Wind Storms, Desertification and the Canadian Dry Belt

Lesson Overview

“What role does wind play in the progress of desertification in Canada as well as globally?” This one or two period lesson is devoted to the investigation of windstorms in the history of the Canadian prairies, how the threat of desertification may affect the future of the Canadian west, and how this threat may loom as part of a larger trend in global climactic changes. Student understanding during this inquiry may be gauged by means of group presentations and/or position papers based upon the suggested readings.

Prior to commencement of student inquiry, the teacher will have read through and become familiar with the suggested readings. Primary among these are three historical readings: David Jones' Empire of Dust (Chapter 3), Pierre Berton’s The Great Depression (section entitled “the black blizzard”), and selections from James Gray's Men Against the Desert. Other suggested readings are more challenging and should be excerpted or edited according to student ability. Students may work independently, in pairs, or in larger cohorts depending on the teacher’s preferences and the needs of the class. Every group will read through at least ONE of the excerpts from the three historical texts above as well as at least ONE other research document from the suggested list. If research for the paper is to be confined to one session, the teacher will ensure that each group analyzes and discusses its selected readings thoroughly; by the end of the period, each group will have presented its findings to the rest of the class. If student research spans two sessions of inquiry, the teacher could rotate the groups through more of the readings, and then provide the second period for more elaborate student presentations. In the second case, allow ten minutes for re-organization and rotation lag.

Modify this lesson for non-academic students through emphasis on teacher-led presentations. Read pertinent excerpts from texts aloud, simplifying or paraphrasing from the stories of settlement and the challenges posed by dust storms. Summarize the most important research on desertification and the “causes” of the Dust Bowl (see suggested readings list). Rather than proceeding by means of small independent group discussions surrounding the challenging readings, directly moderate entire classroom discussions relating the readings to the larger problem of globalized desertification. Diversify classroom activities by using music, art, photography, and stories that portray problems associated with desertification and wind erosion.

Teachers may provide students with worksheets, or "Effective Writing Templates" that will help them focus and organize their research on the paper topic.

Grade Level
Social 10-1 (Can be modified for Social 10-2 by taking a more teacher-focused approach to the materials)

Time Required
Teachers should be able to conduct the lesson in one or two classes.

Curriculum Connection for Alberta Social Studies 10-1 or 10-2:
Key Issue – To what extent does globalization contribute to sustainable prosperity for all people? To what extent should I, as a citizen, respond to globalization? (Global climactic change and its economic ramifications)

Key Outcome -- Students will assess economic, environmental and other contemporary impacts of globalization. Students will assess their roles and responsibilities in a globalizing world. (Are there actions that we can take to preserve our environment?)

Link to the Canadian Atlas Online (CAOL)
www.canadiangeographic.ca/wind

Additional Resources, Materials and Equipment Required
NOT: Many of the attached resources transcend average student abilities. Teachers are advised to peruse these sources carefully, to paraphrase, to gather short excerpts, to summarize, and to simplify materials for student inquiry.


Canadian Prairie Storms – Play-by-play commentary on local and international weather events http://www.canadianprairiestorms.blogspot.com/

Canadian Wind Energy Association
http://www.canwea.ca/

Department of State, US. “Issue in Focus: Desertification – Earth’s Silent Scourge” http://usinfo.state.gov/products/pubs/desertific/prospect.htm


Gifted Kids Network Student Blogs on Desertification
http://giftedkidsnetwork.com/wp/?tag=desertification


### Main Objective
To encourage students to think about the role that wind plays in climactic change both domestically and globally.

### Learning Outcomes
- **generalize** about the extent to which climactic forces such as wind are affected by human activity, as well as the extent to which human activity must be adapted to such climactic forces. Students develop a **conceptual** understanding of desertification as it relates to Canadian geography and environmental degradation. (Knowledge Objectives).
- develop "Process Skills." Students acquire information from various sources, record and organize information in note form, analyse and evaluate research materials for bias, as well as interpret and summarize materials. Students hone their "Communication Skills," developing their ideas in written and oral form. Finally, students develop their "Participation Skills" by working at individual tasks in a group situation (Skill Objectives).
- Through independent and cooperative work, students are encouraged to appreciate various dimensions of this inquiry. It is hoped that all students will develop a critical, respectful attitude towards the natural world (Attitude Objectives).

### The Lesson

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<th>Student Activity</th>
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<td><strong>Teacher Activity</strong></td>
<td><strong>Student Activity</strong></td>
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<td><strong>Introduction</strong> How will the lesson open?</td>
<td>Teacher can introduce topic using newspaper clippings or excerpts from the selected readings on current or recent environmental problems, and how they affect everyone globally.</td>
<td>Students read clippings and/or excerpts and engage in classroom discussion of environmental degradation and global warming.</td>
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<td><strong>Lesson Development</strong> Detail point by point how the lesson will develop by student and teacher activity</td>
<td>Teacher organizes classroom into groups. Teacher circulates among groups asking questions, offering guidance, and</td>
<td>Students work through readings independently or in pairs. When proceeding beyond research phase into writing and/or presentation phase, they may</td>
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Conclusion
How will the lesson conclude? What final product or culminating activity is expected?

Teacher will offer direction and/or editing assistance as students develop writing and argumentative skills.

Students will have presented their findings to the class and/or written an effective research paper.

Assessment of Student Learning:
Student essays and presentations may be evaluated on rubrics.

Link to Canadian National Geography Standards
The Six Essential Elements of Geography

1. The World in Spatial Terms: Students learn about the expansiveness of the Canadian prairie in relation to other dry belt systems around the world.

2. Places and Regions: Students learn about the prairie climate and its desert-like qualities in relation to other similar regions in the world.

3. Physical Systems: Students learn about wind currents, patterns or cycles of drought, and wind erosion.

4. Human Systems: Students ask to what extent problems of desertification are part of grand natural cycles, to what extent they are due to human activity, and to what extent human activity might be successful in combating desertification.

5. Environment and Society: Students are encouraged to ask what responsible stewardship of the land would look like both in Canada and abroad.

6. The Uses of Geography: Can geographic knowledge help us solve problems related to desertification and wind erosion? Students read through geographic research documents and come to their own conclusions.

The Five Sets of Geographic Skills

1. Asking geographic questions: Students respond to the question, “What role has wind played (and continues to play) in desertification in Canada as well as globally?”

2. Acquiring geographic information: Students are exposed to historical, geographic, and scientific research sources.

3. Organizing geographic information: Students must organize their research findings in both written and oral form.

4. Analyzing geographic information: Students work together to develop an analytic response to the prescribed geography-based research question.

5. Answering geographic questions: Students inquire into global geographic/climactic crises by means of local/Canadian historical case studies.