

Lesson Title: How Does Climate Change Affect Animal Populations?

Grade Level: 3rd grade

Content Area: Science

Time Allotted: One week – 5 class periods (60 minutes each)
Day 1: Powerpoint presentation and mapping Nova Scotia
Day 2: Group Research: What is Global Warming?
Day 3: Effects of Global Warming activity
Day 4: Food Chain activity
Day 5: Focus on the Future

Academic Standards: **Florida Sunshine State Standards**
Benchmark SC.D.2.2.1
Benchmark SC.G.1.2.2
Benchmark SC.G.1.2.5
Benchmark SC.G.2.2.1
Benchmark SC.G.2.2.2

Abstract: Students will be given background information on Nova Scotia and will be able to complete the Nova Scotia map activity. Students will then research in teams to determine what global warming is and possible causes of climate change. They will participate in activities to experience the effects that global warming has on the animal populations and the food chain. At the conclusion of the unit, students will work in teams to create a project that describes what would happen if global warming continued and what humans need to do to help the problem.

Goal: **Students will be able to:**

- define what is meant by “global warming.”
- describe possible causes of climate change
- explain the effects of climate change on animal populations
- list things we can do to control climate change

Performance Indicators: **Map activity should:**

- show the location of Nova Scotia on the map.
- list the continent, country, and capital of Nova Scotia.
- tell the latitude and longitude of Halifax.

Research Project tells:

- what global warming is.
- possible causes.

Final project tells:

- the effects that global warming is having on animal populations.
- possible future outcomes if global warming continues.
- things that people can do to help.

Background Information: Basic map reading skills
Computer research skills

Knowledge of the parts of a food chain (decomposer, producer, consumer)

Materials: Nova Scotia Powerpoint
Map activity worksheet
Research Guideline Questions worksheet
Small squares of green, blue, black, brown, and red paper
Ball of string
Cards with animal names printed on them (including producers, consumers, carnivores, omnivores, herbivores, and decomposers) tied to string to hang around neck
Paper, pencils, erasers

Technology: Laptop and projector to show Powerpoint presentation
Access to computer lab for students teams to do research

Instructional Procedure: Day 1: Nova Scotia Powerpoint presentation: overview of the project, pictures of the landscape, introduction to the local animal species of Nova Scotia. Mapping activity: students use their desk maps of the world to locate and label Nova Scotia on the map worksheet and to answer the questions on the map worksheet.
Day 2: In the computer lab, students will work in teams of 2 or 3 to research online and answer the questions on the Research Guideline Questions worksheet.
Day 3: See attached page.
Day 4: Each student (and teacher as well) gets a card to hang around their neck that tells them what animal they are. They will either be a carnivore, omnivore, herbivore, producer, consumer, or decomposer. The teacher starts the activity off by holding the ball of string, saying what she is and what she can eat in the food chain. She then holds on to the end of the string and throws it to an “animal” she can eat. They repeat- hold the string and throw to an animal they can eat. The string begins to form a web. To illustrate the interdependence of animals, teacher can have certain types of animals “die off” by dropping their string.
Day 5: Students work in groups of 3 or 4 to write their final project. They may illustrate their descriptions if desired. Teams will present their project to the whole class.

Assessment: Students will be graded on map activity, research project, and final project. These will be looked at for accuracy of information and demonstration of an understanding of the concepts presented.

Connection to Other Content Areas: **Reading:** Students will be researching climate change, reading articles to gather important facts and summarize what they have read.

Writing: Students will be writing their final presentations to explain what they have learned about the effects of climate change.

Social Studies: Students will be using map skills during the map activity.

Lesson Submitted by: Shannon O'Sullivan

Food Chain/Global Warming Activity

Materials:

Designated/marked space of 10'x10'
100-150 squares of green paper
80-100 squares of blue paper
5-10 squares of black paper
40-50 squares of brown paper
40-50 squares of red paper

Procedure:

Round 1:

Allow students to select their standing space in the marked area.

Take all of the squares of paper and drop them on the ground inside the marked area.

Tell students that they are an animal in the forest and winter is coming. They have 30 seconds to collect what they think they need. Allow students to collect as many squares as possible then call time.

Explain that the green is food and they needed at least 7 to survive the winter. Any student that did not get 7 did not survive and must step out of the forest.

Continue with the rest of the colors:

Blue is water- they needed 5 to survive.

Black was age- if they had 2 or more black squares, they passed away.

Brown was disease- if they got 3 or more, they died during the winter.

Red stands for nothing during the first round.

At the end of the first round, have the students spread the squares out on the ground and get ready for round 2.

Round 2:

The second time around, the students are naturally going to select/avoid certain colors, so tell them that the colors have changed and there are more factors being added to the game.

Allow students time to pick up as many squares as possible.

This time around, if they have even one blue, it means that winter lasted longer than usual in their area. Because of this, they needed more food.

Brown, red or green is food- they needed 10 or more total browns/reds/greens. However, black is good health- if they had 2 or more blacks, they made it through the winter anyway.

At the end of the first round, have the students spread the squares out on the ground and get ready for round 3.

Discuss why so many more animals died during round 2 and the effect that the seasons and weather had on the population of the forest.

***Please note: all of the numbers in here are approximate. It depends on the number of students you have, the number of squares you cut, the number of squares of each color the students picked up, etc. As you are doing this activity with your students, please look around and observe all of these factors. Modify the numbers you call out accordingly.