

Student Sheet

Name \_\_\_\_\_ Period \_\_\_\_\_

**Title: Carbon Dioxide Emissions**

**Introduction:** Many of the things we do increase the emissions of carbon dioxide into the atmosphere. Whenever we burn fossil fuels to drive our car, heat our homes, make hot water, or provide the electricity used by our television or other electrical devices, we take carbon that was previously locked out of today's carbon cycle and inject it into the atmosphere. Other industrial activities, such as manufacturing cement, emit significant amounts of carbon dioxide. This exercise illustrates the different amounts of carbon dioxide emission made by citizens in different areas of the world.

**Procedures:**

1. When instructed to you will go to different areas of the world that you think have high and low populations and high and low carbon emission levels.
2. Watch as students are distributed to areas by population and given balloons to represent carbon emissions.
3. Record how many students are in each area of the world and how many balloons they have on your data table.
4. Calculate the percentage of population and percentage of total carbon emissions using a calculator. Record them on your data table.
5. Answer your analysis questions.

**Data:**

Area of World	# of people out of 19	% of population (# of people out of 19 divided by 19)	# of Balloons	% of Total Carbon Emissions (# of balloons divided by 30)
Africa				
Europe				
Central & South America				
Asia				
North America				

**Analysis:**

- 1) Which area of the world has the largest human population?
- 2) Which area of the world has the least human population?
- 3) Which area of the world produces the most Carbon dioxide?

- 4) What percent of the world's population does North America make up?
- 5) What percent of the world's carbon emissions does North America make up? Is that a lot for the population size?
- 6) What would be the effect of everyone in Asia living like a North American?
- 7) Is it fair for North Americans to live a lifestyle of excess and expect other countries not to? Why or why not?

*Read the excerpt below and use it to answer questions 7-11.*

There are three different kinds of activities that account for most of our environmental impacts as consumers. These are transportation, food, and household operations (heating, cooling, lighting, cleaning, etc.) These three activities account for about 75% of our consumer impacts on global warming, air pollution, water pollution, and alteration of habitat. Transportation account for 32% of our impact on global warming and 51% of our toxic air pollution.

- 8) What are the three activities that account for most of our global impact as consumers?
- 9) Come up with five ways to reduce the pollution and carbon dioxide released by transportation.
- 10) Come up with three ways to reduce the use of fossil fuels in your home.
- 11) List two ways to reduce pollution and environmental impact through food? (Think hard about this one, where do you get your food, how it is made, etc.).

**Conclusion:** Do you think enough people would be willing to make these changes in North America to help bring the carbon cycle back in to balance? Why or why not?