

Lesson Plan By: Amanda Dennis

Lesson: What is Global Warming?

Length: 40 min

Age or Grade Intended: 3rd grade

Source: <http://www.pbs.org/now/classroom/globalwarming.html>

Academic Standards:

Standard 3

The Physical Setting

Students observe changes of Earth and the sky. They continue to explore the concepts of energy and motion*.*

3.3.7 Identify and explain some effects human activities have on weather.

Performance/Behavioral Objectives:

Students will be able to write a definition of global warming and list three things that cause it with 90 percent accuracy.

[Global warming can be defined as “the gradual increase in the Earth’s surface temperature” (zfacts.com). Possible causes students might list: carbon dioxide from power plants, carbon dioxide from transportation, deforestation, burning of fossil fuels.]

Assessment: Students will be assessed through their definitions for global warming and participation in grand discussion.

Advanced Preparation by Teacher:

Materials needed:

Butcher Paper

Markers

Procedure:

Introduction/Motivation:

Ask students, what do you know about global warming? Can you tell me anything about it? (Write student responses on butcher paper)

Step-by-Step Plan:

- Discuss what students have said
- Have a grand discussion covering what global warming is and what causes it
- Then have students write a definition of global warming in their own words
- Have students get into groups of 3 and share their definitions
- Next have each group write a new definition

Closure:

Have groups share their new definition with the rest of the class. Talk about what we have learned in the lesson and review key points.

Accommodations/Enrichments:

For students with autism or ADHD it might be necessary for the teacher to stand close to them and keep them on task.

The teacher might pair students with lower abilities with a higher achieving student. That way the higher achieving student might act as a tutor to help teach the concept to the other student.

Reflection:

The teacher will know this lesson was successful by the amount of discussion generated and if students are engaged.

The teacher will know this lesson was successful if the student definitions are correct and show that they grasped the lesson.

Lesson by: Amanda Dennis

Lesson: When Floating Ice Melts in the Sea

Length: 30-35 min

Age or Grade Intended: 3rd grade

Source: <http://education.arm.gov/teacherslounge/lessons/floatingice.stm>

Academic Standards:

Standard 1

The Nature of Science and Technology

Students, working collaboratively, carry out investigations. They question, observe, and make accurate measurements. Students increase their use of tools, record data in journals, and communicate results through chart, graph, written, and verbal forms.

3.1.3 Keep and report records of investigations and observations* using tools, such as journals, charts, graphs, and computers.

3.1.4 Discuss the results of investigations and consider the explanations of others.

Performance/Behavioral Objectives:

Students will investigate the possible effects that floating ice could have on sea level if melted by global warming.

[Rising temperatures are causing areas of ice to melt, which is raising sea levels. This is a serious problem for people and animals who depend on the ice. "A sea level rise of just one meter would displace tens of millions of people in Bangladesh" (greenpeace.org). Melting ice can also dilute the oceans, changing the salinity and harming the ecosystems. "Then there is the chance that melting ice will cause a feedback

effect due to the fact that snow and ice reflect more sunlight than bare ground or water so less ice means more warming” (greenpeace.org).]

Assessment:

Students will be assessed throughout the experiment. The teacher will walk around and observe the students, as well as assess their answers to their lab write-ups.

Advanced Preparation by Teacher:

Materials needed:

- Container
- Ice Cubes
- Water
- Paper
- Pencil

Teacher should make enough ice cubs for every group to have 3, and this should be done the day before the experiment.

Procedure:

Introduction/Motivation:

Today we are going to do an experiment with ice cubes. Remember yesterday when we talked about global warming and some of the effects that it has and will have on our environment? Well today we are going to see what will happen when floating ice in the sea melts.

Step-by-Step Plan:

- Group students into pairs
 - Give each pair a container filled with ice
 - Then have each pair fill their container to the very top with water
 - Students will then observe what happens as the ice melts
 - Students will record data throughout the ice melting process
 - Students will then answer questions about the experiment.
1. Does the water overflow when ice melts?
 2. Do you think that melting icebergs will make the sea level rise?
 3. Do you have any reason to support your answer in question (2)?

Closure:

Discuss with students the effects of floating ice melting. What does it do? Do the results in the experiment match with what is really happening.

Accommodations/Enrichments:

This experiment could be done individually or in pairs.

For more advanced students the teacher could expand on the project. Having them take a deeper look into it. Ask more critical questions, what could happen to land masses if all the floating ice melts? Will they be affected?

For struggling students, it might be more beneficial if they work in pairs so that they can discuss the outcome and possibilities of ice melting in the sea.

Reflection:

The teacher will know this lesson was successful by student reaction. Were the students fully engaged?

The teacher will know this lesson was successful by the results of the experiment. Did students grasp the concept? Did the students understand what was being taught?

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Lesson: What Can You Do about Global Warming?

Length: 30-35 min

Age or Grade Intended: 3rd grade

Source: <http://www.fightglobalwarming.com/page.cfm?tagID=135>

Academic Standards:

Standard 3

The Physical Setting

Students observe changes of Earth and the sky. They continue to explore the concepts of energy and motion*.*

3.3.7 Identify and explain some effects human activities have on weather.

Performance/Behavioral Objectives:

Students will be able to give three examples of things they can do to help with the global warming issue with 100 percent accuracy.

[“The largest source of greenhouse gases is electric power generation. The average home contributes more to global warming than the average car” (eartheasy.com). Therefore, families could switch to energy efficient lighting, improve the efficiency of appliances, and turn down their heat. “The second largest contributors to greenhouse gases are vehicles” (eartheasy.com). Families could carpool, ride a bike, and keep vehicle maintenance up increasing their fuel efficiency. “Every gallon of gasoline burned puts 26 pounds of carbon dioxide into the air; by keeping the maintenance up on your vehicle you can increase your fuel efficiency by 30%” (eartheasy.com). Recycling can also help keep CO2 emissions out of the air, as well as planting a tree, because plants take in carbon dioxide and turn it into oxygen.]

Assessment:

Students will be assessed by their participation in the discussion and with the activity.

Advanced Preparation by Teacher:

Teacher must ask for permission to plant tree.

Materials needed

Shovel

Tree

Help from students!

Procedure:

Introduction/Motivation:

We have learned about global warming, how it is caused and the effects, now we are going to learn what we as individuals can do about it. What do you think you can do to help the environment?

Step-by-Step Plan:

- Have grand discussion about what students can do.
 - Use less energy
 - Turn off lights
 - Turn heat down
 - Carpool
 - Walk
 - Recycle
 - Plant a tree
- Then together as a class students will plant a tree

Closure:

Explain to students that by using more efficient products, carpooling, and recycling we can help reduce the amount of CO2 emissions in the air, and if we can encourage others to do the same we will greatly help our environment.

Accommodations/Enrichments:

For students with orthopedic impairments it might be necessary to give them one specific job that they can do, or find something important that they can do. Make sure they stay involved during the activity, do not let them feel left out.

Reflection:

The teacher will know this lesson was successful by the amount of participation and engagement from students during discussion.

The teacher will know this lesson was successful by the amount of participation during the activity.

2 May 2007

Dear Parents,

Over the course of the next couple of days I will be teaching a mini unit over global warming. In class, we will be discussing what global warming is, some effects it's having on our environment, and small actions we can take to reduce the amount of air pollutants causing global warming. I feel that this is a very important topic, and I wanted to share with you some information that I have found.

According to the Environmental Protection Agency, the burning of fossil fuels and deforestation have caused large concentrations of greenhouse gases to accumulate in the atmosphere. These gases are preventing heat from escaping into space. "If they continue to increase, climate models predict that the average temperature at the Earth's surface could increase from 2.5 to 10.4 degrees Fahrenheit, and scientist are certain that humans are to blame for this increase" (epa.gov).

This is some startling information, and I do strongly believe that human activities are causing the problem. Therefore, if we are the problem I feel that it is our job to educate people on the topic so we can start to solve it. The two greatest sources of CO₂ emissions come from our homes and vehicles. Knowing that, there are simple steps that each of us can do to reduce the amount of CO₂ emissions we put out into the air.

Keep the maintenance up on your vehicle; this can increase your fuel efficiency by 30%. Choose a compact fluorescent light bulb, according to NRDC this can lower your energy bill, and keep 700 pounds of carbon dioxide out of the air. Other simple things we can all do is conserve energy; turn the lights off when not in a room, turn off certain appliances when not in use such as the computer, or turn the heat down a couple of degrees. You can also do things such as recycle or carpool. These are small solutions that, if we can encourage people in mass numbers to do, could greatly decrease the amount of carbon dioxide we put into the air.

I hope that you will choose to take action and encourage your children to do the same, as well as advocate others. Global warming is a serious issue. If you would like to learn more here are some helpful websites:

<http://www.nrdc.org/globalwarming/>
<http://epa.gov/climatechange/kids/gw.html>
<http://www.livescience.com/globalwarming/>

Thank you for being a part of your child's education!

Sincerely,

Miss Amanda Dennis

Works Cited

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