



## Activity 5: Agriculture at a glance

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Suggested level: **elementary, intermediate, senior**

Subjects: **mathematics, geography, science, language arts, history, theatre arts, economics, family studies**

### Overview

This activity introduces students to the Census of Agriculture. Students will appreciate the value of agriculture in today's society and its effect on their lives. Three activities, which provide a detailed picture of Canada's most important primary industry, are available for various grade levels.

Students will examine sets of imaginary data associated with several community services, decide which neighbourhoods would benefit most from each service, and illustrate their findings on a grid map.

**Duration: Handout 1** — 1/2 period

**Handouts 2-4** — 1-2 class periods per handout.

**Note:** See the **Teacher's Guide** for general background on the census and census vocabulary. More information on the Census of Agriculture is provided in this activity under the section Census of Agriculture. You may wish to review this information with you students before starting the activities.

### Learning objectives

- Develop a knowledge of agriculture and its role as a primary industry.
- Understand the impact agriculture has on every resident in Canada.
- Appreciate that statistics represent real people and their actions.

### Materials

- **Teacher's Guide**
- **Handout 1:** Breads of the world
- **Handout 2:** Agriculture today
- **Handout 3:** A farming tradition
- **Handout 4:** Land size conversions and comparisons

### Getting started

Using the background information provided in the **Teacher's Guide**, tell students about the census and let them know that Canada's next census takes place in May 2011.

Explain to your students that there are two types of censuses: a Census of Population and a Census of Agriculture. The Census of Agriculture is taken at the same time as the Census of Population to find out about the country's farming and food production.

In May 2011, each agriculture operation in Canada will receive a Census of Agriculture questionnaire in the mail. The Census of Agriculture collects a wide range of data on the agriculture industry. More information on the Census of Agriculture can be found on pages 5-6.





## Activity 5: Agriculture at a glance

### Census activity

1. Distribute **Handout 1: Breads of the world**. Have students match the bread name to its grain and country of origin. This activity is suitable for **elementary, intermediate and senior grade levels**.

**Answers:** D, J, A, B, G, F, I, K, H, C, E

To expand on this activity, ask the students to bring in samples of the grain products listed in **Handout 1**.

2. Distribute **Handout 2: Agriculture today, to your students**. Read **Handout 2** together as a group. You may also choose to print an instructor's copy only and place interesting facts for discussion on the board or overhead.

Discuss the trends in farming identified in **Handout 2**. These include:

#### All grade levels

- types of farming
- the decreasing number of farms
- management of farms by men and women
- families on farms

#### Intermediate and senior grade levels only

- the move to larger, more specialized farms
- production and consumption trends

Have the students review the information provided in Table 1. To highlight the difference in Canada's provinces, students can highlight the highest figure in each

column and circle the lowest figure in each column. You can then discuss with the students the differences across the provinces and the information they find most surprising.

3. Divide the class into small groups of four. Distribute **Handout 3: A farming tradition**. Have your students read through **Handout 3**. Have them choose a character to portray. Students can role play one of the scenarios or make up their own scenario. Each character can add his/her point of view based on the farming trends identified in **Handout 2**. This activity is suitable for **all grade levels**.

Students can create cue cards to remember facts. They may rehearse the scene around a desk that could serve as the kitchen table.

4. Distribute **Handout 4: Land size conversions and comparisons**. This activity is suitable for **intermediate and senior grade levels**. Calculators are required.

Have students convert the figures provided in **Handout 4**, and add in the school's figures. Measurements of the school grounds may be available from the school or students may measure it themselves.

Review the conversion formula and the steps to writing numbers in scientific notation.

1 hectare [ha] = 10,000 square metres [m<sup>2</sup>].



## Activity 5: Answers to Handout 4

	<b>Hectares</b>	<b>Square metres</b>
Standard prairie field	64.78	647,800
Urban lot for a house	0.09	900
Average size of a farm in Canada in 2006	294.74	2,947,400
Average size of a farm in Newfoundland and Labrador in 2006	64.78	647,800
Average size of a farm in Saskatchewan in 2006	586.64	5,866,400
Your school grounds		
Your classroom		

\* The size of the classroom and school grounds should be measured in square metres.



## Activity 5: Enrichment

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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. This could be 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.



## Activity 5: The Census of Agriculture

### History

The Census of Agriculture is taken at the same time as the Census of Population to find out about the country's farming and food production.

Agriculture is an important part of our economy. Jean Talon's census of 1667 tells us that the colony had 11,448 arpents of land (3,915 hectares) under cultivation, 3,107 cattle, and 85 sheep.

A mid-decade agricultural census was first held in Manitoba in 1896.

When the provinces of Saskatchewan and Alberta were created in 1905, the increasingly rapid settlement of the west made the quinquennial census a constitutional requirement. A new *Census and Statistics Act* called for additional censuses of population and agriculture to be taken in the provinces of Manitoba, Saskatchewan and Alberta in 1906 and every 10 years after that until the population of each of the three provinces reached 1.25 million. These censuses continued until 1956, when Canada began taking national censuses of population and agriculture every five years.

### New in 2011

In May 2011, each agriculture operation in Canada will receive a Census of Agriculture questionnaire in the mail. The Census of Agriculture collects a wide range of data on the agriculture industry such as number of farms and farm operators, farm areas, business operating arrangements, land management practices, livestock numbers and crop areas, operating expenses and receipts, farm capital and farm

machinery and equipment. These data provide a comprehensive picture of the agriculture industry across Canada every five years at the national, provincial/territorial and sub-provincial levels.

### Users of Census of Agriculture data

Census of Agriculture data are used by various organizations for many reasons:

- operators use census data to make production, marketing and investment decisions. They can also keep abreast of trends in Canadian agriculture through the analysis of Census of Agriculture data published by the agriculture media.
- producer groups and marketing agencies use census data to tell Canadians and government how they are doing economically through their non-government organizations.
- companies supplying agricultural products and services use the data to determine where to locate their service centres.
- government policy advisors use the data to help develop programs related to safety nets and human resources for the agriculture sector.
- operators can keep abreast of trends in Canadian agriculture through the analysis of Census of Agriculture data published by the agriculture media.
- agriculture websites can target their information to current trends and needs in the sector based on census data.



## Activity 5: The Census of Agriculture

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### Vocabulary

- **Census of Agriculture:** an enumeration of every farm, ranch or other agricultural operation with sales of agricultural products during the year prior to the census. Held every five years in conjunction with the Census of Population, the Census of Agriculture asks questions about land use, crops, livestock, agricultural labour, farm income, and land management practices.
- **Biotechnology:** a science that relates biology to technology
- **Census farm:** an agricultural operation producing at least one agricultural product for sale
- **Diversification:** giving variety to, expanding into different fields
- **Hectare:** the metric unit for measuring farmland. One hectare equals 10,000 square metres.
- **Net farm income:** net income (gross receipts from farm sales minus depreciation and cost of operation) earned by working for oneself (self-employment) as an owner/operator of his/her farm.
- **Non-farm work:** (formerly called off-farm work) the number of days farm operators worked away from the farming operation at paid agricultural and non-agricultural work.



## Handout 1: Breads of the world

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) and cook the mixture in a pan or oven. Sharing bread with guests can be a way to make them feel welcome.

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

Home-made breads	Country of origin
A. Baguette	__ Ethiopian bread, very thin (teff grain, or millet and barley)
B. Bannock	__ bread from the Caribbean and India (whole wheat)
C. Challah	__ a long thin loaf of French bread (wheat)
D. Injera	__ First Nations' bread, of Scottish origin (oatmeal or barley)
E. Naan	__ Italian fruit bread for Christmas (wheat or millet)
F. Johnnycake	__ corn bread (corn), an early American staple food
G. Panettone	__ dark rye bread from Eastern Europe (rye)
H. Pita	__ Mexican bread (corn or wheat)
I. Pumpernickel	__ Mediterranean pocket bread (wheat)
J. Roti	__ Jewish egg bread (wheat)
K. Tortilla	__ white bread from India (wheat)



## Handout 2: Agriculture today: the changing face of Canadian agriculture

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 produce a large amount of our food and many of our essential non-edible products. Farming is 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 collects an updated snapshot of Canadian farms and the lives of the people who live and work on them.

### Land area

Farms in Canada cover a surprisingly small area. The farmland you see may seem endless, but only 7% of Canada's land mass is used for farming. That's about 68 million hectares. To give you an idea of the size of a hectare, keep in mind that 1 ha is 10,000 square metres, which is more than one-and-one-half times the size of a Canadian football field.

### 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 65 years ago, today's farms are larger, but there are fewer of them. The 2006 census counted 229,373 farms, down 7.1% or 17,550 from 2001.

As farm numbers drop, the average size of a Canadian farm has increased from 247 hectares in 2001 to 295 hectares in 2006. Although the national agricultural land area remained stable, the provincial numbers varied, with extremes in the eastern and western corners of Canada. Farm area dropped 10.8% in Newfoundland and Labrador and increased 9.6% in British Columbia.

### 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 1:** Agricultural profile of Canada, gives a clearer picture of agricultural practices in each province. In fact, diversification, or production of a variety of products, is common within each province. Production and consumption trends

The types and quantity of farm goods operators 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.



## Handout 2: Agriculture today: the changing face of Canadian agriculture

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With 7.6 million hectares, spring wheat — excluding durum — had top spot among field crops, but its area had declined 8.7% since 2001. This marks the third straight census to note a decline in areas planting spring wheat. This decline isn't particularly unique. Barley also declined between censuses, dropping 21.4%, moving it from third to fourth place in the overall ranking. Farmers today have an ever greater list of crops from which to choose, thanks to breeding efforts, good management and marketing know-how that encourages diversification into other, higher-value crops.

Hay is the second largest crop in Canada with an increase of just over 9% since 2001. Western Canada grows 73.4% of the total hay area. Canola is the third largest, totalling 5.0 million hectares in 2006. This is a 32.9% increase from 2001. Canola is the result of Canadian crop-breeding in the 1970s. Plant breeders developed a new variety of rapeseed — a cousin of turnips and broccoli — to create a food-grade oilseed. Canola is low in saturated fats and has been reported to be a healthy food oil.

### 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. In 2006, Canada's farm population was 684,265, about 2.2% of the overall population. Farm families are getting smaller, while at the same time, there are proportionately more seniors operating farms.

In the 2006 Census there were 30,556 farm operators who were immigrants, just under one-tenth of the total number of farmers. Between a third and one-half (41.89%) of immigrant farmers are from the Netherlands, the United Kingdom and Germany.



## Handout 2: Agriculture today: the changing face of Canadian agriculture

### Farm operators — men and women

Between 2001 and 2006, the number of farm operators in Canada declined 5.5% to 327,055, which followed a 7.1% decrease in the number of farms during that period.

In 2006, women represented 27.7% of all farm operators, slightly higher than in 2001 (26.5%). British Columbia reported the highest share of female farm operators (36.5%).

The management profile of Canada's farms changed little between 2001 and 2006, with just under two-thirds of Canada's farms run only by men (60.9%). Women ran the operation on 5.5% of farms, while the remaining 33.6% were operated by male-female teams.

Women most often operate sheep and goat farms and specialty livestock farms. 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.

### Families on unincorporated farms

Wages and salaries remained the biggest source of income for farm families on unincorporated farms. In 2006, wages and salaries accounted for 62 cents of every dollar in total farm income. Net farm income contributed to total family income at a rate of 6 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 working off the farm 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.

Families who earned at least half their income from agriculture in 2006 were more likely to be involved in dairy, beef, wheat and other grain farming, or in hog production.



# Table 1 – Agricultural profile of Canada

Number of farms reporting, classified by farm type, by province, 2006													
	Total number of farms reporting	Dairy cattle and milk production	Beef cattle ranching and farming, including feedlots	Hog and pig farming	Poultry and egg production	Sheep and goat farming	Other animal production	Wheat	Oilseed and grain farming (except wheat)	Vegetable and melon farming	Fruit and tree-nut farming	Greenhouse, nursery and floriculture production	Other crop farming
<b>farms reporting</b>													
<b>Canada</b>	<b>229,373</b>	14,651	60,947	6,040	4,578	3,815	26,779	12,137	49,530	5,239	8,329	8,754	28,574
<b>N.L.</b>	<b>558</b>	38	54	9	25	29	53	0	2	94	36	111	107
<b>P.E.I.</b>	<b>1,700</b>	221	381	71	29	17	171	10	65	384	153	34	164
<b>N.S.</b>	<b>3,795</b>	297	716	51	133	76	479	3	21	142	907	543	427
<b>N.B.</b>	<b>2,776</b>	270	548	50	45	33	309	6	35	307	372	267	534
<b>Que.</b>	<b>30,675</b>	6,945	4,683	1,932	710	780	1,895	79	3,353	1,131	1,273	1,478	6,416
<b>Ont.</b>	<b>57,211</b>	4,937	11,052	2,222	1,700	1,365	7,573	953	12,103	1,769	1,892	2,822	8,823
<b>Man.</b>	<b>19,054</b>	453	6,593	768	270	201	1,663	1,290	5,483	250	124	294	1,665
<b>Sask.</b>	<b>44,329</b>	220	12,249	211	139	225	2,722	6,938	18,484	134	149	268	2,590
<b>Alta.</b>	<b>49,431</b>	605	20,494	598	416	558	7,414	2,809	9,753	286	227	910	5,361
<b>B.C.</b>	<b>19,844</b>	665	4,177	128	1,111	531	4,500	49	231	742	3,196	2,027	2,487

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



## Handout 3: A farming tradition

### Instructions

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 of the four characters: Jack, Joan, Michael or Laura.

### Scenario

Jack and Joan Green are third-generation farmers in this province. Farming has provided a reasonable standard of living for the 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.

- Laura has returned from agricultural college and is marrying a local farmer, John. They want to merge their farm with the Green's farm.
- Michael and Laura announce that neither of them is interested in taking over the family farm.
- 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.
- Three years of poor harvests and an increasing debt load has forced the family to consider:
  - giving up the farm
  - diversifying into other farm products, or
  - getting non-farm jobs to supplement their income.
- The farm, at its current size, cannot provide the same standard of living as in the past. To keep the farm viable it will be necessary to expand considerably.

Name:

Date:



## Handout 4: Land size conversions and comparisons

The metric system became standard in Canada in 1977. The metric unit for measuring farmland is hectares.

1. Using the information below, complete the following table by converting the measurements into hectares and/or square metres. Measure your classroom in square meters. Is the measurement of your school grounds available? If so, enter the number in square meters. Convert both the classroom and the school grounds measurement into hectares.

1 hectare [ha] = 10,000 square metres [m<sup>2</sup>]

	Hectares	Square metres
Standard prairie field	64.78	
Urban lot for a house		900
Average size of a farm in Canada in 2006	294.74	
Average size of a farm in Newfoundland and Labrador in 2006	64.78	
Average size of a farm in Saskatchewan in 2006		5,866,400
Your school grounds		
Your classroom		

2. How many classrooms, the size of your current classroom, would fit into 1 ha?

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