This lesson introduces the relationship of world view to environmental practices through a First Nations story. Environmental vocabulary and problems are introduced. Students brainstorm using a “graffiti” technique, read for inference, compare and contrast two sets of values, and retell a traditional narrative from their own culture. The final activity for the module, an oral presentation about an environmental problem, is introduced.
Sequence 1

Activation

Introduce the term “graffiti” by explaining its use in Western culture. Let students talk about graffiti in their own cultures or country.

Have students produce a graffiti poster on the idea of “environment.” They can use dictionaries to help, but they should put their own thoughts about the topic on the poster. Students begin by thinking silently about the topic for one to two minutes, writing graffiti-style on their own paper.

Put the poster paper on the wall. Write the word “environment” on it. Ask students to come up two or three at a time to add two responses to the topic anywhere on the poster.

Students read the graffiti that others have written, and write again, responding to previous comments or adding new thoughts.

After everyone has written, review the graffiti board together, using it as a springboard for discussion. Note any comments that refer to problems with the environment. Supply the specific vocabulary, as needed. What do students think cause these problems?

<table>
<thead>
<tr>
<th>Language Features</th>
<th>Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>graffiti, environment, horizontal, vertical, diagonal</td>
<td></td>
</tr>
</tbody>
</table>

Names of environmental problems: e.g., pollution, global warming, deforestation, endangered/extinct species, consequence, ozone layer
Student Learning Tasks

Talk about graffiti in your cultures or country. (C)

Produce a graffiti poster on the topic “environment” by:

a) Thinking, then writing several responses using graffiti-style on your own paper.

b) Adding two responses on the class poster.

c) Reading the graffiti poster and responding to previous comments or adding new thoughts.

d) Discussing environmental problems and the causes of these problems. (I) (C)

Teacher Notes and References

Photograph of graffiti (teacher-provided). Many examples of graffiti are available at <www.graffiti.org>.

Poster-size paper, markers (teacher-provided)

Discuss the importance of preparation for studying a new or difficult topic. One strategy is to provide an overview of the topic to be studied and help students link new vocabulary or information with what is already known. The first activity in this lesson encourages this on an individual and group level.

Encourage students to write horizontally, vertically, diagonally, in capitals, in italics or interesting letters, and with illustrations and cartoons.

Leave the graffiti poster on display throughout the module.

The focus at this point is on activating ideas and introducing vocabulary, not on factual accuracy or analysis of environmental problems.
### Sequence 2

Post map of Canada (teacher-provided).

Ask students if they know any stories or descriptions of the beginning of the world. Do the stories teach any lessons about the relationship between human beings and the natural world?

Introduce a First Nation (Dene) story of the beginning, “The Big Snow in the North Land.” (See **Handout 2-1**: “The Big Snow in the North Land.”)

- Locate Great Slave Lake on the map. Discuss the landscape and weather. Discuss the past or present way of life of the Dene people there: shelter, food, and challenges. Discuss how the people in the story completely depend on nature for survival.
- Explain that stories such as the one they will read were usually told by Elders, both to entertain and to teach important ideas. Introduce the animals in the story.

<table>
<thead>
<tr>
<th><strong>Language Features</strong></th>
<th><strong>Vocabulary</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>shelter, tundra, lodge, canoe, black bear, caribou, fox, mouse, beaver, moose, lynx, duck, raven, ptarmigan</td>
<td></td>
</tr>
</tbody>
</table>

Language used to describe Aboriginal peoples in North America (see Teacher Notes and References column)
Student Learning Tasks

Discuss stories about the beginning of the world.

Discuss landscape and weather in the North.

Teacher Notes and References

Map of Canada (teacher-provided)

Visuals of the Northwest Territories landscape in summer and winter; visuals of animals in story: black bear, caribou, fox, mouse, beaver, moose, lynx, duck, raven, ptarmigan (teacher-provided)

Handout 2-1: “The Big Snow in the North Land”

For more information, see:
Dene Ethnography at: <www.sicc.sk.ca/heritage/ethnography/dene/index.html>
“The People of the Deh Cho” at: <www.artcanadacarvings.com/people_of_the_deh_cho.htm>

Discussing old stories about the beginning of the world may elicit traditional stories or scientific explanations—both responses are appropriate.

The language that is used to describe specific ethnic and national groups is often changing and can be contentious. It may be helpful to introduce some language that is commonly used to discuss Aboriginal peoples in Canada and North America.

In general, indigenous peoples prefer to be called by their specific cultural name (e.g., Anishanabe) rather than a generic term such as Aboriginal. However, in Canada “Aboriginal” is intended to be an umbrella term that includes all indigenous groups, both status and non-status, Métis, First Nations and Inuit. “Status” Aboriginal peoples often wish to be recognized as a “nation” and prefer the term “First Nations.” The terms “Indian” and “Native” were used extensively in Canada in the 1960s to 1980s but generally have been replaced by the term Aboriginal. However, these terms are still used extensively throughout the United States.

The word “Dene” comes from two words, “De,” meaning flow and “Ne,” meaning Mother Earth. This reflects the people’s belief that they flow from Mother Earth and are a people of the Creator and the Creation. There are many distinct regional groups across northern Canada (including Manitoba), but they share a common ancestry.
Present the following questions to direct student focus while reading the story:

- What was the problem the animals faced in the beginning? How did they try to solve it? What were the consequences?
- How does the relationship of the animals to each other change from the beginning to the end of the story?
- What caused this change?
- What warning is given about human beings and the environment?

Read the story aloud as students follow the written version. Check for basic comprehension as you read.

Learning Log: After listening/reading, students estimate how much of the story they understood (e.g., 75 percent) and record this in their Learning Log. After reading, students discuss the focus questions with a partner or in a small group. Then they compare answers with the class.

Discuss: What is the purpose of this story? What ideas or values about nature, living things, the environment, and human beings does this story reveal?
### Student Learning Tasks

Listen and follow along to written version of **Handout 2-1**: “‘The Big Snow in the North Land’ as told by the Dene People,” looking for answers to the focus questions.

**Learning Log**: After listening/reading, estimate how much of the story you understood (e.g., 75 percent) and record this in your Learning Log. (I)

Discuss the focus questions with a partner or in a small group and compare answers with the class. (P) (G)

Discuss the probable purpose of this story and the ideas about the environment that it reveals.

### Teacher Notes and References

**Handout 2-1**: “‘The Big Snow in the North Land’ as told by the Dene People” and/or recorded version

This form of self-monitoring should be done every week or so.
## Outcomes

<table>
<thead>
<tr>
<th>SLO 4.1</th>
<th>Use language to encourage…</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 4.2</td>
<td>Communicate effectively to work with others…</td>
</tr>
<tr>
<td>SLO 5.4</td>
<td>Show understanding of the effect of cultural background…</td>
</tr>
<tr>
<td>SLO 6.2.7</td>
<td>Use elaboration…</td>
</tr>
<tr>
<td>SLO 6.2.8</td>
<td>Use imagery in the form of mental or actual pictures…</td>
</tr>
<tr>
<td>SLO 6.2.12</td>
<td>Use inferencing to guess the meanings…</td>
</tr>
<tr>
<td>SLO 6.3.1</td>
<td>Use questioning for clarification…</td>
</tr>
</tbody>
</table>

## Instructional and Learning Sequence

Use **Handout 2-2: “The Big Snow’ Worldview Comparison Chart”** to compare the values and ideas in this story with those from modern North American culture, as students perceive it. Have students consider their own culture’s values and discuss any changes that have occurred.

### Language Features

**Compare/contrast transitions:**
- compared to x; at the same time; similarly; however; in contrast; on the other hand; unlike x; even though; although

### Discourse Features

**Optional Tasks**

**Optional Writing Task:** Using the information from the previous chart, have students write a paragraph comparing the beliefs about nature demonstrated in the story with those of the modern industrialized world. (I)

**Optional Oral or Writing Task:** Have students retell a traditional story from their own culture, focusing on the beliefs or attitudes toward the natural world that the story reveals.
Student Learning Tasks

Using the chart on Handout 2-2: “‘The Big Snow’ Worldview Comparison Chart,”
• compare the values and ideas in the story with those from modern North American culture, as you perceive it.
• consider your own culture’s values and discuss any changes that have occurred.

Optional Writing Assignment: Using the information from the previous chart, write a paragraph comparing the beliefs about nature demonstrated in the story with those of the modern industrialized world. (I)

Optional Oral or Writing Assignment: Retell a traditional story from your own culture, focusing on the beliefs or attitudes toward the natural world that the story reveals.

Teacher Notes and References

Handout 2-2: “‘The Big Snow’ Worldview Comparison Chart”

The accuracy of students’ perceptions is not important at this point, but encourage them to think through the examples and possible effects.
## Sequence 3

### Culminating Activity

Introduce the culminating activity. Have students think of a specific environmental problem in their city or country and research the causes, effects/impact, and possible solutions. They will present their findings to the class as a part of a proposal to the authorities (some level of government) or to the public about ways to solve it. The final product will be a three- to five-minute oral presentation, using a computer presentation program or well-designed posters for visual support. Students may use the notes from the slide-show view of a computer presentation program, but they may not read from a full text. The presentation will be given at the end of the module.

<table>
<thead>
<tr>
<th>Language Features</th>
<th>Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vocabulary and structures will be drawn from topics in the module.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discourse Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>proposal format</td>
</tr>
<tr>
<td>computer-aided presentation</td>
</tr>
<tr>
<td>poster presentation</td>
</tr>
</tbody>
</table>
**Student Learning Tasks**

**Assignment**

a) Choose a specific environmental problem in your city or country and research the causes, effects/impact, and possible solutions.

b) Present your findings to the class in a three- to five-minute oral presentation, using a computer presentation program or well-designed posters for visual support. Notes may be used but text should not be read.

c) Prepare a proposal to authorities about ways to solve the problem.

---

**Teacher Notes and References**

The activity can be done individually or with a partner.
<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Instructional and Learning Sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SLO 1.3</strong> Develop and express a personal position in a variety of ways...</td>
<td><strong>Sequence 4</strong></td>
</tr>
<tr>
<td><strong>SLO 6.1</strong> Students will know and use effectively metacognitive strategies...</td>
<td><strong>Roundup</strong></td>
</tr>
<tr>
<td><strong>SLO 6.2.9</strong> Use summarization...</td>
<td><strong>Response Journal:</strong> Ask students to respond to the question: From an environmental perspective, what do you feel is the most serious problem facing our world today? Why? OR</td>
</tr>
</tbody>
</table>

Ask students to describe what they believe should be the relationship between humans and animals. **Learning Log:** Have students describe how they used the learning strategy of preview/linking in the activities in this lesson.
**Student Learning Tasks**

**Assignment**
In a Response Journal, respond to the question: From an environmental perspective, what do you feel is the most serious problem facing our world today? Why?  

OR

Describe what you believe should be the relationship between humans and animals.

**Learning Log**: Describe how you used the learning strategy of preview/linking in the activities in this lesson.
Long ago, the animals and the birds and fishes along the shores of Great Slave Lake lived in peace and friendship. All spoke the same language at that time, when the world was new and people had not come out yet. No animal ate another animal. All lived on plants and leaves and berries.

One night in this long ago time, the darkness was very thick and snow began to fall. All night it fell. The night continued, so that it seemed never to have an end. The snow became deeper and deeper. Plants and bushes were covered and the animals had difficulty in finding food. Many of them died. At last their chief called a council of all the living.

“Let us send messengers to the Sky World,” the council decided. “They will find out from the Sky People what is causing this long night and the deep snow.”

So they sent a messenger—one member of every kind of animal, bird, and fish that lived on the shores of Great Slave Lake. Those who would not fly were carried on the backs of those who could fly. So all reached the Sky World and passed through the trap door.

Beside the trap door stood a great lodge made of deerskins. In the lodge were three little bears. This was the home of Black Bear, an animal not on the earth at the time. Their mother, the cubs said, was in her canoe on the lake nearby; she had gone out to spear caribou. The animal people did not like the idea of Black Bear’s spearing caribou, one of their own group. But they said nothing about it. Instead, they looked around the lodge. Hanging from the crossbows overhead were some curious bags. “What are in those bags?” they asked the cubs.

At first the cubs would not answer. When asked again, they said slowly, “We can’t tell you. Wait until our mother comes back. She asked us to stay here and watch them.”

I wonder if those bags have something to do with us,” the earth people wondered to themselves. So they asked the cubs again about the bags.

Pressed by their questions, the cubs finally told them. “This bag contain the winds. That one contains the rain. This one, the cold. That one, the fog. This one—” But they would not say what was in the last bag.

“We dare not tell you about this one,” said the youngest cub. “Our mother told us that it is a big secret. If we tell you what is in it, she will be angry when she returns and will spank us.”

The visitors felt sure that the last bag contained the sunshine, and sunshine was what they wanted. So they left the lodge and held a council. They saw Black Bear landing her canoe on the far shore of the lake. Quickly they made a plan.

“Mouse, you go to Bear’s Canoe and gnaw a deep cut in the handle of her paddle close to the blade. When you have finished your work, you signal to Caribou.

“Caribou, as soon as you get the signal, you jump into the lake and begin swimming. Before Black Bear gets close, swim ashore and run into the woods. The rest of us will hide until it is safe to take the bag of sunshine.”

Before Fox hid himself, he put his head inside the lodge and said to the cubs, “Keep a lookout for the caribou. It may come near you here.”

Mouse ran to the far shore of the lake and gnawed the paddle. As soon as she signaled, Caribou jumped into the water.

The cubs saw him and yelled to their mother. “Mother! Mother! Look at the caribou!”

Source: <http://tigerlily_1.tripod.com/bigsnow.html>. Author unknown.
The earth people, watching from their hiding places, saw Black Bear jump into her canoe, seize the paddle, and begin to stroke as hard as she could. Caribou also watched as he swam. Soon the paddle broke, the canoe turned over, the Black Bear disappeared beneath the waters of the lake. Caribou swam ashore, Mouse returned to her friends, and all the earth people ran into the lodge. They pulled down the bag they wanted, and in it they found the sun, moon, and stars. These they threw down through the trap door. When they opened the door, they saw that snow covered the tops of even the highest pine trees. While they watched, the snow began to melt from the heat of the sun.

Thinking the earth world soon would be safe, the animals started down. But some of them had accidents. Beaver split his tail, and the blood was spilled over lynx. Moose flattened his nose and Buffalo bruised his back. Ever since then, Beaver’s tail has been flat, Lynx has been spotted, Moose has had a flat nose, and Buffalo has had a bump in his back. Since that time also, there have been bears in the earth world, for the three cubs came with the earth people.

But it was still hard to get food. The snow melted so quickly that the earth was covered with water. The fish, who had been living on the land, found that they could swim and so they carried their friends on their backs. The ducks set to work to pull the land up from beneath the water.

At last the people were so hungry that they sent Raven out to look for dry land. At that time Raven was the most beautiful of all birds. While looking for land, he found the body of a dead animal. Although he had never before eaten anything except berries and willow leaves, he began to feast on the body of his animal brother. As punishment, he was changed into the bird he is today. All the animals and birds hate him; and even man, who eats everything else, will not taste his flesh.

Then the people sent Ptarmigan out to look for dry land. When Ptarmigan came back, he carried on his back a branch of willow. It was a message of hope. As a reward, ptarmigans turn white when the snow begins to fall in the Barren Land. Thus they warn the animals and the people that winter is near.

But the peaceful and friendly life on Great Slave Lake was no more. When the floodwaters had gone, the fish found that they could no longer live on the land; if they did, they would be eaten by the birds and the animals. The birds found that they were safer high in the trees and up in the mountains than anywhere else. Every animal chose the place that suited it best. Soon the birds and fish and beasts could not understand the same language.

Not long afterward, the first human beings came to Great Slave Lake. Since then, there has been no peace.
### The Big Snow

#### Worldview Comparison Chart

**Instructions:** Compare the beliefs and values communicated in the Dene story “The Big Snow in the North Land” with those you think modern North America holds. What is the possible effect on culture or on the physical world of these beliefs? The first heading is started for you, but you can add other ideas.

<table>
<thead>
<tr>
<th>Belief or Value</th>
<th>Dene (First Nation)</th>
<th>Possible Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relationship of animals to each other</td>
<td>Animals once lived in friendship.</td>
<td>People don’t want to hurt the animals.</td>
</tr>
<tr>
<td>Origin of natural forces, weather</td>
<td>Everything is part of a food chain—predator eats prey.</td>
<td>People take advantage of the animals—don’t think about how they help each other.</td>
</tr>
<tr>
<td>Relationship of the individual and the group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship of people and nature</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This lesson focuses on some causes, effects, and solutions concerning global warming. Students will analyze an editorial cartoon; analyze and discuss global warming by viewing, reading, and connecting a number of stimulators; present information orally; and synthesize information from a number of sources in order to write about it. Some of the academic tasks are: extracting and connecting information from a variety of text forms; listening for specific information; writing point-form notes; deducing the meanings of unfamiliar words and word groups; recognizing and using important markers; and introducing, describing, explaining, clarifying, and summarizing oral information.
Sequence 1

Activation

Step 1: Review environmental problems discussed in the first lesson. Focus on one important issue: global warming.

Show the editorial cartoon **Handout 2-3**: “Blowing Up Your World.” Direct the students to Appendix 11, which is a list of directions for analyzing editorial cartoons. Discuss the different methods used by editorial or political cartoonists to achieve their purpose. Which ones are used in this cartoon? Ask students: What does the cartoon suggest about the crisis we have in our world regarding environmental issues such as global warming? What analogy is being used in this cartoon to show the seriousness of the situation?

Have students work in pairs to answer this question. Then come together as a class to share information.

## Language Features

### Vocabulary

to describe the visual: dynamite, explode, detonator, destroy, fuse

to describe the cartoonist’s methods: analogy, symbolism, exaggeration
### Student Learning Tasks

Working with a partner, view **Handout 2-3**: “Blowing Up Your World,” and analyze it, following the steps outlined in Appendix 11 to answer these questions:

- What does the cartoon suggest about the crisis we have in our world regarding environmental issues such as global warming?
- What analogy is being used in this cartoon to show the seriousness of the situation? (P)

Answers are shared with the class. (C)

### Teacher Notes and References

**Handout 2-3**: “Blowing Up Your World”

**Appendix 11**: How to Analyze Editorial Cartoons
### Outcomes

- **SLO 1.3** Develop and express a personal position in a variety of ways...
- **SLO 2.1.3** Use developing control of grammatical features...
- **SLO 4.1** Use language to encourage...
- **SLO 4.6** Respond to and critique a variety of individual perspectives...
- **SLO 6.1** Students will know and use effectively metacognitive strategies...
- **SLO 6.2.2** Use repetition to imitate a language model...
- **SLO 6.2.5** Use deduction and induction...
- **SLO 6.2.7** Use elaboration...
- **SLO 6.2.9** Use summarization...
- **SLO 6.3.2** Use co-operation...

### Instructional and Learning Sequence

**Step 2:** Brainstorm: Write the following focus questions on the overhead or board and have students discuss them in small groups:

1. What is global warming?
2. What are the known causes?
3. What are some of the effects/impacts associated with global warming?
4. Referring back to the language related to the activating cartoon: What can be done to diffuse the explosive situation we are in?
5. Are people “on board” in terms of these solutions? Are there different attitudes in different parts of the world?

Get a general overview of ideas from the students.

### Language Features

**Vocabulary**

- climate change, greenhouse effect, ozone layer, ozone hole, chlorofluorcarbons, nitrogen oxides, greenhouse gases, depletion, pollution, toxic waste, emissions, acid rain

**Idiom:** on board

**Structures**

- **Prefixes/suffixes and word families:** fuse~diffuse; explode~explosion, etc.
### Student Learning Tasks

In small groups, brainstorm responses to the questions:

1. What is global warming?
2. What are the known causes?
3. What are some of the effects/impacts associated with global warming?
4. Referring back to the language related to the activating cartoon: What can be done to diffuse the explosive situation we are in?
5. Are people “on board” in terms of these solutions? Are there different attitudes in different parts of the world? (C)

Report your general overview of the responses to the class. (C)

### Teacher Notes and References

Terms related to global warming should be introduced here if students do not know them in English.
### Outcomes

<table>
<thead>
<tr>
<th>SLO 1.2</th>
<th>Respond to texts with increasing independence…</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 1.4</td>
<td>Show an awareness of organizational patterns…</td>
</tr>
<tr>
<td>SLO 2.1.3</td>
<td>Use developing control of grammatical features…</td>
</tr>
<tr>
<td>SLO 2.2</td>
<td>Use several visual techniques…</td>
</tr>
<tr>
<td>SLO 2.3.1</td>
<td>Use the structures and language features…</td>
</tr>
<tr>
<td>SLO 4.1</td>
<td>Use language to encourage…</td>
</tr>
<tr>
<td>SLO 4.2</td>
<td>Communicate effectively to work with others…</td>
</tr>
<tr>
<td>SLO 4.4</td>
<td>Manage group action…</td>
</tr>
<tr>
<td>SLO 6.1</td>
<td>Students will know and use effectively metacognitive strategies…</td>
</tr>
<tr>
<td>SLO 6.1.1</td>
<td>Use advanced organization…</td>
</tr>
<tr>
<td>SLO 6.1.2</td>
<td>Use organizational planning…</td>
</tr>
<tr>
<td>SLO 6.1.4</td>
<td>Use functional planning…</td>
</tr>
<tr>
<td>SLO 6.1.5</td>
<td>Use selective attention…</td>
</tr>
<tr>
<td>SLO 6.2.4</td>
<td>Use note taking…</td>
</tr>
<tr>
<td>SLO 6.2.8</td>
<td>Use imagery in the form of mental or actual pictures…</td>
</tr>
<tr>
<td>SLO 6.2.9</td>
<td>Use summarization…</td>
</tr>
</tbody>
</table>

### Instructional and Learning Sequence

**Sequence 2**

Focus on the strategy of imagery. Ask students how they use visuals in academic study (to clarify information, to show relationships, to summarize, et cetera).

Give each pair of students two related stimulators, as well as a piece of chart paper and coloured markers. (Remind them of the T-List lesson in the previous module and the use of coloured markers to clarify information.)

Students will work together to analyze their stimulators and make connections between the two. They will design a large graphic organizer on their paper to depict the relationship between their stimulators, and summarize the main points made about global warming in point form on their organizer. Have students decide how to use the coloured markers to clarify or highlight important information.

### Language Features

<table>
<thead>
<tr>
<th>Structures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Punctuation</strong>: comma after parenthetical expressions</td>
</tr>
</tbody>
</table>

### Discourse Features

- **Language to express cause/effect**: due to; because of; as a result of; resulting in; as a result; consequently; therefore, etc.
- **Language to express comparison**: similarly, also, likewise, too, in the same way, etc.
- **Language to express contrast**: in contrast; however; on the other hand, etc.
- **Discourse organization**: organizational structure of different texts used
Student Learning Tasks

- Work with a partner to analyze two related stimulators and make connections between the two.
- Design a large graphic organizer to depict the relationship between the stimulators, and summarize the main points made about global warming in point form on the organizer. (P)

Teacher Notes and References

Handout 2-4: “The Indian Ten Commandments”
Handout 2-5: “The Ozone Layer: What’s Going On Up There?”
Handout 2-6: “Declaration of Interdependence”
Handout 2-7: “Our Earth Will Not Die”
Handout 2-8: “Ozone”
Handout 2-9: “Ozone Word Splash”
Handout 2-10: “The Green Leaders”
Handout 2-11: “Our Climate Is Changing”
Handout 2-12: Maps and Graphs

These stimulators should address the focus questions in the activation activity or express attitudes about global warming. The teacher is responsible for deciding before class which stimulators to put together and to give to each group. It may be helpful to provide a word bank for the more difficult written pieces. Make sure that the stimulators are connected: cause~effect, problem~solution; two viewpoints on the same topic; description~example, et cetera.

You may want to do a mini-lesson on, for example, discourse markers used to signal the specific language of cause/effect and problem/solution.

Handout 2-4: “The Indian Ten Commandments”
This handout is intended to capture the spiritual beliefs and code of conduct that are reflective of Aboriginal (Indian) belief systems. As traditional Aboriginal cultures were not Judeo-Christian, the use of the term “Ten Commandments” is a metaphor. The beliefs expressed reflect contemporary Pan-aboriginal/Indian beliefs. Some Aboriginal people may object to the use of the term “Ten Commandments.” See Lone Wolf—Cherokee Religious Information <www.skyenet.net/~myersdk/religious.html>. The Indian Ten Commandments are popular in many U.S. sites and there are a variety of posters available online.

As an alternate reading you may wish to use a handout based on the Seven Sacred Teachings. In Canada, the Seven Sacred Teachings are used by many Aboriginal groups and are often found in Aboriginal perspectives learning resources to explain Aboriginal world views and as a summary of their spiritual beliefs and codes of conduct. The Seven Sacred Teachings complement and reflect some of the same world views and beliefs as expressed in “the Indian Ten Commandments” without attempting to make a connection to Judeo-Christian belief systems. See Seven Sacred Teachings at <www.theturtlelodge.com/teachings.htm>.
### Outcomes

<table>
<thead>
<tr>
<th>SLO 1.4</th>
<th>Show an awareness of organizational patterns…</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 1.5</td>
<td>Examine and interpret various visual media…</td>
</tr>
<tr>
<td>SLO 2.1.3</td>
<td>Use developing control of grammatical features…</td>
</tr>
<tr>
<td>SLO 2.3.3</td>
<td>Produce effective oral presentations.</td>
</tr>
<tr>
<td>SLO 4.5</td>
<td>Experience and consider academic texts…</td>
</tr>
<tr>
<td>SLO 5.7</td>
<td>Select and present ideas…keeping in mind the intended audience.</td>
</tr>
<tr>
<td>SLO 6.1</td>
<td>Students will know and use effectively metacognitive strategies…</td>
</tr>
<tr>
<td>SLO 6.1.5</td>
<td>Use selective attention…</td>
</tr>
<tr>
<td>SLO 6.1.6</td>
<td>Use self-monitoring to check…</td>
</tr>
<tr>
<td>SLO 6.2.4</td>
<td>Use note taking…</td>
</tr>
</tbody>
</table>

### Instructional and Learning Sequence

Have student pairs take turns presenting their information to the class. Ask each presenting student to take an equal load.

**Presenters:**
1. Introduce their stimulators.
2. Explain the graphic organizer they have designed and the colour coding in showing the relationship between the two stimulators.
3. Present the information from the graphic organizer they have created.

Have peers make at least one constructive comment or ask one question while listening to the presentations.

After the presentations, all graphic organizers are displayed so that the information can be used by the class.

### Language Features

- **Discussion expressions for speaker and listeners:** to hesitate, to introduce new ideas, to add information, to restate, to exemplify, to summarize, to probe, to question for clarification, to disagree and agree, etc.
- **Discourse markers:** connecting words and phrases to indicate relationships
Assignment
In pairs, present your information to the class using the following format. Share the presentation tasks so that each of you takes an equal load.

• Introduce the stimulators.

• Explain the graphic organizer you have designed and the colour coding in showing the relationship between the two stimulators.

• Present the information from the graphic organizer you have created. (P)

Classmates make at least one constructive comment or ask one question while listening to your presentations. (I) (C)
### Outcomes

<table>
<thead>
<tr>
<th>SLO 1.2</th>
<th>Respond to texts with increasing independence…</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 4.6</td>
<td>Respond to and critique a variety of individual perspectives…</td>
</tr>
<tr>
<td>SLO 6.1</td>
<td>Students will know and use effectively metacognitive strategies…</td>
</tr>
<tr>
<td>SLO 6.1.5</td>
<td>Use selective attention…</td>
</tr>
<tr>
<td>SLO 6.1.6</td>
<td>Use self-monitoring to check…</td>
</tr>
</tbody>
</table>

### Instructional and Learning Sequence

#### Sequence 3

Making the Problem Personal: In order for students to think about their own actions, use **Handout 2-13**: “Blowing Up Your World” as an activity with the class.
<table>
<thead>
<tr>
<th>Student Learning Tasks</th>
<th>Teacher Notes and References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow the teachers’ instructions for the “Blowing Up Your World” activity. Respond to the questions about individual responsibility in environmental issues by raising your hand and recording your own score on paper. Note the condition of the balloon by the end of the activity. Add up individual scores. What steps do we need to take to save our environment?</td>
<td>Handout 2-13: “Blowing Up Your World: Individual Responsibility in Environmental Issues” (teacher resource)</td>
</tr>
</tbody>
</table>
Outcomes

| SLO 1.3 | Develop and express a personal position in a variety of ways… |
| SLO 1.4 | Show an awareness of organizational patterns… |
| SLO 2.1.1 | Analyze and edit texts… |
| SLO 2.1.2 | Use standard Canadian spelling… |
| SLO 2.1.3 | Use developing control of grammatical features… |
| SLO 2.3 | Produce a variety of short and extended text forms… |
| SLO 2.3.1 | Use the structures and language features… |
| SLO 2.4 | Use the steps of the writing process… |
| SLO 3.1 | Seek, organize, and synthesize information… |
| SLO 6.1.1 | Use advanced organization… |
| SLO 6.1.2 | Use organizational planning… |
| SLO 6.1.5 | Use selective attention… |
| SLO 6.1.6 | Use self-monitoring to check… |
| SLO 6.2.4 | Use note taking… |

Instructional and Learning Sequence

Sequence 4

Roundup

Writing: Have students synthesize information from their brainstorming, viewing, reading, discussions, note taking, and activities. They have a choice of roundup activities. In their writing, students must use at least five new vocabulary words from this lesson. They can:

1. Make a prediction about what the condition of the world might be like in 50 years due to global warming. Create a newspaper headline and write a short article describing the situation. Will the situation become more life-threatening, or will humans react to the warning signals?

2. Write a paragraph explaining global warming based on what they have learned. In the paragraph, give one response to each of the questions from the activation portion of this lesson.

3. Write a personal response after completing the activity “Blowing Up Your World.”

Language Features

Structures

- Focus on appropriate use of verb tenses, particularly third person, present tense, and on appropriate use of present tenses chosen and appropriate article use

Discourse Features

- Organizational structure of a paragraph
- Use of appropriate transition markers
Assignment

Synthesize information from previous activities in one of the following writing formats:

1. Make a prediction, create a newspaper headline, and write a short article describing the condition of the world in 50 years.

2. Write a paragraph explaining global warming based on what you have learned. In the paragraph, give one response to each of the questions from the activation portion of this lesson.

3. Write a personal response after completing the activity “Blowing Up Your World.” (I)
The Indian Ten Commandments

Treat the Earth and all that dwell thereon with respect.

Remain close to the Great Spirit.

Show great respect for all your fellow beings.

Work together for the benefit of all Mankind.

Give assistance and kindness wherever needed.

Do what you know to be right.

Look after the well-being of mind and body.

Dedicate a share of your efforts to the greater good.

Be truthful and honest at all times.

Take full responsibility for your actions.

Author Unknown
The Ozone Layer: What's Going On Up There?

Declaration of Interdependence

The David Suzuki Foundation's
DECLARATION OF INTERDEPENDENCE

THIS WE KNOW: We are the earth, through the plants and animals that nourish us. We are the rains and the oceans that flow through our veins. We are the breath of the forests of the land, and the plants of the sea. We are human animals, related to all other life as descendants of the firstborn cell. We share with these kin a common history, written in our genes. We share a common present, filled with uncertainty. And we share a common future, as yet untold.

We humans are but one of thirty million species weaving the thin layer of life enveloping the world. The stability of communities of living things depends upon this diversity. Linked in this web, we are interconnected—using, cleansing, sharing and replenishing the fundamental elements of life. Our home, planet Earth, is finite; all life shares its resources and the energy from the sun, and therefore has limits to growth. For the first time, we have touched those limits. When we compromise the air, the water, the soil, and the variety of life, we steal from the endless future to serve the fleeting present.

We may deny these things, but we cannot change them.

THIS WE BELIEVE: Humans have become so numerous and our tools so powerful that we have driven fellow creatures to extinction, dammed the great rivers, torn down ancient forests, poisoned the earth, rain and wind, and ripped holes in the sky. Our science has brought pain as well as joy; our comfort is paid for by the suffering of millions. We are learning from our mistakes, we are mourning our vanished kin, and we now build a new politic of hope. We respect and uphold the absolute need for clean air, water and soil. We see that economic activities that benefit the few while shrinking the inheritance of many are wrong. And, since environmental degradation erodes biological capital forever, full ecological and social cost must enter all equations of development. We are one brief generation in the long march of time; the future is not ours to erase. So where knowledge is limited, we will remember all those who will walk after us, and err on the side of caution.

THIS WE RESOLVE: All this that we know and believe must now become the foundation of the way we live. At this turning point in our relationship with Earth, we work for an evolution; from dominance to partnership; from fragmentation to connection; from insecurity to interdependence.
NIYI OSUNDARE

(To a solemn, almost elegiac tune)

Lynched
the lakes
Slaughtered
the seas
Mauled
the mountains

But our earth will not die

Here
there
everywhere
a lake is killed by the arsenic urine
from the bladder of profit factories
a poisoned stream staggers down the hills coughing
chaos in the sickly sea
the wailing whale, belly up like a frying fish, crests
the chilling swansong of parting waters.

But our earth will not die

Who lynched the lakes. Who?
Who slaughtered the seas. Who?
Whoever mauled the mountains. Whoever?

Our earth will not die

And the rain
the rain falls, acid, on balding forests
their branches amputated by the septic daggers
of tainted clouds

Weeping willows drip mercury tears
in the eye of sobbing terrains
a nuclear sun rises like a funeral ball
reducing man and meadow to dust and dirt.

(continued)
But our earth will not die.

Fishes have died in the waters.  Fishes.
Birds have died in the trees.  Birds.
Rabbits have died in their burrows.  Rabbits.

But our earth will not die

(Music turns festive, louder)

Our earth will see again
eyes washed by a new rain
the westering sun will rise again
resplendent like a new coin.
The wind, unwound, will play its tune
trees twittering, grasses dancing;
hillsides will rock with blooming harvests
the plains batting their eyes of grass and grace.
The sea will drink its heart’s content
when a jubilant thunder flings open the skygate
and a new rain tumbles down
in drums of joy.
Our earth will see again

this earth, OUR EARTH.
**Ozone**

**FIGURE 20.15**
In the upper atmosphere, a layer of ozone shields us from the sun’s damaging rays. Near ground level, ozone is a serious air pollutant.

**THREATS TO THE OZONE LAYER**

During the 1970s, scientists discovered that the amount of ozone in the upper atmosphere was declining. Beginning in the 1980s, large portions of the ozone layer over both the North Pole and the South Pole thinned out by about 50 per cent. The “holes” remained for two or three months of each year, but later filled in again (Figure 20.16). Scientists believe that the reason for this thinning involves the reaction of ozone with human-made pollutants that have been accumulating in the upper atmosphere.

 Probe 10, Nelson. 1996.
Ozone Depletion WORSENS

Aerosol Cans: Deadly and Dangerous

Radiation Hazard to Eyes

Loss of the Ozone Layer Protection: Malformed Amphibians

Rapid Collapse of the Antarctic Ice Shelf Stuns Scientists

What About Ozone Pollution?

EEK—Hole in the Ozone Layer Opens Again!

CAN WE KEEP SUNSHINE SAFE?

Fate of the Arctic Remains Up in the Air

Deadly Chlorofluorocarbons: We’ve Got to Make Changes

NEW THREATS TO SKY
In Canada and around the world, more and more industry leaders and communities are learning that there are opportunities that make both economic and environmental sense. They’re finding out energy conservation and energy efficiency save money and create new industries and jobs.

Canadian Communities
Municipalities across Canada are reducing greenhouse gas emissions through a wide range of projects. Local governments say they can achieve one quarter of Canada’s Kyoto target while creating jobs and strengthening the health of our communities.

**Halifax:** A city-wide composting program now prevents organic matter from reaching landfills. This has cut methane production by the equivalent of over half a million tons of carbon dioxide per year, compared to 1995.

**Calgary:** Calgary is achieving its target of six percent below 1990 levels ahead of schedule and at 50 percent projected costs, with substantial energy bill savings and employment created. Through the “Ride the Wind” initiative, the light rail system is powered by wind-generated electricity.

**Edmonton:** Target—to reduce emissions by six percent below 1990 levels by 2010, and 20 percent by 2020. Has already reduced emissions through one landfill waste-to-energy project by 174,949 tonnes.

**Regina:** Reduced emissions from internal operations nine per cent, or 10,000 tonnes annually, from 1988 levels. Energy retrofits will reduce emissions another four percent and save $400,000 annually.

**Sudbury:** Will reduce emissions by 21,000–51,000 tonnes per year with a co-generation and district energy system. Retrofit programs aim to reduce energy consumption 30 percent and save more than $800,000 annually.

**St. John’s:** Retrofits to municipal buildings are expected to deliver annual energy savings of $600,000, improve workplace lighting and comfort levels, and reduce maintenance costs.

**Toronto:** Reduced emissions by 67 percent below 1990 levels, exceeding the city’s goal threefold, generating thousands of jobs and reducing costs for many operations. Success was achieved through landfill waste-to-energy programs, energy efficiency building retrofits, streetlight changes, and more efficient vehicle fleets.

Companies
Many companies are dramatically reducing greenhouse gas emissions, often exceeding the Kyoto target. So far, this is generally achieved at minimal cost or with considerable savings.

**Abitibi-Consolidated (Forest Products):** Reduced emissions on average 10 percent below 1990 levels, and 27 percent below 1988.

**Alcoa (Aluminum Manufacturing):** Committed to reducing emissions by 25 percent from 1990 levels by 2010, and by 50 percent from 1990 levels over the same period if their inert anode technology succeeds.

**Alcan (Aluminum Manufacturing):** Reduced emissions by over two million tonnes worldwide over the last decade; plans to cut another 500,000 tonnes in the next four years.

**BP (Petroleum & Renewables):** Achieved its target, eight years early, of reducing emissions 10 percent worldwide below 1990 levels at no net cost. Energy investments in renewables to grow 40 percent in 2002.

**Canadian Chemical Producers’ Association:** Members reduced emissions 39 percent below 1992 levels, primarily due to declines in emissions of nitrous oxide.

**Canterra Towers (Buildings):** Oxford Properties reduced energy consumption by 30 percent and emissions 28 percent below 1992 levels, saving tenants $1.5 million dollars in operating costs.

**Dofasco (Steel Production):** Reduced emissions 22 percent below 1990 levels by 1999, and 20 percent per unit of production. Target: to further improve specific energy intensity by 10 percent by 2010.

(continued)
The Green Leaders (continued)

**DuPont (Chemical Manufacturing):** Reduced emissions worldwide by 45 percent and improved energy efficiency by 15 percent over 1990 levels. Uses renewables for 10 percent of global energy use. Target: to reduce emissions by 65 per cent.

**Dow (Chemical Manufacturing):** Reduced emissions by 14 percent below 1990 levels, and reduced the level of CO2 per kg of product by 50 per cent. Target: to reduce emissions per unit of production another 10 per cent.

**General Motors:** Reduced emissions by 37 percent below 1990 levels, with a 30 percent reduction in emissions per vehicle produced. Target: to reduce emissions by 56 percent by 2005.

**IBM (Information Technology):** Reduced energy consumption worldwide by 25 percent through conservation, pocketing $527 million. Canada’s operations reduced emissions by 33 percent since 1990.

**Inco (Mining & Manufacturing):** Reduced emissions by seven percent below 1990 levels by 1999. Target: to reduce emissions by a further one percent annually to 2005.

**Mining Association of Canada:** Metal mining in Canada reduced total emissions by 25 percent below 1990 levels and improved per-unit emissions of metal concentrate by 13.8 per cent. Nonferrous metal smelting and refining decreased emissions by 1.8 percent and improved intensity by 15.9 over the same period.

**Nike (Garment Manufacturing, U.S.):** Action Plan—To reduce CO2 emissions worldwide from business travel and from facilities and services to 13 percent below 1998 levels by 2006.

**Toronto-Dominion Centre (Buildings):** Cadillac Fairview reduced electricity consumption in Canada’s largest office complex by about 21 million kWh annually—enough energy to power 6,000 homes—saving $2.5 million per year in energy costs.

**Shell (Petroleum & Renewables):** Reduced emissions 11 percent worldwide between 1990 and 2000, surpassing its target. Diversifying its investments in solar and wind technologies.

The information on this page is subject to change. For the most recent figures, please contact the municipality or business directly.
Major Elements of the Climate System

Projected Temperature Change Between 1975-1995 and 2040-2060

Temperature Projections for Canada for Winter and Summer Seasons Under Doubled Concentrations of CO₂

Climate changes will not be distributed uniformly. For a doubling of carbon dioxide concentrations, Canadian climate models project an increase of 3.5°C in the earth’s average annual temperature but show more substantial warming over much of Canada, particularly in winter.

Different models have different projections for how much temperatures will change. For instance, the Geophysical Fluid Dynamics Laboratory GCM (GFDL 91) model projects increases of 2 to 6°C in the winter and 2 to 3°C in the summer, while the Goddard Institute for Space Studies GCM (GISS 85) model projects increases of 2 to 14°C in the winter and 1 to 2°C in summer.
Blowing Up Your World:
Individual Responsibility in Environmental Issues

1. One student is given a balloon and asked to blow it up so it is full-blown. The balloon should not be tied but should be held closed.

2. Tell students that the balloon represents the world they have inherited from past generations. It is obviously tight with the environmental stress put on it.

3. Have the students determine how they are adding to or deterring from this stress by having them respond to a number of questions. In response to each question, students will raise their hands to indicate a positive response.

4. The student with the balloon will blow one big breath of air for every 3 to 5 students whose behaviour damages the environment.

5. For each question, students record their scores on a piece of paper.

Questions:

1. How many of you leave your bedroom light on when you are not in the room? (Hands down get 2 points.)

2. How many of you walked, biked, inline skated, or took the bus to school today instead of coming by car? (Hands up get 3 points.)

3. How many of you drink a soft drink, then throw the container in the garbage? (Hands down get 3 points.)

4. How many of you use aerosol hairspray or hair products? (Hands down get 3 points.)

5. How many of you use a hair dryer, curling iron, electric razor, or other energy-consuming convenience appliance, especially in the morning? (Hands down get 3 points.)

6. How many of you, when you go to the store, get a bag for your purchases, even if you have only one or two small items to carry? (Hands down get 2 points.)

7. How many of you carry lunch to school in a reusable container? (Hands up get 2 points.)

8. How many of you eat take-out or cafeteria food that is served in Styrofoam or plastic containers? (Hands down get 7 points.)

9. How many of you use handkerchiefs instead of disposable tissues or cloth towels instead of paper towels? (Hands up get 2 points.)

10. How many of you plan to buy a sports car when you can afford it? (Hands down get 4 points.)

11. How many of you throw your old cell phone away when you get a new one? (Hands down get 3 points.)

12. Is your sewage treated before it flows into a body of water? (Hands up get 6 points: zero points for those who don’t know.)

Add up your score:

31-40 Very good! You’re an environmentalist!
21-30 Good! You’re starting to save the world!
11-20 Lots of room for improvement.
0-10 You’re exiled to the town dump!

Did the balloon blow up? What must we do to save our environment?
This lesson focuses on the basic premise of the Kyoto Accord and its controversial nature. Students will listen to and take notes on an article about the Accord, focusing on different categories of vocabulary used in the article; read and discuss an interview expressing contrasting ideas about the Accord, noticing conversational gambits used in a debate-type discussion; and write an editorial expressing the point of view of a fictional character they create. Some of the academic tasks included are: using abbreviations and symbols in note taking, using correct intonation and inflection, recognizing important markers, recognizing voice, using selective attention to extract relevant points, following an argument, reading critically, participating in discussion, classifying, and developing a written argument.
Outcomes

<table>
<thead>
<tr>
<th>SLO 1.1</th>
<th>Engage with increasingly difficult oral and/or visual texts...</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 2.1.3</td>
<td>Use developing control of grammatical features...</td>
</tr>
<tr>
<td>SLO 4.1</td>
<td>Use language to encourage...</td>
</tr>
<tr>
<td>SLO 4.2</td>
<td>Communicate effectively to work with others...</td>
</tr>
<tr>
<td>SLO 6.1</td>
<td>Students will know and use effectively metacognitive strategies...</td>
</tr>
<tr>
<td>SLO 6.1.5</td>
<td>Use selective attention...</td>
</tr>
<tr>
<td>SLO 6.2.3</td>
<td>Use grouping of items to classify...</td>
</tr>
<tr>
<td>SLO 6.2.12</td>
<td>Use inferencing to guess the meanings...</td>
</tr>
<tr>
<td>SLO 6.3.1</td>
<td>Use questioning for clarification...</td>
</tr>
<tr>
<td>SLO 6.3.2</td>
<td>Use co-operation...</td>
</tr>
</tbody>
</table>

Instructional and Learning Sequence

Sequence 1

Activation

Hypothesizing: Group students in triads and have them respond to the following questions:

1. What is the Kyoto Accord?
2. Is the Kyoto Accord a good solution to global warming? (opinion)

Students work together to make a list of the types of people, organizations, and countries that, in their opinion, would support the Accord, and a list of those that wouldn’t. Meet as a class and compare lists. Record important vocabulary words and ideas on the board.

Language Features

Subordinate conjunction~because

Discourse Features

Agreement: I agree with...; You’re right...; That’s a good idea/suggestion because...

Disagreement: I disagree with...; I don’t think...; That’s not exactly right...; I don’t think so...; I think... because...; I can’t support that idea because...

Discourse Markers: cause/effect; problem/solution
In triads, respond to the following questions:

1. What is the Kyoto Accord?
2. Is the Kyoto Accord a good solution to global warming? (opinion)

Work together to make a list of the types of people, organizations, and countries who would support the Accord, and a list of those who wouldn’t. (G)

Compare lists as a class. (G)
Sequence 2

Confirmation

Read a short article about Kyoto to the students. First, provide each student with a note-taking organizer (Handout 2-15: “Kyoto: The Barebones—Note-Taking Organizer”). Make sure students understand the headings. They will try to predict what they might hear under each heading.

Introduce any vocabulary students might need to take notes. Record this vocabulary on the board for students to refer to as necessary. Explain to the students that you will read “Kyoto: The Barebones” to them. Their assignment is to record in point form the main facts presented under each subheading. Remind them to use note-taking symbols and shorthand as they record information. Read the article once, slowly. Read it once more at a more normal pace. Stop reading.

Students then compare their notes. As they sit in pairs, read the article once more. Students check their notes and add information they may have missed. To conclude, elicit the notes from the students and create a master copy on chart paper.

Vocabulary

Idioms: the wrinkles

Environmental vocabulary (new and reviewed from the global warming lesson): environmental threat, fossil fuels, methane, reduce, emissions, carbon dioxide

Business vocabulary: opted, ratify, cap and trade, consultation, financing, collapsing economy, exempt, offset, abatement programs, credit

General vocabulary: obligation, formulated, large-scale, culprit, vent, anaesthetics, profligate, hefty, controversial

Structures

use of articles (review)

As the text is read, record on **Handout 2-15**: “Kyoto: The Barebones—Note-Taking Organizer” the main facts presented under each subheading, using note-taking symbols, point form, and shorthand. (I)

In pairs, compare notes, read the article again, and add missed information. (P)

Contribute notes to a master class list. (C)

**Handout 2-14**: “Kyoto: The Barebones” (teacher resource)

**Handout 2-15**: “Kyoto: The Barebones—Note-Taking Organizer”

Here, you may want to focus on the addition of certain filler words to the point-form notes as a grammar lesson. Choose one structure on which to focus (e.g., rules for using articles).
### Outcomes

**SLO 2.1** Show sufficient control over linguistic structures...

**SLO 2.3.2** Demonstrate increasing awareness of... rhetorical forms...

**SLO 4.1** Use language to encourage...

**SLO 4.5** Experience and consider academic texts...

**SLO 4.6** Respond to and critique a variety of individual perspectives...

**SLO 5.6** Evaluate texts...

**SLO 6.1** Students will know and use effectively metacognitive strategies...

**SLO 6.1.3** Use directed attention...

**SLO 6.1.5** Use selective attention...

**SLO 6.2.1** Use resourcing to access...

**SLO 6.2.5** Use deduction and induction...

**SLO 6.2.9** Use summarization...

**SLO 6.3.2** Use co-operation...

### Instructional and Learning Sequence

**Controversy:** Guide students to realize there can be many points of argument about the Accord. Distribute **Handout 2-16:** “Economy vs. The Environment: Pros and Cons.”

Choose students to take turns reading the interview out loud while others listen. Discuss the interview and the points made by each speaker. Focus on the controversy.

### Language Features

<table>
<thead>
<tr>
<th>Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>subsistence economy, environmental indicator, burning fossil fuels, wind power, clean energy jobs, energy efficiency, renewable energy, windmill, solar, geothermal, photovoltaic industry, coal-fired power plant, Greenpeace, deplete, robust economy, tax credits, investment, economists, assumption, boldest, innovative, obligation, spur, engaging, technology transfer</td>
</tr>
<tr>
<td><strong>Idioms:</strong> put money into; make your case; I don’t get it; put it this way; spur investment; the bottom line; leapfrog; take the lead; at the root</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pronunciation</th>
</tr>
</thead>
<tbody>
<tr>
<td>stress and rhythm of English; clear expression of tone for each speaker; sounds—focus on most consistent errors (l, r, th, final s, ed); linkage; reduction</td>
</tr>
<tr>
<td>Student Learning Tasks</td>
</tr>
<tr>
<td>------------------------</td>
</tr>
<tr>
<td>Take turns reading the interview out loud while others listen. (I) (C)</td>
</tr>
<tr>
<td>Discuss the points made by each speaker, focusing on the controversy. (C)</td>
</tr>
</tbody>
</table>
Students work individually to highlight the gambits used by the speakers to make their points. As a class, create categories of gambits (e.g., disagreement, restatement, hesitation, interruption). Also, note the language of the moderator.

<table>
<thead>
<tr>
<th>Language Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vocabulary</strong></td>
</tr>
<tr>
<td><strong>Idiom:</strong> the bottom line</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discourse Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speakers:</strong> I would argue...; I would make the argument...; The question that is brought up by that is...; Well, let’s put it this way...; I guess the question that I would ask you is...; I don’t believe...; I would agree with you...; The truth of the matter is...; And yet...; The bottom line is...; I think that’s a great example...; Let me interrupt for a minute...; I want to ask you one quick question, though...; I think...; For example...; That’s probably the one point we agree on...; The point is...; etc.</td>
</tr>
</tbody>
</table>

**Moderator:** Your rebuttal? A thought on that?
<table>
<thead>
<tr>
<th><strong>Student Learning Tasks</strong></th>
<th><strong>Teacher Notes and References</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Highlight the gambits used by the speakers. (I)</td>
<td>Language is always changing. Point out to students the use of the verb <em>grow</em> as in “grow the economy.”</td>
</tr>
<tr>
<td>Contribute to class discussion to create categories of gambits. (C)</td>
<td></td>
</tr>
</tbody>
</table>


## Outcomes

**SLO 1.2** Respond to texts with increasing independence…

**SLO 1.4** Show an awareness of organizational patterns…

**SLO 1.6** Interpret a range of texts…

**SLO 2.1** Show sufficient control over linguistic structures…

**SLO 2.1.1** Analyze and edit texts…

**SLO 2.1.2** Use standard Canadian spelling…

**SLO 2.1.3** Use developing control of grammatical features…

**SLO 2.3.1** Use the structures and language features…

**SLO 2.4** Use the steps of the writing process…

**SLO 3.1** Seek, organize, and synthesize information…

**SLO 3.2** Develop and implement a plan for researching…

**SLO 5.2** Analyze and use the appropriate level of formality…

**SLO 6.1.1** Use advanced organization…

**SLO 6.1.2** Use organizational planning…

**SLO 6.1.3** Use directed attention…

**SLO 6.1.5** Use selective attention…

**SLO 6.2.11** Use transfer…

## Instructional and Learning Sequence

### Writing Assignment

Students create a fictional character who either agrees or disagrees strongly with the implementation of the Kyoto Accord. They think about the person’s reasons for his or her position. Encourage students to research to help them create a more believable character with a strongly supported point of view. Ask students to write a letter to the editor of *Voice of America News* as this character, explaining who this character is, and what his or her vested interest and attitude to the Accord is, quoting the speaker from the interview who supports these beliefs. Encourage students to look at some examples of letters to the editor before they start. Instruct students to clearly take one side of the issue based on who they are. This will be written in the first person. Use at least three expressions listed earlier from the interview.

### Language Features

**Vocabulary**

- Adverbs to indicate tone and opinion: strongly, clearly, absolutely, unquestionably

**Structures**

- Use of appropriate tense

**Discourse Features**

- Format of a letter to the editor

### Roundup

Create a grammar exercise for students to complete as part of their roundup to review the use of articles, using vocabulary and ideas from this lesson.
Student Learning Tasks

Assignment
Review examples of letters to the editor. Write a letter to the editor of Voice of America News. Do the following:

a) Create a fictional character who agrees or disagrees strongly with the implementation of the Accord.

b) Do research to help you create a more believable character and to support your position.

c) Explain who you are, what your vested interest is, and what your attitude to the Accord is, quoting the speaker from the interview who supports your beliefs.

d) Write in the first person and use at least three expressions listed earlier from the interview. (I)

Teacher Notes and References

Samples of letters to the editor (teacher-provided)
The Deal: The Kyoto Protocol, a plan constructed in Kyoto, Japan, in 1997, is the only international agreement that sets targets to reduce greenhouse gas emissions that cause climate change. It represents a decade of negotiations and includes mechanisms to provide efficient implementation.

The Problem: According to scientists, greenhouse gases form a blanket in the upper atmosphere, trapping heat from the sun and contributing to the phenomenon commonly known as global warming. There are a number of gases targeted as culprits, the most important one being carbon dioxide, or CO₂, which is produced when fossil fuels, such as coal oil and natural gas, are burned. Some of the other contributing gases are methane (CH₄) and nitrous oxide (N₂O), as well as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluorides (SF₆), which are used as refrigerants, heat conductors and insulators. Chlorofluorocarbons are also powerful greenhouse gases. Canadians currently produce 700 megatonnes of greenhouse gases per year. This translates to 2% of global emissions coming from a country with about ½ of 1% of the world’s population. In other words, the average Canadian produces four times the global average level of emissions.

The Target: In order for the Kyoto Protocol to come into force, 55 countries that produce 55% of the developed world’s 1990 carbon dioxide emissions must ratify it. The European Union ratified in May, 2002, and Japan followed suit a month later. In December, 2002, Canada ratified the agreement under Prime Minister Jean Chretien. More than 100 countries have now ratified the agreement. The reduction targets are different for each country, but Canada must reduce its emissions over the years of 2008 and 2012 to 6% below 1990 levels. A recent study, “Kyoto and Beyond,” shows that we can cut Canada’s total emissions in half by 2030 using existing technology, while maintaining our quality of life and economic growth at “business as usual” levels.

Who’s Not In? Developing countries, including India and China, are exempt from reducing greenhouse gases in the first phase of Kyoto reductions because their per-capita emissions are much lower than those of developed countries. It is important to note that China has already made cuts even without legal requirements to do so. Unfortunately, the United States, the world’s most profligate energy user, has not opted to ratify, along with Australia.

The Business Plan—Cap and Trade: It’s actually a straightforward plan in which Ottawa, after consultations with the industrial sector, would set a mandatory limit, or cap, for greenhouse emissions. Industries especially affected would be the oil and gas industry, the industrial sector, and generating plants. The oil-rich province of Alberta has concerns about the impact of this plan, but the Canadian government predicts that Alberta’s economy will actually grow by an estimated 12% by 2012 assuming a middle-of-the-road plan for implementing Kyoto. An emissions trading system between energy-efficient firms and inefficient ones would develop, allowing businesses to sell unused portions of their caps. New and expanding operations would have to purchase emission permits through this trading system.

The Wrinkles: There are other methods by which large firms having difficulty meeting their targets can gain Kyoto credits. One is to finance abatement programs in developing countries and even in industrialized nations that are in need of creative solutions to the problems of global warming. Such programs could take the form of:

• education programs
• development programs to implement the use of alternative and renewable fuel sources such as natural gas, wind, and solar power
• projects to develop cattle feed that reduces or stops cows from belching methane gas
• afforestation projects
• aggressive biofuels and energy-efficiency programs

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Bigger Wrinkle: Canada wants a 70-million-tonne credit for clean (natural gas and hydro) exports, especially to the U.S., that displace dirtier fuels, reducing gas emissions. However, the United States has not agreed to ratify Kyoto, so the UN has not agreed to this credit. That leaves a gap of 96 million tonnes a year which new policies will have to fill. The most controversial offset, as the credits are called, is Russia’s so called “hot air” program, which would allow the country to export excess pollution rights to countries that might not otherwise be able to meet their quotas. This is possible for Russia because of the collapse of so many Russian industries after the fall of the Soviet Union, leaving emissions already far below their 1990 levels.

References:

“Kyoto: The Details” at: <www.cbc.ca/news/features/kyoto_cost2.html>

David Suzuki Foundation: “Climate Change: FAQs” at: <www.davidsuzuki.org/Climate_Change/Kyoto/FAQs.asp>

David Suzuki Foundation: “Climate Change: Kyoto Protocol” at: <www.davidsuzuki.org/climate_change/kyoto/kyoto_protocol.asp>
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Is it possible to protect the environment and see economic growth at the same time? This is a big question. And with us to discuss all this, from the environmental group Greenpeace, Kert Davies, and from the U.S. Chamber of Commerce, Bill Kovacs.

**Mr. Kovacs:** I would argue that the only way you can ever have environmental protection is by generating the wealth to protect the environment. If you go through the history of civilization, you find that we started off really as a subsistence economy, then we moved to agriculture, then we moved to industrial. And at each stage of the process you accumulate wealth. But the lower the stage of the process, the more you deplete the resources, the more you deplete the wood, the coal—whatever it is that’s in the ground—the more you use the resources. And then, as you move from an industrial society to an information and service society, you then have created the wealth and you begin to reinvest that in environmental protection.

And if you look at what’s happened over the last 30 years, the American business community has put $3 trillion into environmental protection. Every single environmental indicator is going the right way. So I would make the argument that the only way that you can ever have true environmental protection is to really generate the wealth that can pay for it.

**Mr. Borgida:** Mr. Davies, your rebuttal?

**Mr. Davies:** The question that is brought up by that is: Why can’t this economy, the most robust economy in the world, take the lead and the rightful leadership role that the U.S. should have on this issue of global warming?

Now the Bush administration says it’s a real problem, humans are causing it, the burning of fossil fuels is at the root. And yet the government’s reaction is to do nothing. I don’t get it.

**Mr. Kovacs:** Well, let’s put it this way. You can sit there and say the government is doing nothing, but all of the studies are based on very small amounts of data. And they’re asking you to make the assumption that we’re going to put 2.4 million people out of work, that we are going to lose about $300 billion a year in the GDP. So I guess the question that I would ask you is: If you were going to implement the Kyoto Treaty, how could you do it without costing 2.4 million jobs and $300 billion a year to the economy?

**Mr. Davies:** I don’t believe those numbers. I think we can grow the economy. I think we can build clean energy jobs. I know that wind power, for example, has grown 40 percent in the last year in this country. There is a path forward that includes clean jobs, clean cars. U.S. industry is the boldest in the world, the most innovative. We should be selling this technology to the developing world. We should be moving forward with our innovation and our prowess in these things, and leading the world forward to a clean energy economy that not only protects the environment but makes lives better everywhere.

**Mr. Kovacs:** I would agree with you that we certainly should be selling our energy efficient technologies to the world. That is the number one thing that we should be doing. Because the truth of the matter is, if the United States went out of business tomorrow, the rest of the world is still going to continue to emit more greenhouse gases. China, Mexico, India, they’re going to continue to emit. So what we have to do is we do have to transfer this technology there.

**Mr. Davies:** We have an obligation. We are 25 percent of the pollution in the world, with 5 percent of the population. We have an obligation to act now, and act quickly.

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Mr. Kovacs: Well, we are acting. If you look at the energy efficiency of the United States, for example, it took 20,000 BTUs in 1970 to create a dollar of GDP. Today it takes 8,000. We’re about 60 percent more efficient than we were then. We’re efficient on the amount of oil that we’re using. We’re efficient on every single aspect of—

Mr. Davies: And yet the Bush administration says we need more oil and doesn’t say we need more renewable energy, more clean energy. It doesn’t make sense.

Mr. Kovacs: No. If you look at the Bush energy plan, it talks about renewables. It talks about tax credits to spur investment. In the House bill, you have $22 billion worth of new investment into renewables. But the bottom line is, no matter how much you talk about it, renewables as you talk about them—wind and sun and solar and geothermal—is about 1 percent of all of the energy in the United States.

Mr. Davies: We just did a report with the European photovoltaic industry—or the European Wind Energy Association, and found that wind could provide 12 percent of the world’s electricity in 20 years. That’s a short time frame. It can be done. It’s on that path already.

Mr. Kovacs: I think that’s a great example. You have to ask the viewing public: How many people want a windmill in their yard? These things are about 120 feet high, 60-foot blades.

Mr. Davies: Who wants a coal-fired power plant in their yard?

Mr. Kovacs: They’re not.

Mr. Davies: Who wants a nuclear power plant in their yard? This goes both ways.

Mr. Kovacs: They serve large communities. The wind and a wind farm is—

Mr. Davies: Wind is making money for farmers in Iowa and all around the world.

Mr. Borgida: Mr. Davies, let me interrupt for a minute. This is an engaging conversation; I want to ask you one quick question, though. You mentioned a windmill in your yard and those kinds of things. Not everybody in the world has a yard in which to place a windmill, and are concerned about this issue. There are Third World people out there who are concerned about surviving each day. How do you make your case, particularly on the environmental side, to a part of the world where making it through the next day is important?

Mr. Davies: There is nothing better for the developing world than renewable energy. It is low input. There are no wires required. You set up a distribution system that’s just for a village, build solar power for that village. At the meeting in Bali right now, Greenpeace is demanding that governments of the world put a whole lot more money than they are right now into renewable energy for the poorest people in the world. It just makes perfect sense. It fits perfectly with those economies.

Mr. Kovacs: I think the economists are very clear that people don’t worry about the environment until they have a set standard of living. For example, if you want to address deforestation, that occurs when there is about a $7,000 per household income. And you have to begin generating wealth in these nations. And generating wealth means moving them from subsistence living to industrial and then into the information age. And the best way to do that is technology transfer. I think that the United States is very well-equipped to do that, and we should do it. And that’s probably the one point we agree on.

Mr. Davies: And we would agree on that.

Mr. Kovacs: The bottom line is we have to—

Mr. Davies: The point is we have to leapfrog the dirty technology and go to the clean—not let these countries and these people make the same mistakes that we made in going through these dirty pathways. It’s simple.