniques. Farming and technology have always been closely linked. The development of machinery and crops that would flourish in the Canadian west has affected the growth of agriculture over time. New technologies continue to revolutionize Canadian farming methods.

Inquiry Focus:

How has technology changed agricultural practices and ways of life?

Instructional Strategies:

- Shared Writing
- Research Questions
- Contribution Chart
- Visual Timeline

Curriculum Connections:

7.2 Following Confederation: Canadian Expansion

General Outcome

Students will demonstrate an understanding and appreciation of how political, demographic, economic and social changes that have occurred since Confederation have presented challenges and opportunities for individuals and communities.

Knowledge and Understanding:

7.2.7 critically assess the impact of urbanization and technology on individual and collective identities in Canada by exploring and reflecting upon the following question and issue: In what ways did technological advances contribute to the development of Canada (e.g., aviation, farming equipment, radio transmissions, electronics, multimedia)? (ER, PADM)

Skills & Processes:

7.S.1 develop skills of critical thinking and creative thinking:

- critically evaluate ideas, information and positions from multiple perspectives
- re-evaluate personal opinions to broaden understanding of a topic or an issue

7.S.4 demonstrate skills of decision making and problem solving:

- predict outcomes of decision-making and problem solving scenarios from multiple perspectives
- propose and apply new ideas and strategies to contribute to problem solving and decision making, supported with facts and reasons

7.S.7 apply the research process:

- develop a position supported by information gathered through research
- draw conclusions based upon research and evidence

- organize and synthesize researched information
- integrate and synthesize concepts to provide an informed point of view on a research question or an issue

7.S.8 demonstrate skills of oral, written and visual literacy:

- communicate information in a clear, persuasive and engaging manner, through written and oral means
- use skills of informal debate to persuasively express differing viewpoints regarding an issue

Assessment Focus: (I Can... Statements)

Lesson Five encourages students to demonstrate their learning by developing understandings such as the following:

- I can evaluate different perspectives on the impact of technology on agriculture.
- I can identify the changes that agricultural practices and ways of life have gone through as a result of technology.
- I can summarize the ways that changes in technology have contributed to Canadian ways of life and identities.

Rubrics

The assessment rubrics that follow can be applied to many of the products that students develop in the activities in this resource. These rubrics can be adapted and developed with students.

A template is provided for the creation of customized rubrics.

Visual organizers

Excellent 4	Demonstrates an understanding of the topic, its relationships and related concepts and ideas; provides appropriate labels and organizers; provides information that reflects the topic; links are made appropriately; visual organizer is used appropriately
Proficient 3	Displays understanding of the topic and relationships to concepts and ideas; provides appropriate labels and organizers; provides information that relates to the topic; attempts to make links; uses the visual organizer appropriately
Acceptable 2	Identifies concepts and ideas that relate to the topic; provides labels and organizers; includes information that relates to the topic; uses the format of the visual organizer

Limited 1	Provides information related to the topic; uses parts of the visual organizer to present information
No work completed 0	

Research

Excellent 4	Develops a strategy for conducting research; develops and identifies research and inquiry questions; analyzes and assesses sources of information selected for the research task; records information using an appropriate format; applies research to inquiry question; makes effective use of research time
Proficient 3	Identifies a strategy for conducting research; identifies research and inquiry questions; selects and assesses sources of information; records information using an appropriate format; identifies links between research collected and inquiry question; makes effective use of research time
Acceptable 2	Uses and identifies strategy for conducting research; records research and inquiry questions; selects and reads sources of information; records information using an appropriate format; uses information from sources to answer inquiry questions
Limited 1	Selects and reads sources of information; records identifies research and inquiry questions; records information using an identified format; identifies information from sources that relates to inquiry questions
No work completed	

0	
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Group activities

Excellent 4	Articulates clear understanding of the group task and the individual contribution to the group; listens to group members; expresses opinions and ideas; contributes information and research; works with the group to fulfil group responsibilities
Proficient 3	Articulates understanding of the group task the role each individual plays with the group; listens to group members; contributes ideas and information; fulfils individual responsibilities for the group
Acceptable 2	Describes the group task; describes individual role; listens to group members; contributes information to group task
Limited 1	Describes individual role within the group setting; listens to others in the group; contributes ideas
No work completed 0	

Timelines

Excellent 4	Develops timeline to accurately reflect the passage of time; creates organizational structure and presentation of timeline;
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	selects appropriate information and details to the time period and purpose of the timeline; shows an understanding of the topics, events, people or concepts being depicted; uses visuals to expand on the presentation of information
Proficient 3	Develops timeline to accurately reflect the passage of time; uses an identified format for the structure and presentation of timeline; selects appropriate information for the time period and purpose of the timeline; selects topics, events, people or concepts that relate to the time period depicted; uses visuals to enhance the presentation of information
Acceptable 2	Develops timeline in a chronological order; uses an identified format for the structure and presentation of timeline; selects topics, events, people or concepts that relate to the time period and purpose of the timeline; uses visuals to present information
Limited 1	Displays topics, events, people or concepts on timeline; uses and identifies format to record information for timeline
No work completed 0	

Projects

Excellent 4	Develops a project planning strategy and process; identifies goals and purpose of project; demonstrates understanding of topics and concepts represented in the project; selects an appropriate method of constructing and creating project; uses research and information gathered appropriately and effectively in the project; demonstrates ability to summarize and synthesize information within the project; displays learning with pride in final presentation of project
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Proficient 3	Identifies a project planning strategy and process; identifies purpose of project; selects information relating to topics and concepts under study for the project; selects an appropriate method of constructing and creating the project; uses research and information gathered appropriately and effectively in the project; demonstrates ability to summarize information within the project; displays learning with pride in final presentation of project
Acceptable 2	Uses an identified project planning strategy and process; selects information relating to topics and concepts under study for the project; selects a method for constructing and creating the project; uses research and information gathered throughout the project; displays learning with pride in final presentation of project
Limited 1	Selects information relating to topics and concepts under study for the project; constructs and creates the project using an identified approach; uses information gathered for the project
No work completed 0	

Template

Excellent 4	
Proficient 3	
Acceptable 2	
Limited 1	
No work	

completed 0	
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Lesson One: The Importance of Agriculture

Overview

In Lesson One, students explore past and present connections to agriculture in Alberta and in western Canadian society. Students share examples of why they think agriculture is an important aspect of ways of life in Alberta and western Canada. Lesson One provides students with an overview of the importance of agriculture in order to understand the critical issues introduced in the other four lessons.

Rationale

Students should understand agriculture's important role in developing Alberta's society and economy, today as well as in the past. Presenting students with "I can..." statements can help focus their learning and provide a context for assessment with this lesson's activities.

Inquiry

To what extent is agriculture important to ways of life in Alberta and in the Canadian west?

Preparation

The following handouts, materials and resources are used in this lesson:

- Handouts
 - Briefing Notes 1A: The Importance of Agriculture
 - Student Resource 1B: KWHL Chart
- Chart paper
- Local media sources: newspapers and magazines

"I CAN"

Lesson One encourages students to demonstrate their learning by developing understandings such as the following:

- I can discuss how agricultural activities affect ways of life today.
- I can identify and discuss current and local issues and media messages related to agricultural practices, production and human activities.

Lesson One: Teaching and Learning Strategies

In Lesson One, students build the foundation for exploring issues in agriculture that are the focus for the next four lessons.

Introductory Activity

Students begin with a brainstorming session in which they think about and discuss what they know and understand about agriculture in Alberta and the Canadian west.

Instructional Strategy: Cooperative Learning Board Share

The Board Share activity asks students to work in small groups and brainstorm responses to a question. While the group brainstorms, an appointed recorder records the group's ideas on the board for the whole class. The recorder is responsible for ensuring that all of the group's ideas are recorded.

Process

1. Ask students what they know about agriculture's importance to our ways of life in Alberta and Canada.
2. Have students work in small groups to brainstorm their ideas. Remind students to appoint a recorder for their small group.
3. Have each small group record brainstormed ideas in the form of a brainstorming web on the whiteboard, blackboard, or chart paper.

Briefing Notes Activity

Students read and discuss the briefing notes with a partner. They focus on connections between agriculture and ways of life in Alberta and the Canadian west.

Instructional Strategy: Concept Web

Reading for meaning and summarizing main points by using a visual organizer, such as a concept web or cause and effect organizer, requires students to synthesize information and critically evaluate relationships and connections to their prior knowledge and understandings.

Process

1. Provide each student with a copy of Briefing Notes 1A: The Importance of Agriculture. Ask students to discuss or respond in writing to the Predict questions at the beginning of the handout.
2. Have students read the briefing notes and respond in writing to the questions at the end of the handout.
 - Why do you think the agricultural industry is so important to Alberta?
 - Why do you think the proportion of people in Alberta that are employed in the agricultural industry is changing?
 - What are the top five agri-food exports from Alberta? Why do you think these products are important to Alberta's economy?

Have students create a concept web similar to the one below, to summarize the key points that relate to the importance of agriculture to ways of life in Alberta and western Canada. Some examples of key points that students may identify are provided in the sample concept web below.

Agriculture

Agriculture provides many jobs in Alberta

Agriculture is an essential activity that sustains human life in our society today.

Agriculture results in the need to establish relationships with other countries – we import and export goods.

Agricultural activities affect decisions we make about natural resources.

Closing Activity

Students complete a KWHL chart that introduces and focuses on the issue of urbanization.

Instructional Strategy: KWHL Chart

Group discussion, analysis and synthesis of information encourages students to draw conclusions and ask questions that lead to further research. Using a visual organizer such as a KWHL chart, students link their prior knowledge and understandings to ideas for further research.

Process

1. Introduce the critical issue to students by writing the issue question on the board: To what extent is agriculture important to ways of life in Alberta and in the Canadian west?
2. Have each student complete Student Resource 1B: KWHL Chart. Student Resource 1B: KWHL Chart. Trade the chart with another student and discuss ideas that are similar and different.
3. Have students in small groups discuss and record their responses to the question.
4. Ask small groups to share their perspectives, responses and ideas with the whole class.

Extension Activity

Students work with a small group to create a collage.

Instructional Strategy: Collage

Visual representations and compilations of student research provide an opportunity to explore various viewpoints and opinions about a particular topic. A collage provides an alternate method of collecting and organizing research. A collage should be created around a particular topic or research question. Students should not only collect and organize information in their collages, but should also examine and analyze the collage. Ask them to identify what they see in their collage, what patterns they recognize, what opposing or conflicting views are represented, and where the biases may exist in the information they have included.

Process

1. Have each small group do a media search, using local newspapers and magazines to find articles, advertisements, images and stories that relate to agriculture.
2. Ask each group to create a collage of their results.
3. Have each group analyze the articles, advertisements, images and stories they have used in their collages and discuss what they see.
4. Ask groups to develop summary statements about their collage. Remind students to look for patterns or recurring ideas or information, opposing or conflicting viewpoints

or opinions that may be represented, and what biases may exist in the articles, advertisements or stories they have included.

Briefing Notes 1A The Importance of Agriculture

To what extent is agriculture important to ways of life in Alberta and the Canadian west?

Predict

How does agriculture affect your daily life? Why do you think agriculture is so important to ways of life in western Canada?

Extend

What agricultural products do you use? Where do these agricultural products come from? Investigate the agricultural products you have in your home. Find both food and non-food products that come from agricultural activities. How many of them come from Alberta? How many come from Canada?

Agriculture in Alberta is big business 1 (1 Excerpted with permission from Growing Alberta and Food For Thought 2006. "Economic Impact of Agriculture".

Check the Growing Alberta website at www.growingalberta.com for updates, current statistics and information.

www.growingalberta.com/features/default.asp?id=88 (July 5, 2006.)

Alberta's agriculture and food industry is a very important business in this province. The industry is the largest manufacturing type in Alberta and Alberta is the second highest agricultural producing province in Canada.

Farming, ranching, food processing, food retail stores, food service and restaurants all come together to make Alberta's agriculture and food industry a world class exporter and an economic powerhouse.

*So, just what is a farm cash receipt anyway?

Farm cash receipts measure the total revenue (the total amount of money made from sales) of farm business in current dollars. Revenues are figured out from the sale of crops, livestock, and livestock products.

Alberta farm facts

- In 2002, Alberta farm cash receipts* totalled \$8.2 billion – 62 per cent from the sale of livestock and livestock products, 25 per cent from the sale of crops, and 13 per cent from program payments. Only Ontario's farm cash receipts were at \$8.5 billion.
- According to the 2001 Census, there are 53,652 farms in Alberta, producing 23 per cent of Canada's farm cash receipts. The average farm size is 970 acres.
- The agriculture and agri-food sector accounts for 9 per cent of Canada's Gross Domestic Product (GDP).
- Agriculture is Alberta's largest renewable resource base industry.
- Producers spent well over \$5 billion to operate their farms in 2002. The largest single expense was livestock purchases totalling \$950 million or 17 per cent of all operating expenses.

The export situation

- Alberta's agriculture and food industry exports to more than 120 countries around the world.
- Alberta exported \$5.1 billion worth of primary and processed agriculture and food products in 2002.
- Alberta is the country's second largest exporter of agricultural products.
- The United States continues to be Alberta's largest importer. In 2002, 59 per cent of Alberta's total agriculture and food exports – valued at \$3.05 billion – were destined for the US market.
- The top five agri-food exports from Alberta in 2002 were beef - \$1.6 billion, wheat - \$845 million, live cattle - \$634 million, canola seed - \$315 million, and pork - \$191 million.

On the job front

- Alberta's agriculture and food industry impacts 1 out of every 7 jobs in the province.
- In 2002, there were 61,300 persons employed in primary agriculture and 28,300 in food and beverage manufacturing, for a total of 89,600 employees.
- More than 500 companies do business in Alberta's food and beverage manufacturing industries, pumping \$9.9 billion into Alberta's economy. This is projected to double by 2010.

Explore

Talk or write about the following questions.

- Why do you think the agricultural industry is so important to Alberta?
- Why do you think the proportion of people in Alberta that are employed in the agricultural industry is changing?
- What are the top five agri-food exports from Alberta? Why do you think these products are important to Alberta's economy?

Student Resource 1B

KWHL Chart

Issue: How has urbanization affected agricultural decisions and ways of life?

Agricultural communities have changed quite dramatically over the past century. Many of western Canada's communities were established along with the farms of western Canada. These communities continued to grow with the arrival of new immigrants and changing technology. As new technology brings more changes and farming communities become smaller, questions about the future of the family farm arise.

What I Know	What I Want to Know More About	How I Will Find This Out	What I Learned
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Defining Terms: Write your definition for each term:

Urbanization:

Immigration:

Trends:

Industry:

Lesson Two: History in Review

Overview

In Lesson Two, students examine some of the important events in the settlement of the west that connect to agriculture in Alberta and throughout western Canada. Students explore ways that agriculture influenced the railway, immigration and population growth in the Canadian west. Lesson Two encourages students to develop an appreciation of the importance of agriculture to the growth of western Canada, both past and present. This lesson builds on the overview from Lesson One of the importance of agriculture today.

Rationale

Students should understand the significant role that agriculture played in the settlement of western Canada. Presenting students with “I can...” statements can help focus their learning and provide a context for assessment with this lesson’s activities.

Inquiry

How has agriculture influenced ways of life and communities in the past?

Preparation

The following handouts, materials and resources are used in this lesson:

- Handouts
 - Briefing Notes 2A: History in Review
 - Student Resource 2B: Research Sources Chart
- Internet, library, classroom and textbook resources, with information on agriculture and immigration in the late 1800s and early 1900s
- File folders
- Poster paper

Lesson Two: Teaching and Learning Strategies

In Lesson Two, students examine the importance of agriculture in the settlement of the Canadian west.

Introductory Activity

Students begin by sharing questions they have about the history of agriculture in Alberta and Canada. Questions set the foundation for thinking about processes of research and inquiry.

Instructional Strategy: Brainstorming Questions

Brainstorming and recording questions on a topic emphasizes the importance of questioning to the inquiry process. Brainstorming questions also provides an opportunity for students to consider what they already know and understand, and what they would like to know more about. This allows students to re-examine prior understandings and revise opinions once they have completed their research.

Process

1. Introduce the Inquiry Question to students: How has agriculture influenced ways of life and communities in the past?
2. Have students continue to work in small groups to brainstorm and record their questions. Ask them to consider how events of the past influence ways of life today and how agriculture became a foundation of many activities in western Canada. To what extent do they think agriculture was an important factor in bringing people to western Canada?

Briefing Notes Activity

Students read and discuss the briefing notes with a small group. They focus on the historical context of agriculture in the Canadian west and contribute to a group research task.

Instructional Strategy: File Folder Research

Group research strategies provide the opportunity for students to practice research skills in a group setting. Provide each group with a file folder to hold their research. As students collect and record information, use the file folders to hold research as well as to record group discussion and reflection on the research. Each group can be asked to focus

on one research question to facilitate the development of research skills and expertise in a specific content area. Sharing file folders allows students to share their expertise.

Process

1. Provide each student with a copy of the Briefing Notes 2A: History in Review. Briefing Notes 2A: History in Review. Ask students to discuss or respond in writing to the Predict questions at the beginning of the handout.
2. Provide each group with a file folder and Student Resource 2B: Research Sources Organizer. Assign one of the questions in the briefing note or a research question developed by students, to each group. Structure time to complete research using classroom sources, such as the textbook and library resources, or the Internet. Each group should consult three different sources and record their research results on the chart.
3. Extend: Students may be provided with a class period of library research to find sources that relate to their research. This class period could be used to focus on library or Internet research skill development.
4. Each group may also be asked to record or cut-and-paste additional research, excerpts from sources, examples from media sources, and visuals directly in their file folders. Have each group maintain a bibliography of the resources they have used as research sources.
5. Have each group discuss and identify current issues associated with their research. Students may identify current issues such as those connected with changes in farming, urban growth, the impact of agriculture on the environment and new technologies.

Closing Activity

Students share their research with others in the class.

Instructional Strategy: Carousel

A carousel allows students to share research and learning with other students or groups in the class. Each group organizes a display of their research results on their group table. Place a comment sheet on each group table. Groups rotate through the displays at timed intervals. One group member can remain with their displays to present group research and ask visiting groups to record questions or comments. Alternatively, groups can stay together and be asked to record their comments or questions on the comment sheet on each table. The carousel strategy encourages students to develop presentation and communication skills in a small group setting instead of in front of the entire class.

Process

1. Have each group organize and display their research in their file folders.
2. Share research results with the class using the carousel sharing strategy.

Extension Activity

Students create a poster advertisement related to a current issue in agricultural ways of life.

Instructional Strategy: Poster Advertisement

Creating a poster advertisement is a strategy that demonstrates students' creative thinking skills. Students can apply what they learn about historical contexts to a contemporary topic or issue.

Process

1. With the class, discuss how posters were used to advertise land to potential immigrants in the later part of the 1800s and early 1900s. You may choose to spend some time with classroom resources or the Internet, looking at examples of posters used to advertise Canada to people in other countries.
2. Ask students to discuss some of the issues that arose with these poster advertisements. For example:
 - misleading and incomplete information
 - visuals that implied a certain quality of life
 - advertising targeted at particular groups of people
 - stereotypes or cultural myths that encouraged a narrow view of agricultural ways of life (e.g., farmers always wore coveralls or decorated their farms with old pieces of farm machinery; women looked after the household chores while men worked in the fields; all farmers were profitable; the weather was always good).
3. Have students work with a partner or small group to create a poster that would advertise Canada today. How would the poster need to be different from posters in the past? What issues would need to be addressed in a poster used today?

Briefing Notes 2A History in Review

How has agriculture influenced ways of life and communities in the past?

Predict

How important was agriculture in attracting new immigrants to Canada's west? Why do you think agriculture was so important? To whom do you think it was most important? Why?

Opening the West

When the Canadian government decided to open up the lands of the west for settlement, it set the stage for a way of life based on agriculture. As settlers moved into the land made available by the government, small towns and villages started to spring up all over the prairies. A number of factors affected the establishment of agriculturally based communities in western Canada.

The Railway

In 1855, the last remaining land in Canada West (what is now Ontario) was sold to the government for settlement. This made politicians think about the land that was available for settlement in the west. They also started to consider how to move settlers to the prairies.

Politicians were also worried about events in the United States. In 1862, the United States approved construction of the Union Pacific railroad from the Missouri River to the west coast, and the Northern Pacific railway to run from Lake Superior to Puget Sound in the

northwest. What do you think the Canadian politicians were worried about?

In 1870, the Canadian government purchased Rupert's Land from the Hudson's Bay Company. They wanted to move settlers west from eastern Canada, as well as encourage immigrants from other countries to come to Canada, to solidify their claim to this land as quickly as possible. A railway was seen as a solution. Additionally, the railway would encourage the people in British Columbia to join Confederation.

Changing Legislation

At the time of Confederation, immigration was the responsibility of the Department of Agriculture. This continued until March of 1892. At that time, the government formed a department called the Department of the Interior. In 1917, the Department of the Interior joined with the Ministry of Labour.

The Dominion Lands Act

The Canadian government passed the Dominion Lands Act in 1872. The Act granted sections of free land to any settler who was 21 or older and the head of a household. The settler had to pay a ten-dollar registration fee, live on the section for three years, cultivate 21 hectares and build a permanent dwelling on the land. These conditions often prevented women from acquiring land independently.

The Act also set aside land for schools and the Hudson's Bay Company. Clifford Sifton, the Minister of the Interior in Sir Wilfrid Laurier's government, pressured the Canadian Pacific Railway to free up additional land for settlement.

If the settler didn't follow the conditions of the Act, the federal government could take back the land. From 1874 on, settlers were also encouraged to buy adjacent lands for as little as \$1 an acre from the government. This would allow settlers to expand their farms before others bought up the adjoining land.

Advertising "The Last Best West"

Canadian immigration policy changed in 1896. Clifford Sifton increased advertising efforts in Europe to attract farmers and farm labourers to the Canadian west. The slogan "Canada: The Last Best West" became a popular phrase used to attract settlers to the west.

"A torrent of pamphlets in several languages flooded Great Britain, Europe, and the United States. Canadian exhibits were mounted at fairs, exhibitions, and public displays, while 'editorial articles,' commissioned by his department, were inserted in foreign newspapers. Foreign journalists were wined and dined on guided tours across the West, and prosperous homesteaders were encouraged to revisit their homelands and those friends and relatives they had left behind, since it was Sifton's belief that the most effective advertising was done by individual contact." 2 (2 Citizenship and Immigration Canada. Forging our legacy.

www.cic.gc.ca/english/department/legacy/chap-2.html#chap2-1 (July 5, 2006).)

Thanks to these measures and an economy that was generally booming, more than three million people came to Canada between 1896 and 1914.

Did you know?

Posters were used extensively in Canada's aggressive campaign to attract European settlers to the West. Many posters sent to European countries in the 1890s used the slogan "Canada: 160 acres of free land for every settler."

Explore the role of advertising and the settlement of the west on the Internet:

The Canadian West: www.collectionscanada.ca/canadian-west/052901_e.html

The Last Best West: Advertising for Immigrants
www.civilization.ca/hist/advertis/ads1-01e.html

With the economic depression of the 1870s and 1880s starting to lift, Sifton decided it was time to increase immigration to the prairies from Britain, other western European countries, and the United States. It was felt that people from these areas were best suited to agricultural life on the prairies.

While many of the claims of the Canadian government emphasized how attractive the land was for settlement, many settlers often found that conditions weren't quite what they had imagined when they arrived. Posters advertised free land, but settlers still had to pay the registration fee of \$10, equivalent to roughly \$150 in today's money. They had to buy their own equipment and animals for the land, and find materials to build their own shelters. Many settlers built sod houses because they couldn't afford to buy lumber.

Agricultural Traditions

Many of the settlers who came to Canada in search of free land and a better life were European farmers who had a long tradition of agricultural knowledge and practices. However, in Canada they encountered different and often difficult conditions. Shorter growing seasons, a changing and challenging climate, unfamiliar soil types, the need to clear land for new farms as well as other challenges meant a difficult life for many farmers.

An innovation that helped increase the number of people settling in the Canadian west was the 1903 invention of a hardier strain of wheat called Marquis Wheat. This wheat was able to extend the growing season on Canada's prairies, and made farming there a more prosperous occupation. This wheat was commercialized and sold starting in 1911. Rapeseed was another European crop that was brought to Canada. In 1936, an immigrant farmer from Poland started growing a small amount of rapeseed in his garden in Shellbrook, Saskatchewan. The Canadian government had already started to grow rapeseed on experimental farms established in the early 1900s. However, there was no established demand for rapeseed in Canada and little knowledge of how rapeseed could be used. The experimental farms had proven that rapeseed could be grown successfully in both eastern and western Canada. The Saskatchewan farmer knew, however, that rapeseed had been used in Europe for hundreds of years and that oil made from rapeseed was a very good lubricant for steam power machinery.

When World War II broke out, there was a critical shortage of machinery oils. Oil was urgently needed as a lubricant for the increasing number of steam engines in navy and merchant ships and on submarines. When the need for more rapeseed oil became known, the Saskatchewan farmer increased his seed supply and sold it to his neighbours. The seed became known as "Polish rapeseed" in Canada.

It wasn't until the end of World War II, when rapeseed oil was no longer needed as a lubricant, that the possibility of using it for food was explored. Plant breeding modified the seed to eliminate the levels of two known unhealthy fatty acids in the seed's oil, making it more suitable for human consumption. That new variety of rapeseed is now known as canola. Canola is a Canadian innovation.

Explore

With a small group, research one of the following questions:

- Why did people come to western Canada and where did they come from?
- What practices did they bring with them?
- How did the environment affect agricultural activities?
- How did Canada's immigration policies in the late 1800s and early 1900s affect the establishment of agricultural communities?
- To what extent did advertising emphasize agricultural activities? Why do you think this focus was used in the advertising of the times?
- How did Canadian agricultural innovations affect people's quality of life?

What other research questions do you have?

Find Information: Web Links

Start with these web links for further research:

Forging a Legacy

www.cic.gc.ca/english/department/legacy/index.html

Immigrant Voices

www.canadianhistory.ca/iv/main.html

The Last Best West: Advertising for Immigrants

www.civilization.ca/hist/advertis/adindexe.html

Canada in the Making

www.canadiana.org/citm/themes/pioneers_e.html

Student Resource 2B Research Sources Organizer

Research Question

Source 1

Source 2

Source 3

What are some current issues that are connected to our research question?

Lesson Three: Urbanization

Overview

In Lesson Three, students explore how urbanization in Alberta and western Canada has changed the balance between rural and urban society. The farms that used to “dot the landscape” in western Canada have been replaced by large cities, particularly the growing cities of Edmonton and Calgary, with populations of about 1 million each. Lesson Three encourages students to understand the impact that increased urbanization has had on rural

communities in Canada. Drawing on the overarching critical issue of how urbanization affects agricultural decisions, production and technology, this lesson provides students with an opportunity to explore perspectives on urbanization.

Rationale

Students should understand that the movement of people to cities in western Canada has affected agricultural decisions, production and technology. Presenting students with “I can...” statements can help focus their learning and provide a context for assessment with this lesson’s activities.

Inquiry

What does urbanization have to do with agriculture?

Preparation

The following handouts, materials and resources are used in this lesson:

- Handouts
 - Student Resource 3A: Population Change
 - Briefing Notes 3B: Urbanization
- Internet or other media sources, library or classroom resources on urbanization

“I CAN”

Lesson Three encourages students to demonstrate their learning by developing understandings such as the following:

- I can identify and describe the causes and effects of urbanization.
- I can compare the causes and effects of urbanization with changes that agricultural communities and industries have experienced.
- I can draw conclusions about the impact of urbanization.

Lesson Three: Teaching and Learning Strategies

In Lesson Three, students start to explore the issue of urbanization and its relationship to agriculture.

Introductory Activity

Students use raw population data to make generalizations on growth in selected rural and urban places in Canada.

Instructional Strategy: Statistical Analysis

Asking students to draw conclusions and develop generalizations about patterns and recurring ideas develops critical thinking skills. Activities that ask students to use statistics and population data encourages both critical thinking and numerical thinking skill development.

Process

1. Review the definition of urbanization discussed in Lesson One. Provide students with Student Resource 3A: Population Change. Have students examine the chart that

indicates how urban growth in Canada, Alberta and in Saskatchewan has surpassed rural growth since 1980.

2. Discuss, either in small groups or as a class, what rural and urban areas are. The Organization for Economic Co-operation and Development (OECD) defines rural as a community with a population density of less than 150 people per square kilometre. A region is defined as “rural and remote” if more than 50% of its population lives in rural communities. A region is defined as “intermediate” if between 15% and 50% of its population lives in rural communities. Intermediate regions tend to contain small cities. In an “agglomerated” or urban region, less than 15% of the population lives in rural communities. These regions contain Canada’s largest cities. 3 (3 Canadian Rural Information Service. The OECD definition of rural. Government of Canada. www.rural.gc.ca/cris/faq/def_e.phtml (July 5, 2006).)

3. Continue to discuss the questions at the end of the handout.

- What was the difference in population between 1981 and 2001 in predominantly urban regions and predominantly rural regions in Canada, Alberta, Manitoba and Saskatchewan?
- What is the difference between rural and urban growth, according to the statistics in this chart?
- What conclusions do you think it is possible to make about rural and urban growth in Canada? What questions about rural and urban growth would need to be answered using further research and other sources?

Briefing Notes Activity

Students read and discuss the briefing notes with a small group. They focus on trends and issues associated with urbanization.

Instructional Strategy: Retrieval Charts

Retrieval charts are an effective way for students to develop research skills in both collecting and organizing research data. Retrieval charts can encourage the collection of information from multiple sources and the consideration of multiple perspectives.

Process

1. Provide each student with a copy of the Briefing Notes 3B: Urbanization. Ask students to discuss or respond in writing to the Predict questions at the beginning of the handout.
2. Have students use the retrieval chart in the handout to explore the advantages and challenges associated with urbanization. Ask students to use the briefing notes as well as one other source. Other sources can include Internet or other media sources, or classroom resources. Have students also record their own opinions on each question in the chart.
3. Have students work in small groups to organize the information they collect in the retrieval chart.
4. Ask students to discuss issues that are associated with urbanization, using the information they collected in the retrieval chart. Have each group describe how these issues affect their community. How might other communities in Alberta (both urban and

rural) be affected by these issues?

Closing Activity

Students present different perspectives on urbanization.

Instructional Strategy: Cooperative Learning Stand and Share

Spencer Kagen's Stand and Share cooperative learning structure provides a quick opportunity for students to share learning and perspectives with classmates. In Stand and Share, all students stand by their desks. They are asked to volunteer to share an insight, learning or perspective on a topic. Once one student has presented an idea, others who have the same idea can sit down. The sharing continues until all students are sitting down. Students become more comfortable and willing to share ideas before sitting down as they practice this strategy.

Process

1. Have each student share an insight or perspective from their research on urbanization, using the Stand and Share strategy. As ideas are presented, encourage students to consider alternate perspectives.
2. Continue presenting and discussing ideas until all students are seated.
3. If students present few ideas and then all sit down, encourage the class to contribute a response to an additional question.

Extension Activity

Students explore how "urban farming" can contribute to quality of life in communities today.

Instructional Strategy: Community Participation

Community participation provides an opportunity for students to engage as citizens in and contribute to their communities. Developing a plan to become involved in some way in the community extends the inquiry process into social participation and develops values and attitudes associated with active and responsible citizenship.

Process

1. Ask students to consider how urban areas can support agriculture in their regions. Make a class list of these ideas.
2. The terms "farmer" and "urban" are often not associated with each other, but many people in urban areas use their backyards, balconies or vacant lots to grow things. Have students identify some examples of urban farming in their community or in an urban area close to where they live. Then have them suggest the advantages of urban farming for the city environment.
3. Ask students to work in small groups to design and complete a community project where they would look for evidence of "urban farming" and report on their findings. Their report could include how many gardens, compost piles, balcony flowers, even rooftop beehives as well as the use of vacant lots for gardening they can observe within a defined area.

4. Have students create a list of actions that they think their community could take to encourage more urban farming.

Student Resource 3A Population Change

Population Change

The chart below shows how population distribution in Canada has changed between 1981 and 2001. 4 (4 From Canadian Rural Partnership: Research and Analysis (2002).

Canadian rural population trends. Agriculture and Agri-Food Canada.

http://rural.gc.ca/research/note/note1_e.phtml (July 5, 2006.) What would this information look like in a graph format?

Year	Canada		Alberta		Saskatche wan		Manitoba	
	Predomina ntly urban regions	Predomina ntly rural regions	Predomina ntly urban regions	Predomina ntly rural regions	Predomina ntly urban regions	Predomina ntly rural regions	Predomina ntly urban regions	Predomina ntly rural regions
1981	11,389,130	8,089,795	1,417,580	796,075	389,250	567,410	558,430	455,070
1986	11,985,370	8,175,045	1,509,425	830,855	426,290	570,610	587,415	461,705
1991	13,110,350	8,540,010	1,666,560	852,635	438,630	537,390	610,265	469,125
1996	13,939,995	8,970,105	1,764,815	904,390	447,380	529,245	613,205	487,085
2001	14,944,855	9,130,077	1,996,537	978,270	456,879	522,054	621,451	498,132

Did you know?

Statistics show the average age of farmers in 2001 was 50 years of age.

Explore

Analyze the impact of population change by answering the following questions:

- What was the difference in population between 1981 and 2001 in predominantly urban regions and predominantly rural regions in Canada, Alberta, Saskatchewan and Manitoba?
- What is the difference between the rate of rural and urban growth, according to

the statistics in this chart?

- What conclusions do you think it is possible to make about rural and urban growth in Canada?
- What other questions about rural and urban growth would need to be answered using further research and other sources? Consider looking at demographic characteristics such as the average age and gender of farmers.

Find Information: Web Links

Start with this web link for further research:

Statistics Canada

www.statcan.ca

Briefing Notes 3B Urbanization

What does urbanization have to do with agriculture?

Predict

What urban and rural population and settlement patterns were established in the past?

Extend

Consider how the railway and immigration to western Canada influenced the establishment of new communities. What experiences have you had with increased population in your community?

Breaking News

Population and Urban Growth 5 (5 Adapted from Statistics Canada (Wang, Jennie, 2004), They're tilling that field behind the mall. Canadian Agriculture at a Glance Teacher's Kit, Catalogue no. 96-325-XPB, 2001: p. 17. www.statcan.ca/english/research/96-328-MIE/2004003/96-328-MIE2004003.pdf (July 5, 2006).

Statistics Canada information is used with the permission of Statistics Canada. Users are forbidden to copy the data and disseminate them, in an original or modified form, for commercial purposes, without permission from Statistics Canada. Information on the availability of the wide range of data from Statistics Canada can be obtained from Statistics Canada's Regional Offices, its World Wide Web site at www.statcan.ca, and its toll-free access number 1-800-263-1136.)

During the 20th century, more and more of Canada's growing population moved to cities and other urban areas. From 1961 to 2001, the population grew from 18.2 million to 30.0 million. The share of people living in urban areas increased from 70% to 80%.

This shift has resulted in new urban developments, such as suburbs. These suburbs have grown outwards from city and town centres. They generally have larger houses and bigger lot sizes than those found in the city centre. In these areas, cars have become the preferred means of transport. This is often called "urban sprawl."

Urban sprawl often takes over and uses up surrounding land at a very fast rate. In many areas of Canada, some or most of this growth occurred on agricultural land. Urban sprawl is even more of an issue for many people because most of the best farmland in the

country is near urban centres. This is because, in the past, people settled on the most productive land first.

Agriculture in Urban Areas

There are some advantages to operating a farm close to an urban area:

- City dwellers provide a ready market for farm products.
- Perishable products are a short drive from the markets.
- Good transportation networks and processing facilities are more common in developed areas.
- Access to natural gas lines, electrical lines, and communication networks is a plus for most types of farms.

Nurseries and greenhouses, as well as mushroom, dairy, poultry, and fruit and vegetable farms, for example, are often located in or near urban areas. Concern arises when the city begins taking over the neighbouring countryside, and the new neighbours begin objecting to the sounds and odours associated with normal farm practices.

Loss of Farmland

The loss of farmland to residential, commercial and industrial uses is generally considered irreversible. Paving land, constructing houses and other buildings, and installing sewage systems destroys the soil structure and makes reclaiming the land for farming too expensive.

Existing agricultural land is often divided into smaller sections, with developments such as acreages in between. Once this land is divided, returning it to farmland is even more difficult because there is not enough land to start a larger farming operation that can use big machinery and produce enough crops for farmers to make a good living. Other land uses associated with urban areas also change farmland. Gravel pits, public parks and recreational areas can use up farmland.

What are the benefits of protecting existing farmland? One of the most obvious benefits is the agricultural products provided. Farmland also provides important green space and open scenery. It protects natural wildlife habitats and wetlands, and is important for the conversion of carbon dioxide. The loss of farmland to urban developments not only takes land from agriculture, but can also prevent it from providing these benefits.

In Alberta, concern is increasing over the loss of agricultural land caused by residential developments in the area between Calgary and Edmonton. This growth raises the price of farmland over what farmers can afford. This increases the chance that the land will be sold to people who want to develop it rather than use it for agricultural purposes.

Farmland close to urban areas generally costs more. This is partly because of the higher cost of services close to urban areas. It is also because there is more competition for uses of the land. As the cost of land rises, it becomes more difficult for farmers who wish to expand or for newcomers who hope to begin farming to purchase the land they need.

Higher prices can also encourage existing farmers to sell their land and move to places where the land is cheaper.

Explore

With a small group, research and respond to the following questions.

- Examine a population map of Alberta, Saskatchewan or Manitoba. Where is the population concentrated? Why do you think these urban centres developed?
- What are the advantages and challenges associated with urbanization? Use a retrieval chart such as the one below to compare advantages and challenges.

	What this source says	What another source says	What I think
What are the opportunities provided by population growth in urban centres?			
What challenges are caused by urbanization?			
Where will our food come from if this trend continues? How can we maintain agricultural production levels?			

- What are the issues associated with urbanization? How do these issues affect your community? How do you think other communities (either urban or rural) would be affected by these issues?

Lesson Four: Change

Overview

In Lesson Four, students explore how family farms, which once made up the majority of the rural population in western Canada, are declining. Students investigate some of the causes and effects of these changes.

Rationale

Students should understand the changes that farms and the rural population have gone through. Presenting students with “I can...” statements can help focus their learning and provide a context for assessment with this lesson’s activities.

Inquiry

What has happened to the family farm?

Preparation

The following handouts, materials and resources are used in this lesson:

- Handouts
 - Briefing Notes 4A: Change
 - Student Resource 4B: Wheel Chart
- Materials for students to create student-led lesson (transparency acetate; access to photocopying, etc.)

“I CAN”

Lesson Four encourages students to demonstrate their learning by developing understandings such as the following:

I can compare the development of urban and rural communities.

I can summarize the reasons for change that has resulted from urbanization.

I can evaluate the impact of urbanization on agriculture and rural communities.

Lesson Four: Teaching and Learning Strategies

In Lesson Four, students explore some of the changes that family farms have gone through.

Introductory Activity

Students participate in a class discussion to hypothesize about reasons for changes that family farms have gone through.

Instructional Strategy: Class Discussion

Class discussions can be structured to provide all students with the opportunity to participate. Have students work in small groups to discuss questions. Have group members share their responses with the whole class.

Process

1. Share the following information with students: Approximately 98% of all Canadian farms are family owned and operated. But the number of farms and the population in rural areas is declining. Farm families have a great deal invested in their farms time, money, and traditions.
2. Ask students to consider and discuss the following questions:
 - How do you think these family farms are affected by urbanization?
 - What other changes do you think have affected ways of life on family farms?
 - How do you think people on family farms have been affected by change?

Briefing Notes Activity

Students read and discuss the briefing notes with a small group. They focus on trends and issues associated with urbanization.

Instructional Strategy: Teaching a Lesson

Asking students to create and deliver lessons emphasizes a number of skills. Students become experts on a topic, design a way to teach the topic and present the lesson to the rest of the class. Students can be asked to include the basic elements of a lesson, including the presentation of information and an activity to engage other students.

Process

1. Provide each student with a copy of the Briefing Notes 4A: Change. Ask students to discuss or respond in writing to the Predict questions at the beginning of the handout.
2. Ask students to discuss the topics and issue introduced in the briefing note. Have students work in small groups to research and prepare a 10-minute lesson on one of the following topics:
 - decreasing numbers of family farms
 - changes in rural communities
 - the effects of large corporate farms
 - the effects of change on farming as a career
 - changing identities and symbols in rural, farming communities
3. The lessons should focus on the changes that have occurred in rural communities and family farms. Each lesson should include a presentation of information about the content and a brief activity for other members of the class to complete.

Closing Activity

Students create a “futures” wheel chart.

Instructional Strategy: Futures Wheel

Visual organizers provide an opportunity for students to synthesize their research and use it to make predictions based on evidence and facts. A “futures” wheel chart can be used to develop a conclusion and base a prediction on evidence gathered through research. The prediction can be placed in the centre of the wheel, with evidence that supports the viability of the prediction placed in the spokes of the wheel.

Process

1. Provide each student with Student Resource 4B: Wheel Chart.
2. Have each student create a “futures” wheel chart that describes a prediction about the future of family farming in western Canada.
3. Encourage students to use evidence found and shared by classmates to record reasons for the prediction in the spokes of the futures wheel.

Extension Activity

Students focus on the example of food costs to explore some effects of declining farm and rural population.

Instructional Strategy: Paired Investigation and Research

Paired investigations and research encourage students to develop both research and communication skills.

Process

1. Statistics indicate that Canadians spend less than 10% of their disposable income on food. Have students work with a partner to answer the following questions:
 - Why is this statistic important to the Canadian consumer?
 - Who would be affected if the price of food went up quickly so that Canadians had to spend more of their disposable income on food?
 - How would it affect YOU as a student? How would it affect your family?
 - What factors do you think might cause the cost of food to increase?
 - Do you think that the rising price of food could result in changing the current population trends for rural and urban areas?

Briefing Notes 4A Change

What has happened to the family farm?

Predict

What impact do you think urbanization has had on the family farm? What other factors do you think have contributed to change for family farms? What changes do you think people living in urban centres have experienced as a result of the decline of family farms?

Demographics

According to the 2001 Census, there are fewer and older farmers in Canada. Farmers are typically much older than other workers who are self-employed. There are fewer young people entering farming as a career. This means that there may be a shortage of farmers in the future.

The history of much of rural Canada since settlement by European immigrants is strongly connected with farming. This is slowly changing. Look at the information below.

- Farmers made up as much as 31.7% of the Canadian population in 1931.
- In 1931, farmers made up a much greater proportion of the rural population as well.
- In 2001, the farm population numbers sat at less than 2.4% of total population.

- Farmers make up an average of only 11.5% of the rural population.
- The rural population is declining as a percentage of the total population of all of Canada.

Many rural communities that thrived because of the higher farm populations are struggling. They are facing challenges like less employment opportunities, school and hospital closings and an aging population.

Did you know?

Fewer but Larger Farms 6 (6 Maynard, Hugh & Jacques Nault. Big Farms, Small Farms: Strategies in sustainable agriculture to fit all sizes. Agriculture Institute of Canada (2005). www.aic.ca/pdf/AIC_2005_ENG.pdf (July 5, 2006).)

Canadians who work in agriculture and produce Canada's food supply live mainly in Canada's rural communities. Although, there has been a trend towards much larger farms, 98 per cent of all farms are still family owned and operated.

Employment

Many rural communities have seen their populations decrease as employment opportunities decline. This has an effect on the community's ability to provide things that contribute to a good quality of life.

Large Corporate Farms

Some people believe that large corporate farms have contributed to the decline of small family farms. Others believe that the decline in family farms is a result of technology. The largest decrease in farm numbers happened when many farms started to use tractors and obtained electricity. Machinery started to replace horses as the main source of power. So, is the larger corporate farm a cause of declining farm numbers, or a result?

Explore

Talk or write about the following questions.

- What are the causes of change for farms since the early immigration period?
- What has happened to rural communities as a result of declining numbers of family farms?
- Why is there a decline in rural areas? Where are people going and why?

Find Information: Web Links

Start with these web links for further research:

Symbols of Change – Grain Elevators

www.statcan.ca/english/research/96-328-MIE/2004013/96-328-MIE2004013.pdf

What's Happened to the Family Farm? CBC

http://archives.cbc.ca/IDD-1-69-1720/life_society/family_farm/

Agriculture Census

www.cbc.ca/news/background/agriculture/

The Statistical Picture

www.cfa-fca.ca/pages/index.php?main_id=74

Student Resource 4B Wheel chart

Lesson Five: Technology

Overview

In Lesson Five, students examine the relationship between technological advancements and the agricultural industry. This includes an understanding of the role of pesticides and herbicides, chemical fertilizers, genetic breakthroughs in plant and animal production, developments in seed research, and improved harvesting techniques.

Farming and technology have always been closely linked. The development of machinery and crops that would flourish in the Canadian west has affected the growth of agriculture over time. New technologies continue to revolutionize Canadian farming methods.

Rationale

Students should understand how technology has brought about change in agricultural practices and ways of life. Presenting students with “I can...” statements can help focus their learning and provide a context for assessment with this lesson’s activities.

Inquiry

How has technology changed agricultural practices and ways of life?

Preparation

The following handouts, materials and resources are used in this lesson:

- Handouts
- Briefing Notes 5A: Technology
- Student Resource 1B: KWHL Chart (from Lesson One)
- 11” x 17” paper
- Internet, library, classroom and textbook resources, with information on technological and agricultural changes over time

“I CAN”

Lesson Five encourages students to demonstrate their learning by developing understandings such as the following:

I can evaluate different perspectives on the impact of technology on agriculture.

I can identify the changes that agricultural practices and ways of life have gone through as a result of technology.

I can summarize the ways that changes in technology have contributed to Canadian ways of life and identities.

Lesson Five: Teaching and Learning Strategies

In Lesson Five, students investigate the effects of changing technologies on agricultural practices and ways of life.

Introductory Activity

Students brainstorm ideas about ways that technology has had an impact on agriculture.

Instructional Strategy: Shared Writing

A Shared Writing strategy asks students to take turns writing a collective response to a question. One student starts the process by writing their response. They then pass their response to their partner or group member who adds their ideas.

Process

1. Ask students to consider how they think technology has had an impact on agriculture.
2. Have students work in small groups and use a Shared Writing strategy to brainstorm their ideas.
3. Provide each group with a piece of 11 x 17 piece of paper on which to record their brainstorming ideas. Ask one student to start the process, and pass the paper around the group until group members run out of ideas.
4. Ask groups to discuss some of their ideas with the class. Discuss the similarities and differences in answers and perspectives. What might the reasons be for these similarities and differences?

Briefing Notes Activity

Students read and discuss the briefing notes with a small group. They focus on some effects of technology on agriculture.

Instructional Strategy: Research Questions

Research questions for an issue should address:

The concepts related to the issue question: What does this mean? How should this be defined?

The information connected with the issue: What are the facts?

The values and attitudes reflected in positions that people take: What points of view do people have? What are their opinions based on? 7 (7 Canadian Parks and Wilderness Society. Teaching controversial issues. www.cpawscalgary.org/education/action-challenge/teaching-controversial-issues.html (July 5, 2006).)

Process

1. Provide each student with a copy of the Briefing Notes 5A: Technology
Ask students to discuss or respond in writing to the Predict questions at the beginning of the handout.

A teaching resource on biotechnology is available on the website:

<http://farmissues.com/issues/facts/web/>

2. Have students follow the research process at the end of the briefing note. Students will summarize the issue in their own words, find supporting information and summarize different points of view. They will then identify and support their own opinion. Ask students to use the chart in the briefing note to organize their research.

3. Have students work in small groups to discuss their opinions and the evidence they have used to support it. Give each student a turn to present their opinion and use their evidence to defend it.
4. Debrief the group discussions with the class, discussing how examples and facts can be used to defend opinions in an informal debate.

Closing Activity

Students explore the uses and contributions of technology.

Instructional Strategy: Contribution Chart

Exploring contributions made by individuals, groups and communities can help students make the connection between human activities and quality of life. A visual organizer such as a retrieval chart encourages students to organize their research in such a way that they make these connections.

Process

1. Have students complete a chart such as the one below that identifies ways that technology is used in agriculture, and technology's contributions to quality of life.

Uses of technology in agriculture

Contributions of technology to quality of life

2. Have students revisit the KWHL chart they completed in Lesson One. Ask them to fill in the last column and share observations about their learning with a partner or small group.

Extension Activity

Students create a visual timeline to explore the changes that technology has brought to an agricultural industry.

Instructional Strategy: Visual Timeline

A visual timeline requires students to summarize and synthesize information in chronological format. Students should be encouraged to create visuals that represent important events or changes. Timeline captions should summarize the information.

Process

1. Have students work with a partner to investigate the technology involved in an agricultural industry.
2. Ask each pair to use other sources of information, such as Internet, library, classroom and textbook resources, to find out how technology used in the agricultural industry they select has changed over time. Ask students to consider these questions:
 - What needs were met through the development of these technologies?
 - How has scientific knowledge played a part in the development of new technologies?
 - What effects has the technology had on people and communities in western Canada?
3. Have students present their findings in a timeline format, using both visual and

textual information.

Briefing Note 5A Technology

How has technology changed agricultural practices and ways of life?

Predict

How do you think agriculture has benefited from technological changes and advances? In what ways do you think people and communities have been affected by these changes?

Agricultural Traditions

Many of the settlers who came to Canada in search of free land and a better life were European farmers. They had a long tradition of agricultural knowledge and practices that they brought with them. However, in Canada they found different and, in many instances, difficult conditions. Shorter growing seasons, a changing and challenging climate, unfamiliar soil types and other challenges meant a difficult life for many farmers.

Did you know?

Canola is an example of a Canadian innovation.

Canola is the combination of two words — Canadian and oil. Canola oil is produced by crushing seeds from Canada's major oilseed crop - canola. Canadian plant breeders developed canola from rapeseed.

An innovation that helped increase the number of people settling in the Canadian west was the invention of a hardier strain of wheat called Marquis Wheat in 1903. This wheat was able to extend the growing season on Canada's prairies, and made farming there a more prosperous occupation. This wheat was commercialized and sold starting in 1911. When this new strain of wheat was introduced on the prairies, it resulted in change. Why do you think change resulted?

Breaking News

New technologies have continued to revolutionize Canadian farming methods. Among these are pesticides and herbicides, chemical fertilizers, genetic breakthroughs in plant and animal production, developments in seed research, and improved harvesting techniques. Huge tracts of land in the northern prairies that were once considered too remote and arid (dry) for farming have been brought under cultivation. Computer technology is now harnessed for the automatic irrigation of these prairie lands. Canadians were at the forefront in the development of new farming tools and methods that transformed agriculture beginning in the late 19th century.

Two Ontario manufacturers of cast-iron and wrought-iron farm implements, Massey and Harris, merged to form a major farm machinery company, Massey-Harris, in 1891. But the main source of power on the farm remained the horse, until it was finally phased out by the new gasoline-powered tractor after the Second World War.” 8

(8 CBC Television (February, 1999). Down on the farm: Crisis in agriculture.CBC News in Review Online Resource Guide www.cbc.ca/newsinreview/feb99/farm/farm.htm (July 5, 2006).)

Find Information: Web Links

Find out more about the ways that farm technology has affected farming production:

Threshing Machines: Canada Agriculture Museum

www.agriculture.technomuses.ca/english/collections_research/threshing.cfm

Tractors www.agriculture.technomuses.ca/english/collections_research/tractors.cfm

Prairie farmers have always found a way to adapt. Statistics Canada

www.statcan.ca/english/research/96-328-MIE/2004012/96-328-MIE2004012.pdf

Information Technologies 9 (9 Maynard, Hugh & Jacques Nault (2005). Big Farms, Small Farms: Strategies in sustainable agriculture to fit all sizes. Agriculture Institute of Canada: p. 29. www.aic.ca/pdf/AIC_2005_ENG.pdf (July 5, 2006).)

Agriculture has benefited enormously from the introduction of electricity, which was accomplished quite quickly in Canada. The government made policies that worked to provide all Canadians with access to electricity – including farmers and rural communities. Other technology, such as radio and television, were also introduced to rural areas.

Today, however, not every rural area has equal access to modern technology. There are some people who live in rural areas, including farmers, who are still not able to use fax machines. They are on party telephone lines, which means that more than one household shares the same phone line. This also affects their access to the Internet. So access to technology is not always equal.

Changing Technologies

Changing technology has helped farmers to increase their crop production and make sure that crops are harvested and sent to markets. Technology has also helped farmers deal with weather problems and disease. However, much of this technology has not always helped to increase the living that farmers can make from farming. This leads to an issue. Should technology be used to continue to increase crop production and the produce healthier foods? Will higher yielding crops help farmers make a better living at farming? Or will this technology and increased production lead to higher production costs and lower crop prices, which can decrease the profit that farmers can make?

9 Maynard, Hugh & Jacques Nault (2005). Big Farms, Small Farms: Strategies in sustainable agriculture to fit all sizes. Agriculture Institute of Canada: p. 29.

www.aic.ca/pdf/AIC_2005_ENG.pdf (July 5, 2006).

Breaking News

Technological Change Affects Us All... 10

(10 From FarmIssues.com. <http://farmissues.com/issues/facts/web/> (July 5, 2006).

“Agricultural innovation and increased productivity have had a tremendous impact on our society, especially in the last fifty years. In industrialized countries, such as Canada, less than three percent of the population is directly involved in food production. Yet our society enjoys an unprecedented availability of high quality food, at lower costs, than ever before in history. The question for most Canadians is not whether we have enough to eat, but rather, what we like to eat.

Changes in agriculture and food production have been accompanied by many concerns. Issues surrounding the use of chemicals, the care of animals and biotechnology are topics of public debate. Rapid change in agricultural practices may also bring up difficult social, economic, political, environmental, health and ethical questions.”

Points of View 11 (11 Ibid)

Farmers Say...

Products of biotechnology are simply one more tool that we can choose to use in raising crops and livestock. Farmers will choose which of these products, if any, work best for their farms.

Products like bioengineered vaccines can provide livestock with more disease protection that is safer or lower in cost than other types of protection. By applying biotechnology to plants and animals, we can make more efficient use of feed, water and other natural resources to produce food.

Scientists Say...

Genetic engineering is the most promising strategy available today for meeting the challenges of producing food. Genetic engineering can result in less use of chemical pesticides and better plants with more resistance to pests and diseases.

Genetic modification can result in improvements in crops and animals that would not otherwise be possible. Genetic engineering lets us select genes that carry desirable traits from other species. There is no evidence that a gene will convert a harmless plant to a hazardous one.

Critics Say...

Biotechnology can result in hazards to public health and the environment. This new form of technology also has serious ethical and social concerns. The benefits of biotechnology are outweighed by the potential risks.

Some biotechnology research is controlled by companies that are motivated to make profits. It would be too difficult to ensure that the industry or its products are properly monitored and regulated. New products will replace old products from many traditional sources. This may take business away from local farmers. It may concentrate all food production in the hands of a few large companies.

We have no idea of the long-term consequences of biotechnology, because there is no long-term testing on people, the environment or the plants or animals involved. Biotechnology should be banned until it can be proven that there will be no long-term harmful effects. People should have the right to choose between products developed through biotechnology or those produced in traditional ways. All foods produced through biotechnology should be clearly labelled.

Did you know?

Critics of biotechnology can include public interest groups, scientists, and farmers.

Explore

Research and respond to the following question:

- What are the important issues associated with technology and agriculture?

Use a retrieval chart such as the one below to organize your research on this issue question.

What is the issue? Summarize the issue in your own words.

Summarize the positions.

Summarize Position One

Summarize Position Two

Summarize Position Three

Your conclusion: The opinion on biotechnology that I most support is.....because.

My reasons: