Lesson Plan

Did you know... ?

In a Nutshell:

In this lesson, students share their prior climate change knowledge and work in groups to extract and present key information from large colourful climate change posters. This work generates further questions for individual research and presentations.

Goal:

To help students to understand the science of climate change, appreciate its impacts in their region and consider possible solutions.

Background Learning:

Teachers should be familiar with the basic science of climate change and potential impacts as reviewed in:

- High School Backgrounder #1: Climate Change: What's The Big Deal?
- High School Backgrounder #2 : The Greenhouse Effect
- High School Backgrounder #4: Weather and Climate
- High School Backgrounder #6: A Changing Land
- High School Backgrounder #7: The Changing World of Water and Ice
- High School Backgrounder #8: Impacts on Northern Wildlife
- High School Backgrounder #15: What Schools Can Do!

Grade Level: 9–12

Subjects: Social Studies, Sciences, English Language Arts, Northern Studies, Inuuqatigiit, Dene Kede, Visual Arts

Enrichment: English, Science

Time: One to two hours

Setting: Classroom, computer lab (follow up)

Materials: Free Climate Change Posters, Chart paper (optional)

Skills: Reading, group work, presenting, developing key questions, researching

Key Vocabulary: Yukon and NWT poster: atmospheric, discontinuous, thermosyphons, mitigation, hydrologic regime, photovoltaic, circumpolar

Nunavut poster: general circulation models, polynyas, placer mining, active layer detachment, litter quality

Students do not need to do any prior reading for this lesson, however; they could read selectively from backgrounders #1–17 in order to answer the questions they chose to research at the end of the lesson.

Learning Outcomes:

Visit the website and click on the icon for your territory to review the learning outcomes that are addressed by this lesson.


Nunavut


NWT


Yukon

Introduction to Lesson Plan:

This lesson is based on two colourful and informative posters developed for the classroom by the federal government in partnership with climate scientists in each region.

1. "Degrees of Variation: Climate Change in Nunavut" (translated into Inuktutuk)
2. "Taking the Chill off? Climate Change in the Yukon or Northwest Territories"

The posters contain information about the following:

- facts about climate change – what is it and how it is caused
- impacts on the north – specific to each region (on the land, the animals, sea level, permafrost and so on)
- solutions for the north

The posters may be ordered for FREE from the federal government order desk at 1-800-622-6332 or through the Internet at:
http://adaptation.nrcan.gc.ca/posters/post-affich_en.asp?Poster=all or
http://adaptation.nrcan.gc.ca/posters

Posters are best ordered at least two to four weeks prior to the lesson. Order two – one for your classroom wall and one to be cut into sections and laminated for student group work. The posters can also be downloaded in sections from the site listed above.

In this lesson, students will share their prior knowledge of climate change, extract information from a regionally relevant poster, share their findings, develop research questions, conduct research on a specific question and return to class with their findings.

Activity:

1. Introduce students to the posters and then ask them what they already know about climate change and the greenhouse effect. Record their ideas and views on the blackboard.

2. Divide students into small groups of approximately two to five students. Ask the students to choose a presenter and a recorder for the group. The presenter will be responsible for presenting the findings of the group.

3. Give students one or two sections of the poster (the number of sections per group will depend on your class size and number of groups). Ask each group of students to read their section(s) of the poster and select five to ten key, interesting facts. Inform students that they will be sharing these key points with the other groups.

4. Ask students to translate their five to ten facts into the form of "Did you know" questions. For example: "Did you know that changes such as unusually early break-up have made predicting ice conditions more difficult?" Since the Nunavut poster already has "did you knows" incorporated into the poster, ask students to write new "did you knows" in addition to those already listed. Students may want to compete by seeing which group can generate the greatest number of "Did you knows".

5. Students record their group "Did you knows" in their own notebooks, on large flip chart paper, or on the blackboard. Writing them on the blackboard or on large sheets of paper makes it easier to present them to the class.

6. Once the students have completed this task, ask each group to present their "Did you know" list to the rest of the class. As each group presents, encourage the class to ask questions about the "Did you know" facts. If the presenting group does not know the answer, record the unanswered question on the board as a possible research question. This list may be referred to as the "parking lot".

7. Once the presentations and questioning are complete, each student selects their own research question from the "parking lot" list of questions developed during the presentations. Make sure it is a question that is feasible for the student to research. Guide students to select additional questions if necessary. If students will be presenting their research findings to the class at a later date, cross off questions as they are chosen to avoid multiple presentations on the same topic.

8. Each student researches their specific question by accessing the engaging and informative student backgrounders provided in the resources section of this website, by browsing the Internet, or by calling their regional climate change office. If students are not used to the Internet, introduce them to a search engine such as Google and explain that they must use key words from their question plus the phrase "climate change" (e.g. Caribou + snow + climate change, or fish + climate change + north + impacts) to find information on their topic.

9. Have students present their research findings in writing, or orally in subsequent classes. If students would like to post their research on the student web-exchange, ask them to write a 400–600 word essay that summarizes their findings.

Handouts:

The handouts for this lesson are derived from the free posters available from Natural Resources Canada. Check out the Introduction to Lesson Plan above for information on how to order the posters.

Student Web-Exchange:

Encourage students to post their essays (400–600 words) on the Student Web-Exchange. This allows their work to be shared with other students across the north. Visit the website and click on the icon for information on how to post material.

Evaluation:

Students' can be evaluated according to the following criteria:

- Attention to task;
- Group cooperation;
- Number of "Did you knows" developed;
- Oral presentation of group findings;
- Development of an appropriate question;
- Oral or written answer to research question;
- Overall comprehension of the issues surrounding climate change, the basic science, and relevant vocabulary.

More Information:

Refer to the websites listed in Resources.

Enrichment Ideas:

Science/English

Research Paper: Students could be encouraged to make their question the basis for a more comprehensive research paper.

Personal Interest Paper: Students could do further independent research on a specific issue identified by their research.

Public Speaking: Students could be invited to present their findings at a school or community information session – perhaps along with other guest speakers.

Debate: The class could research and debate a contentious climate change issue

Guest Speaker: Invite a knowledgeable person to share information about regional climate change with the class. Elders, scientists and people who spend time on the land and have noted changes can help to make this topic come alive for students.

Watch Create a video: There are many videos available about climate change and students might want to create their own as a way of sharing what they've learned with other classes.

About the Author:

The Yukon Conservation Society Curriculum Team – The team consists of teachers, writers, environmental educators and curriculum specialists. It team worked with teachers across the north, helping them to create lesson plans for the website, and gathering input about website features, backgrounders and lesson plans that would be useful in northern classrooms.