

## Chapter 9 Addressing Climate Change

### Materials

Please see the teaching notes for each activity for a list of the materials required. Please see page TR-31 for a summary of the materials required in this chapter and other chapters.

### Advance Preparation

- Several weeks before beginning Activity 9.2, arrange to have tree stumps or cross sections of a tree available. Alternatively, you may wish to obtain high-definition photos of tree stumps or cross sections to use for this activity. Ensure that information is available about when and where the tree was growing and cut. This information will be necessary for students to consider when answering question 3.
- Students can review the Key Terms in Chapter 9 using **BLM 9-1 Chapter 9 Key Terms**.

In this chapter, students will explore the ways in which scientists study past climates. They will examine the types of data and tools that can be used. Students will also learn how scientists model and monitor the current changing climate, and how predictions are made about future climates. Students will explore their own carbon footprint and learn about the concept of carbon offsets and cap-and-trade systems. They will consider ways to weigh facts and debates about climate change so that they can make informed decisions about their actions.

### Using the Chapter Opener (Student textbook pages 348 and 349)

- Have a class discussion about protests. Ask if students have ever been involved in a protest. Some students may have seen protests on the news or even in their own neighbourhood. Gauge how students feel about the value of protests. Some may believe protests are useful, while others may feel they do not accomplish anything.
- Find out what types of protests students are familiar with. They may be aware of ongoing Greenpeace protests. Though protests may raise the profile of an issue, they rarely change policy. In some cases, protests may even harm a cause. This happens particularly when protests turn violent. Encourage students to come up with a list of issues that are currently being protested in Canada. Choose one protest and have students collect information on how successful the protest was. Ask students to define what they think success means.
- One of the key benefits of public protests is raising awareness of an issue. Have students consider other ways that this can be done. For example, petitions sent to MPs, letter-writing campaigns and signs on lawns are all peaceful methods of raising awareness for a particular point of view. Challenge students to design a campaign to raise awareness about climate change based on what they have learned so far. As students progress through the chapter, the campaign can be expanded. When the unit is complete, students may want to carry out the campaign.

### Alternative Context

The United Nations Climate Change Conferences are a regular occurrence. They are titled COP, or Conference of the Parties, and numbered sequentially. The COP 15 conference in Copenhagen, scheduled for December 2009, is mandated to come up with the successor to the Kyoto Protocol, updated to include and consider changes that have occurred since the 1997 COP 3 in Kyoto.

Assume that the Copenhagen conference is two months away. Have students consider what they would like to see as part of Canada's presentation at the COP 15. Students may need to do additional research to solidify their position. Have them plan a protest designed to communicate to the Canadian representatives what they believe should be discussed by Canada in Copenhagen. Students may wish to write letters, make placards, or start a petition.

### Activity 9-1 Who Is Responsible for Addressing Climate Change?

(Student textbook page 349)

#### Pedagogical Purpose

Students will be challenged to consider both the global effects of climate change on humans and who should be responsible for providing aid to those who need it.

### Planning

Time 20-30 min

## Background

Small island nations need to make adaptations to climate change a priority because they are so vulnerable; however, this is often not possible. Other pressures, such as lack of resources and poverty, can end up taking precedence. The United Nations Framework Convention on Climate Change (UNFCCC) has mandated developed countries to provide assistance to less developed or developing countries. This assistance is not enough, particularly when divided among all the nations that urgently need help.

There are three international financial mechanisms (funds) that support climate change adaptation in developing countries:

- the Least Developed Countries (LDCs) Fund, which provides advice and strategy to develop and implement National Adaptation Programmes of Action (NAPA)
- the Special Climate Change Fund (SCCF), which provides funds to assist in climate change adaptation work
- the Global Environment Facility (GEF) Funding for Pilot Adaptation Measures, which funds the implementation of specific pilot adaptation projects

International agreements like the UNFCCC are the main drivers of adaptation at national and regional levels. This is partly because they provide funding opportunities, but also because of the requirements they place on countries to act, for example, to encourage governments to prepare communications strategies and content for use internally and internationally. These communications pieces involve undertaking vulnerability and adaptation assessments.

The nearest neighbors of Kiribati are Tuvalu, Samoa, and Figi. Tuvalu is a country formed on a series of coral atolls with a population of about 10 000 and an area of 26 km<sup>2</sup>. It is in immediate danger from climate change and rising sea levels. Tuvalu will be uninhabitable in the next 50 years because it will be under water. Tuvalu has secured an immigration agreement with New Zealand to accept refugees, but has not been able to get an equivalent agreement from Australia.

## Activity Notes and Troubleshooting

- Most students should enjoy this activity. However, negotiation skills will vary within groups, so watch for frustration if students feel they are not able to make progress.
- Before the activity begins, have a class discussion about the challenges small island nations face as a result of climate change and other pressures (population growth, poverty, etc.). Record these challenges at the front of the class so students can refer to them during their negotiations.

## Additional Support

- **DI** This is an excellent activity for many types of learners, including linguistic, spatial and interpersonal learners. Allow students to use props and manipulatives, such as maps or photos of Kiribati, to suit their learning styles.
- **ELL** Students can be given the choice of recording the negotiations, rather than participating verbally. Alternatively, allow them an opportunity to create cue cards with their key negotiating points on them.
- This activity provides the opportunity to start some interest centres in the classroom. Students can pursue independent activities if they have an interest in international agreements, or the immediate crisis in smaller nations, and continue to add to the centres as they progress through the chapter.
- Provide students with **BLM A-22 Project Group Assessment**.

## Study Toolkit

Strategy	Page Reference	Additional Support
Identifying Cause and Effect	Students can skim through the headings and subheadings throughout Chapter 9. Students can group headings into the categories of “cause” and “effect” based on their current knowledge.	<p>Have students write sentences using their list of headings and subheadings and the following words: X is a cause of Y because...</p> <p>Refer students to page 566 of Study Toolkit 4 of the student textbook.</p> <p>Have students look for signal words (<i>as a result of, because, in order to, etc.</i>) that may indicate a cause-and-effect relationship. You may wish to use <b>BLM G-41 Cause-and-Effect Map</b> to support this activity.</p>
Creating a Word Map	Students can create word maps for the terms <i>monitoring</i> on page 360, <i>bias</i> on page 372, and <i>carbon footprint</i> on page 373 based on their current knowledge. Have students add to these word maps as they progress through the chapter.	Have students compare their word maps with a partner to see if there is additional information they could add to their maps to help them better understand the word.
Identifying the Main Ideas and Details	Have students write out the title of each section. Underneath each title, they can write or sketch the main ideas in each section. Then have students subdivide each of their points into greater details. They should end up with an organizer, either written or graphic, of the chapter contents.	Have students redo the main ideas using a different method of communication. For example, if they wrote out their ideas the first time, have them now sketch the ideas.