



Lesson Plan: A Virtual Scavenger Hunt **Through BC's Agriculture Commodities**

GROW BC Interactive GIS Map Activity

Students will use the online Grow BC GIS map available on BC Agriculture in the Classroom's website to explore the agricultural commodities that are produced in our province. Through completing this Virtual Scavenger Hunt activity, students will gain a better understanding of BC's commodities and the importance of BC's agricultural industry in our lives.

The Scavenger Hunt activity has been created in a fillable-pdf format, such that students are able to save their responses and submit electronically. This activity could be altered to suit all regions of the province and multiple grade levels and can be used in both an in-class or online format.

Subject Levels/ Suggested Grade

Science 8-10 | Environmental Sciences 11 | Science for Citizens 11 | Social Studies 9-10

Written by: Sabrina Bhojani, BCAITC Educational Specialist (2020-21)

BC Curriculum Connections

Grade and Subject	Curricular Competencies	Content Connections
<p>Science 8</p>	<ul style="list-style-type: none"> • Make observations aimed at identifying their own questions about the natural world • Identify a question to answer, or a problem to solve through scientific inquiry • Make predictions about the findings of their inquiry • Measure and control variables through fair tests • Observe, measure, and record data using equipment 	<ul style="list-style-type: none"> • Characteristics of life – living things respire, grow, take in nutrients, produce waste, respond to environmental stimuli and reproduce
<p>Science 9</p>	<ul style="list-style-type: none"> • Use scientific understandings to identify relationships and draw conclusions • Consider social, ethical and environmental implications of the findings from their own or others' investigations 	<ul style="list-style-type: none"> • Matter cycles within biotic and abiotic components of ecosystems • Sustainability of systems
<p>Science 10</p>	<ul style="list-style-type: none"> • Identify a question to answer, or a problem to solve through scientific inquiry • Observe, measure, and record data using equipment 	<ul style="list-style-type: none"> • Applied genetics and ethical considerations (e.g. GMOs, cloning, stem cells, reproductive technology, genetic engineering)
<p>Environmental Science 11</p>	<ul style="list-style-type: none"> • Use scientific understandings to identify relationships and draw conclusions • Consider social, ethical and environmental implications of the findings from their own or others' investigations 	<ul style="list-style-type: none"> • Abiotic factors: soil (e.g., pH, mineral content, water content, temperature, acidity, aeration, nutrients, humus) • Sustainable use of, and care for, local resources
<p>Science for Citizens 11</p>	<ul style="list-style-type: none"> • Use scientific understandings to identify relationships and draw conclusions • Consider the changes in knowledge over time as tools and technologies have developed • Connect scientific explorations to careers in science 	<ul style="list-style-type: none"> • food security (production, distribution) • agriculture/aquaculture practices and processes (e.g., hydroponics, food crops, feed crops, fuel crops, animal husbandry, fish farms, new technologies, etc.)

<p>Social Studies 8</p>	<ul style="list-style-type: none"> • Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions • Identify what the creators of accounts, narratives, maps, or texts have determined is significant (significance) • Determine which causes most influenced particular decisions, actions, or events, and assess their short-and long-term consequences (cause and consequence) • Make ethical judgments about past events, decisions, or actions, and assess the limitations of drawing direct lessons from the past (ethical judgment) 	<ul style="list-style-type: none"> • scientific and technological innovations • philosophical and cultural shifts • interactions and exchanges of resources, ideas, arts, and culture between and among different civilizations • changes in population and living standards including forced and unforced migration and movement of people, diseases and health, urbanization and the effect of expanding communities and environmental impact (e.g., resource and land use)
<p>Social Studies 9</p>	<ul style="list-style-type: none"> • Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas; and communicate findings and decisions • Assess how prevailing conditions and the actions of individuals or groups affect events, decisions, or developments (cause and consequence) • Make reasoned ethical judgments about actions in the past and present, and determine appropriate ways to remember and respond (ethical judgment) 	<ul style="list-style-type: none"> • global demographic shifts, including patterns of migration and population growth • physiographic features of Canada and geological processes
<p>Social Studies 10</p>	<ul style="list-style-type: none"> • Use Social Studies inquiry processes and skills to ask questions; gather, interpret, and analyze ideas and data; and communicate findings and decisions • Assess the significance of people, places, events, or developments, and compare varying perspectives on their significance at particular times and places, and from group to group (significance) 	<ul style="list-style-type: none"> • environmental, political, and economic policies • environmental issues, including climate change, renewable energy, overconsumption, water quality, food security, conservation



Teacher Background

GIS (Geographic Information Systems) technology is commonly used in industries such as engineering, planning, management, transport/logistics, insurance, telecommunications, and business. Beyond a traditional paper map, the tool allows for multiple layers and data points to be examined within a single map.

The Grow BC resource was first created as a book documenting not only the commodities produced through BC agriculture, but also statistical information detailing the different regions of the province and their agricultural abilities. Teachers were directly involved in developing Grow BC into an interactive online GIS map to ensure its effective use in most curriculum areas.

The provided scavenger hunt activity contains questions for both broad and specific aspects of the Grow BC Map resource, including provincial and regional specific questions. Regional specific questions may vary depending on the commodities chosen, and we encourage teachers to customize this resource to suit their needs.

Materials

- Grow BC GIS Map available at <https://www.bcaitc.ca/resources/grow-bc-guide-bcs-agriculture-resources>
- Internet access
- Computers/tablets
- Student handouts:
 - Grow BC Interactive Map Scavenger Hunt worksheet (digital fillable-pdf or hard copy)

Procedure

1. Before giving this activity to students, it is recommended that the teacher review the resource and determine the length of time needed to complete the activity.
2. It is also recommended to have students try opening the map on their computers using various web browsers to ensure a smooth log-in with minimal trouble shooting during virtual class time. Phones are not advisable for this activity as the small screen is not optimized for the mapping technology.
3. Teachers may wish to edit the activity for a specific commodity or regional area.
4. Start by introducing the map to students using any video conferencing platform you choose (for example, Zoom, MS Teams, Skype, etc.). Walk students through the basic outline of the map, scrolling into a specific commodity, and accessing the story maps. Check for understanding from all students and ensure they can navigate through the GIS Grow BC Interactive Map.
5. Tell students that they will be placed in groups of 2-4 students to complete the following activity. This can be achieved by using a “Breakout Rooms” or other equivalent video conferencing tool that allows participants to split into separate sessions for small group discussion, and then bring those sessions back together to resume the large group meeting. As the meeting host, you can group participants into these separate sessions

automatically or manually, and can switch between sessions at any time. Alternatively, students may also complete the following activity independently, if you wish.

6. Provide students with a copy of the Virtual Scavenger Hunt activity sheet. Have each student//group access the Grow BC GIS map tool and complete the Scavenger Hunt activity.
7. Monitor the students as the activity progresses, assisting as needed. (If students are assigned to “Breakout Rooms”, they can leave the room to come back to ask the teacher facilitator to ask questions, if required or the teacher may move from group to group.)
8. When the class has completed the activity, have the students return as a group to their virtual classroom. Ask student to think about some of the following questions:
 - a. Were you aware of the number of thriving agricultural commodities in BC?
 - b. Were there any commodities that you were surprised to find on the interactive Grow BC Map? Which ones and why?
 - c. Were there any commodities that you were surprised were missing on the Grow BC Map? Which one(s) and why?
 - d. What are some ways that agricultural practices have changed over time?
 - e. How has technology changed the way we farm in BC?
9. The Scavenger Hunt could then be marked together in the virtual classroom, with students volunteering their answers and explaining how they obtained the information.

Extension Activities

- Have students develop their own scavenger hunts based on the area closest to their school/hometown or based on a certain commodity.
- Ask a producer of a local commodity in to do a presentation on their product(s) in your virtual classroom.
- Use the Grow BC Map as the starting point for a research to complete a project on BCs agriculture commodities.
- Connect this activity to one of our other resources available to order at www.bcaitc.ca



Name(s): _____

BC Agriculture in the Classroom Foundation

Grow BC Interactive Map Scavenger Hunt

PART A: General Grow BC Interactive Map questions

1. Where can you access the Grow BC GIS Map? _____
2. Approximately how many commodities are included on the map? _____
3. What happens when you click on the map icons? _____
4. What are some of the top agricultural commodities in BC? _____

5. What are two factors that make some of the land in BC not entirely suitable for farming?

PART B: Click the link to the BC Commodities, then click on Aquaculture – Fish Farming. Use the information to answer the following questions

6. What does the term “mariculture” mean? _____

7. What is one of the major benefits of mariculture? _____

8. When did B.C. license the first rainbow trout farms? _____
9. In 2017, what was the percentage of salmon produced in BC that was from farming? _____
10. List at least five major challenges faced by BC salmon farmers?

“Working to Bring BC’s Agriculture to our Students”



BC Agriculture in the Classroom Foundation

PART C: Choose a fruit or vegetable commodity on the map in your region of the province and use it to answer the following questions

11. What is the name of your commodity? Where is it located throughout BC?

12. Briefly describe the production of the commodity from “seed to sale”

13. List three career options that are created from your commodity, not including farmer/field hand.

14. Who can you contact to learn more about this commodity?

PART D: The ALR

15. What is the ALR? _____

a. Is there ALR land in your region? _____

b. What are some challenges of the ALR? Do you know of any specific challenges faced in a community like yours?

“Working to Bring BC’s Agriculture to our Students”



Grow BC Scavenger Hunt – KEY

PART A

1. Where can you access the Grow BC GIS Map? **BCAITC Website under the Resources Tab**
2. Approximately how many commodities are included in the map? **~63**
3. What happens when you click on the map icons? **A short description of the commodity appears, with an image and link taking you to the commodity story map.**
4. Which is one of the top agricultural commodities in BC? **Examples include: dairy products, chickens, greenhouse vegetables, floriculture, beef, mushrooms, nursery products, eggs, blueberries, and sweet cherries.**
5. What are two factors that make BC's land not suitable in a few areas? **Not all of BC's land is suitable for farming due to topography and soil capability.**

PART B

6. What does the term "mariculture" mean? **Mariculture is the culturing or growing of animals or plants in saltwater.**
7. What is one of the major benefits of mariculture? **Mariculture is considered to be one of the most resource-efficient ways to produce protein and has helped improve nutrition and food security in many parts of the world - in some places, for thousands of years.**
8. When did BC license the first rainbow trout farms? **mid 1950's**
9. In 2017, what was the percentage of salmon produced in BC that was from farming? **86%**
10. List at least five major challenges faced by BC salmon farmers? **Major challenges faced by BC salmon farmers include issues regulations, accidents, pollution, predators, vandalism, toxic algal blooms, disease and fish escaping**

PART C

11. What is the name of your commodity? Where is it located throughout BC? **Answers will vary.**
12. Briefly describe the production of the commodity from "seed to sale" **Answers will vary.**
13. List some career options that are created from your commodity, not including farmer or field hand. **Answers will vary but may include processing, shipping, handling, and selling careers.**
14. Who can you contact to learn more about this commodity? **BC Ministry of Agriculture, BCAITC, commodity group associations or organizations.**

PART D

15. What is the ALR? **The Agriculture Land Reserve (ALR) is a policy put in place by the BC provincial government to protect prime agricultural farmland from being used up for other purposes.**
 - a. Is there ALR land in your region? **Answers will vary. Use website link on story to view map.**
 - b. What are some challenges of the ALR? Do you know of any specific challenges faced in a community like yours? **Answers will vary. Use website link on story to view map.**

"Working to Bring BC's Agriculture to our Students"