



Climate Change Cause and Effect[ME]

Adapted from Smithsonian Institute Ocean Portal

Grades: 6-8

Time: 45 minutes to 1 hour

Goals: To demonstrate the cause and effects of global climate change by using metaphors.

Objectives:

Students will be able to: define global climate change; use metaphors to describe climate change causes and effects; examine ways humans can alter, slow down, or end climate change.

Materials:

Grab bags (paper bags, pillow cases, canvas bags)

Grab bag items (list provided)

Preparation: Procure the items listed so that you have enough for each group of students. They represent the causes of global climate change, the effects to the environment, and conservation strategies. Have already written on the board CAUSE, EFFECT, CONSERVATION STRATEGY.

Listed items:

Toy car – causes air pollution; Goggles – represents smog and unclear visibility

Plastic 6-pack ring – causes damage to wildlife; Stuffed animal turtle – represents entanglement

Plastic vegetables – causes deforestation from agriculture; Picture of cleared forest – represents loss of oxygen from plants

Thermometer – rising temperatures; Picture of a tropical island – represents sea level rise

Toy recycling truck – represents conservation of plastics

Toy bicycle/bus – represents alternative transportation

Light bulb – represents conservation of energy

Packet of seeds – represents adding oxygen by planting trees

Procedures:

1. Pre-Activity (introduction): Begin the discussion by asking the students to define global climate change and describe how it may affect both humans and other species. Examine the idea that something happening in Japan can and will affect an ecosystem halfway around the world in Europe. Explain that in this activity, they will look at the causes and effects of climate change, as well as some conservation strategy we can take to lessen the effects.



2. Activity: Divide the class into groups of 4-5 students and have each group pick an item from the grab bag. As a group, they are to first identify their item as either a cause of climate change, an effect of climate change, or a conservation strategy. Next, have each group try to find their cause/effect match from the other groups. Conservation strategies will have no matches. Once they have found their match, have a representative for each group go up to the board and write their item and how it was a cause, effect, or conservation strategy.
3. Post-Activity (review): Once the students have returned to their seats, discuss how climate change has increased in the last few years and how they can be a part of the conservation strategies. Elaborate on ways the students can take action in their school, their homes, their communities to reduce the causes of global climate change.

Key Words:

Global warming

Entanglement

Deforestation

Energy use

Climate change

Agriculture

Sea level rise

Emissions

Cause and effect

Fossil fuels

Recycling

Background Information:

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Since the Industrial Revolution, scientists have been calculating the rate of change in our global temperatures and the rise of sea level along our coasts. They have given their explanations, placing blame on human activities such as burning fossil fuels, not recycling plastics, deforestation, and the over-consumption of energy. Greenhouse gases, especially carbon, remain in the atmosphere and keep solar radiation from reflected out to space.

Sea level rise, due to the melting of polar glaciers, can be catastrophic if it continues at the rate is it going. The majority of the world's population lives around or near coastal environments and as sea level rises, these ecosystems become vulnerable to erosion, flooding, and major tidal influences that could put a lot of species, including humans, in danger. As temperatures increase, the severity and frequency of storms, such as hurricanes and tsunamis, will also increase. This will also alter the precipitation patterns across the globe.

It is imperative that humans do everything they can to curb the causes of global climate change so that it creates less of a global effect. Some examples of simple changes can be switching to energy efficient light bulbs and turning lights off when not in use, recycling plastics, carpooling or using public transportation, purchasing locally grown foods, and planting more trees. By using alternative energy, less fossil fuels are burned, created less greenhouse gases, allowing more radiation to reflect instead of remain in our atmosphere.