

## SOCIALS 6-7: AGRICULTURE AND THE SHAPING OF BRITISH COLUMBIA

### DESCRIPTION OF LEARNING EXPERIENCE

Through this learning experience, students will be exposed to the local history of agriculture in BC, specifically in the Fraser Valley. They will learn about advancements in various farming machinery in the past. They will also discover the significance of agriculture in the past as well as compare its role in our lives today, and how it has contributed and continues to contribute to society. There will also be some minor integration of science and technology.

### BC CURRICULUM TIE INS

<b>Big Ideas</b>	<b>Socials 7:</b> Geographic conditions shaped the emergence of civilizations.
<b>Competencies</b>	<p><b>Socials 6:</b> Sequence objects, images, or events, and recognize the positive and negative aspects of continuities and changes in the past and present (continuity and change)</p> <p><b>Socials 6/7:</b> Use Social Studies inquiry processes and skills to — ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions.</p> <p><b>Socials 7:</b> Assess the significance of developments at particular times and places (significance)</p>
<b>Content</b>	<p><b>Socials 6:</b> the urbanization and migration of people</p> <p><b>Socials 7:</b> Human responses to particular geographic challenges and opportunities, including climates, landforms, and natural resources. Scientific and technological developments (Specifically agriculture).</p>

### PRE-VISIT ACTIVITY

#### LEARNING INTENTION

Students will be able to recognize how ways that life, specifically in farming and agriculture, has changed over time.

#### GUIDING QUESTIONS

- What are different ways of obtaining food?
- How do you think an improvement in farm machinery impacted the community?
- How did farming help settlers and people in BC's history?
- What is the difference between farming in the past and present?
- How has agriculture changed over time?
- Where do we see farming and agriculture in our communities?
- How do First Nations traditionally obtain food in BC? How did they traditionally use the land for food?

#### ACTIVITY

Discussion:

- What do you know about how life has changed from today from the past? What do you have that your grandparents didn't? How have these changes been significant?
- What are some past artifacts you can think of that were used in place of what we have today? How are our lives different today than in the past?
- Encourage students to think about everything they know has changed in the past century.

- How did First Nations in the area traditionally obtain food?
- *Answers: Fishing, hunting, gathering, migrating in search of food.*
- Why do you think European settlers used agriculture?
- *A lot of settlers were far from towns and communities and settlers had to grow their own food. Later on, with advanced farm machinery, agriculture became more profitable.*

Possible activities:

- Venn diagram of what has changed in the last century and what has stayed the same.
- Students interview a grandparent to find out what life was like when they were their age.
- Students list the pros and cons of housing development over farm land.
- Research the early days of agriculture in North America through First Nations groups that cultivated the land to harvest food: which groups farmed the land? What did they grow?
- Create a KWL in pairs. Have students create in pairs one question about life on a farm in the past. During exploration in the museum, students can use the iPads in the museum or read the signage to search the answers to their questions. Follow up on the questions after and add to the Learn section.

#### **SUGGESTED QUESTIONS FOR FURTHER THINKING**

- What factors might influence our need for agriculture and farming?
- How are farm markets and farmers' markets still important to us?

### **YOUR VISIT TO THE BC FARM MUSEUM**

#### **FOCUSES OF YOUR VISIT**

Students should focus on:

- Improvements in technology and machinery
- Change over time
- How certain tasks were accomplished in the past
- The importance of agriculture in BC, specifically in the Lower Mainland

#### **LEARNING INTENTION**

Students will be able to identify how tools and technology have changed over time, and how advancements in technology impacted agriculture.

#### **GUIDING QUESTIONS**

- How do you think people worked the farm before the invention of devices, machinery and electricity?
- How did advancements in technology impact agriculture?
- What is the purpose of each machine?
- What equipment and machinery would you find on a farm?

#### **WHAT TO EXPECT**

Students will receive a tour of five stations which will be broken down into introduction, demonstration, and a brief wrap-up. These stations will focus on how farming machinery made tasks faster, easier, and more productive, and how this affected the role of agriculture.

Besides farming equipment, there are other displays of life for pioneers for students to explore.

## **ACTIVITY**

### **INTRODUCTION – 8 mins**

- What is agriculture? Share one word that you think of when you hear the word “agriculture”.
  - o Key words: farming, land, tractors, plants, barn, animals, etc.
- Agriculture is the harvesting and raising of plants and animals for resources such as food and fuel (specifically biofuel) for a living.
  - o What are some types of food we grow?
  - o What are some forms of fuel produced on a farm?
    - Key words: wood, animal power, plant-based fuel, biofuel/biodiesel, etc.
- BC has a lot of valuable resources which provided early European settlers with means of survival. How do you think agriculture benefitted early European settlers?
  - Answers: Food such as animals and produce, selling food for money for other needs, etc.
- Have students share with a partner, then choose volunteers: Why do you think people went into agriculture?
  - o Survival: people came to a new land and needed to find something sustainable while building a new family on foreign land
  - o Business and trade: the more the land developed, the more people joined the community. What one farmer has, another doesn't.
- How did farms function in the past? How was farm work accomplished?
  - o Manual labour, animal powered, family owned
- How do farms work today? (answers may vary)
  - o Use machines, all mechanical i.e. tractors, hay balers, etc.
  - o Food farming (dairy, eggs, produce, etc.) are done in factories and mega farms
- Raise hand if you think agriculture is surviving in the modern world. Why?
  - o Examples of modern agriculture: community gardens, school gardens, local farm markets, organic farm markets, home gardens, etc.

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. Ask students: raise your hand if you know what rope is made of.
  - Possible answers: string, twine.
2. Show samples of each type of string without the labels, and pass them around for students to feel.
3. Students think-pair-share: what different materials do you think the strings are made of?
  - Answers: plant based, animal based, synthetic, etc.
  - Note that farmers used what was available to them which is why some rope was made out of plants and animal fibres. Eventually, man-made/manufactured materials became the common fibre.
4. 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.
5. Who used rope? What was it used for? Allow volunteers to respond. Then explain any missing information.
  - More than farm material/tool.
  - Used on boats.
  - Manufactured for companies.
6. Think and share with a partner: Why do you think they invented a tool/machine to make rope? (Answers will vary)
  - Possible answers: reduce labour, efficiently use time in order to complete other tasks, make longer lengths for their tasks
  - Note that farmers used to make lengths of rope for all types of jobs, even for boats and fishing.
  - This machine is actually a smaller scale model for common chores. There are actually large warehouses dedicated to creating thicker and longer lengths of rope for industrial and commercial jobs. Show pictures and clippings from the binder.

Use the rope display to further explain/detail the purpose of rope.

### 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. 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 are 3, 4 and 5 strand paddles.

4. 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.
5. Set up the ropes and proceed with the demonstration. \*There should be enough time to do 2 demonstrations depending on the grade.

Give the rope to the teacher to hold onto. Teacher may choose to keep this rope in the classroom as a class souvenir.

### **Wrap Up – 2 mins**

1. Before they move on to the next station, ask them if they imagine making rope by hand without this machine? How long do they think it would take to hand braid the same length of rope they made today?

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. Have students think and pair on what they think the purpose of the machine is. Then choose volunteers to share. (Answers may vary)
  - Students will know that it has something to do with tomatoes
  - Older grades will likely guess and interpret through observation.
2. What simple machines do you see in the tomato sorter? What do you think they do? Allow students to examine and share with partner. Then call on volunteers.
  - Answer 1: Inclined plane, screw, incline plane, lever, pulley, wheel and axle
  - Answer 2: answers will vary.
3. Explain what the machine is.
  - Sorts tomatoes by size.
  - Upgrade from hand picking and sort tomatoes.
  - Why do you think farmers developed this machine?
    - i. Reduce manual labour
    - ii. As time progressed and farmers started selling to the markets, they needed to sort quick and efficiently to get their product out fresh and early.
4. Have students think then share with partner: How does this reflect change in society over time?

#### **Demonstration – 5 mins**

1. Turn on the machine without releasing the tomatoes.
  - Explain that the machine sorts tomatoes by size. Describe where the tomatoes will go, how they will travel through the machine to the sorter, and where they end up. Explain that separating the tomatoes was important for companies purchasing tomatoes by size.
  - Ask students to turn to a partner and compare how having a machine would have benefitted farmers over picking by hand. Answers: faster, more efficient, less manual labour, more could be grown and sold.
2. Turn off the machine to set up the demonstration.
  - Ask for volunteers to collect the tomatoes and hand them to you. 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.
  - Get students to participate by asking them to work together to set up and start up the machine. Supervise carefully. Guide them with questions like: Where do the tomatoes go first? What do you do to start up the machine? What do you do to get the tomatoes to move down?
3. Have students turn and share with a partner: Would you change the design of this machine in any way? How so? Why? Then choose pairs to share their discussion.

### **Wrap Up – 2 mins**

1. Personal opinion: Ask students to imagine themselves living in a time where there was no technology and things like picking and sorting tomatoes, or harvesting grain and hay were manually completed. How long do they think it would take them to finish their jobs?
  - Has anyone 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.
  - Now imagine having to plant 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.
    - i. Time is invested in these things, yet people do not understand how much work farmers need to do on their farm. We only see the outcome as consumers in a market. We don't usually see the process and work that it takes to actually get these products out and ready for others to buy.

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. Who can name the different sizes of eggs you see in the grocery store?
  - Key words: small, medium, large, extra-large.
2. Who can guess what this machine does?
  - Key phrase: sorts eggs.
3. This machine uses some simple machines to wash, polish, and sort eggs by size. What are some simple machines that you see? Do you think eggs were always sorted this way?
  - Answer 1: Incline plane, screw, etc.
  - Answer 2: No. In books and movies, farmers are shown to manually collect their eggs from the chicken coop.
4. The egg grader consists of different components/parts that farmers used by hand, such as the scale, polisher, and candler. Can you think of any modern day appliances that function similarly to these tools?

Sample answers: Scale – weight scale; polisher – buffer for nails, sanders; candler – x-ray

### **Demonstration – 5 mins**

1. Explain what the candler, scale, and polisher are.
  - What do they do? How do they work together?
  - Why do you think farmers had to grade their eggs? Why did they have to examine each egg through these processes and steps?
  - Answers: To ensure eggs were sorted, cleaned, and checked before being sold to consumers.
2. Match and identify the candler, scale, and polisher to parts on the egg grading machine.
  - Turn the machine on and ask where they think all the parts are. Get them to help identify and match the parts in order to promote critical thinking. 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 specific areas. Allow students to see at least 4-5 different sizes.

Ask students to imagine not having the egg grading machine and only using the candler and scale and polisher. What would be the hardest part? Why? Have them share their responses with a partner first, then choose volunteers to share.

### **Wrap Up – 2 mins**

1. What did they enjoy the most out of the egg grader? What was the most interesting part?
2. Allow students to think, pair, and share: Why do you think farmers built and used the egg grading machine? What reasons would they decide to mechanize the process?
  - Key words: fulfill demands/rise in demands, minimize labour, maximize efficiency and output.

### **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**

- What would this windmill do on a farm?
- How would this windmill have been powered when being used on a farm?
- What other things did windmills do on the farm? Where were they commonly used?
- 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 20<sup>th</sup> 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?
- What kind of jobs could this machine have done? Would it have been used only on a farm, or could it have been used in other important BC industries?
- What about this machine stands out to you? How have we improved on it?

**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. Select 1 or 2 questions for students to think about and respond to.

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.

**SCAVENGER HUNT – 30 mins**

Scavenger Hunt:



Each student will get a handout of 10 items. Must work in pairs.

There are two scavenger hunt handout options (see handouts attached):

- 10 images of artifacts from both buildings. They have to locate it and answer the questions on the sheet.
- Handout with series of questions. Students find the artifacts based on the descriptions on the sheet.

When students are finished, if they still have time left they can explore the buildings and examine the artifacts until the teacher calls them back.

\*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 they can make a rope. Limit students if necessary.

## POST-VISIT ACTIVITY

### LEARNING INTENTION

Students will be able to demonstrate the ways in which life on a farm has changed or stayed the same.

### GUIDING QUESTIONS

- Is agriculture still as important as it used to be? Why or why not?
- How has our community changed over time?
- How have our needs impacted agriculture in our current society?
- What are the differences in agriculture in different societies in the past?
- How did resources influence the placement of farms in the area?

### ACTIVITY

Discussion

- What did you notice during the visit to the museum about how farming practices changed over time? What were the consequences of these changes?
- How has farming in the Fraser Valley changed in the last 100 years?
- *Answer: More urban, more roads, more land cleared and developments. More food is imported. People have the means to travel longer distances and more options.*
- How is agriculture still important in our lives?
- *Answers: family businesses, different kinds of farms, U-pick farms, community gardens*

Possible activities:

- Research and create a chart to compare agriculture in past civilizations.
- Students use a map of Langley and consider why farms were placed where they were. (Water, topography, etc)
- Students research and create a flowchart on the process of bringing food from the farm to the table.
- Students write a diary entry imagining that they are a young person living and working on a farm in the early days of settlement. What was their job? What was life like?

- Students devise inquiry questions inspired by their visit to the museum. Place in a jar and have students work in pairs or groups to research and record the answer to the question they selected. Once finished, place questions back in jar and have students choose a new question.

#### **SUGGESTED QUESTIONS FOR FURTHER THINKING**

- How do you think the need for agriculture will change in the future?
- Why do you think that advancement in farming technology was so important at the time?  
How do you think it changed the nature of farming?