**Global Carbon Atlas** Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Data Collection** Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Per\_\_\_\_\_

**Instructions:** Visit the Global Carbon Atlas website. First, visit the Carbon Story and discover how the past defines us, what is happening in the present, and where the future may take us. Second, view real time data on CO2 emissions and consumption by country.

 Link: <http://globalcarbonatlas.org/>

**The Carbon Story: Click on “Outreach” from the above Website:**

**Enter the Past:**

1. For each year(s), record what humans are doing and the GtCO2 (gigatons of CO2) humans are responsible for at that time.

|  |  |  |
| --- | --- | --- |
| **Year (span)** | **Human Activity** | **GtCO2** |
| 800,000 BC |  |  |
| 14,000 BC |  |  |
| 3,500 BC |  |  |
| 1750 |  |  |
| 1781 |  |  |
| 1824 |  |  |
| 1850 |  |  |
| 1880s |  |  |
| 1908 |  |  |
| **Year (span)** | **Human Activity** | **GtCO2** |
| 1950s |  |  |
| 1970s |  |  |
| 1990 |  |  |
| 2000s |  |  |

2. As you followed the carbon story, what did you notice about the concentration of

 CO2, in ppm, as the years went on? (Hint: look at the Y axis on the graph at the

 bottom of the screen.)

Based on the trend you see, what do you predict the concentration to be 10 years in the future? \_\_\_\_\_\_\_\_\_\_\_ What type of growth does this look like? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Enter the Present: click on “Present” (left) Visualizing Human Impact (click on ‘Present’ (left)**

Where does it come from?

3. Two-thirds of all emissions of CO2 come from?

 Where does the rest come from?

Who produces it?

4. Half of all CO2 emitted since the Industrial Revolution came from what countries?

 But the emerging economies of whom account for an increased amount of 13%?

Where does it go?

5. Only half of emissions remain in the atmosphere. The rest is removed by?

When was it emitted?

6. CO2 began its increase around what year?

 What event does this coincide with?

**Enter the Future: What’s next? (click on ‘Future’ (on left)**

Choose your own future between 2012-2100 by moving the cursor up and record the following:

7. Based on where the cursor is, the concentration of CO2 is \_\_\_\_\_\_\_\_ppm and the

 temperature rises \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 Now click on ‘Go and See the Consequences’:

 What has happened to the water?

 What has happened to the land?

 What has happened to the atmosphere?

8. Move the cursor once more or change the concentration of CO2, picking a different

 outcome.

The concentration of CO2 is now \_\_\_\_\_\_\_\_ppm and the temperature rises \_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 Now click on ‘Go and See the Consequences’:

 What happened to the water?

 What happened to the land?

 What happened to the atmosphere?

**Real Time Emissions Data: Click on ‘Emissions’ at top of page:**

Once it loads, Map View pops up. Click on ‘OK, I get It’ then proceed:

9. Click ‘Type’ then ‘Territorial’ and then click ‘Units’ and pick ‘tCO2 per person’ (t

 means tons).

The United State produces \_\_\_\_\_\_\_\_\_\_ tCO2 per person.

 What is the United States overall rank?

 We aren’t in the top 5 (may be surprising). So who is? (*click on the grey bands under tCO2 to see*)

#1- #2- #3-

 #4- #5-

10. Switch the Units to MtCO2 (megatons of CO2). This is for the entire country.

 The United States produces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ MtCO2.

 Are we #1?\_\_\_\_\_\_ If not, which country is? \_\_\_\_\_\_\_\_

Why do you think this is the case?

11. Move the orange “2014” button, on the slider at the bottom, back to 2012. Click

 ‘Type’ then ‘Consumption’ and keep Units as MtCO2.

What does consumption mean in this case?

Who are the top 3 consumers?

#1- #2- #3-

Is this any different than the producers from question 10? \_\_\_\_\_

Why do you think that is?

12. Move the orange “2014” button back in time. What year does data become

 unavailable? \_\_\_\_\_\_ Why would data suddenly become available after this year?