

CLS Location Discussion

Summary

The premise of this lesson is based on decision making. The Canadian Government has been convinced that a synchrotron, the Canadian Light Source, is a necessary tool for researchers. Saskatoon, Saskatchewan has been proposed as a possible location. Students must determine if the location is appropriate.

Pan-Canadian Objectives

Science Grade	Knowledge	Science, technology, society and the environment	Skills	ATTITUDES
10-12		117-all, 118-all	213-6, 215-1, 215-3, 215-4, 215-5	437, 446, 447, 449, 450
7-9		112-all, 113-all	209-5, 210-15, 211-5	423, 433, 434, 435

Suggested Provincial Units/Objectives

Alberta

- Science 9, 10, 20, 30:** Science, Technology, and Society and their interrelationships
- English Language Arts 10, 20, 30:** Comprehend literature and other texts in oral, print, visual and multimedia forms, and respond personally, critically and creatively
- Social Studies 9:** Topic C: Canada Responding to Change
- Social Studies 10:** Topic A: Challenges for Canada: Theme II: Regionalism
- Social Studies 30:** Topic A: Political and Economic Systems

Saskatchewan

- Science 9** -Risks and Limits: Support students in coming to a better understanding of the personal, moral, social, and cultural aspects of the study of life. (PSVS)
- English 9** -Imagining the Future or Taking Risks, Setting Limits: Environmental, research, speaking, debate skills
- English Language Arts B10** -Decisions—Action or Apathy and/or Environment and Technology—Reality and Responsibility
- Communications Studies 20** -Modules 2,6,7,11,16
- Social Studies 10** -Political Decision Making: The Role of Government in Modern Democratic Societies (7.2, 7.3, 7.4, 7.5)
- Social Studies 20** -Global Issues: Growth in the Power of Science and Technology (1.3, 1.5, 1.8, 2.1, 2.1, 3)
- Social Studies 30** -Canadian Studies: Economic Development

Activity

1. Provide students with an understanding of what a synchrotron is and how it affects scientific research. Information to do this can be found on our web site (view PPT, read or download “What is a synchrotron”, view 10 minute video from CLS). It is imperative that the students understand what a synchrotron is and what it is not (it is not a source of nuclear radiation).

2. Divide students into 8 groups of 2 or 3 (one for each player)

Federal Minister of Industry and Resources

Chair of the Canadian Nuclear Safety Commission (licenser and regulator for CLS)

University of Saskatchewan President or UofS Vice President of Research

SSHA – Students in Support of Humanities and the Arts (an activist organization at the University of Saskatchewan)

Mayor of Saskatoon

Citizens for Safety (a Saskatoon organization dedicated to the protection of the community)

Life Sciences Research Scientist

Environmental Research Scientist

3. Provide each group with their student sheet so they know who they represent, what their job is, and what factors they must consider.

4. Allow students time (about 1 ½ classes depending on access to the Internet) to find the information they need to understand their factors and prepare their statements. The Internet is a valuable place to find this information. Ensure that students understand that it is important that their information be accurate and that their sources be credible. Much of the specific information they will need can be found at www.lightsource.ca. Other sources could include the CNSC (Canadian Nuclear Safety Commission <http://www.nuclearsafety.gc.ca> – recommend using the search option using CLS); www.lightsources.org).

5. Allow 3-5 minutes for each of the players to present their view to the decision makers.

6. If desired, allow a rebuttal for each group to address issues brought up by someone else.

7. The Minister of Industry and Resources and the Chair of the Canadian Nuclear Safety Commission will make their decisions and present their reasoning.

Student Page – Federal Minister of Industry and Resources

Your job: to decide if placement of the Canadian Light Source Synchrotron in Saskatoon Saskatchewan is appropriate or if another site should be investigated. You have already agreed that Canada needs this research tool.

Consider:

1. Which region of Canada would benefit the most from having CLS located there?
2. Would locating CLS in SK benefit Canada as a whole?
3. How would the logistics of moving people, supplies, and research in and out of Saskatoon affect the success of the project?

Be prepared to ask any questions of the presenters that you need to know to make your decision.

Student Page – Canadian Nuclear Safety Commission

Your Job: You are the group that regulates and determines whether or not to licence the CLS. You must determine if all safety issues and concerns are adequately being met before you approve the location.

Consider:

1. Are there any situations in the vicinity that offer a safety or stability concern for the facility?
2. Are there any safety or stability issues presented to the community by the presence of the facility?

Be prepared to ask any questions of the presenters that you need to know to make your decision.

Student Page – University of Saskatchewan President or Vice President of Research

Your Job: Convince the decision makers that locating CLS at the UofS will benefit the campus specifically and that will lead to a benefit for Canada.

Consider:

1. How will CLS fit into the UofS' current climate of research activities? Who on campus would be prepared to use it now, and into the future?
 2. How could the UofS use the presence of the CLS to improve the university as a whole?
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Student Page – Mayor of Saskatoon

Your Job: Convince the decision makers that placement of CLS in Saskatoon will benefit the city, which will positively impact the province.

Consider:

1. How will the visiting scientists impact the city's infrastructure and economics?
2. What, if any, impact could the presence of CLS impact the business culture of the city?

Student Page – SSHA (Students in Support of Humanities and the Arts)

Your Job: You are a group of students that is concerned about the effect of this scientific research tool (and all of the attention and funding that it receives) is having on the humanities and art programs you are registered in.

Consider:

1. How are safety issues presented to those working in close proximity to the facility being addressed.
2. How much funding is being committed to the CLS project? Is this impacting on your programs?

Student Page – Citizens for Safety

Your Job: You are a group of people who are committed to ensuring the safety of your community. Your job is to ensure that any and all safety concerns are met.

Consider:

1. What should the community be concerned about? How are these issues being addressed?
2. What effect, if any, will the expected added visitors to the city have on our infrastructure?
3. How are concerns regarding potential research programs being met?

Student Page – Life Science Research Scientist

Your Job: Ensure that wherever the research tool that you need is located, it benefits you and your area of research. You may argue for or against the Saskatoon location according to your research.

Consider:

1. Does the location provide easy access to the things that you need to carry on your research:
 - a) geographically – what are the logistics of physically getting your research to the facility? Is the ability there?
 - b) Expertise – are the people that are experts in your field present or accessible in that location? Has that access been accounted for?
 - c) Equipment – is the state-of-the-art equipment that you need for your research present or made accessible to the facility?
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Student Page – Environmental Research Scientist

Your Job: Ensure that wherever the research tool that you need is located, it benefits you and your area of research. You may argue for or against the Saskatoon location according to your research.

Consider:

1. Does the location provide easy access to the things that you need to carry on your research:
 - a) Geographically – what are the logistics of physically getting your research to the facility? Is the ability there?
 - b) Expertise – are the people that are experts in your field present or accessible in that location? Has that access been accounted for?
 - c) Equipment – is the state-of-the-art equipment that you need for your research present or made accessible to the facility?