

# *Geographic Issues of the 21st Century*

Food from the Land

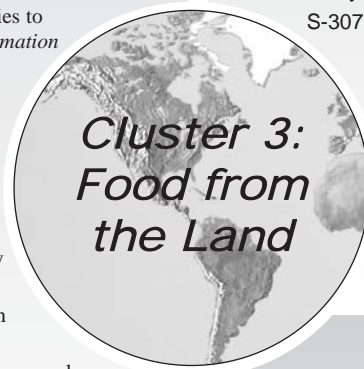
3  
CLUSTER

SENIOR  
2



### Learning Experience 3.1: Areas and Conditions

- KL-020 Identify the major food production areas on a map of the world and a map of Canada. *Examples: grains, oilseeds, fruit, vegetables, beverages, animal, fish, fowl...*
- KL-021 Identify physical conditions required to produce major food crops. *Examples: topography, soil, climate, water...*
- KL-023 Describe the impact of various agricultural practices on the physical environment. *Examples: soil erosion, water quality, soil fertility...*
- VL-005 Respect the Earth as a complex environment in which humans have important responsibilities.
- S-100 Collaborate with others to achieve group goals and responsibilities.
- S-103 Promote actions that reflect principles of environmental stewardship and sustainability.
- S-200 Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.
- S-201 Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*
- S-202 Select and use appropriate tools and technologies to accomplish tasks. *Examples: Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*
- S-203 Construct maps using a variety of information sources and technologies. *Examples: observation, traditional knowledge, compass, Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*
- S-300 Formulate geographic questions to plan inquiry and research.
- S-302 Draw conclusions and make decisions based on research and various types of evidence.
- S-304 Analyze physical material and evidence during research.
- S-400 Listen to others to understand their perspectives.
- S-402 Express informed and reasoned opinions.
- S-403 Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*



### Learning Experience 3.2: Food Production

- KE-044 Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*
- KH-034 Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*
- KI-005 Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*
- S-100 Collaborate with others to achieve group goals and responsibilities.
- S-200 Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.
- S-201 Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*
- S-300 Formulate geographic questions to plan inquiry and research.
- S-301 Consider the context of events, accounts, ideas, and interpretations.
- S-304 Analyze physical material and evidence during research.
- S-307 Propose and defend innovative options or solutions to address issues and problems.
- S-309 Observe patterns and make generalizations based on geographic inquiry.
- S-400 Listen to others to understand their perspectives.
- S-403 Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

### Learning Experience 3.3: Safeguarding Our Food Supply

- KL-022 Explain ways in which natural and human-caused phenomena affect food production.
- KG-037 Give examples of the potential impact of climate change on food production.
- VL-005 Respect the Earth as a complex environment in which humans have important responsibilities.
- VL-006 Be willing to consider the environmental consequences of their food choices.
- S-103 Promote actions that reflect principles of environmental stewardship and sustainability.
- S-107 Make decisions that reflect social responsibility.
- S-200 Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.
- S-201 Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*
- S-202 Select and use appropriate tools and technologies to accomplish tasks. *Examples: Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*
- S-300 Formulate geographic questions to plan inquiry and research.
- S-303 Reconsider personal assumptions based on new information and ideas.
- S-304 Analyze physical material and evidence during research.
- S-307 Propose and defend innovative options or solutions to address issues and problems.
- S-400 Listen to others to understand their perspectives.
- S-403 Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*
- S-404 Elicit, clarify, and respond to questions, ideas, and diverse points of view in discussions.

### Learning Experience 3.4: Contemporary Issues Related to Food

- KG-036 Describe issues related to freshwater and saltwater food resources.
- KG-038 Identify issues related to scarcity and distribution of food.
- KE-043 Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.
- KE-045 Identify issues related to genetic modification of plants and animals.
- VP-010 Be willing to consider the economic and political influence of their food choices. *Examples: food fashions, food aid, food shortages...*
- S-107 Make decisions that reflect social responsibility.
- S-200 Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.
- S-300 Formulate geographic questions to plan inquiry and research.
- S-301 Consider the context of events, accounts, ideas and interpretations.
- S-305 Compare diverse perspectives and interpretations in the media and other information sources.
- S-307 Propose and defend innovative options or solutions to address issues and problems.
- S-400 Listen to others to understand their perspectives.
- S-403 Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*
- S-405 Make decisions that reflect social responsibility.
- S-406 Debate differing points of view regarding an issue.

### Cluster 3: Food from the Land—Overview

This cluster consists of four learning experiences and focuses on the production and acquisition of the basic human necessity of food. Students identify the location of major food production areas around the world and consider both the physical and human factors that influence food production. Students describe the impact of agricultural practices on the physical environment and show how food production has changed over time, specifically in the Canadian Prairies. Students also consider issues related to freshwater and saltwater food resources, the impact of climate change, and concerns regarding genetic modification. Finally, students identify the stages involved in food production as well as issues related to the scarcity and distribution of food.



#### Learning Experience 3.1: Areas and Conditions

In the first learning experience of this cluster, students identify the major areas of food production on maps of Canada and the world. Students investigate the physical conditions necessary for production of major food crops. Students also consider the impact of agricultural practices on the physical environment.

- KL-020 Identify the major food production areas on a map of the world and a map of Canada. *Examples: grains, oilseeds, fruit, vegetables, beverages, animal, fish, fowl...*
- KL-021 Identify physical conditions required to produce major food crops. *Examples: topography, soil, climate, water...*
- KL-023 Describe the impact of various agricultural practices on the physical environment. *Examples: soil erosion, water quality, soil fertility...*
- VL-005 Respect the Earth as a complex environment in which humans have important responsibilities.

#### Learning Experience 3.2: Food Production

In this learning experience, students identify a number of human factors that affect production and use of various types of food.

Students investigate the major stages in food production and distribution, and explore ways in which food production has changed over time.

- KI-005 Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*
- KE-044 Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*
- KH-034 Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*

**Learning Experience 3.3: Safeguarding Our Food Supply**

In this learning experience, students examine the ways in which natural phenomena and human actions affect our food supply.

Students explore examples of the potential impact of climate change on our food supply, and consider the fact that our own food choices have environmental consequences.

- KG-037 Give examples of the potential impact of climate change on food production.
- KL-022 Explain ways in which natural and human-caused phenomena affect food production.
- VL-006 Be willing to consider the environmental consequences of their food choices.
- VL-105 Respect the Earth as a complex environment in which humans have important responsibilities.

**Learning Experience 3.4: Contemporary Issues Related to Food**

In this learning experience, students identify issues related to scarcity and the distribution of food in general. They study issues related to freshwater and saltwater food resources, and examine ways in which food production has changed over time. This learning experience introduces students to new developments in the controversial area of genetic modification in food production. Students also consider the economic and political consequences of their food choices and why they should care.

- KE-043 Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.
- KE-045 Identify issues related to genetic modification of plants and animals.
- KG-036 Describe issues related to freshwater and saltwater food resources.
- KG-038 Identify issues related to scarcity and distribution of food.
- VP-010 Be willing to consider the economic and political influence of their food choices. *Examples: food fashions, food aid, food shortages...*



### Skills Outcomes for Cluster 3: Food from the Land

#### Skills for Active Democratic Citizenship

- S-100 Collaborate with others to achieve group goals and responsibilities.
- S-103 Promote actions that reflect principles of sustainability.
- S-107 Make decisions that reflect social responsibility.

#### Skills for Managing Information and Ideas

- S-200 Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.
- S-201 Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*
- S-202 Select and use appropriate tools and technologies to accomplish tasks. *Examples: Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*
- S-203 Construct maps using a variety of information sources and technologies. *Examples: observation, traditional knowledge, compass, Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*

#### Critical and Creative Thinking Skills

- S-300 Formulate geographic questions to plan inquiry and research.
- S-301 Consider the context of events, accounts, ideas, and interpretations.
- S-302 Draw conclusions and make decisions based on research and various types of evidence.
- S-303 Reconsider personal assumptions based on new information and ideas.
- S-304 Analyze physical material and evidence during research.
- S-305 Compare diverse perspectives and interpretations in the media and other information sources.
- S-307 Propose and defend innovative options or solutions to address issues and problems.
- S-309 Observe patterns and make generalizations based on geographic inquiry.

#### Communication Skills

- S-400 Listen to others to understand their perspectives.
- S-402 Express informed and reasoned opinions.
- S-403 Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*
- S-404 Elicit, clarify, and respond to questions, ideas, and diverse points of view in discussions.
- S-405 Articulate their perspectives on issues.
- S-406 Debate differing points of view regarding an issue.



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## Description of Learning Experience

In the first learning experience of this cluster, students identify the major areas of food production on maps of Canada and the world. Students investigate the physical conditions necessary to produce major food crops. They also consider the impact of agricultural practices on the physical environment.

## Vocabulary Focus

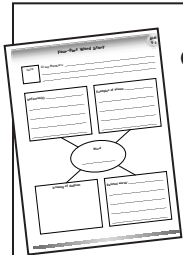
The following vocabulary is important for Learning Experience 3.1: Areas and Conditions.

|                       |                      |                     |
|-----------------------|----------------------|---------------------|
| cereals               | grains               | seasonality         |
| climate               | livestock            | soil erosion        |
| degree days           | market gardening     | soil fertility      |
| export crops          | nomadic herding      | subsistence farming |
| extensive agriculture | oilseeds             | topography          |
| fish farming          | physical environment | water quality       |
| food production       | plantation           | weather             |
| frostfree period      | precipitation        |                     |

## Vocabulary Study Strategies

Please see **Appendix A: Content-Area Vocabulary Study Strategies** for suggested strategies to incorporate vocabulary studies into the learning experiences. Further vocabulary strategies are found in Vocabulary Strategies 6.31–6.36 and Information Processing Strategies 6.49–6.53 in *Success for All Learners: A Handbook on Differentiating Instruction* [referred to in this document as SFAL] (Manitoba Education and Training, 1996). In addition, a number of learning experiences within the clusters include vocabulary strategies for learning. Teachers are encouraged to make use of these strategies and to avoid the less meaningful practice of having students copy out dictionary definitions.

### Where to Find the Blackline Masters (BLMs)



**Cluster-Specific BLMs** are found in Appendix B. They are coded, for example, BLM 3-2, where the “3” refers to Cluster 3 and the “2” refers to the sequential number.

**General BLMs** are found in Appendix C. They are coded, for example, BLM G-6, where the G refers to “General” and the “6” refers to the sequential number. They are used in multiple strategies.

**Teacher Notes** are found in Appendix D. They are coded TN, and are numbered sequentially (e.g., TN 3 or TN 40).

**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KL-020** Identify the major food production areas on a map of the world and a map of Canada. *Examples: grains, oilseeds, fruit, vegetables, beverages, animal, fish, fowl...*

**KL-021** Identify physical conditions required to produce major food crops. *Examples: topography, soil, climate, water...*

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

**KL-021** Identify physical conditions required to produce major food crops. *Examples: topography, soil, climate, water...*

**S-300** Formulate geographic questions to plan inquiry and research.

**S-302** Draw conclusions and make decisions based on research and various types of evidence.

**S-402** Express informed and reasoned opinions.

**KL-023** Describe the impact of various agricultural practices on the physical environment. *Examples: soil erosion, water quality, soil fertility...*

**S-100** Collaborate with others to achieve group goals and responsibilities.

**S-201** Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*

**Activating Strategies****Strategy 1: Predicting Food Production Areas in Canada and the World**

- Students clip or print pictures of a variety of foods from Canada and around the world, including food produced on land and acquired in aquatic locations.
- Students identify the food item illustrated in each picture and predict where in Canada or the world it might be produced or acquired.
- Students attach the pictures at the predicted locations on a large wall map (or outline map) of Canada and of the world.
- Students discuss the distribution and develop general rules about landform and climate conditions that might influence the types of food produced.
- Students record examples in course notebooks.

**Strategy 2: Physical Conditions Necessary for Food Production**

- Using the KWL or KWHL strategy, students list what they already know about the physical conditions required to produce major food crops.
- Students share knowledge with the class and produce a master list on the board or flip chart.
- Through class discussion and teacher guidance, students develop questions that would help provide further information about the topic.
- Students use a variety of resources to answer questions posed.
- If students completed the Activating Strategy “Predicting Food Production Areas in Canada and the World,” they might refer to map displays to make further connections with location and physical conditions.
- Students add any new details to the “Learned” column of the KWL or KWHL organizer.

**Strategy 3: Effects of Production on the Environment**

- Individually, students brainstorm and identify agricultural practices that are harmful to the environment, and include them on a Mind Map organizer they develop to communicate their knowledge.
- Students discuss examples with a partner and add any new examples to their organizers.
- Students share Mind Maps with the whole class, thus providing an opportunity for correcting misconceptions and extending their knowledge and understanding of the effects of food production on the environment.
- The Mind Maps are posted for a Gallery Walk.
- Students record harmful practices identified in their course notebooks.



## Suggested Assessment Strategies

## Teacher Tips and Resources

### Activating Strategies

- Assess the location of pictures on the map for the student's knowledge of food-producing areas in Canada and the world.
- Monitor discussions and assess notes for the student's understanding of the physical conditions required to produce food crops.
- Assess the student's skill in selecting information from a variety of sources. (See BLM G-9.)

- Access to newspapers and magazines for clipping pictures
- Access to the Internet for pictures and articles
- BLM G-9: Selecting Information: Checklist
- Large wall maps of Canada and the world
- Alternatively, students might create a large outline map on the board or poster paper by using an overhead projection of an outline map.
- Keep the map display on the wall throughout the learning experience for future reference.
- Alternatively, students may number pictures and indicate the corresponding location (using these numbers) on smaller, individual maps of Canada and the world. (See BLMs G-31 and G-33 for maps of Canada and the world.)

- Assess the KWL or KWHL organizer for the student's knowledge of physical conditions that influence food production.
- Assess the student's skill in formulating geographic questions. (See TN 11.)
- Monitor discussions and answers for the student's skill in drawing conclusions and making decisions based on research and evidence.
- Observe and monitor contributions to class discussion for the student's skill in expressing informed and reasoned opinions.

- Although students may think of obvious factors such as soils and climatic conditions, they should be encouraged to think of more specific factors. For example, climatic factors include precipitation and appropriate temperature, as well as the length of the frost-free season, the number of degree days, seasonality of precipitation, and relative humidity.
- Students from a farm background or from families involved in primary food production (*Examples: market gardening, fishing, hunting, berry picking, growing mushrooms...*) may be able to provide specific factors related to particular types of food production.
- BLM G-19: KWHL
- SFAL 6.20, 6.22, 6.94: KWL
- TN 11: Asking Geographic Questions
- TN 12: Asking Questions
- TN 24: The Inquiry Process (Conducting Research)
- Alternatively, students could use the Seven-Step Knowledge Chart. (See SFAL 6.96.)

- Assess the Mind Map organizer and notes for the student's knowledge of the impact of agricultural practices on the environment.
- Monitor work in pairs for the student's skill in collaboration to achieve group goals and responsibilities. (See BLM G-1, G-2.)
- Assess the Mind Map organizer and notes for the student's skill in recording and organizing information.

- Depending on the background of students, this learning experience might include controversial issues such as the use of pesticides and herbicides in agricultural activities. (See TN 34: Dealing with Controversial Issues and TN 37: Critical Thinking in Social Studies.)
- BLM G-1: Group Performance: Assessment Scale
- BLM G-2: Group Performance: Self-Assessment Scale
- SFAL 6.24: Mind Maps
- SFAL 6.80: Gallery Walk

**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KL-021** Identify physical conditions required to produce major food crops. *Examples: topography, soil, climate, water...*

**S-302** Draw conclusions and make decisions based on research and various types of evidence.

**VL-005** Respect the Earth as a complex environment in which humans have important responsibilities.

**Activating Strategies****Strategy 4: An Apple for Learning: A Demonstration**

- Students observe as the teacher and/or students slice an apple to represent portions of the Earth's surface that do not have the appropriate physical conditions for production of major food crops. (See TN 31.)
- At each step in the process, students list the conditions that rule out food production in that portion of the Earth represented by a slice of the apple.
- Students note what proportion of the apple (Earth) is left with the appropriate combination of physical factors for production of major food crops.
- Students discuss the potential implications of this reality for feeding the world's population now and in the future.
- Students write an Exit Slip to reflect on the demonstration and to summarize the class discussion regarding potential implications for feeding the world's population.

**Students will...**

**KL-020** Identify the major food production areas on a map of the world and a map of Canada. *Examples: grains, oilseeds, fruit, vegetables, beverages, animal, fish, fowl...*

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

**S-201** Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*

**S-202** Select and use appropriate tools and technologies to accomplish tasks. *Examples: Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*

**Acquiring Strategies****Strategy 1: Mapping Major Food Production Areas**

- Working with a partner, students select either an outline map of the world or of Canada to map major food production areas.
- With the use of atlases, maps, and Internet sources, students locate and label major food production areas (those identified in KL-020 and any others they can think of) on their respective maps, using appropriate symbols and legends.
- Students compare their maps with the wall map created in the Activating Strategy "Predicting Food Production Areas in Canada and the World," and comment on similarities and differences.
- Students post maps and observe them during a Gallery Walk.
- Individually, students write an Exit Slip to describe and analyze any patterns observed.

**Teacher Reflections**

**Suggested Assessment Strategies****Teacher Tips and Resources****Activating Strategies**

- Assess the list of conditions and Exit Slip for the student's knowledge of physical factors required to produce major food crops.
- Assess the student's skill in drawing conclusions and making decisions based on evidence from the demonstration.
- Monitor discussions for the student's understanding of the importance of respecting the Earth and promoting responsible use of those areas that can be used for food production.

- SFAL 6.60, 6.61: Exit Slips
- TN 31: An Apple for Learning
- Appropriate caution should be exercised when using cutting utensils, particularly if students are engaged in cutting up an apple.

**Acquiring Strategies**

- Assess the map and Exit Slip for the student's knowledge of the location of major food production areas.
- Assess the student's skill in selecting information from a variety of sources. (See BLM G-9.)
- Assess the map and Exit Slip for the student's skill in organizing and recording information.
- Assess the student's skill in using appropriate tools and technologies to accomplish tasks.

- The map portion of this activity could be created using *ArcView* GIS computer software.
- Atlases, maps, and Internet access
- BLM G-9: Selecting Information: Checklist
- BLM G-31: Map of Canada
- BLM G-33: Map of the World
- SFAL 6.60, 6.61: Exit Slip
- SFAL 6.80: Gallery Walk
- TN 8: Geographic Information Systems (GIS)
- Suggested types of food production to locate in Canada include cereals (barley and wheat), dairy, livestock (beef, hogs, poultry), oilseeds, field crops, fruits, vegetables, and fish farming.
- On a global scale, students may wish to use the following general categories of food production: mixed farming, grain farming, dairying, ranching, intensive farming (fruits, vegetables, feedlots), plantation farming (primarily export crops such as coffee, tea, sugar, tobacco, cotton), rice farming, subsistence farming (small farms with crops and livestock to support the family), and nomadic herding.

**Teacher Reflections**

## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

**KL-020** Identify the major food production areas on a map of the world and a map of Canada. *Examples: grains, oilseeds, fruit, vegetables, beverages, animal, fish, fowl...*

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**KL-023** Describe the impact of various agricultural practices on the physical environment. *Examples: soil erosion, water quality, soil fertility...*

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**KL-023** Describe the impact of various agricultural practices on the physical environment. *Examples: soil erosion, water quality, soil fertility...*

**S-302** Draw conclusions and make decisions based on research and various types of evidence.

**S-402** Express informed and reasoned opinions.

## Acquiring Strategies

## Strategy 2: Major Production Areas for Foods around the World

- In small groups, students select a specific food product of interest. (For examples, see Teacher Tips and Resources in the previous learning experience.)
- Using print and electronic sources, students collect information about their chosen food product, and identify where the particular food is produced and the physical conditions required for growth and production.
- Students organize information into appropriate categories. *Examples: landforms, climatic conditions, soils, availability of water...*
- Students develop a map to show the location of their chosen food product.
- Students present findings to the class using presentation software or poster format.
- Individually, students complete a graphic organizer with key details from the presentations. Organizer headings could include: Food Product, Country/Region of Production, and Physical Conditions Required (landforms, soils, climatic conditions, water availability).

## Strategy 3: The Impact of Agricultural Practices in Canada

- In small groups, students brainstorm to identify local, provincial, or national case studies of controversial agricultural practices that are currently or have recently been in the news.
- Students report examples to the class and a master list is developed on the board or flip chart.
- Working in small groups, students select an example of their choice and, using a variety of print, electronic, and primary sources, research the issue, making note of the particular practice in question, specific impacts on the physical environment, and controversial evidence surrounding the case study.
- Groups report findings to the class.
- Class members record in course notebooks the information presented.

## Strategy 4: Examining Multiple Perspectives on Agricultural Practices

- Students individually read and analyze a number of newspaper, magazine, or Internet articles to determine the pros and cons of a variety of agricultural practices.
- In pairs, students review information and discuss their analysis.
- Students share responses with the class, and discuss the pros and cons of various agricultural practices.
- Following the discussion, students individually complete the Pro and Con Discussion Chart to record the pros and cons of various agricultural practices.
- Students then complete the Making up Your Mind organizer to select their preferred action and resulting consequences.
- Students share preferred actions and consequences with the class.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Acquiring Strategies

- Assess the map and presentation for the student's knowledge of the locations of major food production areas.
- Assess the presentation and organizer for the student's knowledge and understanding of the physical conditions required to produce major food crops.
- Assess the student's skill in selecting information from a variety of sources. (See BLM G-9.)
- Assess the student's skill in constructing maps using a variety of information sources and technologies.

- GIS computer software could be used to produce the map and parts of the presentation.
- Access to library resources and the Internet
- Access to computers and presentation software and equipment
- Poster paper, art materials, and magazines and newspapers for clipping
- BLM G-9: Selecting Information: Checklist
- TN 8: Geographic Information Systems (GIS)
- TN 16: Creating an Electronic Presentations
- TN 18: Creating a Poster

- Assess the presentation and notes for the student's knowledge of the impact of agricultural practices on the environment.
- Assess the student's skill in selecting information from a variety of sources. (See BLM G-9.)
- Assess the presentation for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.

- Students may need some examples of agricultural practices that affect the physical environment.  
*Examples: high-density livestock such as large-scale hog farms; drainage of wetlands; use of pesticides and herbicides; burning of straw; animal waste disposal issues...*
- BLM G-9: Selecting Information: Checklist
- BLM G-13: Controversial Issues Checklist
- TN 24: The Inquiry Process (Conducting Research)
- TN 34: Dealing with Controversial Issues

- Assess the presentation and organizer for the student's understanding of the impact of agricultural practices on the physical environment.
- Assess the organizer for the student's skill in drawing conclusions and making decisions based on evidence.
- Observe and monitor sharing in pairs and class discussions for the student's skill in expressing informed and reasoned opinions.

- Appropriate articles can be prepared in advance, or the search for articles can be part of the student activity.
- BLM G-22: Pro and Con Discussion Chart
- BLM G-23: Making up Your Mind
- SFAL 6.13: Listen-Think-Pair-Share



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**S-304** Analyze physical material and evidence during research.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**KL-021** Identify physical conditions required to produce major food crops. *Examples: topography, soil, climate, water...*

**S-201** Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*

**KL-023** Describe the impact of various agricultural practices on the physical environment. *Examples: soil erosion, water quality, soil fertility...*

**S-103** Promote actions that reflect principles of sustainability.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**Applying Strategies****Strategy 1: From the World to Your Kitchen**

- Individually, students make a list of at least 10 food items found in their kitchen and note the country in which each was produced.
- Students report to the class, and their collective information is classified by country of origin.
- Students identify (on self-stick notes) the number and kinds of items listed for each country.
- The self-stick notes are then attached in appropriate places to a large wall map of the world for review.
- Students develop a summary in their course notebooks of the main physical conditions necessary for the production of items listed.

**Strategy 2: Physical Conditions and Food Production**

- Working individually, students conduct research from a variety of sources and record a synthesis of findings, using a Concept Relationship Frame to explain the effect of a specific aspect of the physical environment on food production.
- Students select one of the following physical aspects: topography, soil, climate, water.
- Students share explanations with the class, making any corrections or adding any new information.
- Class members make notes in course notebooks on the various effects of the physical environment on food production.

**Strategy 3: Promoting Better Agricultural Practices**

- Students work in small groups to examine agriculture-related brochures (or videos, television/radio commercials) to determine their content and characteristics.
- Students use samples to determine the content and format elements they will include in the development of their brochures or electronic presentations.
- Students design brochures, develop a TV commercial, or create an electronic presentation to promote more environmentally friendly agricultural practices.
- Students share information with the class by posting brochures or by showing video and electronic presentations.
- Students list in their course notebooks environmentally friendly agricultural practices.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Applying Strategies

- Assess the placement of the self-stick notes for the student's knowledge of locations of areas of major food production.
- Assess the information on self-stick notes and in summaries for the student's understanding of physical conditions required to produce food crops.
- Assess the student's skill in identifying and analyzing foods from her or his kitchen.
- Assess self-stick notes and the summary for the student's skill in presenting information and ideas in appropriate formats.

- Students could also include food items sold in the school canteen or cafeteria.
- As an alternative to food items at home, students could use flyers from grocery stores to identify source regions for foods advertised.
- Self-stick notes, large wall map of the world

- Assess the Concept Relationship Frame and notes for the student's knowledge of physical conditions required for food production.
- Assess the student's skill in organizing and recording information in the Concept Relationship Frame.

- Access to library resources and the Internet
- SFAL 6.104: Concept Relationship Frame

- Assess the presentation and notes for the student's knowledge of the impact of agricultural practices on the environment.
- Assess the presentation and notes for the student's skill in promoting actions that reflect stewardship and sustainability.
- Assess the presentation for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.

- Brochures or video/television footage relating to environmentally friendly agricultural practices (sources include local Agricultural Field Office, farm organizations, environmental groups, provincial and federal government agricultural and environmental agencies)
- Access to computers, Internet, video equipment
- BLM G-7: Checklist for Creating Visuals
- BLM G-8: Assessment Guide for Visuals
- TN 15: Creating a Brochure
- TN 16: Creating an Electronic Presentation
- TN 20: Creating a TV Commercial



### *Learning Experience 3.2: Food Production*

- KE-044 Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*
- KH-034 Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*
- KI-005 Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*
- S-100 Collaborate with others to achieve group goals and responsibilities.
- S-200 Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.
- S-201 Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*
- S-300 Formulate geographic questions to plan inquiry and research.
- S-301 Consider the context of events, accounts, ideas, and interpretations.
- S-304 Analyze physical material and evidence during research.
- S-307 Propose and defend innovative options or solutions to address issues and problems.
- S-309 Observe patterns and make generalizations based on geographic inquiry.
- S-400 Listen to others to understand their perspectives.
- S-403 Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

## Description of Learning Experience

In this learning experience, students identify a number of human factors that affect the production and use of various types of food. Students investigate the major stages in food production and distribution, and explore ways in which food production has changed over time.

## Vocabulary Focus

The following vocabulary is important for Learning Experience 3.2: Food Production.

|                  |                          |                      |
|------------------|--------------------------|----------------------|
| commercial       | environmentally friendly | processing           |
| conservation     | fashionable              | target group         |
| cultural factors | fertilizers              | technological change |
| distribution     | marketing                | technology           |
| economics        | political factors        | transportation       |

## Vocabulary Study Strategies

Please see **Appendix A: Content-Area Vocabulary Study Strategies** for suggested strategies to incorporate vocabulary studies into the learning experiences. Further vocabulary strategies are found in Vocabulary Strategies 6.31–6.36 and Information Processing Strategies 6.49–6.53 in *Success for All Learners: A Handbook on Differentiating Instruction* [referred to in this document as SFAL] (Manitoba Education and Training, 1996). In addition, a number of learning experiences within the clusters include vocabulary strategies for learning. Teachers are encouraged to make use of these strategies and to avoid the less meaningful practice of having students copy out dictionary definitions.

## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-100** Collaborate with others to achieve group goals and responsibilities.

**S-201** Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

**S-302** Draw conclusions and make decisions based on research and various types of evidence.

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-304** Analyze physical material and evidence during research.

**S-309** Observe patterns and make generalizations based on geographic inquiry.

## Activating Strategies

## Strategy 1: Picky Eaters: Factors affecting Food Production

- Using the Listen-Think-Pair-Share strategy, students work individually to identify human factors (positive and negative) that affect food production, and list them in an organizer.
- After a few minutes, students join in pairs to share findings, add new information to their lists, and make clarifications or corrections as required.
- Students share findings with the class and create a master list on the board or flip chart.
- Using a Sort and Predict Frame, student pairs then classify factors affecting food production into different categories. *Examples: cultural, economic, political and marketing...*

## Strategy 2: Buy This! Buy That!

- Students look for and clip food advertisements from newspapers and magazines, and keep a log of TV or radio advertisements for various food products.
- Students display advertisements and/or TV or radio logs on a bulletin board and report on findings.
- Keeping in mind that markets have a major influence on the kinds of foods produced, students analyze the advertisements and discuss who is promoting the food item, the target audience (*Examples: gender, age, income group, lifestyle...*), and the techniques used to promote the product (*Examples: youth marketing, health foods, Government agency such as Canada Food Guide, fitness foods, cultural dishes, government department or interest group promoting certain types of food consumption to support Canadian producers...*).
- Students write an Exit Slip to reflect on what they have learned about human factors that influence food production.

## Strategy 3: Visit to a Grocery Store/Supermarket

- Students visit a local grocery store or supermarket to observe various food types within the context of human factors that influence food production.
- Students identify the produce, fresh meats, processed foods, bakery, and confectionary sections in the store, note their respective locations in the store, their placement (high, eye-level, low), and the amount of space designated for each.
- Students view packaging and advertising for the foods, and consider why it is stocked in this store. *Examples: snack appeal, cultural, well advertised, fashionable, economical, health factors, basic food needs...*
- Students record results on notepads, and discuss their findings when they return to class.



## Suggested Assessment Strategies

## Teacher Tips and Resources

### Activating Strategies

- Assess the Listen-Think-Pair-Share organizer and Sort and Predict Frame for the student's knowledge of factors affecting food production.
- Monitor collaborative pairs for student's skill in carrying out group goals and responsibilities. (See BLMs G-1, G-2.)
- Assess the Listen-Think-Pair-Share organizer and Sort and Predict Frame for the student's skill in organizing and recording information.

- Students may need a few examples of factors affecting food production to prepare them for the "Think" phase of this learning experience.
- BLM G-1: Group Performance: Assessment Scale
- BLM G-2: Group Performance: Self-Assessment Scale
- SFAL 6.13: Listen-Think-Pair-Share
- SFAL 6.100: Sort and Predict Frame

- Monitor the report and assess analysis and the Exit Slip for the student's understanding of human factors that influence food production.
- Assess the student's skill in selecting information from a variety of sources. (See BLM G-9.)
- Monitor the report and assess analysis and the Exit Slip for the student's skill in drawing conclusions and making decisions based on research and various types of evidence.

- Access to a variety of magazines and newspapers
- Access to TV/radio news broadcasts
- BLM G-9: Selecting Information: Checklist
- SFAL 6.60, 6.61: Exit Slips

- Monitor discussions and assess notes for the student's knowledge of factors that influence food production.
- Observe analysis and categorization of food items in the grocery store for the student's skill in analyzing physical material and evidence.
- Observe analysis and categorization of food items in the grocery store for the student's skill in observing patterns and making generalizations.

- Make appropriate arrangements for the field study well in advance.
- You and the students may need to design a note-taking template prior to field study.
- SFAL 9.3: Learning Experiences Outside the Classroom
- SFAL 9.4: Excursions
- SFAL 9.5: Teacher's Planning Sheet for Learning Experiences Outside the Classroom
- TN 30: Field Studies in Geography
- An alternative or additional activity could involve the analysis of grocery flyers and advertising practices.

## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

**KE-044** Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*

**S-201** Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*

**KH-034** Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*

**S-301** Consider the context of events, accounts, ideas, and interpretations.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

## Students will...

**KE-044** Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*

**KH-034** Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

## Activating Strategies

## Strategy 4: Visualizing the Stages in Food Production

- Students collect a variety of pictures that portray various stages of food production. *Examples: growing, processing, transportation, marketing...*
- Students identify the specific stage illustrated in each picture and sort pictures into various stages.
- Students post pictures on a bulletin board by stage of production, in appropriate sequence, and discuss the processes involved from growing or production through marketing.
- Students list in their course notebooks the steps involved in food production.

## Strategy 5: Changes in Food Production

- In pairs, students brainstorm examples of how food production has changed over time.
- Using a variation of the Listen-Draw-Pair-Share strategy, students draw a picture of a specific aspect of food production as it may have looked in their grandparents' time. *Examples: old farm machinery, outmoded methods of cultivation, old means of transportation, lack of soil and water conservation strategies, old methods of processing and packaging...*
- Students then draw another picture to illustrate the current realities of the same aspect of food production.
- Students post drawings for a Gallery Walk and discuss how food production has changed over time.
- Students record examples in their course notebooks.

## Acquiring Strategies

## Strategy 1: Agriculture in Manitoba

- Following a short discussion to review students' learning during Activating Strategies, students view a video on agriculture in Manitoba. (See Teacher Tips and Resources.)
- Paying particular attention to the three themes identified in the knowledge outcomes (human factors, stages of production and distribution, and food production changes over time), students record information from the video in an organizer. (See BLM G-27.)
- After viewing, students work with a partner to add new details from the video or to clarify information.
- Students complete their own Getting Information from a Video information sheet.
- Students share information sheets with the class and discuss how they reflect the three themes listed in the outcomes for this learning experience.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Activating Strategies

- Monitor discussion and assess selection and classification of pictures and notes for the student's knowledge of the stages of food production and distribution.
- Observe and assess selection and classification of pictures for the student's skill in organizing and recording information in an appropriate format.

- Encourage students to find pictures that represent the stages of production of a variety of food products. *Examples: cereals and oilseeds, vegetables and fruits, meat from various animals, fish...*
- Access to a variety of magazines and newspapers for clipping

- Monitor pair brainstorming and assess the Listen-Draw-Pair-Share organizer and notes for the student's knowledge of how production has changed over time.
- Observe drawings for the student's skill in considering the context and interpretations of early food production methods.
- Assess the Listen-Draw-Pair-Share organizer and drawings for the student's skill in presenting information and ideas in an appropriate visual format.

- Students may require prompts, such as pictures of farms of the past, or suggested topics to consider. *Examples: changes in farm machinery, food preservation, transportation, marketing...*
- If students completed the Activating Strategy "Visualizing the Stages of Food Production," they may use pictures collected as ideas for their drawings.
- SFAL 6.80: Gallery Walk
- SFAL 6.97: Listen-Draw-Pair-Share

### Acquiring Strategies

- Assess the Getting Information from a Video organizer for the student's understanding of human factors affecting food production, the stages of production, and changes over time as they relate to Manitoba.
- Review the Getting Information from a Video organizer for the student's skill in selecting information from a video and from peers.

- BLM G-27: Acquiring Information from an Audio-visual
- Student partners may wish to share the workload of gathering information from the video by deciding what information each will investigate and gather. *Example: one student may record information relating to human factors affecting production while another records information relating to stages of production and changes over time...*
- Video suggestions: *Agriculture and Food Industries in Manitoba* (2003); and *Manitoba: Supermarket to the World* (1997), available from Manitoba Education, Citizenship and Youth Instructional Resources Unit
- Alternatively, students may use the B-D-A Viewing Worksheet (BLM G-28) for recording information from video.

**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KE-044** Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

**S-300** Formulate geographic questions to plan inquiry and research.

**Acquiring Strategies****Strategy 2: Food Production: From Start to Finish**

- Working with a partner, students select and research a food product, such as their favourite lunch food, a common item in their home kitchen, or a locally produced item.
- Students develop geographic questions about selected food to investigate.
- Using print and electronic sources, and primary sources where appropriate, students research their geographic questions related to the stages of production of their selected food product, from its origins, through processing, transportation and marketing, to its consumption in their home or school cafeteria.
- Students also make note of how human factors affect the production of their selected food product. *Examples: cultural, economic, political, marketing...*
- Students organize information in an electronic presentation or poster format and present findings to the class.
- Class members take notes in their course notebooks on food items listed and the stages of production of each.

**KH-034** Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

**S-201** Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*

**Strategy 3: Farming—Then and Now**

- Working in small groups, students use a variety of print, electronic, and primary sources to research how farming has changed over time. *(Example: from World War II to the present...)* Sources might include history texts, community history books, census data, old photographs, news articles, personal interviews, and museums, as well as films and video resources.
- Students gather appropriate information, identifying primary and secondary sources, and reference sources appropriately.
- Students record information in an organizer (Venn diagram or Compare and Contrast Frame).
- Students write conclusions about farming then and now in their course notebooks, justifying their comments with their research findings.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Acquiring Strategies

- Assess the presentation and notes for the student's understanding and knowledge of stages of food production and the possible influences of human factors in the various stages of production.
- Assess the student's skill in selecting information from a variety of sources. (See BLM G-9.)
- Assess the student's skill in formulating geographic questions.

- Encourage students to make use of local resources such as farmers, U-pick fruit producers, market gardeners, hunters and fishers; processing operations such as flour mills, meat packers, fish processing/smoking, bakeries, transportation firms; and marketers such as stores and restaurants.
- Regional and provincial agricultural agencies may have a variety of pamphlets and brochures that could provide useful information.
- To prepare for collecting primary information, students may wish to review TN 14: Conducting an Interview.
- Access to computers, the Internet, and presentation software such as *PowerPoint*
- Art materials as required
- BLM G-9: Selecting Information: Checklist
- TN 11: Asking Geographic Questions
- TN 12: Asking Questions
- TN 16: Creating an Electronic Presentation
- TN 18: Creating a Poster
- TN 24: The Inquiry Process (Conducting Research)

- Assess the organizer and written conclusion for the student's knowledge of ways in which food production has changed over time.
- Assess the student's skill in selecting information from a variety of sources. (See BLM G-9.)
- Review the organizer and format of citations for the student's skill in organizing and recording information and referencing sources appropriately.

- Access to library resources, computers, and the Internet
- BLM G-9: Selecting Information: Checklist
- SFAL 6.103: Compare and Contrast Frame
- TN 24: The Inquiry Process (Conducting Research)
- Student research could include a comparison of the percentage of the labour force that is presently employed in the agricultural sector as opposed to the past.
- The Statistics Canada website ([www.statcan.ca](http://www.statcan.ca)) and its annual publication (*Canada at a Glance*) may be useful sources of information.
- *The Challenge of Change: The Canadian Agriculture and Food Industry* (Agriculture in the Classroom)
- *The Drylanders*: This video recording is available from the Instructional Resources Unit of Manitoba Education, Citizenship and Youth.
- Students may need instruction regarding proper identification and citing of primary and secondary sources. Some schools adopt a particular system, such as APA or MLA, for school-wide use.



## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

**KE-044** Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-300** Formulate geographic questions to plan inquiry and research.

**S-309** Observe patterns and make generalizations based on geographic inquiry.

## Acquiring Strategies

## Strategy 4: Case Study of a Local Food Industry

- Working in small groups, students research a local or regional food production industry. *Examples: flour mill, bakery, slaughterhouse, market gardening, dairy/cheese plant, canning operation, wild rice production, fish plant...*
- Students develop geographic questions about the selected food production industry.
- To answer geographic questions posed, students gather information from primary sources such as a visit to the site, interviews, guest speaker, and print and electronic sources.
- Students record information relating to the various stages of production, and the human factors that influence production of this particular food product.
- Students organize information in an electronic or poster format and present findings to the class.
- Students culminate the activity with a Learning Log entry identifying what they have learned about aspects of local food production industries.

## Students will...

**KH-034** Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

## Applying Strategies

## Strategy 1: Attracting a Food Industry to Your Region or Province

- Students work in pairs to create a brochure, radio/TV advertisement, or write a letter to the editor to promote their region or the province of Manitoba as a good place to locate a food production industry.
- The promotion should include references to as many human factors as possible, as well as to modern but environmentally friendly production practices. *Examples: cultural, economic, political, transportation, labour, marketing...*
- Students present a brochure, radio/TV advertisement, or letter to the class.
- Class members record locational factors identified in their course notebooks.

**KE-044** Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, environmental, marketing...*

**S-307** Propose and defend innovative options or solutions to address issues and problems.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

## Strategy 2: Developing Proposals for New Food Products

- Working with a partner, students “invent” a new food product, such as a snack or health food item, and use persuasive writing to develop a proposal to produce and market the new product.
- Using an organizer, students list the kinds and sources of ingredients, stages in production, transportation needs, target group, and marketing strategies for the new product. (See BLM 3-1.)
- Students present proposals for the new food product to the “Board of Directors” (classmates).
- Class members list in their course notebooks food products proposed.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Acquiring Strategies

- Assess the presentation and the Learning Log for the student's understanding and knowledge of stages of food production and the possible influences of human factors on the production of various types of food.
- Assess the student's skill in formulating geographic questions.
- Monitor information gathering and assess the presentation for the student's skill in observing patterns and making generalizations based on geographic inquiry.

- Some students may have parents employed in a local food production industry and could be used as a contact to acquire primary information.
- Access to publicity and information sheets on local food products
- SFAL 6.56, 6.57: Learning Log
- SFAL 9.3, 9.4: Learning Experiences Outside the Classroom
- SFAL 9.6: Teacher's Planning Sheet for Learning Experiences Outside the Classroom
- TN 11: Asking Geographic Questions
- TN 14: Conducting an Interview
- TN 16 Creating an Electronic Presentation
- TN 18: Creating a Poster
- TN 24: The Inquiry Process (Conducting Research)
- TN 30: Field Studies in Geography

### Applying Strategies

- Assess the brochure, radio/TV advertisement, or letter and notes for the student's knowledge of factors affecting food production and changes over time.
- Assess the student's skill in presenting information and ideas in formats appropriate for audience and purpose. (See BLM G-8.)

- Samples of brochures, magazine articles, radio/TV ads
- BLM G-7: Checklist for Creating Visuals
- BLM G-8: Assessment Guide for Visuals
- TN 15: Creating a Brochure
- TN 20: Creating a TV Commercial
- TN 25: Persuasive Writing

- Assess proposals and notes for the student's understanding of human factors affecting food production and the stages of food production.
- Monitor proposals for the student's skill in proposing and defending innovative ideas and solutions.
- Assess persuasive writing for the student's skill in presenting information and ideas in formats appropriate for audience and purpose.

- Students may wish to draw on information from Acquiring Strategies in this learning experience.
- Students may wish to review brochures promoting new food products to gather ideas.
- BLM 3-1: Proposal for a New Food Product
- TN 25: Persuasive Writing
- The story of the development and marketing of a product such as Clodhoppers® may provide further ideas for students. <[www.clodhoppers.tv](http://www.clodhoppers.tv)>

**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KE-044** Identify the stages involved in food production and distribution. *Include: growing, processing, transportation, and marketing.*

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**KH-034** Give examples of ways in which food production has changed over time. *Examples: soil conservation strategies, technological change...*

**KI-005** Identify human factors affecting the production and use of various types of food. *Examples: cultural, economic, political, marketing...*

**S-301** Consider the context of events, accounts, ideas, and interpretations.

**S-400** Listen to others to understand their perspectives.

**Applying Strategies****Strategy 3: Flow Chart of Food Production**

- Students select a food product of interest and show, in a flow chart diagram, the different stages of production, from “raw material” to the consumable product in their kitchen or school cafeteria.
- Students use brief notes and pictures/drawings to illustrate each stage.
- Completed flow charts are posted and shared with the class as a Gallery Walk.

**Strategy 4: Food Production: What’s Changed?**

- Students invite a grandparent, Elder, or other senior citizen with a farming, hunting, or fishing background to speak to the class about how food production has changed in the last few decades, and what aspects have remained similar.
- In advance of the visit, students develop questions related to human factors that influence food production, the stages of food production, and how these have changed over the years.
- Students note information about the changes in an organizer such as a Venn diagram, Compare and Contrast Frame, or Concept Relationship Frame
- Following the presentation, students share with a partner and add new information or make necessary corrections.

**Teacher Reflections**

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Applying Strategies

- Assess the flow chart for the student's knowledge of the stages of food production.
  - Assess the flow chart for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.
- 
- Assess the organizer for the student's knowledge of how food production, including human factors, has changed over time and what things have stayed the same.
  - Monitor the student's response to the speaker and assess the organizer for the student's skill in considering the context of past events and accounts.
  - Observe and monitor the student's response to the speaker to assess the student's skill in listening to others to understand their perspectives. (See BLM G-5.)
- 
- In this learning experience, students may wish to select a food item they identified in the Acquiring Strategy 2: Food Production: From Start to Finish or Acquiring Strategy 4: Case Study of a Local Food Industry.
  - Access to library and Internet resources
  - Appropriate art materials and poster paper
  - The website <[www.agintheclassroom.org](http://www.agintheclassroom.org)> may be helpful.
  - SFAL 6.80: Gallery Walk
  - TN 17: Creating a Flow Chart
- 
- A second guest familiar with current farming and/or food production methods could also be invited to the class.
  - Alternatively, students could view a video, such as *The Drylanders*, to learn about farming methods during the 1930s (available from the Instructional Resources Unit of Manitoba Education, Citizenship and Youth).
  - BLM G-5: Listening Skills: Observation Checklist
  - SFAL 6.103: Compare and Contrast Frame
  - SFAL 6.104: Concept Relationship Frame
  - TN 11: Asking Geographic Questions
  - TN 12: Asking Questions

## Teacher Reflections

*Learning Experience 3.3: Safeguarding Our Food Supply*

- KL-022 Explain ways in which natural and human-caused phenomena affect food production.
- KG-037 Give examples of the potential impact of climate change on food production.
- VL-005 Respect the Earth as a complex environment in which humans have important responsibilities.
- VL-006 Be willing to consider the environmental consequences of their food choices.
- S-103 Promote actions that reflect principles of sustainability.
- S-107 Make decisions that reflect social responsibility.
- S-200 Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.
- S-201 Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*
- S-202 Select and use appropriate tools and technologies to accomplish tasks. *Examples: Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*
- S-300 Formulate geographic questions to plan inquiry and research.
- S-303 Reconsider personal assumptions based on new information and ideas.
- S-304 Analyze physical material and evidence during research.
- S-307 Propose and defend innovative options or solutions to address issues and problems.
- S-400 Listen to others to understand their perspectives.
- S-403 Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*
- S-404 Elicit, clarify, and respond to questions, ideas, and diverse points of view in discussions.

## Description of Learning Experience

In this learning experience, students examine the ways in which natural phenomena and human actions affect our food supply. Students explore examples of the potential impact of climate change on our food supply, and consider the fact that our own food choices have environmental consequences.

## Vocabulary Focus

The following vocabulary is important for Learning Experience 3.3: Safeguarding Our Food Supply.

|                            |                        |               |
|----------------------------|------------------------|---------------|
| cash crops                 | greenhouse gases       | pollution     |
| climate change             | human-caused phenomena | shelter belts |
| drought                    | irrigation             | surplus       |
| environmental consequences | malnutrition           | vegetarian    |
| fair trade                 | natural disaster       | yield         |
| famine                     | natural phenomena      | zero tillage  |
| farmers' market            | nutrition              |               |
| global warming             | obesity                |               |

## Vocabulary Study Strategies

Please see **Appendix A: Content-Area Vocabulary Study Strategies** for suggested strategies to incorporate vocabulary studies into the learning experiences. Further vocabulary strategies are found in Vocabulary Strategies 6.31–6.36 and Information Processing Strategies 6.49–6.53 in *Success for All Learners: A Handbook on Differentiating Instruction* [referred to in this document as SFAL] (Manitoba Education and Training, 1996). In addition, a number of learning experiences within the clusters include vocabulary strategies for learning. Teachers are encouraged to make use of these strategies and to avoid the less meaningful practice of having students copy out dictionary definitions.



## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

**KG-037** Give examples of the potential impact of climate change on food production.

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**KG-037** Give examples of the potential impact of climate change on food production.

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**S-304** Analyze physical material and evidence during research.

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**S-303** Reconsider personal assumptions based on new information and ideas.

**S-400** Listen to others to understand their perspectives.

## Activating Strategies

## Strategy 1: Effects of Natural and Human-Caused Phenomena on Food Production

- Using the Listen-Think-Pair-Share strategy, students initially work alone to brainstorm natural and human-caused phenomena that might affect food production, and list them in an organizer. *Examples: flood, tornado, war...*
- Students then work with a partner and add new ideas or clarify information in their organizers.
- Pairs share information with the class to create a master list, on the board or on a flip chart, of natural and human-caused phenomena affecting food production.
- Students classify the list of phenomena into human-caused and natural factors.
- Students discuss the possible cause-and-effect relationship between past, present, and future human activities, and natural phenomena that might affect food production. *Examples: clearing forests can lead to flooding, or burning fossil fuels may result in climate change...*
- Students write an Exit Slip to reflect on what they have learned about the effects of natural and human-caused phenomena on food production.

## Strategy 2: Headline: Problems of Food Production

- Working in small groups, students examine newspapers, magazines, and Internet news sites for headlines and articles relating to natural and human-caused phenomena (local, regional, or global) that affect food production.
- Students clip/print the articles and reference sources appropriately.
- Students sort headlines into natural and human-caused phenomena.
- Students post the headlines, by category, and share them with the class as a Word Splash or Gallery Walk.
- After reviewing the posted headlines, students predict the nature of natural and human-caused factors affecting food production.

## Strategy 3: New Perspectives from Relief Workers

- Students use the LAPS strategy to record information from a presentation by a relief worker.
- Students prepare a list of questions about natural and human-caused phenomena affecting food production.
- Students listen to a speaker talk about the effects of natural and human-caused phenomena on the food supply in affected areas.
- Students picture what they hear, and write a reflection to summarize what they heard and its effect, if any, on their personal perspective.
- The LAPS sheets are shared with the rest of the class.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Activating Strategies

- Assess the organizer and Exit Slip for the student's prior knowledge and understanding of natural and human-caused phenomena and the impact of climate change on food production.
- Assess the organizer and Exit Slip for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.

- Students may require some examples to generate their own ideas on both human-caused and natural phenomena that affect food production.
- SFAL 6.13: Listen-Think-Pair-Share
- SFAL 6.60 - 61: Exit Slips

- Assess the collection and classification of headlines and predictions made for the student's prior knowledge of natural and human-caused phenomena affecting food production.
- Assess the classification of headlines for the student's skill in analyzing evidence during research.

- Students may need to be given several examples of human and natural factors to prompt further discussion.
- Access to a variety of newspapers, magazines, and the Internet
- Teachers may wish to note that there is a related outcome in LE 3.4 (KG-038: Identify issues related to scarcity and distribution of food).
- Students may need instruction regarding proper identification and citing of primary and secondary sources. Some schools adopt a particular system such as APA or MLA for school-wide use.
- SFAL 6.28: Word Splash
- SFAL 6.80: Gallery Walk

- Assess LAPS sheet/reflections for the student's understanding of the impact of natural and human-caused phenomena on food production.
- Monitor the student's questions, sharing, and reflections for evidence of his or her skill in reconsidering personal assumptions based on new information and ideas.
- Monitor the student's responses to the speaker and assess the LAPS sheet for her or his skill in listening to others to understand their perspectives. (See BLM G-5.)

- Speakers may be available from various relief agencies or local organizations that work with groups on food and nutrition issues. *Examples: Canadian Food Grains Bank, UNICEF, The Red Cross/Crescent Society, Mennonite Central Committee, Care Canada, Winnipeg Harvest, Helping Hands...*
- BLM G-5: Listening Skills: Observation Checklist
- SFAL 6.108: Do Your LAPS
- TN 11: Asking Geographic Questions
- TN 12: Asking Questions

**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KG-037** Give examples of the potential impact of climate change on food production.

**VL-006** Be willing to consider the environmental consequences of their food choices.

**S-404** Elicit, clarify, and respond to questions, ideas, and diverse points of view in discussions.

**Activating Strategies****Strategy 4: Environmental Impact: Climate Change**

- Students view a video that deals with climate change, its potential impact on food production, and the environmental consequences of people's food choices.
- Using an organizer, students record information from the video, including positive and negative effects of climate change on food production. (See BLM G-28.)
- Students write a short statement to reflect and summarize their view on the degree to which climate change will affect food production and the potential consequences of their food choices on the environment.
- Students share views, first in small groups and then with the class, and discuss diverse points of view.

**Students will...**

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**S-300** Formulate geographic questions to plan inquiry and research.

**S-302** Draw conclusions and make decisions based on research and various types of evidence.

**Acquiring Strategies****Strategy 1: Human-Caused and Natural Phenomena Affecting Food Production**

- Using print and electronic resources, students work in pairs to research how a natural event or a human-caused phenomenon affected food production.
- Students formulate a number of questions to guide their research.
- Students identify the area affected, describe the nature of the event or phenomenon, and explain how food production was affected and the consequences of the event.
- Students record details using an Information Frame or the Cornell Note-Taking Frame.
- Students share findings, first in small groups and then with the whole class.
- Class members list in their class notebooks examples provided.

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**Strategy 2: Impact of Phenomena on Local Food Production**

- Working in small groups, students select a local crop grown or livestock raised for food production. Alternatively, students may select wildlife hunted or natural resources gathered for food.
- Using local primary sources, as well as print and electronic sources, students research the ways that either natural or human-caused phenomena have or could affect the production or acquisition of this crop or livestock.
- Students organize and display information in poster or electronic format and present it to the class.
- Class members record in course notebooks examples of phenomena affecting food production.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Activating Strategies

- Assess the B-D-A Viewing Worksheet and monitor discussion for the student's understanding of the impact of climate change on food production.
- Monitor discussion and review reflections for evidence of the student's willingness to consider the environmental consequences of food choices.
- Monitor group and class discussions for the student's skills in clarifying his or her viewpoint, responding to questions and diverse points of view.

- Check the Instructional Resources Unit of Manitoba Education, Citizenship and Youth for video resources. Additional sources include programs on *The Nature of Things* and *CBC News in Review*.
- BLM G-28: B-D-A Viewing Worksheet

### Acquiring Strategies

- Assess Information Frame/Cornell notes for the student's knowledge of how natural and human factors affect food production.
- Assess questions developed for the student's skill in formulating geographic questions.
- Monitor the group report and assess the frame for the student's skill in drawing conclusions and making decisions based on research.

- The kind of event or phenomenon selected can be either natural or human-caused, current or historical, local or international. *Examples: flood in Bangladesh, war in Iraq, drought in the Canadian Prairies, potato blight in Ireland, overfishing in Atlantic Canada, frost in your home garden...*
- Access to newspapers, magazines, and the Internet
- BLM G-21: Cornell Note-Taking Frame
- TN 11: Asking Geographic Questions
- TN 12: Asking Questions
- TN 24: The Inquiry Process (Conducting Research)
- Alternatively, students might use the Information Frame in SFAL 6.51.

- Assess presentation and notes for the student's knowledge and understanding of natural and human-caused phenomena affecting food production.
- Observe sources of information used for the student's skill in selecting information from a variety of appropriate sources. (See BLM G-9.)
- Assess the presentation and notes for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.

- Examples of local phenomena include short-term severe weather events like wind, hail, frost, heavy rain, drought, flooding, insects, plant and animal diseases, negative market forces, government policies, transportation issues, food safety, and factors affecting seasonal migrations and numbers of wildlife.
- Primary information may be obtained from local food producers, regional agricultural and natural resources offices, farm organizations, stores, insurance companies, Band offices, and local hunters and fishers.
- Access to newspapers, magazines, and the Internet
- Sample posters as models and for analysis
- BLM G-9: Selecting Information: Checklist
- TN 14: Conducting an Interview
- TN 16: Creating an Electronic Presentation
- TN 18: Creating a Poster

**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KG-037** Give examples of the potential impact of climate change on food production.

**VL-006** Be willing to consider the environmental consequences of their food choices.

**S-202** Select and use appropriate tools and technologies to accomplish tasks. *Examples: Geographic Information Systems (GIS) and Global Positioning Systems (GPS)...*

**S-303** Reconsider personal assumptions based on new information and ideas.

**Acquiring Strategies****Strategy 3: Global Warming and Food Production**

- Using print and electronic resources, students work with a partner to research the potential impact of global warming on food production in Canada and other places in the world.
- Students consider the negative and potentially positive impact of global warming. *Examples: drier climate, more frequent severe weather events, longer growing season, opportunities for introduction of new crops, and habitat changes for wildlife such as polar bears in the Canadian Arctic...*
- Students organize information in electronic format and share it with their peers using presentation software such as *PowerPoint*.
- Individually, students write an Exit Slip to record and reflect on what they have learned about global warming and food production and its implications for them personally.

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**VL-105** Respect the Earth as a complex environment in which humans have important responsibilities.

**S-201** Organize and record information in a variety of formats and reference sources appropriately. *Examples: maps, graphs, tables, concept maps...*

**Strategy 4: Parking Lots Bad for Crops**

- Working individually, students carefully read the article “Parking lots bad for crops.” (See BLM 3-2.)
- Students put the article aside and, using the Reading for Comprehension and Note-Taking Frame, write down as many “fast facts” as they can remember.
- Students re-read the article to review information and to make corrections or additions to their fast facts.
- Students make connections with information in each column and group into themes/concepts.
- Students write a short paragraph on each of the themes/concepts, thus restating in their own words key items from the article.
- Students write an Exit Slip to express their personal view on issues raised in the article.

**Teacher Reflections**

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Acquiring Strategies

- Assess the presentation for the student's knowledge of the potential impact of climate change on food production.
- Assess the Exit Slip for evidence of the student's willingness to consider the environmental consequences of food choices.
- Observe the use of technology for the student's skill in selecting and using appropriate technologies to accomplish tasks.
- Assess the Exit Slip for the student's skill in reconsidering personal assumptions based on new information and ideas.

- Encourage students' use of GIS computer software for production of maps that they may include in their presentation.
- Regional agricultural and environmental offices may have information sheets on climate change and agricultural production.
- Natural Resources Canada has published a series of posters, available at no charge, depicting the impact of global warming on various regions in Canada. (See <<http://adaptation.nrcan.gc.ca>> and follow the links: Online Posters/View/Order Posters.)
- Other relevant websites include: Agriculture Canada <<http://www.agr.gc.ca>> and follow the links: Environment/Environment Bureau/Air/Climate Change. <[http://www.ec.gc.ca/press/ccsprairie\\_n\\_e.htm](http://www.ec.gc.ca/press/ccsprairie_n_e.htm)>
- Access to newspapers, magazines, and the Internet
- SFAL 6.60, 6.61: Exit Slips
- TN 16: Creating an Electronic Presentation
- TN 24: The Inquiry Process (Conducting Research)

- Assess responses in the Reading for Comprehension and Note-Taking Frame for the student's knowledge of how human-caused factors affect food production.
- Assess the Exit Slip for language that demonstrates the student's respect for Earth's complex environments and related human responsibilities.
- Assess the Reading for Comprehension and Note-Taking Frame for the student's skill in organizing and recording information.

- BLM 3-2: Parking lots bad for crops
- BLM G-29: Reading for Comprehension and Note-Taking Frame
- TN 32: Reading for Comprehension and Note-Taking Strategy
- SFAL 6.60, 6.61: Exit Slips
- As an extension activity, students could focus on the Statistics Canada report that gave rise to *The Globe and Mail* story. The report can be accessed at <<http://www.statcan.ca>> and follow the links: Products and Services/Free/Agriculture/Rural and Small Town Canada Analysis Bulletin/The Loss of Dependable Agricultural Land in Canada View/Open pdf file.

## Teacher Reflections



## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**VL-006** Be willing to consider the environmental consequences of their food choices.

**S-103** Promote actions that reflect principles of sustainability.

**KG-037** Give examples of the potential impact of climate change on food production.

**KL-022** Explain ways in which natural and human-caused phenomena affect food production.

**VL-006** Be willing to consider the environmental consequences of their food choices.

**S-307** Propose and defend innovative options or solutions to address issues and problems.

**VL-006** Be willing to consider the environmental consequences of their food choices.

**S-103** Promote actions that reflect principles of sustainability.

**S-107** Make decisions that reflect social responsibility.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

## Applying Strategies

## Strategy 1: Your Food Choices and Consequences

- Working individually, students keep a Daily Food Consumption Log for a few days or a week, including a weekend. (See BLM 3-3.)
- Students identify as many natural and human-caused factors as possible that may have influenced their food choices.
- As part of their log, students also note any potential environmental consequences of their choices, either in the production, distribution, or packaging of food items.
- Students also note if there is any action they may take to reduce the negative environmental impact of their food choices.
- Students write a journal entry to reflect on their food choices, environmental consequences, and what actions they may take.

## Strategy 2: Fighting Nature for More Food Production

- Working with partners, students develop a list of suggestions to reduce or prevent the negative impacts that natural phenomena (including climate change) have on food production, either locally or in a broader geographic context.
- Students consider factors such as cultivation methods, developing hardy varieties, irrigation and water management, shelter belts, methods of rodent and pest control, alternative farming techniques and production, and new approaches to wildlife and habitat management.
- Student pairs present suggestions to the class and defend their choices.
- Class members record suggestions in their course notebooks.

## Strategy 3: Responsible Food Production

- Working individually or with a partner, students prepare a brochure to educate the public about environmentally and socially responsible food choices.
- Students focus on specific issues and practices. *Examples: purchasing organically grown fruit and vegetables; reducing red meat consumption or becoming vegetarian; supporting "fair trade" products such as coffee, tea, and chocolates; supporting the local beef industry in the wake of BSE; banning sport fishing and hunting; promoting fair labour practices in the worldwide food industry; reducing food packaging materials; implementing mandatory recycling of containers by manufacturers; strengthening regulations for safe ingredients; labelling...*
- Students include illustrations, examples, and text in their brochures.
- Students share suggestions by circulating or posting brochures in class.
- Class members make notes on the issues covered and practices promoted in each.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Applying Strategies

- Assess the Daily Food Consumption Log and journal entries for the student's understanding of factors that influence food choices and environmental consequences.
- Assess journal entries for evidence of the student's willingness to consider environmental consequences of her or his food choices.
- Assess the Daily Food Consumption Log and journal entries for the student's skill in promoting actions that reflect principles of environmental stewardship and sustainability.

- Food choices and environmental consequences may be sensitive and/or controversial issues for students, particularly those with concerns about weight, appearance, or economic status, as well as for those who are indifferent to the environmental consequences of their own choices.
- BLM 3-3: Daily Food Consumption Log
- Sharing the Daily Food Consumption Log with the class should be optional.
- TN 22: Journal Writing in Geography
- Students may wish to review previous work completed on stewardship in LE 2.3: Sustainable Development, and relate it to this cluster's context.

- Assess suggestions and notes for the student's knowledge about the effects of natural phenomena, including climate change, on food production.
- Observe work with partners and monitor presentations for evidence of the student's willingness to consider the environmental consequences of his or her food choices.
- Assess suggestions for the student's skill in proposing and defending innovative solutions to problems.

- Students may need to be reminded that many current agricultural practices are, in fact, attempts to minimize the influence of natural phenomena, but that they are asked to think of alternative, more creative ideas to reduce the negative impacts even further.
- Internet sites and brochures from agricultural organizations may provide useful information for this learning experience.

- Monitor group work and the brochure for evidence of the student's willingness to consider environmental consequences of her or his food choices.
- Assess the brochure for the student's skill in promoting actions that reflect principles of environmental stewardship and sustainability and in making decisions that reflect social responsibility.
- Assess the brochure for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.

- Topics may be selected by students or may be assigned by the teacher to ensure a greater variety of issues and practices.
- TN 15: Creating a Brochure
- TN 25: Persuasive Writing
- Alternatively, students use the RAFT (Role, Audience, Format, Topic) format to write persuasively about environmentally responsible food choices. (See SFAL 6.77.)



*Learning Experience 3.4:  
Contemporary Issues Related to Food*

- |        |  |
|--------|--|
| KG-036 | Describe issues related to freshwater and saltwater food resources.  |
| KG-038 | Identify issues related to scarcity and distribution of food.  |
| KE-043 | Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.   |
| KE-045 | Identify issues related to genetic modification of plants and animals.   |
| VP-010 | Be willing to consider the economic and political influence of their food choices.<br><i>Examples: food fashions, food aid, food shortages...</i>                      |
| S-107  | Make decisions that reflect social responsibility.   |
| S-200  | Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.  |
| S-300  | Formulate geographic questions to plan inquiry and research.   |
| S-301  | Consider the context of events, accounts, ideas and interpretations.   |
| S-305  | Compare diverse perspectives and interpretations in the media and other information sources.   |
| S-307  | Propose and defend innovative options or solutions to address issues and problems.   |
| S-400  | Listen to others to understand their perspectives.   |
| S-403  | Present information and ideas in a variety of formats appropriate for audience and purpose. <i>Examples: models, displays, multimedia presentations, editorials...</i> |
| S-405  | Make decisions that reflect social responsibility.   |
| S-406  | Debate differing points of view regarding an issue.  |

## Description of Learning Experience

In this learning experience, students identify issues related to the scarcity and the distribution of food. They study issues related to freshwater and saltwater food resources, as well as examine ways in which other food production has changed over time. This learning experience introduces students to new developments in the controversial area of genetic modification in food production. Students also consider the economic and political influences of their food choices and why they should care about the consequences of their actions.

## Vocabulary Focus

The following vocabulary is important for Learning Experience 3.4: Contemporary Issues Related to Food.

|                 |                      |                         |
|-----------------|----------------------|-------------------------|
| agribusiness    | food aid             | organic farming         |
| animal rights   | food banks           | relief programs         |
| biotechnology   | food fashions        | saltwater               |
| depopulation    | freshwater           | selective breeding      |
| desalinization  | genetic modification | sidewalk farmers        |
| desertification | greenhouse           | subsidies               |
| cloning         | Kyoto Protocol       | sustainable agriculture |
| El Niño         | labour-intensive     | urbanization            |
| factory farms   | land capability      |                         |
| factory ships   | mechanization        |                         |

## Vocabulary Study Strategies

Please see **Appendix A: Content-Area Vocabulary Study Strategies** for suggested strategies to incorporate vocabulary studies into the learning experiences. Further vocabulary strategies are found in Vocabulary Strategies 6.31–6.36 and Information Processing Strategies 6.49–6.53 in *Success for All Learners: A Handbook on Differentiating Instruction* [referred to in this document as SFAL] (Manitoba Education and Training, 1996). In addition, a number of learning experiences within the clusters include vocabulary strategies for learning. Teachers are encouraged to make use of these strategies and to avoid the less meaningful practice of having students copy out dictionary definitions.

## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

- KE-043** Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.
- KE-045** Identify issues related to genetic modification of plants and animals.
- KG-036** Describe issues related to freshwater and saltwater food resources.
- KG-038** Identify issues related to scarcity and distribution of food.
- S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

- KE-043** Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.
- KE-045** Identify issues related to genetic modification of plants and animals.
- KG-036** Describe issues related to freshwater and saltwater food resources.
- KG-038** Identify issues related to scarcity and distribution of food.
- S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

- KE-043** Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.
- KE-045** Identify issues related to genetic modification of plants and animals.
- KG-036** Describe issues related to freshwater and saltwater food resources.
- KG-038** Identify issues related to scarcity and distribution of food.
- S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

## Activating Strategies

## Strategy 1: Issues Related to Food Production

- Students view a video that deals with issues related to food production.
- Students use the B-D-A Viewing strategy as a guide for learning and, with a partner, complete the “Before Viewing” column prior to viewing the video.
- Students view the video and complete the “During Viewing” column in the B-D-A Viewing Worksheet.
- Students work with a partner to complete remaining portions of the B-D-A Viewing Worksheet.
- Students share summaries with partners, then with the rest of the class.
- Students discuss what they have learned from the video about issues related to food production.

## Strategy 2: Knowledge of Issues Related to Food

- Working in small groups, students review and sort a word list provided by the teacher. (See BLM 3-4.)
- Students sort the terms into three categories: terms someone in their group can define, terms they can guess but are not sure about, and terms that no one in the group knows about.
- Groups share definitions of the words they know and add or correct information from other groups.
- Students refer to dictionaries and other sources and, individually, use the Three-Point Approach to define terms.
- Based on the terminology, students predict what this learning experience will be about.

## Strategy 3: Contemporary Food Issues: Headlines and Images

- Working with a partner or in small groups, students search for headlines and images (in both print and electronic sources) that reflect a variety of current issues related to food production.
- Students browse the headlines and images and identify the nature of the issue, the parties involved (*Examples: individuals, groups, organizations, institutions, companies...*), and any associated messages promoting a particular course of action.
- Groups classify headlines and images into categories as identified in the outcomes above.
- Groups post headlines and images on a bulletin board and discuss findings and interpretations with the rest of the class.
- Individually, students write an Exit Slip that indicates what they have learned about contemporary food issues and identifies questions they may have for further inquiry.

### Suggested Assessment Strategies

### Teacher Tips and Resources

#### Activating Strategies

- Assess B-D-A Viewing Worksheet for the student's knowledge of issues relating to food production.
  - Assess the student's skill in selecting and recording information from the video.
- 
- Monitor group work and assess the organizer for the student's understanding and knowledge of contemporary food issues and related terminology.
  - Assess the organizer for the student's skill in presenting information and ideas in an appropriate format.
- 
- Assess the headlines, images, and Exit Slip for the student's knowledge of current food production issues, the changing nature of farming, and issues related to genetic modification.
  - Assess information selected for the student's skill in selecting information from a variety of sources. (See BLM G-9.)
- 
- Check the Manitoba Education, Citizenship and Youth Instructional Resources Unit catalogue for appropriate videos, including those in the *CBC News in Review* series.
  - Departments of Agriculture and Fisheries of the provincial and federal governments may also have suitable video resources.
  - BLM G-28: The B-D-A Viewing Worksheet
  - Alternatively, students may use the LAPS strategy. (See SFAL 6.54, 6.108.)
- 
- BLM 3-4: Terminology Related to Contemporary Food Production
  - Teachers may change or add terms as necessary.
  - SFAL 6.101: Three-Point Approach for Words and Concepts
  - Alternatively, students use the Word Cycle strategy to identify connections between terms from the list or any nine related terms provided by the teacher. (See SFAL 6.31, 6.32, 6.99.)
- 
- Access to recent and current newspapers and magazines for clipping articles
  - Access to the Internet
  - BLM G-9: Selecting Information: Checklist
  - SFAL 6.6, 6.61: Exit Slips
  - Newspaper, magazine, and Internet articles used for this learning experience may be appropriate for a more detailed study in subsequent Acquiring Strategies.



**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KG-036** Describe issues related to freshwater and saltwater food resources.

**KG-038** Identify issues related to scarcity and distribution of food.

**KE-045** Identify issues related to genetic modification of plants and animals.

**S-300** Formulate geographic questions to plan inquiry and research.

**KG-036** Describe issues related to freshwater and saltwater food resources.

**KE-043** Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.

**VP-010** Be willing to consider the economic and political influence of their food choices. *Examples: food fashions, food aid, food shortages...*

**S-400** Listen to others to understand their perspectives.

**Students will...**

**KG-036** Describe issues related to freshwater and saltwater food resources.

**KG-038** Identify issues related to scarcity and distribution of food.

**KE-043** Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.

**KE-045** Identify issues related to genetic modification of plants and animals.

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary.

**S-305** Compare diverse perspectives and interpretations in the media and other information sources.

**Activating Strategies****Strategy 4: Sharing Knowledge about Food Production Issues**

- Working with a partner, students use the KWHL organizer and the Listen-Think-Pair-Square strategy to identify what they already know about food production issues.
- Students consider issues related to freshwater and saltwater food production, the scarcity and distribution of food, and genetic modification of plants and animals.
- Students share knowledge with another group, adding or clarifying information.
- Students develop a list of questions they could ask to learn more about food production issues.
- As the learning experience progresses, students add information in the Learned column of their KWHL sheet.

**Strategy 5: Speakers on Food Issues**

- Students develop questions related to food issues prior to a visit by a guest speaker. (They may use questions developed in previous learning experience.)
- Students listen to an Aboriginal Elder talking about freshwater and saltwater food issues, or to a senior farmer talking about the changing nature of farming on the Prairies.
- Students use the LAPS strategy to record information from the speaker's presentation.
- Following the speaker's presentation, students work with a partner to add or clarify information and ideas.
- Students share responses with the rest of the class.
- Students discuss how an individual's food choices might relate to the issues identified by the speaker.

**Acquiring Strategies****Strategy 1: Analyzing Articles on Food Production Issues**

- With a partner, students examine paper and electronic sources for articles related to issues of food production listed in the targeted outcomes.
- Student pairs use the Collaborative Reading strategy to read and comprehend news articles.
- Pairs analyze articles using the News Article Analysis form.
- Partners share articles and analyses, including personal viewpoints, with the rest of the class.
- Class members record in course notebooks the food issues identified.

### Suggested Assessment Strategies

### Teacher Tips and Resources

#### Activating Strategies

- Assess the organizer for the student’s prior knowledge of food production issues.
- Assess lists of questions for the student’s skill in formulating geographic questions for inquiry and research.

- Students may need several examples of food production issues before they can generate their own examples.
- BLM G-19: KWHL
- SFAL 6.13: Listen-Think-Pair-Share
- TN 11: Asking Geographic Questions
- TN 12: Asking Questions
- The list of questions developed could be used in the subsequent activity “Speakers on Food Issues.”

- Assess the LAPS sheet and class discussions for the student’s knowledge of issues relating to food production.
- Monitor class discussions and assess the LAPS sheet for the student’s willingness to consider the economic and political influences of her or his food choices.
- Observe the student’s skill in listening to the guest speaker to understand his or her perspectives. (See BLM G-5.)

- Contact the Band Office of the nearest First Nation in your area, or a nearby Friendship Centre for names of Aboriginal Elders willing to speak to the class.
- Students living on a farm or with farm relatives may be able to assist with acquiring/inviting a speaker.
- Alternatively, contact an agricultural organization, regional field office, or government department of Agriculture for a speaker about the changing nature of farming.
- BLM G-5: Listening Skills: Observation Checklist
- BLM G-6: Listening Skills: Self-Assessment
- SFAL 6.54, 6.108: Do Your LAPS
- TN 11: Asking Geographic Questions
- TN 12: Asking Questions

#### Acquiring Strategies

- Assess the news analysis sheet and notes for the student’s knowledge of issues related to food production and/or the changing nature of farming on the prairies.
- Assess the student’s skill in selecting information from a variety of sources. (See BLM G-9.)
- Assess the News Article Analysis sheet for the student’s understanding of diverse perspectives and interpretations in the media.

- Students may use the news articles they found in the Activating Strategy “Contemporary Food Issues: Headlines and Images” for the analysis in this learning experience.
- Access to newspapers, magazines, and the Internet
- BLM G-9: Selecting Information: Checklist
- BLM G-26: News Article Analysis
- SFAL 6.45: Collaborative Reading
- Alternatively, students may use the Fact-/Issue-Based Article Analysis forms. (See SFAL 6.114, 6.115.)

## Targeted Learning Outcomes

## Suggested Teaching/Learning Strategies

## Students will...

**KG-036** Describe issues related to freshwater and saltwater food resources.

**S-300** Formulate geographic questions to plan inquiry and research.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**KG-038** Identify issues related to scarcity and distribution of food.

**VP-010** Be willing to consider the economic and political influence of their food choices. *Examples: food fashions, food aid, food shortages... aid, food shortages...*

**S-400** Listen to others to understand their perspectives.

**S-405** Articulate their perspectives on issues.

**KE-043** Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.

**S-200** Select information from a variety of oral, visual, material, print, or electronic sources, including primary and secondary

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

## Acquiring Strategies

## Strategy 2: Aquatic Food Resources

- Working in small groups, students use print and electronic resources to research issues or events relating to freshwater and saltwater food resources.
- Students select issues/events relating to Aboriginal fishing rights in coastal and/or inland areas (*Examples: Burnt Church, Miramichi, South Indian Lake...*) or issues relating to Canada's fishing industry (*Examples: cod fishery in Atlantic Canada or salmon fishery in the Pacific region...*).
- Students formulate geographic questions for inquiry. *Examples: questions related to the background of the selected issue, the problem, courses of action taken, the current status of the issue and the impact of this issue or event on food supplies and local communities...*
- Students conduct research to find answers to the geographic questions formulated.
- Students present findings in poster format or via electronic presentation software such as *PowerPoint*.

## Strategy 3: Feast and Famine

- Students develop a list of questions in preparation for a guest who will speak on issues related to the scarcity and distribution of food.
- Students listen to a speaker from a development agency dealing with food programs and famine relief in less-developed countries or in emergency situations in North America.
- Students use the LAPS Frame to help process and record information provided by the speaker.
- Students complete the "Summarize" section of the LAPS Frame.
- Students share findings with the class and discuss issues related to the scarcity and distribution of food as presented by the speaker.
- Class members record in their course notebooks issues identified by the speaker.

## Strategy 4: Down on the Farm

- Working in small groups, students use print, electronic, and primary resources to research the changing nature of farming on the prairies and the impact on local communities.
- Students consider factors such as farm size, labour force, mechanization, types of production, transportation, markets, and government policies and subsidies.
- Students analyze the social and economic implications of these factors on local farming communities.
- Students gather or create photographs or images that reflect these changes.
- Students present information in a visual poster display or electronic presentation.
- Class members record in their course notebooks information about the changing nature of farming.

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Acquiring Strategies

- Assess the presentation for the student's knowledge of issues related to freshwater and saltwater food resources.
- Assess the list of questions for the student's skill in formulating appropriate geographic questions to plan inquiry and research.
- Observe and assess the poster and electronic presentation for the student's skill in presenting information and ideas in a format appropriate for audience and purpose. (See BLM G-7, G-8.)

- Access to print and media resources  
*Examples: current and back issues of Maclean's and Canadian Geographic magazines, vertical files, and CBC News in Review videos, which include print support materials...*
- Access to computers and the Internet, presentation software
- Poster paper and art supplies
- BLM G-7: Checklist for Creating Visuals
- BLM G-8: Assessment Guide for Visuals
- TN 11: Asking Geographic Questions
- TN 12: Asking Questions
- TN 16: Creating an Electronic Presentation
- TN 18: Creating a Poster
- TN 24: The Inquiry Process (Conducting Research)

- Assess the LAPS sheet and notes for the student's understanding of issues related to the scarcity and distribution of food.
- Monitor discussion and assess the LAPS sheet for evidence of the student's willingness to consider the economic and political influence of their food choices.
- Observe and monitor the student's skill in listening to the speaker to understand others' perspectives. (See BLM G-5, G-6.)
- Monitor discussion and assess the LAPS sheet and notes for the student's skill in making decisions that reflect social responsibility.

- Agencies that provide food relief programs include the Canadian Foodgrains Bank, Mennonite Central Committee, Save The Children Canada, Unitarian Service Committee, Red Cross/Crescent Society, Canadian Lutheran World Relief, Presbyterian World Service & Development, United Church of Canada, Primate's World Relief and Development Fund, and others.
- BLM G-5: Listening Skills: Observation Checklist
- BLM G-6: Listening Skills: Self-Assessment
- SFAL 6.54, 6.108: LAPS Frame
- TN 11: Asking Questions
- TN 12: Asking Geographic Questions

- Assess the presentation and notes for the student's knowledge of the changing nature of farming and his or her understanding of the resulting social and economic implications for communities.
- Assess the student's skill in selecting information from a variety of sources, including primary and secondary. (See BLM G-9.)
- Assess the presentation for the student's skill in presenting information and ideas in a variety of formats that are appropriate for audience and purpose.

- Access to agricultural newspapers and magazines.  
*Examples: Western Producer, Manitoba Cooperator...*
- Access to computers, the Internet, and appropriate presentation software such as *PowerPoint*
- Encourage students to interview local farmers and agricultural representatives for primary information.
- BLM G-9: Selecting Information: Checklist
- BLM G-7: Checklist for Creating Visuals
- BLM G-8: Assessment Guide for Visuals
- TN 14: Conducting an Interview
- TN 16: Creating an Electronic Presentation
- TN 18: Creating a Poster
- TN 24: The Inquiry Process (Conducting Research)

**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KE-045** Identify issues related to genetic modification of plants and animals.

**S-405** Articulate their perspectives on issues.

**S-406** Debate differing points of view regarding an issue.

**Acquiring Strategies****Strategy 5: Playing With Nature: Genetic Modification**

- Students prepare a debate on the merits of genetic modification as a method to improve our food supply.
- Working in partnerships, one student gathers evidence to support genetic modification, while the partner finds reasons to oppose this practice.
- Student volunteers conduct a debate for classmates and attempt to convince others of their point of view.
- During the debate, classmates list on an organizer the pros and cons of genetic modification.
- In a class discussion following debates, students listen to others' views and record in their organizers additional evidence for or against genetic modification.
- Students complete the Pro and Con Discussion Chart to express their views on the issue of genetic modification.

**Students will...**

**KE-043** Identify the changing nature of farming on the prairies and describe the social and economic implications for communities.

**S-301** Consider the context of events, accounts, ideas, and interpretations.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**Applying Strategies****Strategy 1: Changing Times on the Farm**

- Working in small groups, students identify changes in farming over time by performing a role-play of a farm family from a century ago that time-travels to the present, or a modern farm family travelling back in time to the early 20th century.
- In their role-play perspectives, the members of the "families" make comments about what they observe, ask questions about things or practices they do not recognize, comment on "food fashions" and types of foods available, and talk about the positive and negative social and economic impacts on communities.
- With the help of props (*Examples: appropriate clothing, tools, food samples...*), groups act out their role-play for the class.
- Class members record in their course notebooks examples of changes in farming.

**Teacher Reflections**

## Suggested Assessment Strategies

## Teacher Tips and Resources

### Acquiring Strategies

- Assess the Pro and Con organizer for the student's understanding of issues related to genetic modification of plants and animals.
- Monitor the debate and class discussion for the student's skill in articulating her or his perspectives on issues.
- Monitor the debate and class discussion for the student's skill in debating differing points of view.

- Students may need some background on genetic modification with some examples of public/legal debates. *Example: Monsanto...*
- Access to newspapers, magazines, and the Internet
- BLM G-10: Articulating Perspectives: Observation Checklist
- BLM G-15: Debate Assessment Rubric
- BLM G-22: Pro and Con Discussion Chart
- SFAL 6.77: RAFT (Role, Audience, Format, Topic)
- TN 13: Conducting a Debate
- TN 33: Articulating Perspectives on Issues
- Alternatively, this learning experience could use the RAFT strategy (Role, Audience, Format, Topic) in SFAL 6.77, or students could write a persuasive editorial expressing their point of view on issues related to genetic modification. (See TN 25: Persuasive Writing and TN 26: Writing an Editorial.)

### Applying Strategies

- Assess the role-play activity and notes for the student's knowledge of the changing nature of farming and its impact on communities.
- Observe the student's portrayals in the role-play to assess his or her skills in considering the context of the event, accounts, ideas, and interpretations.
- Assess the role-play activity for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.

- Remind students to use information from the Activating and Acquiring Strategies in this learning experience.
- Books or articles with visual images of life in the past may provide creative ideas for the role-play and props.
- Access to appropriate materials for props and costumes
- BLM G-16: Role-Play Character Sheet
- TN 29: Role-Play in Social Studies

## Teacher Reflections



**Targeted Learning Outcomes****Suggested Teaching/Learning Strategies****Students will...**

**KE-045** Identify issues related to genetic modification of plants and animals.

**KG-036** Describe issues related to freshwater and saltwater food resources.

**S-403** Present information and ideas in a variety of formats appropriate for audience and purpose. *Examples: models, displays, multimedia presentations, editorials...*

**KG-038** Identify issues related to scarcity and distribution of food.

**VP-010** Be willing to consider the economic and political influence of their food choices. *Examples: food fashions, food aid, food shortages...*

**S-107** Make decisions that reflect social responsibility.

**S-307** Propose and defend innovative options or solutions to address issues and problems.

**Applying Strategies****Strategy 2: A RAFT of Opinions**

- Working individually, students use the RAFT strategy to express an opinion related to a food production issue covered in this learning experience. *Examples: issues related to freshwater and saltwater food resources, scarcity and distribution of food, and issues related to genetic modification...*
- Students assume the role of a particular writer, identify the audience or party they are writing to, determine the format they will use, and select a writing topic from this learning experience.
- Students share writing with the class.
- Students use the RAFT presentations to extend their knowledge and understanding of the issues.

**Strategy 3: Student Food Power**

- Working in small groups, students select an issue related to the scarcity and distribution of food, and develop a proposal for a class, school, or community project to help resolve the issue.
- Students develop a plan of action to educate others about the selected issue, and provide colleagues with an opportunity to assist in resolving the issue.
- Students present proposals to the class.
- Students implement and participate in each others' projects to help resolve issues relating to the scarcity and distribution of food.
- Class members list in their course notebooks various proposals presented.

**Teacher Reflections**

**Suggested Assessment Strategies****Teacher Tips and Resources****Applying Strategies**

- Assess the RAFT composition for the student's knowledge and understanding of food production issues.
- Monitor viewpoints expressed for evidence of the student's willingness to consider the economic and political influence of her or his food choices.
- Assess the RAFT composition for the student's skill in presenting information and ideas in a format appropriate for audience and purpose.

- Students may need some examples to help them develop their own ideas for this activity. *Examples: Students might pretend to be an Aboriginal fisher writing a letter to the editor to explain treaty rights regarding fishing; students might play the role of a plantation worker in a tropical country writing a journal about how land is used to produce export crops, resulting in lack of local food supplies for his village; students might pretend to be a medical researcher writing an article about the possible dangers of genetic modification of common food items...*
- SFAL 6.77, 6.78, 6.79: RAFT (Role, Audience, Format, Topic)
- TN 25: Persuasive Writing

- Assess proposals and notes for the student's understanding of issues relating to the scarcity and distribution of food.
- Monitor group activities and proposals for evidence of the student's willingness to consider the economic and political influence of his or her food choices.
- Assess proposals for the student's skill in making decisions that reflect social responsibility.
- Assess proposals for the student's skill in proposing and defending innovative solutions to address issues related to the scarcity and distribution of food.

- Students might consider projects such as participating in the 30-Hour Famine, collecting food items, and/or volunteering for a local soup kitchen or women's shelter, collecting funds for a relief effort, supporting local organic producers, or providing assistance with delivery of Christmas hampers in their community.
- For related information and activity ideas, refer to the following websites:
  - World Vision 30-Hour Famine  
<[www.worldvision.ca/wvfamine/live](http://www.worldvision.ca/wvfamine/live)>
  - The Canadian Hunger Foundation  
<[www.chf-partners.ca/index.htm](http://www.chf-partners.ca/index.htm)>
  - Appalachian Sustainable Agriculture Project  
<[www.asapconnections.org](http://www.asapconnections.org)>
- BLM G-23: Making up Your Mind may assist students in selecting an appropriate action plan.
- TN 25: Persuasive Writing

**Teacher Reflections**

