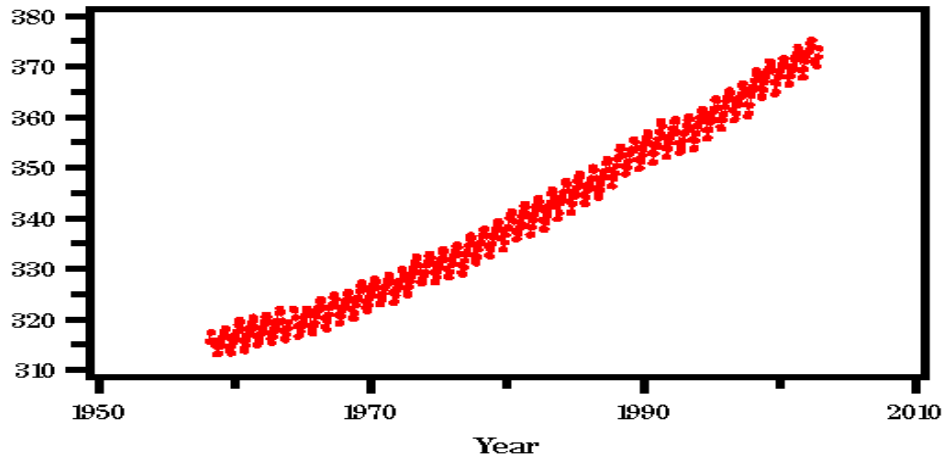
ANSWER ANSWER ANSWER
Round: 10B



1. What is the appropriate label for the Y axis? What are the units?
   Atmospheric CO_2 OR Carbon Dioxide Concentration (2 pts)
   Units: ppm OR ppmv OR parts per million (1 pt)

2. This graph is fairly heavily used. What is it commonly called? Where were the measurements taken?
   Keeling Curve (1 pt)
   Measurements are from Mauna Loa Observatory in Hawaii (1 pt)
   (Also acceptable: Hawaii or Mauna Loa)

3. The graph appears to show a distinct trend, but has a lot of variability. Is there a pattern to the variability? Is there a specific source for the variability?
   There is seasonal (yearly) variability associated with the release and draw down of CO_2 by terrestrial plants. In the summer, atmospheric CO_2 drops because plants photosynthesize a lot, and draw down the atmospheric concentration. In the winter, respiration is greater than photosynthesis, and CO_2 consequently rises. (5 pts)

4) Draw a new graph similar to the one shown on the previous page, but going back to 1500 A.D. and forward to 2100 A.D. Do not worry about short term variability, only about the long term trends. Appropriately label your axes and any key dates. Explain what the contributing factors were to your predictions, and what the global implications of your predictions might be. Be as specific as possible.

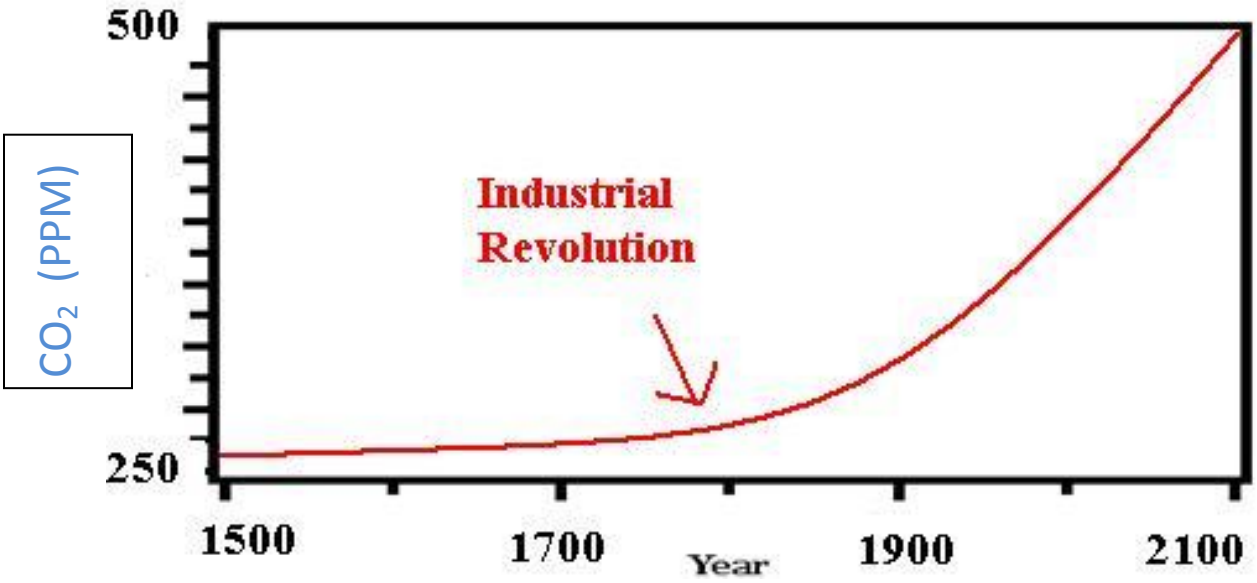


Figure Scoring (6 pts total)

- *-1 pt for correct X axis labels*
- *-1 pt for correct Y axis labes*
- *-1 point for correct range of CO_2 concentration (anywhere between 200-700 is okay)*
- *-2 pts for increase at ~1800*
- *-1 pts for labeling the Industrial Revolution*

Explanation (4 pts total)

Prior to the 1800s, CO_2 remained at a relatively constant level (1 pt). The advent of the Industrial Revolution initiated a sharp increase in population growth and increased use of fossil fuels (1 pt). As developing nations continue to industrialize over the next century, CO_2 levels will continue to rise as more fossil fuels are used (1 pt). This will lead to an acceleration of climate change (1 pt).