



## Wheat & the Settlement of Canada

Follow wheat from its humble beginnings across the ocean to Canada. This lesson should be taught after Lesson 9: Early Beginnings of Wheat.

### Outcomes:

IN4.3 Determine the influence Saskatchewan people and programs have had on a national scale.

RW4.1 Analyze the strategies Saskatchewan people have developed to meet the challenges presented by the natural environment.

RW4.2 Investigate the importance of agriculture to the economy and culture of Saskatchewan.

RW 4.3 Assess the impact of Saskatchewan resources and technological innovations on the provincial, national, and global communities.

### Indicators:

IN4.3 a. Identify the impact of programs originating in Saskatchewan on Canada and global communities



RW4.1 f. Research past and present technologies used to withstand the Saskatchewan climate.

RW 4.1 g. Investigate the technological evolution of farming practices in Saskatchewan, including crop variety development, pesticide and herbicide use, and soil and water conservation.

RW4.2 h. Research early agriculture practices and identify the impact agriculture had on early settlers.

RW4.3 g. Describe the impact of technological innovations originating in Saskatchewan on the global community (e.g., farm machinery, varieties of grain, automated teller machines, fibre optics, communications technologies, pesticides and herbicides, vaccines).

Note from AITC: Other expected outcomes include:

-  Students will appreciate the hard work and dedication of the early wheat farmer.
-  Students will recognize the relatively short time line that delivered tremendous changes to Saskatchewan's development and the role wheat played in that evolution.

### Questions/Statements to Guide Inquiry:

1. Why was it important to find new wheat varieties?
2. Prairie wheat research benefits the rest of Canada and the world.



About two  
45 minute  
classes

### MATERIALS NEEDED:

- \* a number of hoes
- \* handouts 10.1



## Teacher Background

The grain varieties in existence were not ideally suited to the prairie climate and growing conditions. The growing season was too short and often the wheat crops froze and were only fit to feed the livestock. To facilitate development of the agricultural economy in the West and other parts of Canada, the federal government passed the Experimental Farm Station Act in 1886, thus creating experimental farms largely to conduct plant breeding and research to support agricultural production.

More information is provided in Student Handouts and Teacher Information Sheets 10.1 and 10.2. (Teacher Information Sheet 10.1 is a timeline with events connected to Saskatchewan agriculture).

## Before Activity

### Activity One

Pose the following question for students to consider, "Would you like to have been a pioneer?" Instruct students who would have liked to live in the pioneer times to go to one part of the room and the students who wouldn't want to live in those times to meet on the other side of the room. Students in each group explore the reasons for their choice.

Each group selects a spokesperson to explain its thinking to the other group.

At the end of the explanations, individual students are free to change his/her opinion and walk to the other group. Students who have changed groups will explain their reasons for change to the rest of the class.

### Activity Two

Share some of Alice Rendell's letters with class. Explain these are real letters written by and to real people. See <http://olc.spsd.sk.ca/DE/Saskatchewan100/docs/Alice%20Rendell.pdf>.

## During Activity

### Activity One

Explain the size of one quarter section; 160 acres (about the size of a football field). If possible, go outside where there is grass that can be uprooted a little. Take a hoe and show them the enormous task that awaited the early settlers of the Prairies. Let the students try hoeing grass in an out of the way spot. Invite them to think about working the entire 160 acres with just this simple tool. Back in the classroom discuss some of the challenges that awaited the excited new settlers.

### Activity Two

*The first recorded attempt at growing wheat in present-day Saskatchewan took place in the Carrot River Valley some time between 1753 and 1756, and ascribed to the Frenchman, Chevalier de La Corne.*

*Because wheat is such a versatile crop, it is being harvested somewhere in the world every month of the year.*



Distribute “Wheat Comes to Saskatchewan” (Handout 10.1) to students. Instruct them that at the end of each paragraph there will be a question based on information contained in that paragraph. Pause at the end of each paragraph to allow students to answer the question on the hand-out.

When the passage is completed, have students share and discuss answers with those of another student. Then discuss as a class.

*One family of four can  
live 10 years off the  
bread produced by one  
acre of wheat.*

## After Activity

Invite students to reflect in their journals on the advantages, as well as the drawbacks, to being a wheat farmer in Saskatchewan’s early years.

## Assessment

### Teacher Checklist

- ✓ Were students able to defend their choices during the initial activity?
- ✓ Could student respond accurately to the paragraph questions?
- ✓ Could student reflect meaningfully in his/her journal?

## Lesson Resources

Information on the climate of Saskatchewan including mean temperatures. <http://esask.uregina.ca/entry/climate.html>

Narratives from the early years. [www.saskstories.ca/english/work/settlers/index.html](http://www.saskstories.ca/english/work/settlers/index.html)

Real letters written in Saskatchewan’s early years. <http://olc.spsd.sk.ca/DE/Saskatchewan100/docs/Alice%20Rendell.pdf>

Excellent site that shows a timeline of Saskatchewan agriculture. Includes information and pictures. <http://www.timetoast.com/timelines/91509>



## Cross Curricular Connections

### Math

Use Farm Population and Rural Population charts to create math problems.

### Science

Continue plant journals and experiments with wheat plants.

Visit <http://wbc.agr.mt.gov/> for lots of enjoyable activities that will teach students more about wheat.

### Health Education

Get an armful of swathed wheat from a local farmer. Have the children cut off the heads and dry them for a couple of days to make sure the kernels are very dry. Hand-thresh the heads releasing the kernels on to a large plastic table cloth on the floor. Once all the kernels are threshed take the table cloth outside (you'll need a good breeze) and toss the whole works in the air allowing the chaff to fly away and catching the wheat. Repeat this process over and over. Use a hair dryer to remove the last of the chaff. Gather the wheat and sift the final bits of chaff away from the wheat with a colander. Grind the wheat in a flour mill (or if there is no flour mill, use a coffee grinder although it is slow and you will need to sift your flour to remove any larger pieces). Use your whole grain flour and half white flour to make biscuits with half the class and with the other half, use just the whole wheat ground flour. Notice the difference in the baked biscuits. Take the opportunity to notice the differences in the flours and why one is healthier for you than the other. While you are doing this discuss what it must have been like doing is whole process without any modern tools. Imagine how the first flour was ground between flat stones. How might the first breads have looked or tasted? How would they have come up with a recipe? What would the first ingredients have been? The questions are endless. Allow for a lot of creative thought and concrete problem solving.

Make biscuits, using a favorite recipe or one found online.

### Arts Education

Invite a guest into the classroom to demonstrate wheat weaving.

Learn the song "The Farmer's Song" by Murray MacLauchlan.

*A wheat mill is provided in the Agriculture Learning kit as well as a recipe and lesson plan for making bannock in the classroom. (This kit also contains the storybooks The Little Red Hen and Bread Comes to Life).*



## Time Line Events

### 1896

17,000 newcomers arrived in Canada to head west. Between 1896 and 1914 a total of two million immigrants come to Canada from Britain, Scandinavia, Western and Eastern Europe to take up the farming of this new land.

### 1901

There were 13,380 farms in Saskatchewan averaging 282 acres.

### 1905

The year marked the mid-point of the great wave of immigration to the West which began in 1896 and would last until the outbreak of the First World War in 1914.

### 1907

The University of Saskatchewan was established by an act of the Saskatchewan Legislature.

### 1909

Early maturing Marquis Wheat, first tested at the experimental farm in Indian Head, was made available to farmers. Within a few years, Marquis was the most widely grown variety of wheat in the West.



*1903 Ship enroute to Canada*



*1904 - Doukhobors pulling wagon, beside elevator.*







### 1911

The census showed that Saskatchewan was Canada's third largest province by population.

Seager Wheeler, a farmer from Rosthern, won the first of five world wheat championships and put Saskatchewan on the map. His entry of Marquis Wheat earned him \$1000 at the New York Land Show. Wheeler used the money to pay off his farm. A few years later, he went on to develop new varieties of barley, wheat, and oats.

The farmer-owned Saskatchewan Co-operative Elevator Company was formed. Forty-six elevators were ready for the 1911-1912 crop years.

### 1913

Violet McNaughton, a farm woman from Harris, became president of the newly formed Women Grain Growers' Association. The WGGA took up many causes including women's right to vote.

### 1914

The First World War began. Over the next five years, 42,000 men and women from Saskatchewan served in the armed forces. On the home front, farmers concentrated on growing wheat to supply the needs of the Allies.



*1910 Land seekers leaving for the Tramping Lake district - Scott, SK.*



*1912 Melville Security elevator - Melville, SK.*



*Saskatoon's first volunteers - First World War. 1914*



*1914 - Rumely 36 HP double cylinder hauling plows, packers, seeder & harrows burning flax straw for fuel*



### 1914 (continued)

The Better Farming Train, a classroom on rails, was sponsored by the University of Saskatchewan, the provincial government and the railways. Travelling the province until 1922, it brought the latest in science and technology to farm families.

### 1915

Saskatchewan farmers produced the first bumper wheat crop. More than half of the wheat grown in Canada this year came from Saskatchewan farms.

### 1918

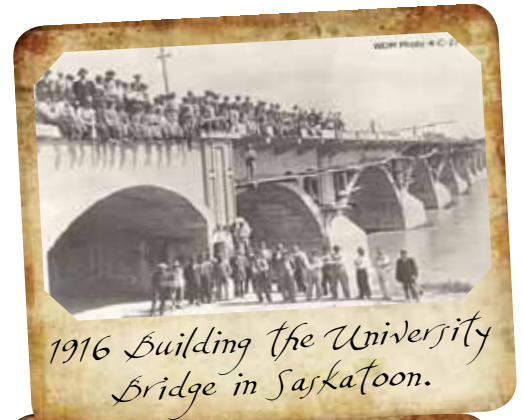
Soldiers returning from WWI were given 160 acres of land for their service to Canada and the world.

### 1921

A group of farmers in Ituna organized the Farmers' Union of Canada. The group was committed to farmer-controlled marketing. Thousands of farmers signed up in the next two years.

### 1924

Saskatchewan Co-operative Wheat Producers Limited, better known as the Saskatchewan Wheat Pool, was formed. It became the largest co-operative marketing organization in the world. A flurry of grain elevator construction followed.





**1925**

Saskatchewan Wheat Pool completed construction of its first elevator at Bulyea.

**1926**

Saskatchewan Wheat Pool bought the Saskatchewan Co-operative Elevator Company. By 1929, the Wheat Pool would operate 970 grain elevators in Saskatchewan.

**1929**

On the farm, there were signs of increasing mechanization. The combine began to replace the threshing machine. Harvest excursions, which for years had brought men from eastern Canada to help with the harvest, ended as a result.

**1935**

The Canadian Wheat Board was established as an Agricultural Marketing Board for orderly marketing of western grains. This gave the farmers some consistency and predictability in the prices they would get for their wheat.

**1937**

This was the worst year of the Depression in Saskatchewan. Crops averaged an all-time low of 2.7 bushels per acre. Drought, dust, heat, grasshoppers, western equine encephalitis, and army worms drove farmers to desperation.







**1938**

An outbreak of western equine encephalitis, or sleeping sickness, struck some 50,000 horses in Saskatchewan and killed more than 15,000 in 1937-1938. To a farm population already hit hard by drought, the loss of so many horses was a heavy blow.

**1939**

Canada declared war on September 10. Some 80,000 Saskatchewan men and women would serve in the armed forces over the next few years.

**1941**

There were 138,713 farms in Saskatchewan averaging 432 acres.

**1991**

Average farm size in Saskatchewan was 1,091 acres, just over double what it had been in 1951.

**1995**

The farmer-owned Saskatchewan Wheat Pool went public with share offering on the Toronto Stock Exchange.

**2001**

There were 50,598 farmers in Saskatchewan with farms averaging 1,550 acres.



*July 20, 1944 A French veteran of the First World War greeting Universal Carriers of the South Saskatchewan Regiment during a Canadian advance in Normandy.*



Combines on pea stubble



**2004**

A province-wide bumper crop was lost in a killing frost on August 20. Over 50% of the wheat was feed grade and could only be used for livestock feed.

**2006**

There were 44,329 farmers in Saskatchewan with farms averaging 1,283 acres.

**2007**

The Saskatchewan Wheat Pool and Agricore United became a new company under the name of Viterra.

**2010**

There was spring flooding in Saskatchewan and many farmers couldn't seed their crops.

8.5 to 12.5 million acres were unseeded in the Prairies, the majority of this in Saskatchewan and the wheat acres were the lowest in almost 40 years.

Information for this timeline adapted from:

<http://olc.spsd.sk.ca/DE/Saskatchewan100/1905.html>

[www.agriculture.gov.sk.ca](http://www.agriculture.gov.sk.ca)

[http://canadachannel.ca/HCO/index.php/5\\_The\\_Immigration\\_Boom\\_1895-1914](http://canadachannel.ca/HCO/index.php/5_The_Immigration_Boom_1895-1914)



Historic photos accessed from <http://olc.spsd.sk.ca/DE/Sask100gallery/index.htm> and to be reproduced for educational purposes only.



## Fascinating Facts Sheet

In 1931, there were 3,300,000 farmers in Canada and in 2006, there were 684,260 farmers.

In 1931, approximately 1 in 3 people lived on a farm; in 2006, approximately 1 out of 46 people lived on a farm.

In 1930, there were 288,403 farms on the Prairies; in 2006 there were 112,814.

In 1930, there were 59.7 million acres farmed on the Prairies; in 2006, there were 135.5 million acres farmed on the Prairies.

In 1930, there were 5498 elevators on the Prairies; in 2009, there were 341.

In 1930, the average distance farmers had to haul their wheat was between 13 -16km; in 2006, the average distance to the nearest elevator is more than 60km.

In 1962, an elevator in Saskatchewan had an average storage capacity of 1,877t; in 2009, the average storage capacity is 17,723t.

In 2008, the average total expenses to produce wheat on one hectare was \$575.40 and the average gross revenue was \$521.40. This is based on a yield of 2.27 tonnes and price of \$229.69/tonne.

In 1960, one hectare of wheat produced 1205 kg of wheat and in 2006 one hectare of wheat produced 2,564 kg of wheat.





### The Top Five Wheat Exports in 2000

Country	Wheat Production	Exports in Millions of Tons
United States	69.4	31.9
Canada	29	19.2
Australia	21.6	17.6
European Union	104.2	16.5
Argentina	12.3	12.5

Source: All About Food, Agri-Foods Factbook



Farmer unloading grain from combine to semi in the field.

### Increasing Farm Size in Canada

Year	Average Farm Size
1901	50 ha
1911	65 ha
1921	80 ha
1931	91 ha
1941	96 ha
1951	113 ha
1961	145 ha
1971	188 ha
1981	207 ha
1991	242 ha
2001	273 ha
2006	295 ha
2020	?

Source: All About Food, Agri-Foods Factbook



In 2007 Agricore United and the Saskatchewan Wheat Pool merged to form Viterra.



### Saskatchewan Population Location

Year	Saskatchewan Population	% Living on the Farm
1901	91,279	84%
1911	492,432	73%
1921	757,510	71%
1931	921,785	68%
1941	895,992	67%
1951	831,728	70%
1961	925,181	57%
1971	926,242	47%
1981	968,313	42%
1991	988,928	37%
2001	978,933	36%
2010	1,041,729	?

Canadian Plains Research Centre <http://esask.uregina.ca/management/app/assets/img/enc2/PDF/Page-706.pdf>



1899 A field of stooked grain at Indian Head



1912, John Harsmehuk with oxen - Smuts, SK.





### Average Farm Size, 2006

Provinces	Number of Farms	Total Farm Area (hectares)	Average Farm Size (hectares)
British Columbia	19,844	2,835,458	143
Alberta	49,431	21,095,393	427
Saskatchewan	44,329	26,002,605	587
Manitoba	19,504	7,718,570	405
Ontario	57,211	5,386,453	94
Quebec	30,675	3,462,935	113
New Brunswick	2,776	395,228	142
Prince Edward Island	1,700	250,859	65
Newfoundland and Labrador	558	36,195	65
Canada	229,373	67,586,739	295

Source: All About Food, Agri-Foods Factbook



One hectare produces approximately 83 bushels. This can vary greatly each year depending on the weather conditions!

One bushel contains 60 lbs (27.2 kg) of wheat and contains approximately one million individual kernels.

One bushel of wheat makes 42 lbs (19.1 kg) of white flour and 70 loaves of white bread.

One bushel of wheat makes 60 lbs (927.3 kg) of whole wheat flour and 95 loaves of whole wheat bread.



At today's prices the farmer would get about \$6.50 for the bushel of wheat and you would pay about \$3.00 per loaf of bread. This means the farmer's share is about 9 cents per loaf. This does not include the farmer's costs to produce the wheat, which can be more than 9 cents some years!

*Wheat prices change daily and there can be big differences from year to year!*

Today it takes about 9 seconds for a combine to harvest enough wheat to make about 70 loaves of bread.

### Conversions

1 tonne = 1000 kg

1 tonne = 83.45 bushels of wheat

1 hectare = 2.47 acres

1 acre = 0.404 hectares

1 bushel of wheat = 60 lbs or 27.2 kg of wheat

1 kg = 2.2 lbs

1 lb = 0.45 kg

One hectare = 10000 sq. meters or 107600 sq. feet

One acre = 4050 sq. meters or 43560 sq. feet



### References

All About Food Factbook, AITC 2010, <http://www.wheatfoods.org/AboutWheat-wheat-facts/Index.htm>

<http://esask.uregina.ca>

<http://www.gov.sk.ca/about-saskatchewan>

<http://www.gov.sk.ca/about-saskatchewan>

<http://olc.spsd.sk.ca>

Historic photos accessed from <http://olc.spsd.sk.ca/DE/Sask100gallery/index.htm> and to be reproduced for educational purposes only.



## Wheat Comes to Saskatchewan ...And Leaves Too!

Read the following passages and consider the question(s) below each.

### Passage One

In 1867, Canada was declared a country. Soon after, the new government was looking for people to come and settle on the Canadian Prairies. Wheat farming on free land drew people from Europe to a new life in the Canadian West. Posters advertised free farms until the 1920s. There were promises of wealth and riches, but nothing was mentioned about the terrible winters and many other problems. A lot of people came to settle the prairies and in time the three prairie provinces of Manitoba, Saskatchewan, and Alberta were born.

**Question: What was promised to European people so they would move to the West?**



### Passage Two

In the Prairies, wheat was so important that it was referred to as "King Wheat". People from Britain, the United States, Scandinavia, Eastern and Western Europe came to grow wheat. Many had been growing wheat in their home countries already. They brought their wheat seeds with them, but they



*Pioneer family outside house in winter dress.*



*Mr. Tronczak,  
an immigrant from Poland,  
breaking new land on his  
farm in the Henribourg  
district 1920-1930*



*German immigrants, 1911*



found out the varieties they grew at home did not always do well in this new land. The growing season was shorter here and sometimes there wasn't enough rain. However, these pioneers did not give up. In time, they tamed the prairies.

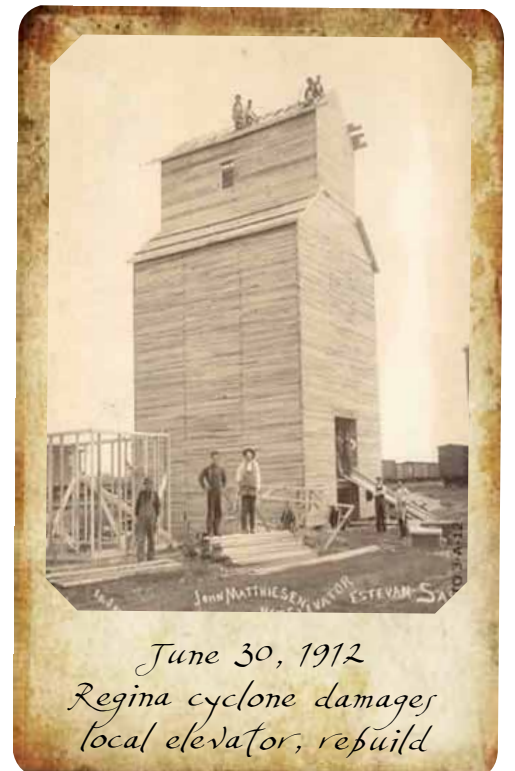
**Question: What was wrong with the seeds the new settlers brought with them?**



### Passage Three

The Canadian government wanted to help these new people find wheat types that would work on the Prairies. The government set up experimental farms and research stations to find better ways of growing wheat. Charles Saunders, a government researcher, developed Marquis Wheat. It was discovered that Marquis Wheat had a shorter growing season, so was better for the Prairies. Seager Wheeler, a Saskatchewan farmer, further improved Marquis Wheat. Other scientists like Dr. Margaret Newton discovered wheat varieties that would withstand rust, drought, and insects.

**Question: Why was (and is) crop research important on the Prairies?**







### Passage Four

Getting the wheat to grow was difficult enough, but the farmers' trouble didn't end there. The farmers needed to get their product to people who wanted to buy it. In the beginning, grain elevators popped up all over the Prairies along the railway tracks. They were built close enough together so that farmers could make the trip to the elevator and back home in a day. This is why the Prairies have so many small towns so close together. With an elevator came a train stop, and with a train stop came the opportunity for selling. People would bring their wheat to town and pick up supplies for the farm. Often cream and other produce was delivered to the train so it could be moved on to the bigger markets in the cities. This meant there was a need for a hardware store, a grocery store, a post office, a church, and, of course, a school. It didn't take long and a town was born.



**Question: Why was the railway so important in Canada during these years?**



### Passage Five

In the 1930s there were almost 6,000 grain elevators in Western Canada; now there are fewer than 850. When the elevators disappeared, the towns often did as well. Many of the early towns are marked

*In some towns, farmers bought the local elevator when it was being decommissioned and now use them to handle their own grain.*





now only by old cemeteries where many of the first settlers are buried.

**Question: Offer a suggestion about why elevators may have disappeared.**



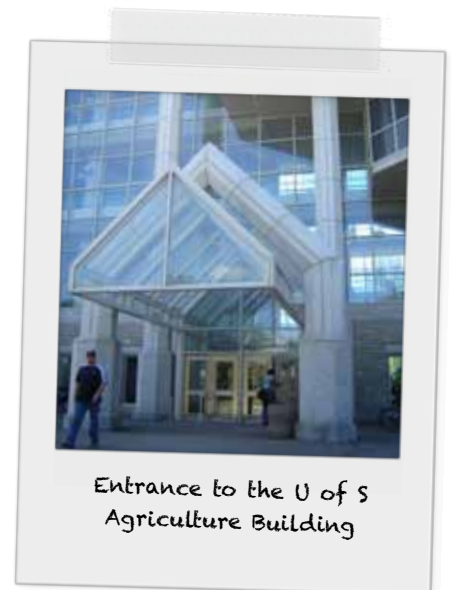
### Passage Six

There were many people who were of importance in creating a strong prairie grain industry in Saskatchewan. One person who was particularly important was William Richard Motherwell. Mr. Motherwell started a grain growers' group because he wanted to make sure prairie farmers were treated fairly and got good prices for their grain. He had the very important job of Canadian Minister of Agriculture in Ottawa. He also founded the College of Agriculture at the University of Saskatchewan in Saskatoon. We can be proud of this college as it is now known all over the world.

**Question: What is the advantage of having a school of agriculture in Saskatchewan?**



Old Sask Wheat Pool elevator



Entrance to the U of S  
Agriculture Building



### Passage Seven

The history of wheat is a story of change and growth. Farmers came to the Prairies with the promise of 160 acres of free land. This was a lot of land when everything had to be done by hand.

Year	Number of Farms	Size of Average Farm
1901	13,380	114 ha
1940s	138,713	175 ha
2006	44,329	587 ha

**Question: Examine the chart. What does it tell you?**



### Passage Eight

New technology, different farming methods, and better machinery has changed grain farming. Stronger types of wheat and new varieties of fertilizers have helped produce larger crops. Improved weed and insect control means there is more wheat left at harvest time to bring in from the fields. Farmers have learned ways to save soil from getting too dry and just blowing away. Farm machinery is much different from the hoes and axes the settlers had.

**Question: How has farming changed in Saskatchewan?**





### Passage Nine

Canada grows excellent wheat. Canadian wheat is sold to countries all over the world for use in breads and pastas. However, wheat is used in many products, not only baked goods. New wheat foods are being created all the time. Parts of the wheat plant are often used to make other things, like fuels, medicines, packaging, and plastics. Our researchers and scientists are always looking for new ways to use this crop. The entire world uses our wheat and wheat products, as well as learns from our wheat research.



**Question: What are four uses for wheat?**

