



Using Inquiry in Social Studies Lessons to Target Environmental Education and Stewardship

Social Studies Inquiry Model

Formulate
Questions

Gather and
Organize

Interpret and
Analyse

Evaluate and
Draw Conclusions

Communicate

Introduction: Challenges and Perspectives Regarding Environmental Stewardship

This lesson models the elements of social studies inquiry (gather and organize information, data and evidence; interpret and analyse information, data and evidence) and the application of critical thinking skills when constructing and assessing multiple arguments, perspectives and positions. As an extension, students may communicate a variety of perspectives while in role.

Considerations for Planning

Prior to this lesson, students will need:

- understanding of the relationship/impact of human activities on the environment;
- understanding of community/regional environmental stewardship initiatives (recycling efforts, reducing greenhouse gas emissions, through alternative energy options);

Note: It is suggested that the teacher reviews the MERE Project online resources.

Resources and Materials

chart paper, post-it-notes, access to technology, including Internet, students' Exit Cards from the Lesson:

Balancing Needs and Wants with Environmental Stewardship

BLM 2.1 – Mother Earth Renewable Energy Project

BLM 2.2 – MERE Project Inquiry: Multiple Roles and Perspectives

BLM 2.3 – Varied Perspectives on the MERE Project

BLM 2.4 – Venn Diagram

How does this lesson link to Environmental Education?

Students develop strategies which allow them to better understand and appreciate the “dynamic interactions” related to “the dependency of our social and economic systems on...natural systems” and “the positive and negative consequences, both intended and unintended, of the interactions between human-created and natural systems”.

Shaping Our Schools, Shaping Our Future: Environmental Education in Ontario Schools (2007), p. 6

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Lesson: Challenges and Perspectives Regarding Environmental Stewardship

Students review the impacts that our action have on the environment and analyze relevant multiple perspectives while investigating environmental stewardship and sustainable practises.

Learning Goals:

By the end of this lesson students will understand and be able to:

- use elements of the Social Studies Inquiry Model (gather and organize information, data and evidence; interpret and analyse information, data and evidence) to investigate the issues and challenges associated with balancing human needs/wants and activities with environmental stewardship;
- make connections between needs/wants, human activities which satisfy them, and the intended and/or unintended environmental consequences; and,
- gather, interpret and analyse the perspectives of a variety of stakeholders regarding a community-based renewable energy project (the Mother Earth Renewable Energy (MERE) Project).

Curriculum Expectations and Concepts of Social Studies Thinking

Grade 4: People and Environments: Political and Physical Regions in Canada

Overall expectation:

- Use the social studies inquiry process to investigate issues and challenges associated with balancing human needs/wants and activities with environmental stewardship in one or more political and/or physical regions of Canada. FOCUS ON: Perspective

Specific expectations:

- Gather and organize information and data from various sources to investigate issues and challenges associated with balancing human needs/wants and activities with environmental stewardship in one or more of the political and/or physical regions of Canada
- Interpret and analyse information and data related to their investigations, using a variety of tools.
- Evaluate evidence and draw conclusions about issues and challenges associated with balancing human needs/wants and activities with environmental stewardship in Canada.

Big Idea: Human activities should balance environmental stewardship with human needs/wants.

Framing Questions to Guide the Lesson: What impact can human activities have on the natural environment? How do we find the balance between environmental stewardship and human needs/wants? Why is it important to consider the long-term impact of human activities?

Integrated Expectations across Subject Areas

Language: Media Literacy

- Use overt and implied messages to draw inferences and construct meaning in media texts;
- Express opinions about ideas, issues, and/or experiences presented in media texts, and give evidence from the texts to support their opinions.

Science

- Analyze the effects of human activities on habitats and communities.

Relevant Terminology

impact, renewable energy, balance, consequences, environmental stewardship, wind turbine, perspective, First Nations

Minds On: Connecting Background Knowledge

The Impact of our Choices and the Need for Balance

Large group activity (approximately 15 minutes)

- Show the film trailer to the movie *Home*. As students watch the video ask them to look for the impacts of human activities on the environment. <http://www.youtube.com/watch?v=RZhrkdAwJ1M>
- Invite feedback on the film trailer by asking students to share one impact they observed with a partner.
- Each pair shares with the class. Record the ideas on chart paper.
- Distribute students' BLM 1.3 – Exit Card: Considering Environmental Impact from the Lesson: Balancing Needs and Wants with Environmental Stewardship.
- Students compare these impacts with their ideas/insights recorded on **BLM 1.3**. How are they similar and how are they different?

Assessment Tools and Strategies:

Assessment for Learning - Observations/notes, *consider*:

- students' ability to make connections between human activities and their impact on the environment

Action

Acts of Environmental Stewardship

Large group activities (approximately 20 minutes)

- Ask students to generate examples of activities which promote environmental stewardship (recycling, composting organic materials, cycling/walking instead of driving, reducing energy/water use).
 - Record the ideas on chart paper (one idea per paper).
 - Place the chart papers in different parts of the room.
 - Ask students to identify reasons or challenges that people have related to the activity and record on each chart (hard for people to change habits, organic products often more costly, solar panel use may depend on climate, quality of biodegradable alternatives).
- As a large group, review the charts to identify any patterns. Discuss the results.

Considering Multiple Perspectives: Mother Earth Renewable Energy Project

Small group activities (allotted time/days for research)

- Explain that there are approaches that people can take to minimize the impact that our actions have on the environment.
- As a large group begin to explore an environmental stewardship project within a First Nation community on Manitoulin Island, in northern Ontario – the Mother Earth Renewable Energy (MERE) Project to determine its effectiveness..
- Distribute **BLM 2.1 - Mother Earth Renewable Energy Project** to each student. Use Google Maps (<https://maps.google.com/>) to help students locate M'Chigeeng First Nation community on Manitoulin Island.

(Option: Utilize the street view on Google Maps for a panoramic street-level views of the area, considering students' opportunities/access to visiting a First Nation community.)

- Read the MERE Project introduction/description aloud.
- Ask students to share their thoughts/opinions/insights regarding the Project and identify the actions and the impacts on the environment and who is involved.
- Record the results of the student discussion on chart paper (actions, impacts, people involved).
- Indicate that the focus of the investigation will be on the different groups involved and how they view the environmental stewardship project and its impacts.
- Distribute **BLM 2.2 – MERE Project Inquiry: Multiple Roles and Perspectives**. Read and clarify as needed.
- Organize students into the following roles:
 - Members, M'Chigeeng First Nation community
 - Members, Ontario Sustainable Energy Association
 - Local residents, Manitoulin Island
 - Animal rights activists
 - Canadian government officials
 - Canadian scientists with the David Suzuki Foundation
- Allow time for students to investigate their role and the associated perspectives through research in order to identify advantages and disadvantages of the Project (See **BLM 2.3 – Varied Perspectives on the MERE Project** for online resources).
- Using a jigsaw strategy, group students who represent different roles to share the key perspectives, according to their role.
- Ask each small group to create a Venn diagram comparing the different perspectives. See **BLM 2.4 – Venn Diagram**.
- Discuss the results as a class.

Assessment Tools and Strategies:

Assessment for Learning – group research, *consider*:

- students are able to gather and organize information relating to advantages and disadvantages of the MERE Project

Consolidation and Debrief

Exit Strategy – Considering and Summarizing Perspectives

Large group and individual activities (approximately 15 minutes)

- Post chart paper around the room for each role researched (Members, M'Chigeeng First Nation community, Members, Ontario Sustainable Energy Association, Local residents, Manitoulin Island, Animal rights activists, Canadian government officials, Canadian scientists with the David Suzuki Foundation).
- Distribute post-it-notes to each student.
- Writing in role, students communicate a one sentence summary of the advantages and disadvantages of the MERE Project. When complete, place their post-it-note (include names on the back) on the appropriate piece of chart paper.
- Hold a Gallery Walk to allow students to read the other perspectives.
- As a large group, discuss similarities and differences between perspectives.

Assessment Tools and Strategies

Assessment for Learning – observation/notes, *consider*:

- students' ability to summarize/explain a perspective, using information/evidence

Further Opportunities for Learning

Small Group Presentations

In a simulated press conference, rally or Municipal Council Meeting, small groups present a particular perspective regarding the MERE Project to the rest of the class, while in role. As an option, film group presentations to showcase the MERE Project Inquiry considering the perspectives of multiple stakeholders. (See **Group Presentation Plan** for ideas.) Presentations may be assessed by both teacher and peers, based on established success criteria, and include opportunities for specific, positive descriptive feedback and suggestions for improvement. (See **Sample Rubric for Small Group Oral Presentations** for ideas.) Upon completion of each group's presentation, students reflect on their group's ability to collaborate successfully. (See **Peer Assessment of Small Group Work** for ideas.)

Persuasive Writing

After careful examination of the multiple perspectives presented on the MERE Project Inquiry, students communicate a position in writing on whether the MERE Project constitutes effective environmental stewardship in the context of the needs/wants of the Manitoulin Island community, using data/evidence to support their position.

Inquiry

Research/compare the ways that needs/wants are met in a variety of communities/regions of Canada, and or the world. Investigate housing, food, recreational/leisure activities, community services (e.g., transportation, garbage collection, water) and consider a community's:

- climate
- available resources
- physical environment (land)
- population
- cultural/spiritual needs/preferences
- economy

Related Resources and References

Websites

- Ministry of Education
<http://www.edu.gov.on.ca/eng/teachers/enviroed/education.html>
- Ministry of Education
<http://www.edu.gov.on.ca/eng/curriculum/elementary/sshg.html>
- Natural Curiosity
<http://www.naturalcuriosity.ca>

References

Ministry of Education. Acting Today, Shaping Tomorrow; A Policy Framework for Environmental Education in Ontario Schools. Ontario, 2009

The Laboratory School at the Dr. Eric Jackman Institute of Child Study. Natural Curiosity: Building Children's Understanding of the World through Environmental Inquiry. University of Toronto (2011)

BLM 2.1 – Mother Earth Renewable Energy Project

The Mother Earth Renewable Energy (M.E.R.E.) **Project** uses large turbines to convert wind, a renewable source of energy, into electrical power. The power generated by the wind turbines is then purchased by utility companies.

The environmental impact from wind energy is generally less problematic than that from traditional power sources. However, depending on perspective and priority, the use of wind turbines is not without consequence.

Of note, the M.E.R.E. Project is Ontario's first wind energy project entirely owned by a First Nations community. It is located on M'Chigeeng First Nation community lands on Manitoulin Island. The M.E.R.E. Project provides the M'Chigeeng First Nation community with regular cash flow from the electricity it generates.

Sources:

http://en.wikipedia.org/wiki/Wind_power

http://www.3g-energy.com/?page_id=606

BLM 2.2 – MERE Project Inquiry: Multiple Roles and Perspectives

<p>Members, Ontario Sustainable Energy Association (OSEA)</p> <p>OSEA is a non-profit organization dedicated to inspiring and enabling the people of Ontario to improve the environment, economy and their health by conserving and producing clean, renewable energy in their homes, businesses and communities.</p>	<p>Canadian Scientists from the David Suzuki Foundation</p> <p>David Suzuki is a Canadian scientist and environmental activist. He co-founded the David Suzuki Foundation to find ways for society to live in balance with the natural world. The Foundation's priorities are: oceans and sustainable fishing, climate change and clean energy, sustainability, and Suzuki's Nature Challenge.</p>	<p>Local Residents, Manitoulin Island, Ontario</p> <p>People who live on Manitoulin Island, within sight of the MERE Project.</p>
<p>Animal Rights Activists</p> <p>Individuals who actively advocate for the rights of animals, including protection of their habitat(s) and exploitation or abuse by people.</p>	<p>Canadian Government Officials</p> <p>Government employees who provide (government) funding for provincial and/or federal projects/ programs which support clean energy initiatives that encourage economic growth, create local jobs, and support renewable energy.</p>	<p>Members, M'Chigeeng First Nation Community</p> <p>The MERE Project benefits the M'Chigeeng First Nation of Manitoulin Island with regular cash flow from the electricity it generates. M'Chigeeng became the first Ontario First Nation to develop wind power and to fully own and operate its facility.</p>

BLM 2.3 - Varied Perspectives on the MERE Project

General information:

Windfacts

This website was created by industry leaders. It provides general information and brief video clips that many groups may find useful.

- <http://windfacts.ca/>

Wikipedia

- http://en.wikipedia.org/wiki/Wind_power_in_Canada

Wind Watch

Wind Watch is a grass-roots, nonprofit corporation. None of the officers, board members, advisors, or technical contributors receive reimbursement for their time. All funds go directly to the mission of providing information and support material.

- <http://www.wind-watch.org/>

Members, Ontario Sustainable Energy Association

OSEA is a non-profit organization dedicated to inspiring and enabling the people of Ontario to improve the environment, economy and their health by conserving and producing clean, renewable energy in their homes, businesses and communities.

(http://www.ontario-sea.org/Page.asp?PageID=1224&SiteNodeID=205&BL_ExpandID=50)

Suggested websites/resources for student research:

- <http://www.ontario-sea.org/Page.asp?PageID=122&ContentID=3862>
- Wind Turbine Sound and Health Effects An Expert Panel Review Executive Summary, pages 2 - 3
http://www.ontario-sea.org/Page.asp?PageID=1180&SiteNodeID=228&BL_ExpandID=139
- http://www.ontario-sea.org/Page.asp?PageID=122&ContentID=900&SiteNodeID=201&BL_ExpandID=

Canadian Scientists from the David Suzuki Foundation

David Suzuki is a Canadian scientist and environmental activist. He co-founded the David Suzuki Foundation to find ways for society to live in balance with the natural world. The Foundation's priorities are: oceans and sustainable fishing, climate change and clean energy, sustainability, and Suzuki's Nature Challenge.

(http://en.wikipedia.org/wiki/David_Suzuki)

Suggested websites/resources for student research:

- <http://david Suzuki.org/blogs/science-matters/2013/04/wind-power-opponents-may-be-blowing-hot-air/>
- <http://nationtalk.ca/story/dr-david-suzuki-keynote-speaker-of-m-e-r-e-wind-project-2/>
- <http://www.nationtalk.ca/modules/webshow/singlelink.php?lid=329>

Members, M'Chigeeng First Nation Community

The MERE Project benefits the M'Chigeeng First Nation of Manitoulin Island with monthly cash flow from energy generation. M'Chigeeng became the first Ontario First Nation community to develop wind power and to own its facility 100%. (http://www.3g-energy.com/?page_id=606#sthash.AuPJOU28.dpuf)

Suggested websites/resources for student research:

- <http://mchigeeng.ca/>

- <http://www.northernontariobusiness.com/Industry-News/energy/First-Nation-to-produce-4-MW-of-power-in-2012.aspx>
- A Message of congratulations from the Assembly of First Nations National Chief Shawn A-in-chut Atleo to M'Chigeeng First Nation on the occasion of the ground-breaking ceremony for the Mother Earth Renewable Energy (M.E.R.E.) wind project. (June 21, 2011)
<http://www.ontario-sea.org/Page.asp?PageID=924&ContentID=3139>

Animal Rights Activists

An individual who actively advocates for the rights of animals, including protection of habitat(s) and exploitation or abuse by people.

Suggested websites/resources for student research:

- http://en.wikipedia.org/wiki/Environmental_impact_of_wind_power
- www.wind-watch.org/publication/nwwpub-wildlife.pdf
- <http://www.fort.usgs.gov/BatsWindmills/>
- <http://www.cbc.ca/news/canada/sudbury/david-suzuki-to-help-open-manitoulin-island-wind-farm-1.1160102>

Canadian Government Officials

Government employees who provide (government) funding for provincial and/or federal projects/programs which support clean energy initiatives that encourage economic growth, create local jobs, and support renewable energy. (<http://www.aadnc-aandc.gc.ca/eng/1314664778060/1314664830589>)

Suggested websites for student research:

- <http://www.ontario-sea.org/Page.asp?PageID=122&ContentID=3862>
- <http://www.manitoulin.ca/2013/09/27/mchigeeng-gain-control-land-management-resources-environment/>
- <http://www.aadnc-aandc.gc.ca/eng/1314664778060/1314664830589>

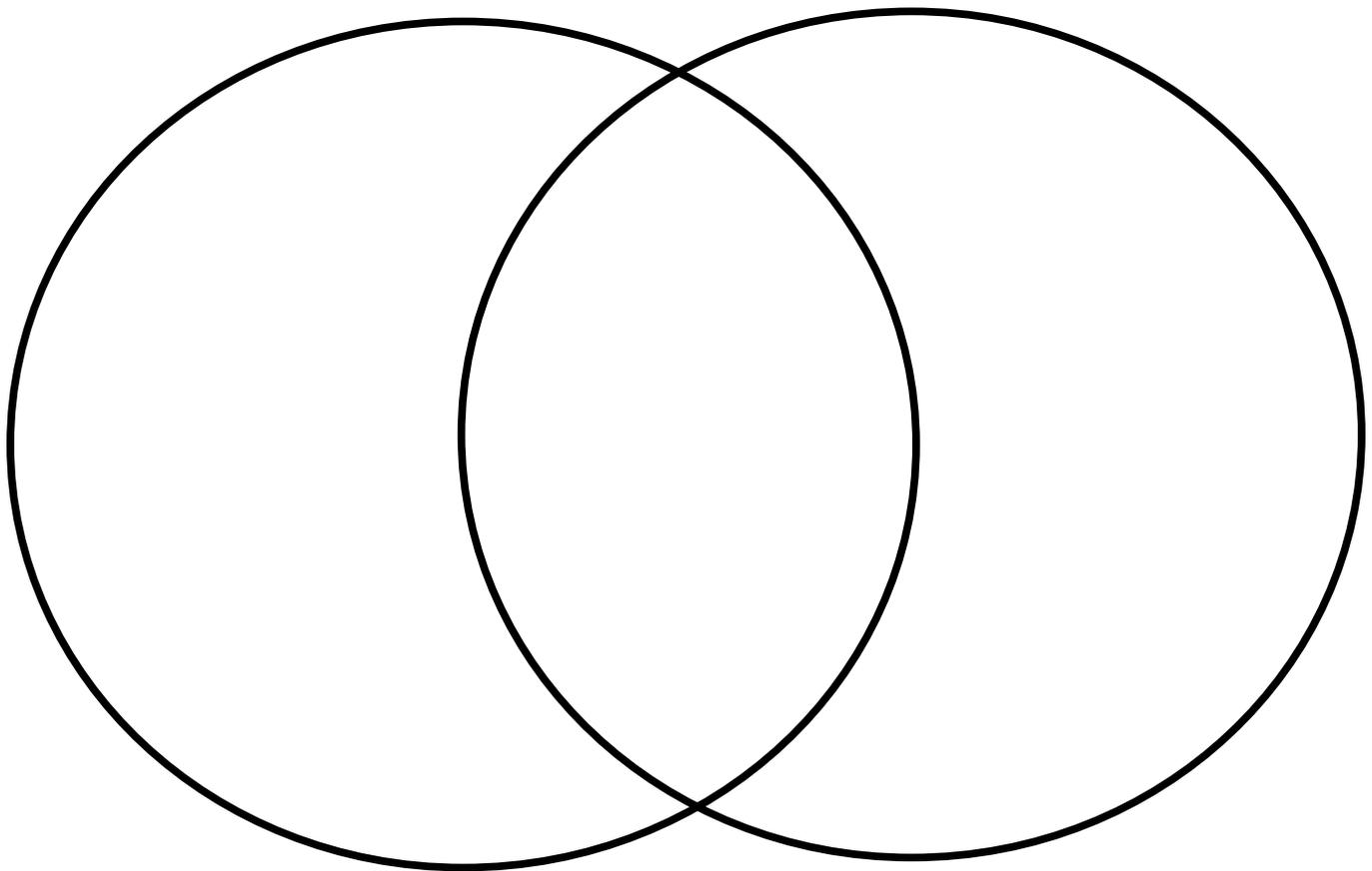
Local Residents, Manitoulin Island, Ontario

People who live on Manitoulin Island, within sight of the MERE Project.

Suggested websites for student research:

- http://en.wikipedia.org/wiki/Environmental_impact_of_wind_power
- http://en.wikipedia.org/wiki/Renewable_energy_debate#Community_debate_about_wind_farms
- <http://www.manitoulin.ca/2013/09/03/letter-writers-ask-first-nations-people-reconsider-island-wind-development/>

BLM 2.4 – Venn Diagram



Group Presentation Plan

Small Group Presentations

In a simulated press conference, rally or Municipal Council Meeting, small groups present a particular perspective regarding the MERE Project to the rest of the class, while in role.

Role to establish perspective for small group presentation

Summary of perspective, based on research

Important points to bring forth, considering our group's perspective

- 1.
- 2.
- 3.
- 4.
- 5.

Websites/resources:

-
-
-

Assigned tasks/jobs for presentation

-
-
-
-

Presentation plan, in sequence

- 1.
- 2.
- 3.
- 4.
- 5.

Visuals to help make our presentation powerful

-
-
-
-

Oral presentation skills to keep in mind...

-
-
-

Peer Assessment of Small Group Work

Presentation: MERE Project Inquiry – Multiple Perspectives

1. How do you feel about your project?

We did NOT accomplish any of our Group Project Plan.

We accomplished some of the tasks/objectives within our Group Project Plan.

Most of our Group Project Plan tasks/objectives were accomplished.

We accomplished all of the tasks/objectives within our Group Project Plan.

2. Were you able to contribute to the project?

yes What did you do?

no Why not?

3. Focus on Task: Were members of your group focused and on task?

4. Task Commitment: Were tasks assigned and followed through in an equitable way?

5. Listening, Questioning and Discussing: Did group members respectfully listen, discuss and ask questions?

6. Research and Sharing Information: Did group members gather information and share useful ideas?

7. Attitude: Did group members respond positively to the contributions of others?

8. If you were to do this project again, what would you do differently?

9. What would you do the same?

10. What were some of the problems, and how did you and your group deal with the problems?

11. What things did you and your group do well in this project?

12. What did you learn from doing this project?

Sample Rubric for Small Oral Group Presentations

(**Adaptations from co-created success criteria are intended to be included within this rubric.)

Use the following rating scale to determine the score which best reflects your assessment of the group's presentation.

Level 1 – difficulty meeting expectations

Level 2 – progressing toward expectations

Level 3 – meets expectations

Level 4 – exceeds expectations

1. The perspective presented is accurate and meets the requirements of the assignment.

1 2 3 4 5

2. The presentation uses information from student research.

1 2 3 4 5

3. The presentation is well organized and easy to understand.

1 2 3 4 5

4. The presenters have adequately prepared all required materials/props ahead of time.

1 2 3 4 5

5. The students seems to have a clear understanding of the groups' perspective, as well as the big idea.

1 2 3 4 5

6. The students presented their groups' perspective with enthusiasm and clarity.

1 2 3 4 5

7. The students spoke loudly and clearly enough to be heard by the audience.

1 2 3 4 5

8. The students maintained eye contact with the audience.

1 2 3 4 5

9. Overall, the presentation demonstrated equitable participation and positive collaboration.

1 2 3 4 5

Additional Comments: _____

Adapted from: http://www.scs.sk.ca/cyber/elem/learningcommunity/6/1/curr_content/aboriginal_res/