## **LAB 18**

#### **Checkout Questions**

# Lab 18. Carbon Dioxide Levels in the Atmosphere: How Has the Concentration of Atmospheric Carbon Dioxide Changed Over Time?

1. Sketch a graph of the how the concentration of atmospheric carbon dioxide has changed over time.

2. A scientist collects yearly global average temperature and compiles it into the table below.

Year	Average temperature		
1880	56.8°F		
1900	56.9°F		
1920	56.7°F		
1930	56.9°F		
1940	57.3°F		
1960	57.1°F		
1980	57.6°F		
2000	57.9°F		
2010	58.4°F		

- a. What is the rate of change for the time period between 1880 and 1930 and the time period between 1960 and 2010?
- b. Are the rates of change significantly different from one another?

### Carbon Dioxide Levels in the Atmosphere

How Has the Concentration of Atmospheric Carbon Dioxide Changed Over Time?

c. How do you know	C.	How	do	you	know	?
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d. What additional information would you need to determine whether the global climate is stable?

- 3. Once new scientific knowledge is developed, it will not be abandoned or modified in light of new evidence.
  - a. I agree with this statement.
  - b. I disagree with this statement.

Explain your answer, using an example from your investigation about carbon dioxide levels in the atmosphere.

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- 4. Science assumes that objects and events in natural systems occur in consistent patterns that are understandable through measurement and observation.
  - a. I agree with this statement.
  - b. I disagree with this statement.

Explain your answer, using an example from your investigation about carbon dioxide levels in the atmosphere.

5. It is critical for scientists to be able to recognize what is relevant at different time frames and scales. Explain why analyzing data in the context of appropriate time frames and scales is important, using an example from your investigation about carbon dioxide levels in the atmosphere.

6. It is critical to understand what makes a system stable or unstable and what controls rates of change in a system. Explain why it is important to determine whether a system is changing or is stable, using an example from your investigation about trends in average global temperatures.