

Activity 3: Adaptation and Mitigation

Summary

In this activity, students collaborate to define and identify the concepts of adaptation and mitigation as they pertain to climate change.

Duration: 60 to 75 minutes

Learning outcomes

After participating in the activity, students will be able to:

- Define and differentiate the concepts of adaptation and mitigation as they pertain to climate change,
- Identify examples of adaptation and mitigation measures, and
- Discuss the importance of using both adaptation and mitigation measures to fight against climate change.

Competency outcomes

During this activity, students will develop or improve these abilities:

- Collaboration
- Inference
- Research
- Critical thinking

Set-up and materials

- ☐ Computer, tablet, or dictionary (one per team)
- ☐ Colour printout of the **Adaptation and Mitigation Goals**, cut into strips
- ☐ Copies of the **Adaptation or Mitigation?** student worksheet
- ☐ Copies of the **Climate Change: Adaptation and Mitigation** infographic
- ☐ **Adapting to Our Changing Climate in Canada** poster

Tip: Check out Natural Resources Canada's new poster, **Adapting to Our Changing Climate in Canada**. It will help you learn more about our changing climate, the impacts it's having, and how Canadians are adapting. **Request your copy** using the [online order form](#) or by calling 1-800-387-2000 (Product # M174-13/2016). Alternatively, you can **download the web-accessible version**.

What to do

1. Following the **Conceptual Map** activity, launch the discussion on adaptation and mitigation by watching the video capsule called "Climate change adaptation: It's time for decisions now" (GIZ online) at www.youtube.com/watch?v=FO46sPwm4xk.
2. On the blackboard or Smart Board, write "Adaptation Measures" (on one side) and "Mitigation Measures" (on the other side).

Brainstorming phase: Ask students if they know what these words mean (synonyms, resemblances) and write their ideas under each heading.

Research phase: Ask students to find two or three words related to these concepts using the Internet or the dictionary.

Validation phase: Synthesize the results and work with students to define the concepts.

3. Provide students with the following examples of adaptation measures and mitigation measures with respect to biodiversity and nature. Work with students to refine their definitions further.

Adaptation measures:

- Revise building code to ensure flood-resistant basements.
- Protect, revegetate, and stabilize sand dunes to reduce erosion.
- Fly fuel in to mines (costing mining companies millions of dollars) to get around shortened winter road season.

Mitigation measures:

- Replace fossil-fuel-based energy with renewable energy sources like wind and solar.
 - Plant millions of trees to absorb and trap carbon dioxide from the atmosphere.
 - Feed cattle seaweed instead of traditional hay and grains to reduce the methane content of cow belching and flatulence.
4. As a whole-class activity, ask students to help you classify the **Adaptation and Mitigation Goals** as either “Adaptation” or “Mitigation.”
 5. Hand out the **Adaptation or Mitigation?** student worksheet.
 6. Assign two measures per pair of students and ask them to justify whether they fall under “Adaptation” or “Mitigation.”
 7. Ask each pair to join another group to compare answers.
 8. As a class, decide where each example should be classified and why. Hand out the **Climate Change: Adaptation and Mitigation** infographic to compare answers.

Tip: Your class answers may vary from the **Climate Change: Adaptation and Mitigation** infographic. The important part for assessment purposes is that students are able to justify their choice based on the goals of adaptation and mitigation.

Extension

- Return to the **Mind Map** activity (p. 16) and ask students to assign adaptations to their consequences.
- Some students may have experienced climate change impacts, large or small (e.g., recurrent flooding; earlier spring smelt runs). They may also have witnessed adaptation measures (e.g., their village may have been relocated; they may now go smelt fishing earlier in the season). Tap into any first-hand knowledge and make connections to their lives outside the classroom by inviting students to share their stories.
- When it comes to adaptation or mitigation, discuss whether one is more important than the other. Are there some measures that address both at the same time?
- Discuss how the following might be barriers to climate change adaptation:
 - Short-term thinking
 - Using uncertainty as a reason to do nothing
 - Unrealistic optimism

For a more detailed discussion on this topic, see the Natural Resources Canada report **Canada in a Changing Climate: Sector Perspectives on Impacts and Adaptation**, p. 273–74.

- Read the following article and justify whether this is an example of adaptation or mitigation:
P.E.I. farmer assists in near-eradication of methane from cow farts
www.cbc.ca/news/canada/prince-edward-island/pei-cow-farting-1.3856202

Activity 3—Teacher BLM: Adaptation and Mitigation Goals

Cut these goals into strips and work with students to assign each to either adaptation or mitigation.



Improve the ability of animals and plants to thrive under different climate conditions.



Build resilience to extreme weather and climate changes.



Increase species' capacity to adapt.



Cut down greenhouse gas emissions.








Trap greenhouse gas emissions.





Name: _____ Date: _____

Activity 3—Student BLM: Adaptation or Mitigation?

What type of measure does each example below represent: adaptation or mitigation? Justify your answer.

| | Adaptation | Mitigation |
|---|------------|------------|
|  <p>Designate more forests as protected areas.</p> | | |
|  <p>Improve roads, bridges and building design to resist weather damage.</p> | | |
|  <p>Protect homes and buildings from flooding.</p> | | |
|  <p>Invest in ways to absorb rainwater, like « green » roofs and porous driveways.</p> | | |
|  <p>Promote water and energy conservation.</p> | | |

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| | Adaptation | Mitigation |
|---|------------|------------|
|  <p>Invest in or provide rebates for energy-efficient fridges, furnaces, and appliances.</p> | | |
|  <p>Promote cycling, walking and taking transit as alternatives to driving.</p> | | |
|  <p>Increase sources of renewable energy like wind and solar.</p> | | |
|  <p>Improve industrial processes to use less energy and materials.</p> | | |