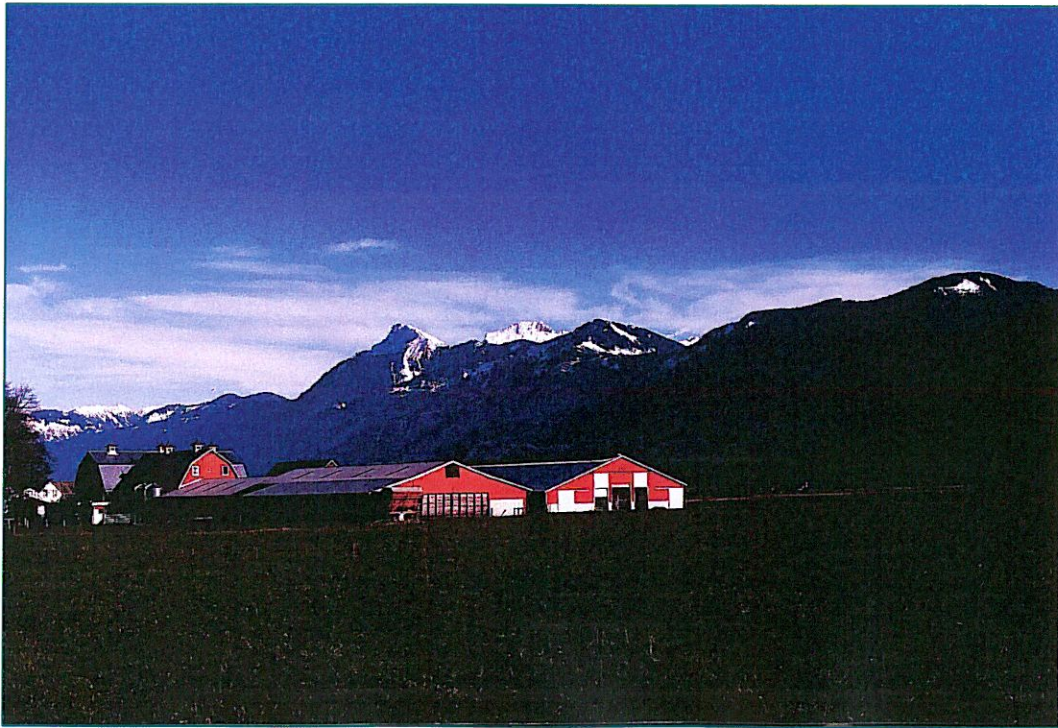




Growing Concerns: Agriculture in BC

Geography 12/Social Studies 10/11

Unit Plan



British Columbia
Agriculture
in the Classroom
Foundation



BC Agriculture in the Classroom Foundation &
Fraser Valley Regional District

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Growing Concerns: Agriculture in BC

Preamble

The connections between geography and agriculture are many. It would be very easy to compile an entire unit simply on these connections. Reality is, however, that the time constraints of the course will require teachers to dedicate between three and four classes to the topic and interject references throughout the year. The lessons will provide some suggestions as to how the topics can be covered. Teachers are encouraged to adapt the lessons to their area and to include relevant local topics. Several presentation styles are proposed to allow teachers to cover the material in a manner that suits their teaching style.

Goals

- Develop an immediately usable, concise, and adaptable unit
- Provide a base set of support materials
- Include a sensitivity for 'fit' to all regions of the province
- Show pros and cons of issues rather than gloss over challenges

Product Information

This document was produced by A. Kim Luteijn B.Ed. for BC Agriculture in the Classroom Foundation (www.aitc.ca/bc). The Fraser Valley Regional District's Agricultural Advisory Committee assisted in the production of this document (www.fvrd.bc.ca).

Prescribed Learning Outcomes Addressed: Geography 12

1. Identify the social, economic, cultural, and political components of human systems
2. Explain how physical and human systems interact within an ecosystem
3. Describe the application of current computer technologies to a relevant geographic issue
4. Describe the characteristics of renewable and non-renewable resources
5. Explain contemporary concepts of sustainability
6. Assess the compatibility of human activities and population growth with concepts of sustainability
7. Identify how bias, data availability, and data interpretation affect the evaluation of resource sustainability
8. Analyze factors that make proposed resource-management solutions challenging to implement
9. Develop and defend a thesis relating to the sustainability of a resource



Prescribed Learning Outcomes Addressed: Social Studies 10

APPLICATIONS OF SOCIAL STUDIES

1. Identify and clarify a problem, an issue, or an inquiry
2. Plan and conduct library and community research using primary and secondary print and non-print sources, including electronic sources
3. Generate and critique different interpretations of primary and secondary sources
4. Assess and defend a variety of positions on controversial issues
5. Plan, revise, and deliver formal presentations that integrate a variety of media
6. Demonstrate leadership by planning, implementing, and assessing a variety of strategies to address the problem, issue, or inquiry initially identified

ENVIRONMENT: CANADA FROM 1815 TO 1914

1. Analyze how geography influenced the economic, historical, and cultural development of western Canada
2. Identify key local and provincial resource-development issues from 1815 to the present, considering the concepts of stewardship and sustainability



Prescribed Learning Outcomes Addressed: Social Studies 11

APPLICATIONS OF SOCIAL STUDIES

1. Social Issues - Identify and assess social issues facing Canadians
2. Economic Issues - Identify and assess economic issues facing Canadians
3. Skills and Processes
4. Demonstrate the ability to think critically, including the ability to define an issue or problem
5. Develop hypotheses and supporting arguments
6. Gather relevant information from appropriate sources
7. Assess the reliability, currency and objectivity of evidence
8. Develop and express appropriate responses to issues or problems
9. Reassess their responses to issues on the basis of new information
10. Assess the influence of mass media on public opinion
11. Develop, express and defend a position on an issue, and explain how to put the ideas into action

SUGGESTIONS FOR PLANNING

As this resource demands a short time line, introduce the topic so as to allow students a weekend to finish their presentations i.e. Lessons 1 and 2 before the weekend and Lesson 3 immediately after the weekend.

Lesson 1

Introduction to Agriculture in BC

Objective

Students will be introduced to agriculture in BC and its role in BC's economy.

Materials

1. Introduction to Agriculture in BC - Background, (PowerPoint Presentation and Script)
 2. Assignment outlines (Appendix)
 3. Criteria for presentations and poster assignments (Appendix)
 4. Support materials on research topics (teacher developed p.19-20).
-

Activities

1. **OVERHEAD/POWERPOINT PRESENTATION:**
Introduction to Agriculture in BC. Introduce the overhead/PowerPoint presentation (using script).
2. **STUDENT ASSIGNMENT INTRODUCTION:**
Introduce students to their assignment options - See Appendix. Explain the procedures for each assignment. Develop a timeline for due dates and presentations.
3. **CLOSING:**
Tie together the challenges that agriculture faces. Ensure that students are clear of the goals for the coming lessons.

Lesson 2

Sustainability and Land Use Issues

Objective

Students will be introduced to sustainability issues and challenges related to farming near urban centres.

Materials

1. Quiz for prior learning with teacher key, Agriculture Quiz No.2 (Power Point Presentation and Hard Copy)
 2. Population Pressures and Agriculture (PowerPoint Presentation and Script)
 3. Urban/Agriculture Conflict (PowerPoint Presentation and Script)
 4. Student/Speaker summary and opinion sheets (p.14)
 5. Support materials on research topics (teacher developed p.18-19-20).
-

Activities

1. **SPONGE ACTIVITY: FACT OR FALLACY**
Read each statement one question at a time. Allow students to determine whether they believe the information is fact or fiction. Discuss.
2. **POWER POINT PRESENTATION**
Power point presentation shows Population Pressures and - Urban/Agriculture Conflict. Introduce the PowerPoint (using script). Note the challenges associated with sustainability of agriculture and urban issues.
3. **WORKING TIME FOR ASSIGNMENTS:**
Teacher to discuss progress with groups.
4. If using the oral presentation format, hand out the student note-taking outline.
5. **CLOSURE:**
Remind students that it is imperative that they complete their assignments on time as they will be utilizing them in the next class. Conclude by reiterating what some of the major challenges are regarding sustainability and urban issues.

Quiz

Agriculture - Fact or Fallacy

STUDENTS ARE TO SUGGEST WHETHER EACH STATEMENT IS FACT OR FALLACY.

1. BC sells more agricultural and fish products internationally than it does to all other provinces.
2. Less than 5% of BC is suitable for agriculture.
3. There are approximately 10,000 farms in BC.
4. It's a fact that the Lower Mainland and the Okanagan Valley have 77% of BC's population and 60% of agriculture dollars are generated there.
5. The Agricultural Land Commission (ALC) gets about 400 applications to remove land from the Agricultural Land Reserve (ALR) each year.

Answer Key

Agriculture Quiz

1. **Fact.**
 “BC exports, to over 100 countries around the world, many agricultural and fish products valued at over \$2.1 billion. Sales to other Canadian provinces are valued at another \$1.3 billion”. **BC Ministry of Agriculture and Lands**

2. **Fact.**
 “We have a total of 94.78 million hectares of land in BC’s borders provincial land area. But less than 3% of that is suited to agriculture production.” **BC Ministry of Agriculture and Lands**

3. **Fallacy.**
 “The total investment in BC’s 20,290 farms in terms of land, equipment, stock, and other tangible assets is over \$10 billion; the investment in terms of individual and family commitment, hard work, and community spirit is immeasurable.” **Census Canada**

4. **Fallacy.**
 “77% of BC’s population lives in two small areas centred in the Lower Mainland and the Okanagan Valley - a mere 3% of the province’s land base. Yet 77% of BC’s agricultural dollars are generated in these same two areas.”
Preserving Our Foodlands p.4

5. **Fallacy.**
 “On average the Commission reviews 1,000 applications and land use documents a year.” Preserving Our Foodlands p.7

Lesson 3

Sustainability and Urban Issues

Student Work

Objective

Students will become more familiar with sustainability issues and challenges related to farming near urban centres.

Materials

STUDENT ORAL PRESENTATIONS

- Extra copies of Student Speaker Summary and Opinion note-taking sheets p.14
- Support materials on research topics p.18-19-20
- Teacher designed assessment form p.13
(based on established criteria)

STUDENT POSTER PRESENTATIONS

- Support materials on research topics p.18-19-20
 - Teacher designed assessment form p.17
(based on established criteria)
-

Activities

DEPENDING ON THE PRESENTATION STYLE CHOSEN BY THE TEACHER, STUDENTS WILL:

ORAL PRESENTATIONS

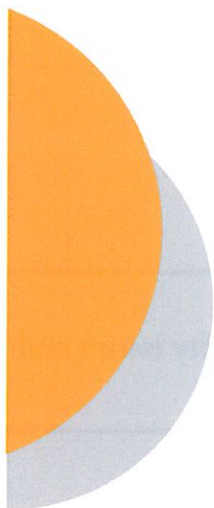
- Have students take out their note taking sheets
- Groups will start making their presentations
- Discuss issues as appropriate

POSTER DISPLAYS

- Attach posters around the room
- Have students move around the room gathering information from each poster (gallery style)p.15

CLOSURE

- Discuss what made for a good presentation/poster
- Close by discussing what the future of agriculture in B.C. might look like. What will be the challenges and how will improvements impact the province?



Appendix

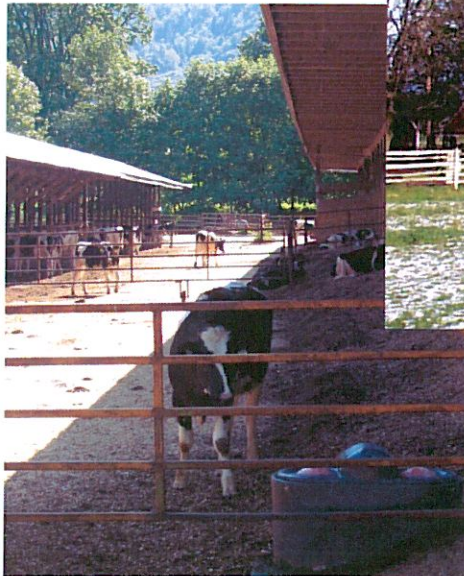
1. Oral Presentation
2. Gallery walk
3. Town Council Presentation
4. Poster Presentation
5. Topics
6. Support Websites for Research Topics



1. Oral Presentation

INSTRUCTIONS

- Students will be broken into groups of 3 or 4 and each student would be assigned responsibilities.
- Where the issue involves controversy, the students can present both sides of the issue to the council. The third person could be in charge of all visual components to the presentation. A fourth person could contribute with the research component.
- The students would be provided with some materials to get them started and additional information found through research.
- While the presentation is taking place, the rest of the class will be filling in a summary sheet and assessing the issues of the presentation. See the example next page.



Name _____

Block _____

Student/ Speaker Summary and Opinion

Topic:	
Name:	
Speaker 1:	Speaker 2:
Your opinion and reasons:	

Topic:	
Name:	
Speaker 1:	Speaker 2:
Your opinion and reasons:	

2. Gallery Walk

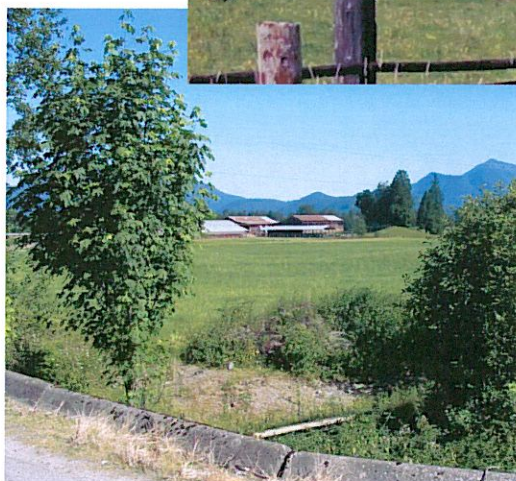
INSTRUCTIONS

Students can be provided with some resources and expected to do further research.

A set of criteria will inform students what is expected from the poster.
(See p.17)

Included in these criteria will be a set of questions that the class must answer based on their poster.

When posters are complete, students will use a compilation of the questions to move around and answer questions based on the posters.



3. Town Council Presentations

INSTRUCTIONS

OUTLINE:

- Three to four people per group.
- Research your assigned topic to obtain the necessary background.
- Prepare a 5 - 7 minute presentation. Your presentation could take the form of two people expressing different sides of an issue at a town council meeting, a report to council about work done on a controversial situation, or another scenario developed by the group.
- Assign duties to each of the group members. For example two people could be the actors/actresses in the scene to perform the scene. One person could be responsible for the visuals that will be used. The final person might have a larger role in the research component.

DUE DATE: The presentation will take place on _____

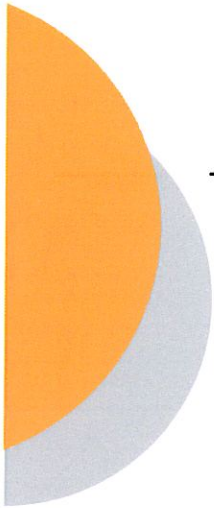
CRITERIA: You will be evaluated on the following criteria:

- Content:
- Strength of the research completed
 - Ability to effectively communicate both sides of the issue
 - Use of effective visuals

- Method:
- Involvement of all group members
 - Time not to exceed 7 minutes



4. Poster Presentations



INSTRUCTIONS

OUTLINE:

- Two to three people per group
- Research your assigned topic to obtain the necessary background
- Prepare a poster display. Depending on your topic, your poster could express different sides of the issue or explain the necessary background of your topic.
- Assign duties to each of the group members. For example how the research will be conducted, how supplies will be obtained, who will compile the research, who will compile the visuals, and how the poster will be put together.
- Include on your poster questions concerning four main points that your classmates should know about your topic

DUE DATE: The poster will be due on _____

CRITERIA: You will be evaluated on the following criteria:

CONTENT:

- Strength of the research completed
- Ability to effectively communicate both sides of the issue
- Use of effective visuals
- Quality of the questions for students to focus on

METHOD:

- Involvement of all group members
- Presentation

5. Topics

LEGAL/POLITICAL ISSUES:

- Legal tools to help farmers
 - Agricultural Land Commission Act
 - Farm Practices Protection Act
 - Municipal Act
 - Land Title Act
- Why is there a need to plan for agriculture?

ENVIRONMENTAL ISSUES:

- Pollution of aquifers
- Riparian management
- Soil management
- Water use issues
- Damage by wildlife to farmland
- Greenhouses - pros and cons
- Genetically modified foods
- Fish farming
- Local issues

URBAN NEIGHBOUR ISSUES:

- Noise issues - farm machinery and bird cannons
- ALR land and rezoning attempts
- Subdivisions next to ALR - buffers and how to plan subdivisions
- Mushroom composting - odours
- Use of ALR land - where to place a house and how land is used
- Local issues

6. Support Websites for Research Topics

LEGAL/POLITICAL ISSUES:

Smart Growth BC - www.smartgrowth.bc.ca

BC Ministry of Agriculture and Lands - www.agf.gov.bc.ca

BC Ministry of Agriculture and Lands - Strengthening Farming - www.agf.gov.bc.ca/resmgmt/sf

Agricultural Land Commission - www.alc.gov.bc.ca

Farm Industry Review Board - www.firb.gov.bc.ca

Farm Folk City Folks - www.ffcf.bc.ca

West Coast Environmental Law Research Foundation - www.wcel.org/

ENVIRONMENTAL ISSUES

POLLUTION OF AQUIFERS:

BC Environment Aquifer Page - <http://www.env.gov.bc.ca/wat/gws/>

BC Groundwater Association - <http://www.bcgwa.org/education.htm>

Agrochemical entry into groundwater - http://res2.agr.ca/publications/hs/chap10_e.htm

RIPARIAN MANAGEMENT:

Alberta Cows and Fish Riparian Management information - <http://www.cowsandfish.org/>

BC Woodlot Association - <http://www.woodlot.bc.ca/swp/agro/docs/AgroGuideChapter05.pdf>

SOIL MANAGEMENT:

SOIL Web - UBC - <http://www.landfood.ubc.ca/soil200/>

BC Ministry of Agriculture and Lands -

<http://www.agf.gov.bc.ca/resmgmt/publist/600series/610000-1.pdf> or

<http://www.agf.gov.bc.ca/resmgmt/publist/600series/610000-6.pdf>

Soil Conservation Council of Canada - <http://www.soilcc.ca/>

WATER USE ISSUES:

WaterBucket - <http://www.waterbucket.ca/waterbucket/index.asp>

Water Use planning LWBC - <http://lwbc.bc.ca/03water/overview/wup/index.htm>

Support Websites for Research Topics

DAMAGE BY WILDLIFE TO FARMLAND:

Resource Management Branch - http://www.agf.gov.bc.ca/resmgmt/fppa/Refguide/activity/870218-60_wildlife_damage_interior_bc.pdf

CWS - Private Land Stewardship - <http://www.pyr.ec.gc.ca/EN/Wildlife/habitat/stewardship.shtml>

FarmWest.com - <http://www.farmwest.com/index.cfm?method=pages.showPage&pageid=254>

Delta Farmland and Wildlife Trust - <http://www.deltafarmland.ca/index.html>

GREENHOUSES:

BC Greenhouse Growers Association - <http://www.bcgreenhouse.ca/>

GENETICALLY MODIFIED FOODS:

Canadian Food Inspection Agency - GMO Fact Sheet – <http://www.inspection.gc.ca/english/sci/biotech/safsal/gmoogme.shtml>

Health Canada – Genetically Modified Foods - http://www.hc-sc.gc.ca/fn-an/gmf-agm/index_e.html

FISH FARMING:

BC Salmon Farmers Association - <http://www.salmonfarmers.org/>

URBAN NEIGHBOUR ISSUES

DUST/ODOUR/NOISE ISSUES:

BC Ministry of Agriculture and Lands - www.agf.gov.bc.ca

BC Ministry of Agriculture and Lands - Strengthening Farming - www.agf.gov.bc.ca/resmgmt/sf/

SUBDIVISIONS NEXT TO ALR:

BC Ministry of Agriculture and Lands - Strengthening Farming

<http://www.agf.gov.bc.ca/resmgmt/sf/edge/index.htm>

Fraser Valley Regional District, www.fvrd.bc.ca

MUSHROOM COMPOSTING ODOR

BC Ministry of Agriculture and Lands - BC Agriculture Composting Handbook –

<http://www.agf.gov.bc.ca/resmgmt/publist/300series/382500%2D0.pdf>

BC Ministry of Agriculture and Lands – Strengthening Farming: Right to Farm – Composting –

http://www.agf.gov.bc.ca/resmgmt/fppa/refguide/activity/870218-29_Composting.pdf

USE OF ALR LAND

Provincial Agricultural Land Commission - <http://www.alc.gov.bc.ca/>