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Climate Change Saskatchewan

CLIMATE CHANGE EDUCATION SASKATCHEWAN

**Cross-References Between
Saskatchewan Core Curriculum &
Selected Instructional Resource Materials**

Middle Level: Grades 6 – 9

English Language Arts: Grades 6, 9

Health: Grade 8

Mathematics: Grades 7, 8, 9

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Canada



SaskEnergy  **SaskPower**

CLIMATE CHANGE EDUCATION

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Middle Level: Grades 6 - 9

Major entry points - such as Knowledge, Skills and Attitude objectives - have been selected from the Saskatchewan Education/Learning curricula, including other statements and ideas from activities. Professional teachers may make other connections as they integrate instructional resources dealing with the topic of Climate Change.

REFERENCES

Climate Change Saskatchewan <<http://www.climatechangesask.ca>>.

Ecology (Heath Middle Level Literature Series). (1995). Alvermann, D. et al. D. C. Heath (Nelson Thomson). ISBN 0-669-32093-5.

Environmental Diseases (Bodies in Crisis Series). (1993). Shader, L., & Zonderman, J. Twenty First Century Books ([VAN](#)). ISBN 0-8050-2600-2.

Our Planet at Risk. (1993). (Video, Secrets of Science Series I). Sandra Carter Productions (Media Group). [24 min., Dup. Order No. V9753]

Speak to the Earth. (1996). Bell, W. Doubleday Canada. ISBN 0-7704-2724-3.

Strands in the Web: 201 Activities for Teaching Environmental Awareness. (1994). Smith, R. Pippin Publishing (University of Toronto Press). ISBN 0-88751-035-3.

Teaching With the Internet: Lessons From the Classroom. (1997). Leu, D. J., Jr., Leu, D. D., & Leu, K. R. Christopher-Gordon Pubs ([IRW](#)). ISBN 0-926842-59-5.

Touch the Earth (Nelson Mini-Anthologies Series). (1993). Barry, J., Huser, G., & Siamon, G. Nelson Thomson. ISBN 0-17-603945-7.

MIDDLE LEVEL (Grades 6-9)

ENGLISH LANGUAGE ARTS: Grades 6 & 9; HEALTH: Grade 8; MATHEMATICS: Grades 7, 8, 9

Grade 6 English Language Arts

Instructional Resources

Select appropriate objectives from those stated in the curriculum guide

(p. 211), for example,

- identify students' language and learning needs and abilities
- determine the specific language knowledge, attitudes, and skills that can be developed, extended, or reinforced most effectively within the selected unit topic or theme
- select the foundational and learning objectives for the unit
- identify the Common Essential Learnings that will be developed or reinforced during the unit.

Consult the www.climatechangesask.ca portal linking to resources for Educators, Youth, etc.

Teaching With the Internet: Lessons From the Classroom

Speak to the Earth

Touch the Earth

Ecology

Contexts for English Language Arts Units (p. 213)

The following contexts and descriptors are useful as organizers. By considering the contexts when planning units, teachers can ensure that students experience a range and a variety of issues and ideas throughout the year. As well, by using contexts as organizers, interdisciplinary units may be developed. Each unit of study may address one or more of the contexts. The descriptors are meant to explain the context, not to limit it. Teachers can use the descriptors to identify broad or narrow unit topics and themes.

Note. There are relatively few instructional resources for ELA that are specific to the topic of Climate Change. Resources identified may relate to general environmental themes/contexts and the process of integration. Teachers who find new and exciting instructional resources should let Climate Change Saskatchewan and Saskatchewan Learning know about them.

Environmental

- exploring elements of nature
- examining environmental issues (e.g., pollution and its impact on people, jobs versus saving trees [**Climate Change: causes, effects, and solutions**])

Topics/Themes (p. 214)

- **Grade 6: A Balancing Act: How Far Will We Go?** Interdisciplinary Connection: Science [Grade 6] - Ecosystems; Contexts: Personal, Social, Environmental; include nonfiction and media, but focus on fiction in which adolescents seek to affect decisions made about their natural environments (e.g., *Speak to the Earth* by William Bell).

Grade 9 English Language Arts

Instructional Resources

Topics/Themes (p. 214)

- **Imagining the Future**

Interdisciplinary Connection: Social Studies [and/or Science]

Possible Contexts: imaginative, inquiry, environmental, philosophical.

Take a look at the future through a variety of fiction (e.g., science fiction, fantasy) and nonfiction (e.g., genetics, space program); include research and essay writing. [**Explore Climate Change and its many sub-topics.**]

- **Taking Risks, Setting Limits**

Interdisciplinary Connection: Science [Grade 9]

Possible Contexts: personal, social, inquiry, historical.

Examine a variety of situations in which individuals and society take risks and question the limits we set (e.g., How far will humans go to have their needs met? Their comforts? What risks do we take without thinking? What calculated risks do we take?). [**What are the risks associated with**

Climate Change in Saskatchewan?]

Consult the www.climatechangesask.ca portal linking to resources for Educators, Youth, etc.

Grade 8 Health

Instructional Resources

Protecting the Environment and the Health of People Unit (p. 247)

[Focus on Climate Change and solutions dealing with mitigation or adaptation.]

Learning Objectives for:

1. Level A - Extend Knowledge Base (p. 247)

- identify practices and activities that pose a threat to the environment and the health of people
- consider the kinds of changes needed to protect the environment and the health of individuals
- identify social action groups that exist to protect the environment and/or promote the health of individuals (p. 248)
- consider ways of initiating and participating in social actions that may lead to protection of the environment and the promotion of health
- analyze the rules, regulations, and laws related to environmental health and the health of individuals
- assess some of their own actions and identify some changes that can be made on an individual basis in relation to personal and environmental health.

2. Level B - Make an Informed Decision (p. 248)

- list strategies to use in supporting a friend(s) who is making a positive change to protect the environment and the health of people
- list ways of supporting existing social action groups and/or programs created to protect the environment and promote health
- point out the consequences that each support strategy has for themselves, their peer, and the likelihood of the peer achieving his or her goal
- select the best strategy based upon specific criteria (CCT)
- compile a goal statement to support a peer who is trying to protect the environment and the health of individuals.

3. Level C - Carry Out an Action Plan (p. 248)

Students may decide to design and carry out a variety of action plans in this unit. Pairs of students may support one another as they strive to improve the air quality within their homes or school. Others may

Consult the www.climatechangesask.ca portal linking to resources for Educators, Youth, etc.

Consider integration with the Science Grade 8 Unit “Energy Resources in Saskatchewan” or the Social Studies Grade 8 Unit “Interdependence and Our Basic Needs”.

Environmental Diseases

Our Planet at Risk

Speak to the Earth

Strands in the Web: 201 Activities for Teaching Environmental Awareness

Grade 8 Health (continued)

Instructional Resources

implement an action plan to support their neighbourhood composting initiative, block parent program, ... neighbourhood watch initiative [or cutting Greenhouse Gas Emissions (GHGs) using energy conservation strategies or making energy efficiency improvements].

Grade 7 Mathematics

Instructional Resources

STRAND: Data Management (p. 778)

Topic: Collecting

- D-1** Acquire data through:
- (a) surveys, questionnaires
 - (b) experiments
 - (c) observation
 - (d) research
 - (e) interviews
 - (f) published information.

Consult the www.climatechangesask.ca portal linking to resources for Educators, Youth, etc.

Integrate with the Science Grade 7 Unit “Resource Use” or the Social Studies Grade 7 Units “Resource Management” and/or “Assessing Personal Resource Use”.

Examples/Activities

- **D-1 (f)**
In general, which cars get better gas consumption, American made or Japanese made? Use reference material to determine the gas consumption for eight different models of cars, some American and some Japanese. Based on your research, what is your conclusion? [Discuss the benefits of less gas consumption!]
- **D-15** (p. 786)
Determine, from a set of data [dealing with Climate Change], the (b) range, median, mode.
- **D-15(b)**
Using the data collected in D-1 (f) (gas consumption), calculate the: mean, range, median, and mode.

Grade 7 Mathematics (continued)

Instructional Resources

STRAND: Geometry/Measurement

<http://www.climatechangesask.ca/Learn-Climate-clidatmap.htm>

Topic: Area.

[Students could estimate the area of the different climate regions.]

M-58 solve a variety of problems involving area (p. 83). (Grades 6 – 9)

G/M-60 identify examples of where km^2 and hectare are used for measurement (p. 83). (Grade 6)

G/M-61 compare and estimate the area of regions using square kilometres (km^2) and hectares (p. 83). (Grades 7 and 8)

<http://www.climatechangesask.ca/Learn-Emissions-emipro.htm>

STRAND: Data Management

Topic: Summarizing and Interpreting

[Students could find the line of best fit to approximately describe the **emission trends** and to pose and answer questions regarding those trends. They could also be asked to identify the type of function that closest represents the data from the types of functions that they have studied to that point. By Math B30, the students could be using their understanding of logarithmic functions to approximate the behaviour of the data and to predict future values.]

http://www.ir.gov.sk.ca/Default.aspx?DN=3359_3087_2936

D-14 discuss, interpret, and ascribe meaning to the organized data (p. 89). (Grades 6 – 9) [Grades 5 and 6 look at broken line graphs specifically which these are being illustrated as.]

STRAND: Ratio and Proportion

[Documents many of these publications deal with percentage increases and decreases as well as rates. Students could be asked to solve problems regarding these values.]

<http://www.gov.sk.ca/newsrel/releases/2002/11/25-898.htm>

- **R-12 identify real-world occurrences of percent** (p. 73). (Grades 6, 7)
- **R-18 solve percent problems by writing the corresponding number sentence or proportion** (p. 73). (Grades 7, 8 and 9)
- **R-21 solve real-life percent problems about (c) percent increase and decrease** (p. 74). (Grades 8 and 9)

STRAND: Ratio and Proportion

[News releases can be analyzed for the type of data that they include. This particular one could also be used to determine average rates of usage.]

R-1 solve word problems involving rates and ratios (p. 72). (Grades 7 –9)

[Measurement strand at the middle level – looking at different types of measurements and related units.]

Grade 8 Mathematics (Check Grade 7 also)

Instructional Resources

STRAND: Data Management (p. 876)

Topic: Organizing and Displaying

D-13

Discuss the reasonableness of data and results.

Examples/Activities

D-13

Find some data collected and presented in a local newspaper that are related to a current civic, regional, or health issue [**such as Climate Change: causes, effects, and solutions!**]. Do the data seem to support the conclusions the newspaper makes? Are the data presented in a fair, clear, and appropriate manner? What questions about the issue are not addressed?

Consult the www.climatechangesask.ca portal linking to resources for Educators, Youth, etc.

Integrate with the Science Grade 8 Unit “Energy Resources in Saskatchewan” or the Social Studies Grade 8 Unit “Active, Informal Citizenship”!

STRAND: Data Management (p. 964)

Topic: Collecting

D-7 Identify the limits of student collected and published data.

Examples/Activities

Collect data presented via newspaper, magazine, radio or television [dealing with **Climate Change: causes, effects, and/or solutions!**].

- How were the samples for the data selected? Why do you think they were selected that way? Are they biased?
- Were the data collection methods appropriate for the data and the issue?
- How would you do it differently? Why?
- Are the data presented clearly and honestly?
- Do the conclusions follow logically from the data?
- What questions are left unanswered? Is this deliberate?

STRAND: Data Management

Topic: Summarizing and Interpreting

D-19 (p. 972) Analyze and interpret arguments or conclusions based on statistical information.

Example/Activity

Using an article in a newspaper or magazine that promotes a particular point using statistical information [dealing with Climate Change], work in groups to analyze and interpret the arguments presented. (CCT)

Consult the www.climatechangesask.ca portal linking to resources for Educators, Youth, etc.

Integrate with the Science Grade 9 Units “Using Electricity” or “Risks and Limits’ and/or the Social Studies Grade 9 Unit “Analyzing Change”.