



Count Yourself In!  
May 16, 2006

## Activity 5: Agriculture at a Glance

Suggested level: **Secondary (5A, 5B, 5C), Intermediate (5A, 5B, 5C), Elementary (5A, 5C)**

Subjects: **Theatre Arts, Mathematics, Geography, Science, Language Arts, History, Economics, Family Studies**

### Overview

This activity introduces students to the Census of Agriculture. It helps them to understand why a detailed picture of Canada's most important primary industry is needed every five years. Students will begin to appreciate the place of agriculture in today's society and its affect on their own lives. Three activities round out the lessons for various age levels.

In activity 5A, students write a short play and assume the roles of a farm family struggling to make important business and family decisions in a changing world.

(1-2 class periods)

In activity 5B, using real statistics students can measure and compare the size of their classroom or school to the size of an average Canadian farm.

(1 class period)

In activity 5C, a short matching game encourages students to recognize various types of bread made with grains grown on Canadian farms.

(1/4-1/2 class period)

**Note:** See the **Teacher's Guide** for general background on the census and census vocabulary. Census of Agriculture vocabulary is provided in Handout 1.

### Learning Objectives

- Develop an awareness and appreciation of agriculture as a vital and changing industry in Canada.
- Learn cooperation by working in small groups.
- Express ideas through developing and playing roles in a short play.
- Appreciate that statistics represent real people and their actions.

### Materials

- Teacher's Guide
- Handout 1: *The Changing Face of Canadian Agriculture*
- Activity 5A: Handout 2: *Create a Play*
- Activity 5B: Calculators, Handout 3: *Land Size Conversions and Comparisons*
- Activity 5C: Handout 4: *Breads of the World: A Game of Ethnic Breads and Canadian Grains*



## Getting Started

Explain to your students that the next census takes place on May 16, 2006. Begin with a general discussion of the census — what it is and how it is carried out. (See Teacher’s Guide.) Distribute Handout 1: *The Changing Face of Canadian Agriculture* to your students.

Besides saving money, conducting the Census of Population and the Census of Agriculture at the same time every five years allows us to combine the data so we can compare the farm operator to the general population. By looking at current trends, we can predict what is likely to happen in the future.

Explain how the charts indicate trends. Take turns reading aloud in class. Discuss the trends in farming that were identified through the reading. These include:

- the decreasing number of farms
- the move to larger, more specialized farms
- the increase in the use of technology and computers
- management of farms by men and women
- the education and aging trend
- new data on farm-related injuries
- farm income and motivation for non-farm work
- why more farm women work off the farm

Choose an activity from 5A, 5B, and 5C.

## Census Activity 5A (1-2 classroom periods)

Divide the class into small groups. (The preferred group size is four, but the exercise can be conducted by a group of three.)

Distribute Handout 2: *Create a Play* and read through the scenarios with the class.

## Census Activity 5B (1 classroom period)

Distribute Handout 3: *Land Size Conversions and Comparisons*.

Have students convert the figures provided in the Table in Handout 3 – and add your school’s figures. Students will require the data on the size of the school grounds or the classroom if time is not available to calculate it. Review the steps to writing numbers in scientific notation.

## Answers to Activity 5B

	Acres	Hectares	Square metres
Standard prairie field	160	64.78	647,773
Urban lot for a house	0.22	0.09	880
Average size of a census farm in Canada in 2001	675	273.37	2,702,080
Average size of a census farm in Newfoundland and Labrador in 2001	155.95	63.11	623,800
Average size of a census farm in Saskatchewan in 2001	1,282.74	519.1	5,130,960
Your school grounds*			
Your classroom*			

\* Numbers will vary for the sizes of classroom and school grounds. The idea is to be able to visualize the space of a hectare or acre.

1. The formulas are: 1 acre [a.] = 0.405 hectare; 1 hectare [ha] = 2.47 acres; and 1 hectare = 10,000 square metres [m<sup>2</sup>].
2. The size of the classroom should be measured in square metres.

### **Census Activity 5C (a short game)**

Using Handout 4: *Breads of the World: A Game of Ethnic Breads and Canadian Grains*, match the bread name to its grain and description.

*Answers:* K, J, I, H, G, F, E, D, C, B, A (A-K backwards)

### **Extension/Enrichment**

Organize a field trip to a nearby farm to study the farm operation and interview the farm operators.

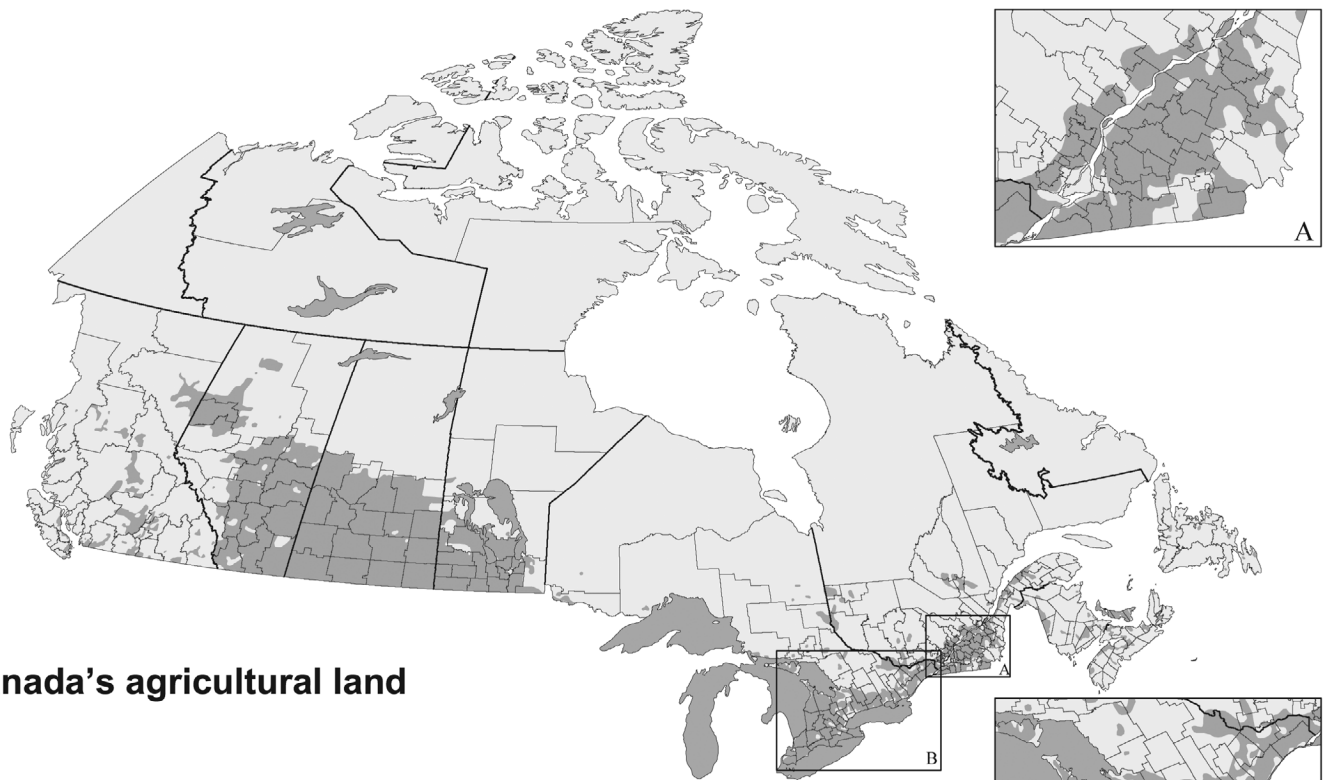
Invite a guest speaker to class to talk about farming from his or her perspective. Ask a retired farmer, a student from an agricultural college, an agricultural scientist, a representative from provincial agricultural offices or laboratories, a real-estate agent, a farm auctioneer or a practising farmer to come in.

To expand on Activity 5C, ask the students to bring in samples of the grain products in the main activity. Bake some bread!

Thirty-eight lessons were designed to compliment the 2001 edition of *Canadian Agriculture at a Glance*. Each lesson corresponds with one article (also provided in PDF format) and focuses on secondary school curricula in the following subject areas: Family Studies/Home Economics; Geography; History; and Science. When online, access the lesson plans at [www.statcan.ca/english/kits/agric04/lesson.htm](http://www.statcan.ca/english/kits/agric04/lesson.htm) Census of Agriculture data are available at [www.statcan.ca/english/agcensus2001/index.htm](http://www.statcan.ca/english/agcensus2001/index.htm).



# Handout 1: The Changing Face of Canadian Agriculture



## Canada's agricultural land

2001 agricultural ecumene    Non-agricultural area    Census division boundary

Source: Statistics Canada, *Canadian Agriculture at a Glance*, 2004  
Catalogue no. 96-325-XPB

## 1. APPRECIATING AGRICULTURE

### Words You'll Need to Know

**biotechnology:** a science that relates biology to technology

**diversification:** giving variety to, expanding into different fields

**subsistence:** a livelihood, a means of staying alive

**BSE:** Bovine Spongiform Encephalopathy, or "mad cow disease"

If you're not living on a farm, studying agriculture or working in the food industry, what has Canadian agriculture got to do with you? Plenty! Canadian farms are where most of your food comes from, as well as many essential non-edible products you use daily. Our farms are also part of

one of Canada's major industries: from the farmer's field to your grocery checkout, the agri-food industry employs hundreds of thousands of people and contributes billions of dollars to the economy. Every five years the Census of Agriculture gives us an updated snapshot of Canadian farms and the lives of the people who live and work on them. A **census farm** is defined as an agricultural operation producing at least one agricultural product for sale.

**Gross farm receipts** is the total revenue from all farming activities before deducting any expenses. This is an important concept that can be used to distinguish farmers whose operation is a business and their livelihood from those who farm as a sideline or lifestyle choice.

## Land Area

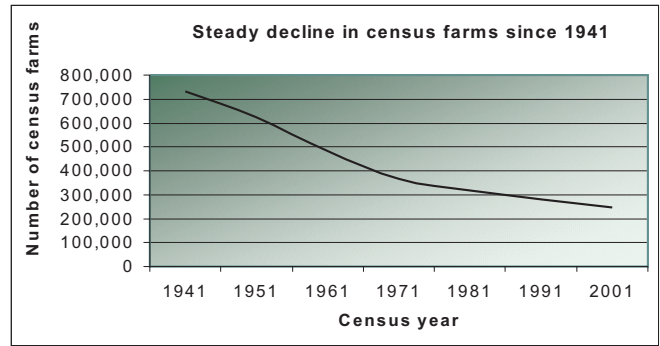
Farms in Canada cover a surprisingly small area. The farmland you see out the car window on the highway may seem limitless, but in fact only 7% of Canada's land mass is used for farming. That's about 68 million hectares, or about three times the land area of Great Britain. Take a look at the map. (To give you an idea of the size of a hectare, keep in mind that 1 ha is 10,000 square metres, more than one-and-one-half times the size of a Canadian football field, and almost two-and-a-half times the size of an acre.)

## Fewer, Larger, More Technologically Advanced Farms

Farming in Canada has come a long way from the small, subsistence activity it once was. Improvements in equipment, management practices, feed, fertilizer, and plant and animal breeding have made production soar.

Compared with 60 years ago, today's farms are larger, but there are fewer of them. This has been the trend since 1941, when farms peaked at almost 733,000. In 1991, the Census of Agriculture recorded 280,000 census farms (those that produce agricultural products intended for sale), down 4.5% from the 1986 figure.

While the decline between the 1991 and 1996 censuses was the smallest ever at 1.2%, it picked up again between 1996 and 2001 with numbers falling 10.7%. In 2001, the Census of Agriculture recorded 246,923 census farms. While their overall numbers were down, farms have been getting bigger in terms of gross sales. Only farm operations in the receipts category of \$250,000 or more grew in terms of farm numbers over the five-year period. In 2000, they represented 34,139 farms, an increase of 32.0% from 1995. While they accounted for only 13.8% of all farms in Canada, they had 68.1% of all gross receipts reported.



## Technology@thefarm

Large farms call for major investments in buildings and machinery and demand sophisticated know-how. Today's farmer makes use of the latest technology — everything from computers for farm management to biotechnologies. The specialized buildings, machinery and equipment required to be an efficient agricultural producer have led the transition to larger, more specialized farms.

The share of farms using a computer to help manage the farm has doubled every five years since 1991. In 2001, it stood at almost 40%, compared with 21% in 1996. The higher the receipts, the more likely a farm was to have a computer. In 2001, more than two-thirds of farms with receipts of at least \$250,000 used a computer in some capacity to manage their farm.

## Computers Continue to Grow in Importance for Farm Management

% of farms with a computer by total gross farm receipts class



## Types of Farming

A wide variety of farming takes place in Canada. Livestock products include hogs, poultry, dairy cattle and beef cattle. Although wheat is still popular, more and more Canadian farmers are growing a variety of other crops. These include oats, dry field peas, mustard seed, canary seed and dry coloured beans. Farmers are also growing other grain and oilseed products such as canola, barley, rye, corn, soybeans, and flax. Other crops include vegetables, fruits, root crops, tobacco, and forest products.

Specific types of farming are associated with certain provinces — potatoes in Prince Edward Island, corn in Ontario, wheat in Saskatchewan, beef in Alberta — but such generalizations create inaccurate pictures of farming in Canada. Table – Agriculture Profile of Canada, on page 9, gives a clearer picture of agricultural practices in each province. In fact, if you look at where different types of farming are located in Canada, it is clear that diversification, or producing a variety of products, is common within each province.

## Production and Consumption Trends

The types and quantity of farm goods Canadians produce depend very much on consumer demand, both at home and abroad. Grains and oilseeds continue to be key products, particularly for the export market.

Production of canola, Canada's major oilseed, rose significantly in the 1980s and 1990s. The global market for this high-quality edible oil will likely continue to expand.

Farmers reported record levels of both cattle and hogs as of May 15, 2001. The number of cattle on Canadian farms rose 4.4% between 1996 and 2001, to a record 15.6 million head. The number of hogs also reached record highs, at 13.9 million — a 26.4% jump.

Shortly after the 2001 Census was completed BSE was discovered in a Canadian cattle herd. The subsequent loss of markets has caused a great deal of hardship for many in the agricultural sector. The 2006 Census of Agriculture will help to establish just how farmers have been affected and how they are reacting.

## 2. WHO'S DOWN ON THE FARM?

In 1941, just under 3.2 million people lived on farms, more than 25% of Canada's overall population. Since the Second World War, the proportion of people living on farms has dropped drastically. At the time of the 2001 Census of Agriculture, Canada's farm population was 727,125, about 2.4% of the overall population.

Between 1991 and 1996 the farm population declined 1.7%, while between 1996 and 2001, it declined 14.6%. Farm families are getting smaller, which is one reason for the decline in the farm population. At the same time, there are proportionately more seniors operating farms.

The 2001 Census counted 32,995 farm operators who were immigrants, about one-tenth of the total number of farmers. Between a third and one-half of immigrant farmers from the Netherlands, the United Kingdom and Germany, the three most frequent countries of birth for immigrant farmers, came to Canada before 1961.

### Farm Operators — Men and Women

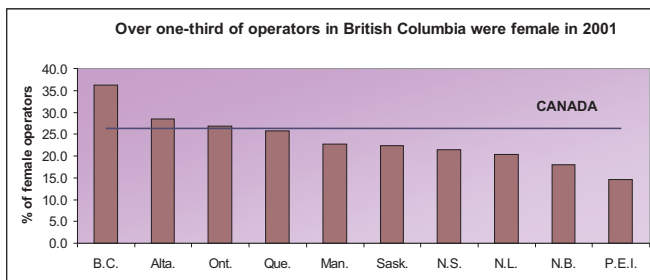
Between 1996 and 2001, the number of farm operators in Canada declined 10% to 346,200, which mirrored a 10.7% decrease in the number of farms. A farm operator is defined as a person responsible for the day-to-day management decisions in the operation of a census farm or agricultural operation.

Women represented just over one-quarter of all farm operators, virtually the same proportion as in 1996.

British Columbia reported the highest share of female farm operators (36%).

The management profile of Canada's farms changed little between census years. Just under two-thirds of Canada's farms were run only by men in 2001 (63%). Women ran the operation on 5% of farms, while the remaining 32% were operated by male-female teams.

Women were best represented on sheep and goat farms and on specialty livestock operations. They tended to manage smaller farms than men both in terms of area and sales. Compared with their female counterparts, men made up the highest percentage of operators on field-crop operations, and managed farms with higher sales.



## Increased Education

Farmers on the whole were better educated in 2001 than they were 20 years earlier. In addition to university education, many opted for some form of non-university postsecondary education such as an agricultural college.

In 2001, 11.5% of farmers of all ages had university education, compared with 28.5% with non-university postsecondary education. A number of factors may explain the preference for non-university, for example: 1) the time a university education requires away from the farm; and 2) the practical approach of college courses towards animal care and field techniques. This same trend was more evident in farm operators under the age of 35; 37.7% had a non-university postsecondary education, more than three times the 11.7% who went to university.

Female farm operators had more schooling than male farm operators. Nearly one-third of female farm operators (32.0%) had some non-university postsecondary education, while 14.4% had a university education. By comparison, 27.3% of male operators had a non-university postsecondary education, while 10.4% had a university education.

## Aging Trend

### Farm Operators: Older than the General Labour Force

An aging trend has been occurring among farm operators as well as in the general working population. About 88% of all farm operators were over the age of 34 in 2001, up from 84% five years earlier. At 48.4 years of age, the average female operator was two years younger than her male counterpart (50.4).

Over one-third (35%) of farm operators were aged 55 and over in 2001. By comparison, people aged 55 and over accounted for only 12% of the general labour force in 1996. Farm operators tend to be older on average than the general working population since they retire later. Often an older farmer will pass the farm down to the next generation, or scale back production while remaining an active farm operator. As well, those who retire from a non-farm job may continue to farm as a retirement activity, thus contributing to a higher average age.

## Injuries

A farm can be a dangerous place to work and live. On average, 108 work-related fatalities occur on farms annually, according to the Canadian Agricultural Injury Surveillance Program. Children under the age of 15 account for about 10% of these fatalities.

In 2001, the Census of Agriculture collected data about farm-related injuries sustained by farmers. The census found that more than 11,000 operators or 3.2% of the total were injured on the farm in 2000, the last full year prior to the census. Farmers on livestock farms had higher injury rates than those on other types of farms. Male operators were nearly twice as likely to be injured as their female counterparts. The injury rate for men was 3.7% compared to 1.9% for women.

### **Majority of Operators Work Only on the Farm**

The majority (55.5%) of farm operators worked only on the farm in 2000, up slightly from 1995. Only marginally more female farm operators reported working off the farm than their male colleagues in 2000. Those with non-farm work included two groups of operators, those who worked off the farm or operated another business to help make ends meet, as well as those who had non-farm work and farmed as a sideline or hobby.

### **Families on Unincorporated Farms**

Wages and salaries remained the biggest source of income for farm families on unincorporated farms. In 2000, wages and salaries accounted for 57 cents of every dollar in total farm income. Net farm income was the second highest contributor to total family income at 18 cents of every dollar.

One reason that wages and salaries have grown in importance is the volatility of agricultural prices. Over time, farm families have diversified their income sources by seeking work off the farm as one way to stabilize their total income. For other families, farming could be considered a secondary occupation or even a hobby, and is not expected to provide the family with significant disposable income.

Those families who earned at least half their income in agriculture were more likely to be involved in dairy, hogs, poultry and egg, wheat, or grain and oilseed farming.

### **More Farm Women Work Off the Farm**

Women have always played an essential role on Canadian farms. Now they are playing more of a role in their surrounding communities, as more farm women are working off the farm. In 1971 approximately 45% of all Canadian women (between the ages of 15 and 64) were in the labour force. Of all farm women, 43% were in the labour force. By 2001, 70% of all women (between the ages of 15 and 64) were in the labour force. For farm women the proportion had jumped to 83%.

Is it only a paycheque that has lured women off the farm? That's important, but other reasons factor in too. Agriculture is changing, and with it the traditional role of "farm wife." Small family-run operations such as dairy farms are giving way to larger operations. Mechanization and hired labour — both essential on large crop or livestock operations — have changed the traditional roles of women and other farm family members.

Today proportionately more farm women hold diplomas and degrees. Having a postsecondary education affords more options in terms of off-farm work. The numbers back this up. In 2001, 29% of farm women between 15 and 64 with a non-agricultural job had completed postsecondary education, compared with 24% of women working on the farm.



## TABLE - Agricultural Profile of Canada

**Highlight the highest figure in each column.**  
**Circle the lowest figure in each column.**

**Farms reporting total gross farm receipts of \$2,500 or more, classified by farm type, by province, 2001**

Total number of farms reporting	Dairy	Cattle (Beef)	Hog	Poultry and egg	Wheat	Grain & oilseed (except wheat)	Field crop (except grain & oilseed)	Fruit	Miscellaneous specialty	Livestock combination	Vegetable	Other combination	
													#
<b>Canada</b>	<b>230,540</b>	<b>18,574</b>	<b>67,814</b>	<b>7,148</b>	<b>4,394</b>	<b>15,249</b>	<b>52,648</b>	<b>17,286</b>	<b>6,560</b>	<b>28,315</b>	<b>4,991</b>	<b>2,890</b>	<b>4,671</b>
N.L.	519	59	46	8	33	-	-	55	23	155	12	76	52
P.E.I.	1,739	309	455	94	22	14	43	461	91	114	35	42	59
N.S.	3,318	375	828	65	111	1	15	242	653	757	73	97	101
N.B.	2,563	320	718	79	47	4	26	433	304	494	33	54	51
Que.	30,539	8,594	5,159	2,193	756	56	3,129	1,700	1,042	6,200	309	802	599
Ont.	55,092	6,414	13,669	2,454	1,609	395	12,863	4,531	1,733	7,301	1,617	1,233	1,273
Man.	19,818	600	7,232	968	284	2,007	5,325	1,276	72	1,318	355	62	319
Sask.	48,990	332	12,078	293	113	8,992	21,736	2,055	48	1,706	756	38	843
Alta.	50,580	776	22,939	848	446	3,718	9,327	4,725	73	5,495	1,165	70	998
B.C.	17,382	795	4,690	146	973	62	184	1,808	2,521	4,775	636	416	376

- nil or zero

**Farms reporting total gross farm receipts of \$2,500 or more, classified by farm type, by province, 2001**

Total number of farms reporting	Dairy	Cattle (Beef)	Hog	Poultry and egg	Wheat	Grain & oilseed (except wheat)	Field crop (except grain & oilseed)	Fruit	Miscellaneous specialty	Livestock combination	Vegetable	Other combination	
													#
	%	%	%	%	%	%	%	%	%	%	%	%	
<b>Canada</b>	<b>230,540</b>	<b>8.1</b>	<b>29.4</b>	<b>3.1</b>	<b>1.9</b>	<b>6.6</b>	<b>22.8</b>	<b>7.5</b>	<b>2.8</b>	<b>12.3</b>	<b>2.2</b>	<b>1.3</b>	<b>2.0</b>
N.L.	519	11.4	8.9	1.5	6.4	-	-	10.6	4.4	29.9	2.3	14.6	10.0
P.E.I.	1,739	17.8	26.2	5.4	1.3	0.8	2.5	26.5	5.2	6.6	2.0	2.4	3.4
N.S.	3,318	11.3	25.0	2.0	3.3	-	0.5	7.3	19.7	22.8	2.2	2.9	3.0
N.B.	2,563	12.5	28.0	3.1	1.8	0.2	1.0	16.9	11.9	19.3	1.3	2.1	2.0
Que.	30,539	28.1	16.9	7.2	2.5	0.2	10.2	5.6	3.4	20.3	1.0	2.6	2.0
Ont.	55,092	11.6	24.8	4.5	2.9	0.7	23.3	8.2	3.1	13.3	2.9	2.2	2.3
Man.	19,818	3.0	36.5	4.9	1.4	10.1	26.9	6.4	0.4	6.7	1.8	0.3	1.6
Sask.	48,990	0.7	24.7	0.6	0.2	18.4	44.4	4.2	0.1	3.5	1.5	0.1	1.7
Alta.	50,580	1.5	45.4	1.7	0.9	7.4	18.4	9.3	0.1	10.9	2.3	0.1	2.0
B.C.	17,382	4.6	27.0	0.8	5.6	0.4	1.1	10.4	14.5	27.5	3.7	2.4	2.2

- nil or zero

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## Handout 2: Create a Play (Activity 5A)

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### “Kitchen Table” Scenario

Jack and Joan Green are third-generation farmers in the province of \_\_\_\_\_. The farm has provided a reasonable standard of living for their family for over 100 years. They have always assumed that their eldest son, Michael, would want to continue the family tradition and that their daughter Laura would settle close to home. However, circumstances change and the time has come to make some decisions.

1. **Develop** a short play, about five minutes long. The family members are having a discussion around the kitchen table after dinner about the future of their farm. Each group member should assume the role of one character.
2. **Decide** on portraying one of the following scenes, or create an appropriate situation of your own. Remember to give each character a point of view based on the trends in farming that were identified in Handout 1.
  - (a) Laura has returned from agricultural college and is marrying a local farmer. They want to merge their farm with the Green’s farm.
  - (b) Michael and Laura announce that neither of them is interested in taking over the family farm.
  - (c) Jack and Joan decide to retire and announce they will be selling the farm. Michael and/or Laura had been planning to take over the farm.
  - (d) Three years of poor harvests and an increasing debt load has forced the family to consider (i) giving up the farm (ii) diversifying into other farm products (iii) getting non-farm jobs to supplement their income. Discuss any or all of these options.
  - (e) The farm at its current size cannot provide the same standard of living as in the past. To keep the farm viable and the major income provider for the family, it will be necessary to expand considerably.
  - (f) Over the years, the nearest town/city has expanded and now the family farm is in the urban fringe. Discuss positive and negative implications for the family and the farm.
  - (g) Your own scenario.
3. **Allow time** for each person to develop a response to the scenario based on his or her role.
4. **Blend** the Census of Agriculture information into each person’s reaction to the scenario — e.g., Laura: “When John and I get married, we want to do like other farmers and increase our land by buying out the farm next door.” Create small cue cards to help you remember your facts.
5. **Rehearse** your scene around a desk that could serve as the kitchen table.
6. **Think of a few props** that would make your presentation more realistic. Can you think of small costume hints for each character?
7. **Get into the roles** by becoming your new persona and believing that your future depends on what is decided around the kitchen table.

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### Handout 3: *Land Size Conversions and Comparisons (Activity 5B)*

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1. The metric system became standard in Canada in 1977. The metric unit for measuring farmland is hectares. Using these conversion numbers (1 acre [a.] = 0.405 hectare; and 1 hectare [ha] = 2.47 acres = 10,000 square metres [ $m^2$ ]), complete the following table:

	<b>Acres</b>	<b>Hectares</b>	<b>Square metres</b>
Standard prairie field	160		
Urban lot for a house			880
Average size of a census farm in Canada in 2001		273	
Average size of a census farm in Newfoundland and Labrador in 2001		63	
Average size of a census farm in Saskatchewan in 2001		519	
Your school grounds			
Your classroom			

2. How many rooms the size of your classroom could fit in 1 ha?

**(Answers are on p. 2, see Answers to Activity 5B)**

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## Handout 4: *Breads of the World:* *A Game of Ethnic Breads and Canadian Grains (Activity 5C)*

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People make bread in every country of the world. They mix flour or meal with water or other liquids. They may add a little fat (like oil or butter) and a rising agent (such as yeast). Then they cook the mixture in a pan or oven. Sharing bread with guests can be a way to make them feel welcome.

Here are the names of the some of the delicious breads we eat here in Canada. They come from all over the world. Can you match the name of the bread to its description?



### HOME-MADE BREADS

- |                 |  |
|-----------------|--|
| A. Baguette     | __ Mexican bread (corn or wheat)                                 |
| B. Bannock      | __ Bread from the Caribbean and India (whole wheat)              |
| C. Challa       | __ Dark rye bread from Eastern Europe (rye)                      |
| D. Injera       | __ Mediterranean pocket bread (wheat)                            |
| E. Naan         | __ Italian fruit bread for Christmas (wheat or millet)           |
| F. Johnnycake   | __ Corn bread (corn)   |
| G. Panettone    | __ White bread from India (wheat)                                |
| H. Pita         | __ Ethiopian bread, very thin (teff grain, or millet and barley) |
| I. Pumpernickel | __ Jewish egg bread (wheat)                                      |
| J. Roti         | __ First Nations' bread, of Scottish origin (oatmeal or barley)  |
| K. Tortilla     | __ A long thin loaf of French bread (wheat)                      |