

▶ CLIMATE CHANGE AND GRADE 10 SCIENCE (ACADEMIC)

Several of the main concepts of Grade 10 Science (Academic) can be linked to understanding the phenomenon of climate change. Through science we understand how greenhouse gases are formed and how they contribute to changing levels of carbon dioxide in the atmosphere. As students explore the chemical reactions that contribute to climate change, they identify the factors that disrupt ecological balances within local and global ecosystems. Atmospheric carbon changes the way energy is retained on Earth, changing the motion of global wind and ocean current patterns.

In this resource, students use science to assess the environmental impact of either urban sprawl or contemporary logging practices. The purpose of each culminating task is to have students suggest alternatives that will mitigate greenhouse gas emissions.

▶ Resource Overview

This resource outlines how a series of Big Ideas about climate change can illuminate some of the main concepts in Grade 10 Science. Two culminating tasks are provided: *A Case Study of the Environmental Impact of Transportation Choices* and *Forestry Management and Climate Change*. These tasks give students an opportunity to integrate their learning and apply their knowledge to situations where they are asked to explore ways to reduce greenhouse gas emissions.

This resource includes:

- ▶ **Big Ideas** about concepts that underlie the science of climate change;
- ▶ **Prior learning** – both fundamental skills and science background – required to complete the tasks;
- ▶ **Focus Questions** related to the Big Ideas in each of the strands which suggest ways to organize ideas as you plan your lessons with the culminating task in mind;
- ▶ **Culminating tasks** to help students explore how our individual and collective actions affect the earth's ecosystems and climate;
- ▶ A chart that shows how approved **textbooks and blackline masters** support learning about climate change;
- ▶ An **annotated list of websites** that accompanies each task.