

SOCIALS/SCIENCE K-2: AGRICULTURE AND THE SHAPING OF BRITISH COLUMBIA

DESCRIPTION OF LEARNING EXPERIENCE	
<p>Through this learning experience, students will explore the local history of agriculture in BC, specifically in the Fraser Valley. They will explore how farming has changed over time and compare the past to the present, and how agriculture has been important in the past and its significance today. This program will mainly focus on the social studies curriculum with some tie in to the processes and functions of the machinery.</p>	

BC CURRICULUM TIE INS	
Big Ideas	<p>Socials K: Stories and traditions about ourselves and our families reflect who we are and where we are from. Socials 2: Canada is made up of many diverse regions and communities. Science K: The motion of objects depends on their properties. Science 2: Forces influence the motion of an object</p>
Competencies	<p>Socials K-2: Sequence objects, images, or events, and distinguish between what has changed and what has stayed the same (continuity and change). Ask questions, make inferences, and draw conclusions about the content and features of different types of sources (evidence). Science K: Ask simple questions about familiar objects Discuss observations Science 2: Compare observations with predictions through discussion</p>
Content	<p>Socials K: Personal and family history and traditions Socials 1: natural and human-made features of the local environment Socials 2: how people’s needs and wants are met by the community (change over time) Science K: effects of size, shape, and materials on movement effects of pushes/pulls on movement (How things move) Science 2: The motion caused by different strengths of forces</p>

PRE-VISIT ACTIVITY	
LEARNING INTENTION	
<p>Students will be able to identify how life was different for their grandparents and great-grandparents than today.</p>	
GUIDING QUESTIONS	
<ul style="list-style-type: none"> - How was life different when your grandparents were your age? - What are the similarities and differences between today and the past? - How is your community different now than it used to be? - How does the rural environment differ from the urban environment? - Where does food come from? 	
ACTIVITY	
<p>Discussion:</p> <ul style="list-style-type: none"> - What kind of old items and technology have you seen that we don’t use anymore? 	

- How do you think food gets from a farm to our tables?
- What machines do you see on farms?
- *Answers: hay baling machines, milking machines, sprinklers, tractors etc.*

Sample Activities:

- As a class, create Venn diagram showing how life was different for their grandparents' parents as children. Explore differences and similarities, especially in machines that we have now that their great-grandparents didn't have as children.
- Match artifacts to their names and their purpose.
- Create a list with the class of where food comes from
- Create a Know-Wonder-Learn as a class. Have students think about and share questions about old machinery and ways of life that they want to know. Follow up on the questions after and add to the Learn section.
- Read "A Pioneer Story" about a Canadian family in 1840, followed by comprehension questions.
- Encourage students to talk to grandparents about their lives when they were their age and to share something they found out with the class.

SUGGESTED QUESTIONS FOR FURTHER THINKING

- How has other technology (machines) changed over time?
- How was life for children different in the past?

YOUR VISIT TO THE BC FARM MUSEUM

FOCUSES OF YOUR VISIT

Students will explore the uses of farming machines. They will consider why these machines were important for people on farms, and why farming was a significant aspect of people's lives in the past as well as today.

LEARNING INTENTION

Students will be able to recognize what tools and devices were used for farming in the past. They will also be able to identify force and motion through machinery.

GUIDING QUESTIONS

- Where does your food come from?
- What happens on a farm?
- How did new machines help farmers in the past?
- What processes occur in these machines to complete the task?

WHAT TO EXPECT

In the museum students will encounter various farm machinery from the past, as well as the setup of farm houses and machinery used in the kitchen and sewing. Students will compare then and now. They will also observe the process of some machines in their task from start to finish. They will see change over time and explore what led to the changes.

ACTIVITY

Introduction:

1. What is agriculture? Turn to your elbow partner and share one word that you think of when you hear the word "agriculture". (If students don't know then break it down: ask them to explain the word "farming" and then explain agriculture.)

- After partner share, choose volunteers to share a word. Key words: farming, land, tractors, plants, barn, animals, etc.
- 2. Agriculture is the growing and collecting of plants and animals for food for a living.
 - What are some types of food we grow?
 - What are some animals raised on the farm?
 - What animal products can you get on a farm?
- 3. Why do you think people built farms and became farmers?
 - People needed a way to survive and get food.
 - Making money: selling food, and buying what they need.
- 4. How do farms work today? (answers may vary)
 - Use machines, all mechanical i.e. tractors, hay balers, etc.
 - Food farming (dairy, eggs, produce, etc.) are done in factories and mega farms
- 5. What did people use in the past?
 - Manual labour (by hand), animal powered, family owned
- 6. Examine murals on the wall and have students point out similarities and differences they see in farming in the past and today

To give the students an idea of how farming equipment and farming life worked, they will be observing **3** different hands on demonstrations: Rope Making, Tomato Grader, and Egg Grader. They will observe at 2 other stations: Windmill and Steam Powered Pump. They get 10 minutes at each station which are located around the museum. At this time, divide the class into 5 groups (each with their own teacher/parent supervisor) and send them to their stations.

- Group 1 – Rope Making
- Group 2 – Tomato grader
- Group 3 – Egg grader
- Group 4 – Windmill
- Group 5 – Steam Powered Pump

Station 1: Rope Making

10 Minutes

- 3 minutes of history
- 5 minutes for demonstration
- 2 minutes to wrap up

History – 3 mins

1. Show different strings without labels.
 - Show samples of each type and pass them around for students to feel. Have students think-pair-share what each rope material is made of, then give them the correct answers. List the different rope materials: plant based, animal based, man-made, etc.
 - Tell students that farmers used what was available to them which is why some rope was made out of plants and animal fibres. Eventually, man-made materials became the common fibre.

2. Now that they know the different types of materials, do they know how these ropes were made? Choose volunteers to respond.
 - Back then, they had to hand braid the rope, which used to take a long time.
 - Eventually, they came up with a rope making device that efficiently made rope with little effort.
3. Who used rope? For what? When? Think pair share.
 - More than farm material/tool.
 - Used on boats.
 - Manufactured for companies.

Demonstration – 5 mins

Now that they know a little bit of background information about rope materials and methods to make them, move on to the rope machine.

1. Ask for 3 volunteers to help with the demonstration: hook, paddle, and crank.
2. Have student at the **crank** to slowly turn the handle. Note how the hooks turn around. That motion will mimic braiding and twist the rope.
3. Ask: What motions are we using now to move the rope making machine? What are these forces doing?
 - Pushing, pulling. The forces are twisting the rope threads together.
4. Have the student with the **paddles** to hold up the different types. Explain that these paddles will help form the shape of the rope. Depending on what the farmers needed the rope for, there 3, 4 and 5 strand paddles.
5. Have student with the **hook** carefully hold it up for the others to see. This part is extremely important if farmers wanted to make a tight and sturdy rope. It is also good for measuring the length of rope needed.
6. Set up the ropes and proceed with the demonstration. *There should be enough time to do 2 demonstrations depending on the grade.
7. Give the rope to the teacher or parent to hold on to.

Wrap Up – 2 mins

1. Before they move on to the next station, ask them what they think about rope making? How do they think that using the rope-making machine made rope-making easier? How long do they think it would take to hand braid the same length of rope they made today? How was having a rope-making machine helpful?

Gather the students and lead them to the next station: Tomato Grader.

Station 2: Tomato Grader

10 Minutes

3 minutes of history

5 minutes for demonstration

2 minutes to wrap up

History – 3 mins

1. Who knows what this machine does? (Answers may vary)
 - Students will know that it has something to do with tomatoes.
2. Explain what the machine is.
 - Sorts tomatoes by size.
 - Upgrade from hand picking and sort tomatoes.
3. Think, pair, then share: How do you think that using this machine would help farmers?
 - Less working by hand, task is completed faster, accomplishes more in the same amount of time
 - With a machine, more is done in less time so more people can be fed.
 - When new machines were invented, it became easier to produce more so farmers could sell food for a living.

Demonstration – 5 mins

1. Ask students to predict how they think the tomatoes will be sorted in this machine from beginning to end.
2. Turn off the machine to set up the demonstration.
 - Ask for volunteers to collect tomatoes and hand them to you. Run machine. Explain how the tomatoes move down the row and sort themselves by size by dropping through the holes. Point out where the tomatoes roll down and are sorted from smallest to biggest.
3. Question: why do you think tomatoes needed to be sorted by size?
 - Answer: For companies who would purchase a certain size of tomatoes.

Wrap Up – 2 mins

1. Ask students to explain what happened during the process of the sorting. How did the machine work to move the tomatoes?
 - Releasing the tomatoes so they roll down, machine pushes them along and they drop through the holes into the right size of bin.
2. Raise your hand if you have gone blueberry picking on a farm. What did you do?
 - i. All of the trees are ready and bearing fruit. Buckets are prepared for you. Once you're done the farmers weigh it and package it as well. Minimal work other than collecting the berries, which is done at your leisure and pace.
3. Growing and preparing the food we buy in a grocery store is a little more complicated. What else do you think needs to happen before food makes it to the grocery store? Turn to your partner and share. (Call on volunteers after to share.)
 - Planting the trees from start to finish. Preparing the land and soil, nursing the trees so that they are big enough to plant into the ground. Tending to them for weeks on end until they finally grow and start producing fruit. Then carefully picking and sorting them by hand and covering as much land as you possibly can until the sun sets. No

machines. No shortcuts.

Similar to the tomato grader, the next machine is something special in that it is a multi-functioning machine. Gather and move to the next location.

Station 3: Egg Grader

10 Minutes

3 minutes of history

5 minutes for demonstration

2 minutes to wrap up

History – 3 mins

1. Can anyone name the different sizes of eggs you might see in the store?
 - Key words: small, medium, large, extra-large.
2. Can anyone then guess what this machine does?
 - Key phrase: sorts eggs.
3. This machine uses machines to wash, polish, and sort eggs by size. What kind of machines in this one do you see that move and clean the eggs? Do you think eggs were always sorted this way?
 - Answer 1: conveyor belts, roller, arms, weight
 - Answer 2: No. In books and movies, farmers are shown to collect their eggs from the chicken coop by hand.
4. The egg grader consists of different components/parts that farmers used by hand, such as the scale, polisher, and candler. Have students point out what they think might happen in each stage of the machine process.
5. What do you think these tools were used for?
 - Choose students to share: cleaning, weighing, and checking for defects such as blood spots before sorting eggs
6. Predict: Notice the shape of the eggs. How do you think the eggs will move?
 - They will roll onto the machines.

Demonstration – 5 mins

1. Explain what the candler, scale, and polisher are.
 - What do they do? How do they work together?
2. Ask students to identify the candler, scale, and polisher to parts on the egg grading machine. Give them a minute to look and explore parts of the machine, and then ask them to share with each other which part they think is which, and why they think that.
 - Explicitly show each part. Describe how each part works. The light box, the screw and bristles, the scales.
3. Give full demonstration of machine. Put eggs through. Carefully monitor their journey through the machine as they may get stuck in certain areas. Allow students to see at least 4-5 different sizes.
4. Ask students to explain the route the eggs took and what pushed them along. Have them share with their partners first.

Ask students to think and imagine not having the egg grading machine and only using the

candler and scale and polisher. Turn to their partner and share: what would be the hardest part? Why?

Wrap Up – 2 mins

1. What did they enjoy the most out of the egg grader? What was the most interesting part? Allow students to share with a partner, then choose students to share aloud. If they don't remember the exact name they can point to it.

STATION 4- WINDMILL

This station allows students to see a windmill used for irrigation, and water pumping on a farm. This windmill is currently powered by electricity, as it is inside, but was not in its original state.

Questions to consider

- Raise your hand if you have seen a windmill. Do you know what windmills are used for?
- Why was it important for farmers to be able to pump water to different places on their farm? What did they do before they had the ability to do that?

STATION 5- STEAM POWERED PUMP

At this station students will view a giant working steam powered pump that could have been used for a variety of jobs in the early 20th century. It is no longer powered by steam, but still could do the jobs it was created for. You can also show students the other steam powered equipment around this area during this station.

Questions to consider

- What does it mean when we say that this pump was “steam-powered”?
- Why did people use steam back in the pioneer days?
- Why don't we use steam anymore?

If this is the end:

Meet under the plane for conclusion.

If this is first to fourth stop:

Move to Rope making activity.

CONCLUSION – 5 mins

Close off by explaining how our history still lives on today. You can still find people working on farms and doing these things for a living in the local community.

Choose a couple of questions for students to think then share with their partner. Sample questions:

1. What did they think of the activities?
2. What were their favourite ones?
3. Why do they think we showed them these machines?
4. What did they learn about history that they didn't know before?

5. What are some things they noticed about the machines or things they hear that reminded them of something in the present?
6. Why is it important that we learn about these parts of history? How does it relate to our community?

*You can ask other questions in relation to what you have said or what you think is important for them to know.

Allow volunteers to share, if they would like.

Scavenger Hunt (30 minutes):

7. Distribute the handout with images of artifacts to find from both buildings and answer the questions (original museum copy). Students will need to complete this in their groups with the leader. In their groups, they will search for the items and answer the questions with the help of the leader. Leader can circulate to help students with spelling for lower grades.
8. For each item, discuss through think pair share: what do you think this is? What do you think it is for? Where do you think it is found? i.e. barn, kitchen, yard?

*Note, if students are finished their scavenger hunt and they ask to make a piece of rope, check their sheet for all the answers. If all are correct, then with teacher supervision they can make a rope. Limit students if necessary.

POST-VISIT ACTIVITY
LEARNING INTENTION
Students will be able to identify the differences and similarities in farming life between the past and the present.
GUIDING QUESTIONS
<ul style="list-style-type: none"> • What are the differences and similarities between farms in the past and farms now? • How is farming different now than it was in the past? • What kind of crops were grown on farms in the past?
ACTIVITY
<p>Discussion:</p> <ul style="list-style-type: none"> - How did people do farm work before there were machines? - <i>Answer: by hand.</i> - What kind of farms exist today? - <i>Answers: animal farms, farms that grow food, blueberries, dairy farms</i> - Compare old machines from what we use today and ask: How does better technology help us? - What would you find in a house or on a farm many years ago? <p>Sample Activities:</p> <ul style="list-style-type: none"> • Grow their own crop.

- Farm-to-table activity
- Use magazines and fliers to find equivalent pictures of modern-day machinery used on a farm and compare to the past
- Illustrate a picture of a pioneer house or farm in the past.
- Complete KWL chart as a class.
- Compare techniques on acquiring food and which food the European settlers used with those of the First Nations.

SUGGESTED QUESTIONS FOR FURTHER THINKING

- Are farms still as important today?
- What else has changed between my time and my grandparents' or great-grandparents' time?