



Climate Change Trivia Tag

It is time to review what has been learned about climate change. Let this fun and engaging activity do the work for you.

Activity Time:

30 minutes

Setting:

Large play area outdoors or indoors

Materials:

8 cone pylons (general supplies)

Grade Level:

Grade 4-8

Subject Areas:

Biology, chemistry, ecology, earth science, geography, physical science, social studies

Group Size:

24+

Keywords: (may vary)

Atmosphere, carbon, carbon cycle, carbon dioxide, climate, climate change, energy efficiency, fossil fuels, greenhouse effect, greenhouse gas, solar power, wind turbine

* Source: ffl.nbed.nb.ca

Summary

Students review and consolidate their knowledge of the issue of climate change in this active tag game.

Objectives (may vary)

Students will:

- Analyze the impacts of weather on living things
- Determine how personal choices and actions have environmental consequences
- Describe potential environmental impacts of using BC's living and non-living resources
- Explain how the earth's surface changes over time
- Evaluate human impacts on local ecosystems
- Describe factors that affect productivity and species distribution in aquatic environments.
- Demonstrate scientific literacy

Making Connections

Reviewing what has been learned in a unit of study can be as dry as dust. In this activity, students engage their bodies and their minds in an active review of what has been learned. Allowing

students to be up and moving while they keeps them alert and focused resulting in better engagement in the task.

Background

This game should be used as a culminating activity or a midway check up for a unit of study on climate change. The Climate Change Primer and other activities provided can serve as a solid foundation for teaching about climate change.

The Activity

1. Set up a playing area by having two lines, designated by a pylon at each end, approximately 3m apart. These are the start lines. Behind each of these lines, set up another parallel line about 20-30m back. Use the remaining four cones to mark the ends of these lines. Behind these lines are the safe zones. Do not have the pylons inside the play area.

2. Divide the students into two teams (Team A and Team B) and have each team line up facing each other on their respective lines, 3m apart.



Climate Change Trivia Tag

3. Explain that the teacher will read a question to which the answer is either true or false.

If the answer is true, then Team A chases Team B and tries to tag them before they reach their safe zone. If the answer is false then Team B chases Team A and tries to catch them before they make it to their safe zone. Once someone is tagged by a member of the opposing team they become that team's member.

4. After each question and chase, repeat the question and discuss

the correct answer when the teams return to their starting positions.

5. The game ends when all the players are on one team or when all the questions have been asked.

In the latter case, the team with the most players wins.

Note: The questions can be adapted to suit specific levels of understanding. It is important to have equal numbers of true and false answers.

Assessment

Provide the true and false questions in the form of a written quiz.

Extensions

Have each student research a topic related to climate change and develop one true and false question. Use these questions to play another game and have the students conduct the debrief after the question has been asked.

The Questions

It is recommended that you supplement or replace the following questions with those covered in your unit of study.

True Questions

1. *Climate is the average weather pattern over long periods of time – tens to thousands of years.*

This is opposed to changes in daily conditions and seasonal trends in temperature, precipitation, humidity, wind and pressure. Climate profoundly affects the distribution of life on land, freshwater and in oceans.

Organisms adapt to climate conditions in their local area.

2. *The four major greenhouse gases are: water vapour, carbon dioxide, nitrous oxide and methane.*

3. *Burning fossil fuels is the major contributor to the emission of carbon dioxide into the atmosphere.*

- Carbon dioxide is released to the atmosphere when solid

waste, fossil fuels (oil, natural gas, and coal) and wood and wood products are burned.

- Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from the decomposition of organic wastes in municipal solid waste landfills, and the raising of livestock.
- Nitrous oxide is emitted during agricultural and industrial activities, as well as during combustion of solid waste and fossil fuels.

4. *Climate change may result in frequent and severe weather events.* Climate models suggest that global warming could cause more frequent extreme weather conditions. Intense hurricanes and storm surges could threaten coastal communities, while heat waves, fires and drought could also become more common.

5. *Small changes can have significant impacts.*

In BC on average households recycle 42% of their municipal solid waste. If each household generated 5% less waste from recyclable materials (newspapers, cans, plastics, etc), then recycled the remaining recyclable materials, they would reduce greenhouse gas emissions by 141 Kg per household.



Climate Change Trivia Tag

False Questions

1. *The greenhouse effect has a negative effect on life on earth.*

The natural greenhouse effect is critical to life on earth. Without it the earth's average temperature would be -18°C . The enhanced greenhouse effect caused by an increase in greenhouse gas emissions due to human activities has a positive effect.

2. *A carbon sink releases carbon into the atmosphere.*

A carbon sink holds carbon. A carbon source releases it into the atmosphere.

3. *Humans create more nitrous oxide than any other greenhouse gas.*

Since the beginning of the industrial revolution, atmospheric concentrations of **carbon dioxide** have increased nearly 30%, methane concentrations have more than doubled, and nitrous oxide concentrations have risen by about 15%. Though methane is produced in much smaller quantities than CO_2 , it is measured in parts per billion by volume (ppbv) rather than parts per million by volume (ppmv), it is a significant contributor to the greenhouse gas problem because it is about 24 times more potent as a greenhouse gas than CO_2 .

4. *A 1m rise in sea level would not have much effect on coastal communities.*

Worldwide some 100 million people live within 1m of mean sea level and will experience significant effects from a rise in sea level. For example, the Indian Ocean nation of Maldives has a maximum elevation of only 2.5m.

5. *There is not much an individual can do to help stop climate change.*

All the individuals making changes will have a big cumulative effect. For example, using compact fluorescent bulbs can help you use 67% less energy every year. If every American home changed out just 5 high-use light fixtures or the bulbs in them with ones that are energy efficient, each family would save more than \$60 every year in energy costs, and together they would keep more than one trillion pounds of greenhouse gases out of our air – equal to the emissions of 8 million cars. That's a \$6 billion energy savings, which is equivalent to the annual output of more than 21 power plants.