

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

## **DESCRIPTION OF LEARNING EXPERIENCE**

- This learning experience is created to allow students to explore the important role of farming in the European settlement and development of British Columbia. Young students will be able to connect to what life was like on the farm at the turn of the century and see how people did common farm jobs over time. This experience will concentrate on tying in these experiences to Science curriculum (although it will tie into Socials as well) by highlighting things like force and motion, and the importance of water and weather in the growing of crops. It would be a great tie into any units exploring gardening, plant life, chickens, motion, farming in general, and change in the local community over time.

## **BC CURRICULUM TIE INS**

<b>Big Ideas</b>	<p>Science K: The motion of objects depends on their properties.</p> <p>Science K: Daily and seasonal changes affect all living things.</p> <p>Science K: Plants and animals have observable features.</p> <p>Science 2: Forces influence the motion of an object</p> <p>Science 2: Water is essential to all living things, and it cycles through the environment.</p>
<b>Competencies</b>	<p>Science K, 1 &amp; 2: Ask questions about familiar objects and events</p> <p>Science 1 &amp; 2: Make and record observations</p> <p>Science K: Make exploratory observations using their senses.</p>
<b>Content</b>	<p>Science K: basic needs of plants and animals</p> <p>Science K: living things make changes to accommodate daily and seasonal cycles.</p> <p>Science 1: natural and artificial sources of light and sound.</p> <p>Science 2: types of forces</p> <p>Science 3: physical and chemical ways of changing materials.</p> <p>Science 2: water sources, and water use</p>

## **PRE-VISIT ACTIVITY**

### **LEARNING INTENTION**

For students to find some of the science present in farming, and relate it to other things they have learned, and experienced in their everyday lives.

For students to understand the importance of farming in their local community, what farms do, and why they are important to us.

### **GUIDING QUESTIONS**

- How do we make things move?
- Why is important for us to make things move?
- What moves things on a farm?
- What can grow on a farm?
- What do we need to make things grow on a farm?
- Why are farms important?
- What do we get from farms?

<b>ACTIVITY</b>
<ul style="list-style-type: none"> <li>• Explore farms, and what farms do with your students. Do an inquiry into how we get food to our house? What do farmers use? What is important to farmers?</li> <li>• Do a demonstration about force with your students. Have discussions about different types of force, and how what we use to move things have changed over time. Have students try and move a ball using different things that can cause force, and compare how hard or easy they are.</li> <li>• Grow plants as a class. Have students observe how water and sunlight play important roles in the development of plants.</li> <li>• Have students set up their own farms in the classroom? What would they grow? What do they need to know about what they are growing? What tools would they need? What work will they have to do?</li> </ul>
<b>SUGGESTED QUESTIONS FOR FURTHER THINKING</b>
<ul style="list-style-type: none"> <li>• What do you get from the farm?</li> <li>• Do you think it would be tiring to work on a farm?</li> <li>• Do you think it would be easier to be a farm now, or 100 years ago? Why?</li> </ul>

<b>YOUR VISIT TO THE BC FARM MUSEUM</b>
<b>FOCUS OF YOUR VISIT</b>
The focus of your visit is to explore the importance of farming to BC, and how have used science and engineering to help them provide for the community.
<b>LEARNING INTENTION</b>
For students to discover some the ways people used to farm in BC, and to relate some of the things they have explored in science to the technology they view (light, force, seasonal changes etc.)
<b>WHAT TO EXPECT</b>
<ul style="list-style-type: none"> <li>• The BC Farm Museum houses many agricultural, household, and technology artifacts that show what life was like on a BC farm throughout the late 19<sup>th</sup> and early to mid 20<sup>th</sup> century. We have many interactive exhibits, and numerous displays showing how life has changed from the pioneer days, and the mid century.</li> <li>• The museum is housed in two open buildings with lots of room to explore. Many of the displays include historic farm equipment</li> </ul>
<b>ACTIVITY</b>
<p>Start with a welcome to the BC Farm Museum</p> <p>As a whole group we will talk about the following questions:</p> <ol style="list-style-type: none"> <li>1. What is farming?</li> <li>2. What do we get from farms? Why are they important?</li> </ol> <p>We are going to be looking at items, and things that show us how farms functioned in the past. Some things might be familiar and others may not be, so students will be asked to ask as many questions as they can come up with.</p> <ul style="list-style-type: none"> <li>• The class will be placed into 5 groups and go to 5 different stations throughout the Museum.</li> <li>• Each group will need an accompanying adult, and some of the stations may have BC Farm Museum volunteers to help you observe the function.</li> <li>• Each station should take 10 minutes</li> <li>• We suggest using a KWL Chart for students to take around the museum with them to</li> </ul>

remain engaged in all activities, and to give you some feedback into their engagement and learning outcome. Depending on the age of your class it might be helpful to have the adult supervising each group to document on a singular KWL chart, or have the students illustrate ideas they have. (Please see attached KWL at the end of the document)

### **STATION 1- EGG GRADER**

At this station students will be shown a vintage egg grading machine, and how it sorts and cleans the eggs. On top of this machine are a Candler, scale, and polisher. The egg grader does the job of all 3 of these things.

#### ***Questions to consider***

- BEFORE INTRODUCING THE MACHINE: What do you think this machine does?
- Who gets eggs from the grocery store? Did you know there are different sizes of eggs? Have you ever noticed that at the store?
- Why is it important that the farmer can see into the egg? What do you think they are looking for when they do that?
- POINT OUT THE THREE OBJECTS ON TOP OF THE MACHINE? What do you think these each did? How are they different from the egg grader?
- Why does the egg grader help the farmer? Why couldn't the farmer just use the Candler, scale and polisher? Why does the grader make the farmer's job easier?
- If your class has been studying oviparous organisms (such as chickens) looking at the Candler, and the weights is a great way to tie it into your classroom.

### **STATION 2- ROPE MAKING**

At this stations students will be shown how rope was made on a farm, using some simple tools.

#### ***Demo:***

1. Ask for 3 volunteers (depending on the age of your group, may have to use an adult to do all of the tasks) to help with the demonstration: hook, paddle, and crank.
2. Have the 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.

#### ***Questions to consider (Pose these before, during, and after your demo)***

- What would a farmer do with rope?
- Do you think rope is still made like this?
- What else could we use to make rope?
- Who other than a farmer could use rope?

### **STATION 3- 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 powers a windmill?
- Why is it important for the windmill to move water on the farm?
- Why is water important on a farm?
- Who or what needs water on the farm?
- How do we get water now? Do we use a pump and a windmill?

**STATION 4- 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**

- Do you think we still use steam now?
- What is steam? What is it like?
- What do we use now instead of steam?

**STATION 5- TOMATO GRADER**

At this station students will get to see a working Tomato Grader from the mid 1900s sort tomatoes. This machine was handmade by a farmer in the Netherlands.

**Questions to consider**

- BEFORE INTRODUCING THE MACHINE: What do you think this machine does?
- Why would this machine be helpful to farmers?
- Who has seen different sizes of tomatoes? How are tomatoes sorted at the grocery store?
- It is easy to connect this idea to what students see and buy at the grocery store... when they are there are all the tomatoes that are priced the same are similar sizes.

**SCAVENGER HUNT**

For the remaining 30 minutes of your visit to us, we have created a Scavenger Hunt for the students to do with the help of an adult in their group.

**POST-VISIT ACTIVITY**

**LEARNING INTENTION**

For students to connect the technology they saw at the BC Farm Museum to their everyday life, and curriculum science concepts.

**GUIDING QUESTIONS**

- How was the equipment you saw at the museum different than things we use today?
- Do you think the stuff we use today makes things easier?

**ACTIVITY**

- Relook at your class, farm, or create one (see pre activities). What changes would you make? What could you add?
- Compare things technology you saw at the BC Farm Museum to how farming is done now. Look at modern farming equipment, and techniques and compare and contrast.
- Have students create human, or wind powered tools (this ties in with ADST as well) to help them farm. This could be done as a class project or in groups.

**KNOW**

**WONDER**

**LEARN**

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