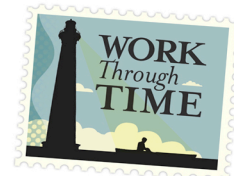


WORK THROUGH TIME

Cape Breton Stories of Land & Sea



Grade Three – Dairy Farming in Rankinville

Atlantic Canada Curriculum – Specific Curriculum Outcomes (SCO)

Lesson Plan Based on *Work Through Time* Story:

Dairy Farming in Rankinville by Colleen MacDonald MacLeod, William Smith and Calum Ryan

Overview: Students will gain an understanding of the role fertile soil plays in a successful farming operation. They will observe growth of plants in various soils and get a first hand account of immigration to Canada in the late 1950s.

<p>GRADE THREE SCO MATH</p>	<p>A3 Use simple fractions to describe situations</p> <p>B4 Solve and create problems involving addition and/or subtraction</p> <p>D1 Estimate and measure length in meters, decimeters, and centimeters</p> <p>D8 Continue to solve a wide variety of measurement problems</p> <p>E5 Recognize, name, describe, and represent different prisms and pyramids</p> <p>E6 Cut and assemble net patterns for pentagonal and hexagonal prisms and pyramids</p> <p>E8 Predict the results of combining triangles and/or quadrilaterals</p>
<p>GRADE THREE SCO GYM</p>	<ul style="list-style-type: none"> • Experience playing a game in a variety of environments • Move to catch an object in a small group (two on one keep-away situation)
<p>GRADE THREE SCO ART</p>	<p>1.1.1 Express personal feelings, ideas and understandings through art-making</p> <p>4.1.1 Celebrate with pride and respect their own work and that of others</p>
<p>GRADE THREE SCO LANGUAGE</p>	<p>1.1 Describe, share, and discuss thoughts, feelings, experiences and consider others' ideas</p>

	<p>2.1 Participate in conversation, small-group and whole-group discussion, understanding when to speak and when to listen</p> <p>4.5 Use a variety of self-correcting strategies (e.g., rereading, reading on and trying to think about what would make sense, trying to find a little word in the big word)</p> <p>5.1 Answer, with assistance, their own questions and those of others by seeking information from a variety of texts</p> <p>8.1 Use writing and other forms of representation</p> <p>9.1 Create written and media texts using a variety of forms – experiment with a combination of writing with other media to increase the impact of their presentations</p> <p>9.2 Demonstrate some awareness of purpose and audience</p> <p>10.2 Use some conventions of written language</p>
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<p>GRADE THREE SCO SCIENCE</p>	<p><i>Life Science: Plant Growth and Changes</i> <i>Investigating Germination and Growing Conditions for Plants</i></p>
	<p>200-1 Ask questions to investigate related to growing conditions for plants</p> <p>200-3 Make predictions about which conditions will be the best for plant growth</p> <p>201-5 Make and record relevant observations and measurements of plant growth during their investigations</p> <p>202-4 Construct and label bar graphs that show plant growth under different conditions</p> <p>100-29 Draw inferences that identify and investigate life needs of plants and describe how plants are affected by the conditions in which they grow</p> <p>100-28/203-2 Identify and describe parts of plants and their general function</p> <p>202-5 Identify and suggest explanations for patterns and discrepancies in the growth rate of similar plants grown in varying conditions (202-5)</p>
	<p><i>The Life Cycle of a Plant</i></p>
	<p>100-30/201-5 Observe and describe changes using written language, pictures, and charts, that occur through the life cycle of a flowering plant</p> <p>201-6 Estimate measurements of the plant as it grows</p>

GRADE THREE SCO SOCIAL STUDIES	<p>3.1.1 Identify and locate their province in the Atlantic region, Canada, North America, and the world</p> <p>3.1.3 Demonstrate an understanding of where people live and how people make a living in their province</p> <p>3.2.1 Recognize that people living in their province have diverse cultural backgrounds and contribute to the cultural diversity of their province</p> <p>3.4.1 Demonstrate an understanding that many individuals, groups and events have contributed to the development of their provincial identity throughout its history</p>
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GRADE THREE SCO MUSIC	N/A
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GRADE THREE SCO TECHNOLOGY	RPSD 3.1 Locate relevant information by using the appropriate organizational features of and search strategies applicable to books, other print, audio CDs, videos, computer software, multimedia, and the Internet, with teacher assistance
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GRADE THREE SCO HEALTH	C4.1 Demonstrate an awareness of conditions in the environment that support the healthy growth of plants
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NOVA SCOTIA BOOK BUREAU

The Nova Scotia School Book Bureau is responsible for the distribution of learning resources and related products to support teaching and learning and to ensure availability in a cost-effective manner to Nova Scotia schools. Resources may be searched by level, topic and subject area.

Many resources appropriate for this lesson are available through the Nova Scotia Allocated Learning Resources (ALR) at the Nova Scotia School Book Bureau (NSSBB).

Please visit: https://w3apps.ednet.ns.ca/nssbb/search_alr.asp

Nova Scotia School Book Bureau, 10 Acadia St, Dartmouth NS B2Y 4H3
Phone: (902) 424-5516, Fax: (902) 424-0545, E-mail: nssbb@gov.ns.ca

SUGGESTED VIDEO RESOURCES

National Film Board (NFB): In January 2009, the NFB launched its online Screening Room, offering Canadian and international web users the ability to stream hundreds of NFB films for free. It was created as part of a project to digitize the NFB's collection of films. Over 700 films are free and the remainder may be viewed by subscription.

The cost of subscription for one teacher is \$19.95 and \$99 for an elementary school. Please visit: <http://www.nfb.ca/education/en/>

World Wide Web: You Tube (<http://www.youtube.com/>) and Google Video (<http://video.google.ca>) have many short videos that may be relevant to this lesson.

Discovery Education: Has thousands of videos for boards that subscribe to this resource (password protected). Please visit: <http://streaming.discoveryeducation.com/>

NS Dept of Education LRT videos:
Please visit: <http://lrt.ednet.ns.ca/>

A Dairy Day Video #21939

This program takes us to the Farmers Dairy production plant in Bedford, Nova Scotia. We see the milk handling process from farm to table. We also learn how cheese, ice cream and yogurt are made.

MUSIC RESOURCES

Farmer in the Dell
(Lyrics below)

BACKGROUND

After WWII, Canada actively encouraged farmers to come to Canada. Joe van den Hoogen and his family came from Holland and settled on their farm in South West Mabou. Although it was an arduous process they were able to build up a successful farming operation. When his parents retired Joe and his brother ran the farm until Joe bought a farm of his own in Rankinville, near Mabou. Joe's story is similar to that of many of the Dutch farmers who came to Cape Breton in the '50s and '60s.

IMPLEMENTATION STRATEGIES

LESSON PLAN ONE: FIND THE FARM

- Approximate lesson time: 30 minutes
- Materials needed: Computer with Internet Access, chart paper
- Find Rankinville, Nova Scotia, using Google Earth.
- Joe's farm is $46^{\circ} 03' 59.87' N$ $61^{\circ} 21' 39.16' W$
- These numbers appear on the bottom left hand corner of the Google Earth screen, when the cursor is placed on Joe's main barn.
- Estimate the distance from your location to Joe's farm. Check numbers by using Google maps. Discuss the reasons for his family's move and the spirit of adventure needed to embark on such a voyage. Make a chart describing the influences that may have made Dutch immigrants want to leave Holland (push) and the factors that attracted them to Canada (pull).

LESSON PLAN TWO: SLIDE SHOW PRESENTATION

- Approximate lesson time: 15 minutes
- Materials needed: Materials needed: PowerPoint slide show, LCD projector for class viewing or individual computers for small group viewing,
- View the introductory slide show based on the *Work Through Time* story *Dairy Farming in Rankinville*. Students may view as a class or individually. Discuss how you would feel if you were in the van den Hoogen's situation.

Slide Show: <http://www.workthroughtime.ca/Educational/index.php>

LESSON PLAN THREE: GROWING TOMATOES

- Approximate time: 1 hour set-up, extended activity
- Materials needed: Tomato seeds, planting containers (same size, with drainage holes) - two per each type of soil sample, samples of soil (3-4 cups per pot, depending on the size of the plant pots), small bag of composted sheep manure
- This is a good project to begin in the Spring (after March Break) as the plants can later be planted outside and produce fruit.
- Obtain tomato seeds, preferably an early variety such as 'Scotia', as well as soil samples to represent the varying types of soil found in your community and a bag of composted sheep manure.
- Provide two growing containers (same size) for each type of soil, a sample with manure (WM) and a sample without manure (WOM). Fill WOM container $\frac{3}{4}$ full of soil. Fill WM container $\frac{1}{2}$ full of soil. Label containers as to type of soil and where the soil was collected. For each type of soil follow the same procedure.
- Now with all WOM containers $\frac{3}{4}$ full and WM containers $\frac{1}{2}$ full, take all WM containers and mix $\frac{1}{4}$ cup composted sheep manure well in the soil to fill the container to the $\frac{3}{4}$ mark.
- Add an equal amount of water to each container to moisten the soil and plant 3 seeds in each container. Do not add fertilizer, just water.

- Place the containers in sunlight so each has the same growing conditions. When seeds have germinated and plants established, cut off all plants at soil level *except* the most vigorous, which will be the lone resident of the container.
- Over the following weeks all the plants should receive the same care. Make predictions about which soil will be the best for plant growth.
- See photo for example



LESSON PLAN FOUR: PLANT GROWTH OBSERVATION

- Approximate lesson time: 10 to 15 minutes per day for several weeks
- Materials needed: Individual Plant Growth Observation charts (See Appendix One)
- Assign each pot to a group of students and it will be their responsibility to monitor the growth of their plant by journaling its growth on a chart located beside the plant.
- Each day estimate how much it grew and then measure the actual plant height.

LESSON PLAN FIVE: ANIMATION

- Approximate lesson time: 5 minutes per day for several weeks
- Materials needed: Still or video camera, video editing program (or PowerPoint)
- Each day take a still picture or short video of one of the plants that shows promise of good growth from Lesson Plan Four.

● These images can be made into an animation. Short movie clips can be edited together in a video-editing program. Digital photos of successive day's growth can be put together into a slide show to illustrate the growth progress and may also be used to identify and describe parts of plants and their general function.

● See Appendix Two for Plant Animation Evaluation Rubric

LESSON PLAN SIX: GROWTH BAR GRAPH

● Approximate lesson time: 45 minutes

● Materials needed: Experiment Results Template (See Appendix Three). Fill in the 'Experiment Results Template' provided using the information collected on the daily plant observation chart in Lesson Four.

● Use the information collected from Experiment Results Template to construct a bar graph illustrating plant growth. Discuss the graph results, paying special attention to how plants are affected by the soil in which they grow.

● See Appendix Four for Growth Bar Graph Evaluation Rubric

LESSON PLAN SEVEN: FARM FIELD TRIP

● Approximate lesson time: Extended activity

● Materials needed: Camera, stationary supplies

● Plan to visit a farm. In preparation for the trip, divide class into groups of convenience. Each group is responsible for asking questions and gathering information for one of the following topics.

What types of crops are grown?

What livestock do they have?

How does this farm make money?

What types of soil/land is best for a farm?

What crops are grown on the farm?

Is erosion a problem?

How do you prepare soil for planting?

Observe the specific job done by farm machinery.
What pests adversely affect the farm: insects, raccoons, and coyotes?

- Take pictures to be used in upcoming lessons.

LESSON PLAN EIGHT: THANK YOU LETTER

- Approximate lesson time: 45 minutes
- Materials needed: Computer with word processor or stationary supplies.
- Write a thank you letter to the farmer for taking time to be with the class. Explain what was enjoyed the most and give examples of something new learned.
- See Appendix Five for Thank You Letter Evaluation Rubric

LESSON PLAN NINE: FIELD TRIP FOLLOW-UP DIORAMA

- Approximate lesson time: 1 hour, homework
- Materials needed: Box, art supplies
- Divide students in to the same working groups formed for the field trip. Make a diorama to share the information each group acquired on the farm. Using the diorama as a prop, students can explain the insights gained through asking questions and observation on their field trip.
- See appendix Six for Diorama Evaluation Rubric

LESSON PLAN TEN: 3D FARM

- Lesson plan time: 1 hour
- Materials needed: 3D Net Solids patterns of rectangular prisms, triangular prisms,

pyramidal prisms, cubes, cylinders, etc. printed off on card stock paper; small boxes of various geometric shapes, cylinder containers

- 3D Net solids available online
http://lrt.ednet.ns.ca/PD/BLM/table_of_contents.htm
- Divide class into groups of convenience.
- Using the above website to access net patterns, build solids using net patterns.
- Use the solids constructed from the nets and other suitable 3D objects (boxes, cylinder containers) to construct farm buildings and a farmhouse. Structures may be painted and windows and other features pasted or painted on.
- Label the finished structures with names of the prisms or 3D figures used for construction. Animals, toy machinery, people and other props may be used to enhance the scene.
- Plan a display event for parents or other classes.
- See Appendix Seven for 3D Figure Evaluation Rubric



Example of 3D of farm built using 3D Net Solids

LESSON PLAN ELEVEN: GAMES

- Lesson plan time: 1 hour
- Materials needed: Open play area
- Children join hands and dance around the farmer, who stands in the center of the circle as they sing. At the end of the first verse, the farmer chooses his wife, who joins him inside the circle. At the end of the next verse, the wife takes a child, and so on, until the last verse when everyone is in the circle except the cheese, who stands alone. Whoever ends up being the cheese becomes the farmer for the next round.

The Farmer in the Dell

The farmer in the dell
The farmer in the dell
Hi-ho, the derry-o
The farmer in the dell

The farmer takes a wife
The farmer takes a wife
Hi-ho, the derry-o
The farmer takes a wife

Continue the pattern using the following: Child, Nurse, Cow, Dog, Cat, Rat

The cheese stands alone
The cheese stands alone
Hi-ho, the derry-o
The cheese stands alone

- Duck, Duck, Goose: In this game, children sit down in a circle facing each other. One person is "it" and walks around the circle. As they walk around, they tap people's heads and say whether they are a duck or a goose. Once someone is tagged as a goose they get up and try to chase the person who is "it" around the circle. The goal is to tap that person before they are able sit down in the goose's spot. If the goose is not able to do this, they become "it" for the next round and play continues. If they do tap the "it" person, the person tagged has to sit in the center of the circle. Then the goose becomes "it" for the next round. The person in the middle can't leave until another person is tagged and they are replaced.

FOLLOW-UP ENRICHMENT

- When weather permits, the plants from Lesson Three can be transplanted outside to a summer location where they will be cared for during school vacation.
- Take a video of the farm trip and edit into short information clips that can be narrated by students, either thorough captions or voice over.
- Write farm poetry.
- Investigate other Dutch families with similar stories.

EVALUATION

Use observation, anecdotal records and work products as methods of assessment in addition to rubrics provided.

LINKS TO SUPPORTING INFORMATION

(1) DLTK's Crafts for Kids Farm Themed Songs and Rhymes

<http://www.dltk-kids.com/animals/farm-songs.htm>

(2) Preschool Express Home, farm songs and rhymes

http://www.preschoolexpress.com/music_station07/farm-songs-sep07.shtml

(3) Maasdam Schedule

<http://www.timetableimages.com/maritime/images/archives.htm>

(4) Farrm Links

<http://www.theteachersguide.com/onthefarm.htm>

APPENDICES

APPENDIX ONE: PLANT GROWTH OBSERVATION CHART

Soil Sample Name:	Notes: (Be sure to mention height in cm and observable changes such as new leaves, etc)
Day 1: Monday	
Day 2 Tuesday	
Day 3 Wednesday	
Day 4 Thursday	
Day 5 Friday	
Day 8 Monday	
Day 9 Tuesday	
Day 10 Wednesday	
Day 11 Thursday	
Day 12 Friday	
Day 15 Monday	
Day 16 Tuesday	

Day 17 Wednesday	
Day 18 Thursday	
Day 19 Friday	
Day 22 Monday	
Day 23 Tuesday	
Day 24 Wednesday	
Day 25 Thursday	
Day 26 Friday	
Day 29 Monday	
Day 30 Tuesday	
Day 31 Wednesday	
Day 32 Thursday	
Day 33 Friday	

APPENDIX TWO: PLANT ANIMATION RUBRIC

	5	3	1
Message	Conveys a clear, concise message.	Conveys a message.	Message is unclear.
Content	Text indicates knowledge of subject.	Text indicates some knowledge of subject.	Text indicates poor knowledge of subject.
Graphics	All graphics match text.	Most graphics match text.	Graphics do not match text.
Creativity	Shows creativity and time well spent.	Shows some creativity and time spent fairly well.	Plain – without evidence of significant effort.
On Time	Completed on time.	Completed on time.	Submitted late.

APPENDIX THREE: EXPERIMENT RESULTS TEMPLATE

Aim:

Procedure:

Diagram:

		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Height - cm Sample 1 Container A							
Height - cm Sample 1 Container B	With compost						
Height - cm Sample 2 Container A							
Height - cm Sample 2 Container B	With compost						
Height - cm Sample 3 Container A							
Height - cm Sample 3 Container B	With compost						

Results:
Conclusions:

APPENDIX FOUR: GROWTH BAR GRAPH RUBRIC

	5	3	1
Accuracy	All data is accurate.	Most data is accurate.	Some data is accurate.
Parts of a Bar Graph	The graph includes all parts of the bar graph: title, labels, number line, and accurate data.	The graph includes most parts of the bar graph: title, labels number line, and accurate data.	The graph includes some parts of the bar graph: title, labels number line, and accurate data.
Presentation	The graph is easy to read, neat and creative.	The graph is somewhat easy to read and neat.	The graph is somewhat difficult to read and lacks neatness.

APPENDIX FIVE: THANK YOU LETTER RUBRIC

	4	3	2	1
Parts of a Letter	Heading, salutation, body, closing are present and written correctly.	All of the parts of a friendly letter are present and most are written correctly.	All of the parts are present but only some are written correctly.	Only some of the parts of a friendly letter are present.
Grammar, Punctuation and Spelling	Rules of grammar, usage, and punctuation are followed, and spelling is correct.	Rules of grammar, usage, and punctuation are followed with minor spelling errors.	Paper contains some grammatical, punctuation and spelling errors. The letter can be read.	Paper contains numerous grammatical, punctuation, and spelling errors. The letter cannot be read easily.
Content	Student writes meaningful thank you letter, using significant details.	Student writes a meaningful thank you letter, but needs more details.	Student's writing contains some ideas and details.	Student does not display any understanding of what the letter should contain.
Farm learning mentioned	Incorporates mention of specific learning experiences on farm.	Some mention of specific learning experiences on farm.	Slight mention of specific learning experiences on farm.	Does not mention specific learning experiences on farm.

APPENDIX SIX: FIELD TRIP DIORAMA RUBRIC

	4	3	2	1
Workmanship	All items are neat and carefully constructed.	Almost all items are neat and carefully constructed.	Some items are neat and carefully constructed.	Few items are neat and carefully constructed.
Creativity	The farm scene shows excellent innovation and design.	The farm scene shows good innovation and design.	The farm scene shows effort to create an innovative design.	The farm scene does not show effort to create an innovative design.
Content	The diorama is used as an effective tool to give an excellent insightful account of the farm visit.	The diorama is used as a tool to give a good account of the farm visit.	The diorama is used as a tool to give a fairly good account of the farm visit.	The diorama is not used as an effective tool to give an account of the farm visit.
Explanation of Items Related to the Farm	The student gives a reasonable explanation of how every item in the diorama is related to the farm.	The student gives a reasonable explanation of how most items in the diorama are related to the farm.	The student gives a fairly reasonable explanation of how most items are connected to the farm.	Explanations are weak and illustrate difficulty understanding how to relate items to the farm theme.

APPENDIX SEVEN: 3D FIGURE RUBRIC

	5	3	1
3D figures	3D shapes used to construct 6 or more farm buildings.	3D shapes used to construct 4 or less farm buildings.	3D shapes used to construct 2 or less farm buildings.
Presentation	Spoke loud, clear and enthusiastically.	Spoke loud clear.	Difficult to hear.
3D and farm information incorporated into display	Knowledge of farms and 3D figures very evident in display.	Some knowledge of farms and 3D figures evident in display.	Knowledge of farms and 3D figures not evident in display.