

First Name \_\_\_\_\_ Last Name \_\_\_\_\_  
Teacher Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

### What do you know about Climate Change?

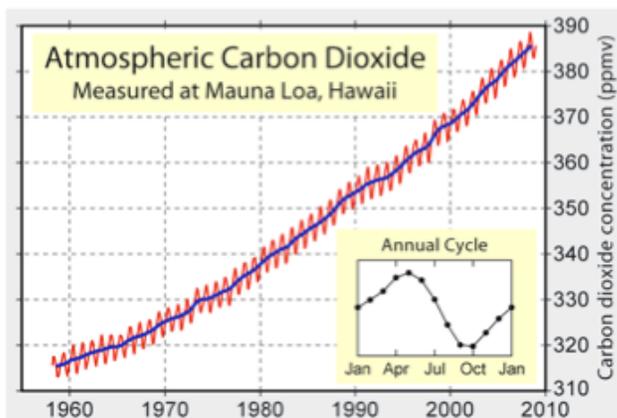
1. Without the natural greenhouse effect, the Earth, on average, would be:
  - A. much warmer.
  - B. much colder.
  - C. about the same temperature.
  - D. We don't know.
  
2. The Earth's temperature remains stable when:
  - A. the Earth reflects the same amount of energy as it absorbs.
  - B. the amount of solar energy absorbed by Earth is doubled.
  - C. the amount of radiation increases and albedo decreases.
  - D. the amount of radiation decreases and the albedo increases.
  
3. To know what climate was like in the far past, scientists most often use:
  - A. thermometer readings from thousands of years ago.
  - B. natural records such as tree rings and ice cores.
  - C. computer models of the past.
  - D. written records from thousands of years ago.
  
- 4: How do we know that atmospheric carbon dioxide (CO<sub>2</sub>) concentrations have increased over the past **50 years**?
  - A. From recent temperature readings
  - B. From tree rings
  - C. From direct measurements of the atmosphere
  - D. From growth of ice sheets
  
5. Earth's atmosphere is made up of:
  - A. primarily nitrogen and less than 1% carbon dioxide.
  - B. only heat-trapping (or greenhouse) gases.
  - C. primarily oxygen and less than 1% methane.
  - D. carbon dioxide and methane, with less than 10% of it being nitrogen and oxygen.
  
- 6: To stabilize carbon dioxide concentrations in the atmosphere, carbon dioxide emissions from human activities must
  - A. be kept at current levels.
  - B. be increased.
  - C. be reduced.
  - D. be measured.
  
7. If global carbon emissions are kept constant at current levels, then global temperature would:
  - A. the answer cannot be known.
  - B. stay about the same.
  - C. decrease.
  - D. increase.
  
8. Which of the following choices best represents a way to **mitigate** (to lessen, to diminish) carbon dioxide emissions?
  - A. Drive more cars
  - B. Burn more coal
  - C. Cut down more trees
  - D. Use solar electricity
  
9. Which of the following is NOT a way to **adapt** to climate change?
  - A. Reduce use of fossil fuels
  - B. Build dams or levies to protect shoreline from flooding
  - C. Plant different crops that can better stand a changing climate
  - D. Wear light colored clothes on hot days

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10. The difference between weather and climate is:
- A. weather is what we expect based on years of data while climate is what is happening right now.
  - B. weather includes more variables like moisture and wind while climate just focuses on temperature.
  - C. weather is predictable but climate is not.
  - D. weather is a day-to-day event while climate is a consistent pattern many years.
11. Over the last 50 years, carbon dioxide in the air has increased which has led to
- A. higher global temperatures.
  - B. cooler global temperatures.
  - C. more earthquakes and volcanoes.
  - D. None of the above.
12. Which of the following is a major cause of global climate change?
- A. nuclear power plants
  - B. driving cars
  - C. littering
  - D. ozone in the upper atmosphere
13. When coal or oil is burned for electricity, it makes:
- A. albedo.
  - B. carbon dioxide.
  - C. radiation.
  - D. ozone.
- 14a. A friend who lives in another state calls you and says that it has snowed in her city for the first time in a hundred years. She says that this proves global warming is not happening.
- A. True. The snow **proves** that global warming **is not** happening.
  - B. False. The snow **does not prove** that global warming **is not** happening.
- 14b. Does your friend have enough evidence to claim global warming isn't happening?
- A. Yes
  - B. No
- 14c. Explain why or why not.
- 15a. Name one thing you did today (besides breathing) that produced carbon dioxide.
- 15b. Explain as specifically as possible how that activity produces carbon dioxide.

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Use the figure below to answer questions 16.



16. Look at the information given in the title and the labels. Answer the following questions using the specific language and information on the graph.

a. What does the solid (blue) line tell us?

b. What does the squiggly (red) line tell us?

17a. Name one thing that your community could realistically do to reduce carbon dioxide emissions to the atmosphere.

17b. Explain how this change or activity could reduce carbon dioxide emissions to the atmosphere.

18a. What is one thing you or your community could realistically do to prepare for or adapt to future changes in climate?

18b. Explain how or why your suggestion would work.

The last five questions ask for **your opinions** about global climate change. They will **NOT** be graded.

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1. Assuming global warming is happening, do you think it is
  - a. Caused mostly by human activities.
  - b. Caused by human activities and natural changes.
  - c. Caused mostly by natural changes in the environment.
  - d. None of the above because global warming isn't happening.
  - e. Other. Please specific \_\_\_\_\_
  - f. Don't Know.
  
2. Do you think global warming is happening? How sure are you that global warming (is happening/is not happening)?
  - a. Very sure sure global warming is happening
  - b. Somewhat sure global warming is happening
  - c. Don't know
  - d. Somewhat sure global warming is not happening
  - e. Very sure that global warming is not happening
  
3. Which comes closer to your own view?
  - a. Most scientists think global warming is happening.
  - b. There is a lot of disagreement among scientists about whether global warming is happening.
  - c. Most scientists think global warming is not happening.
  - d. Don't know enough to say.
  
4. How important is the issue of global warming to you personally?
  - a. Extremely Important
  - b. Very important
  - c. Somewhat important
  - d. Not too important
  - e. Not at all important
  
5. How worried are you about global warming?
  - a. Very worried
  - b. Somewhat worried
  - c. Not very worried
  - d. Not at all worried

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ANSWER KEY

- 1 B
- 2 A
- 3 B
- 4 C
- 5 A
- 6 C
- 7 D
- 8 D
- 9 A
- 10 D
- 11 A
- 12 B
- 13 B