**Guided Notes: Atmosphere and Climate Change**

Changes in the composition of the atmosphere, particularly increases in \_\_\_\_\_\_\_\_\_\_\_\_ gases, have a significant influence on climate change.

**Key Concepts:**

• Greenhouse gases include:

1. \_\_\_\_\_\_\_\_\_\_\_\_ dioxide

2. Water \_\_\_\_\_\_\_\_\_\_\_\_

3. \_\_\_\_\_\_\_\_\_\_\_\_

• Greenhouse gases \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_ the sun's energy, warming the atmosphere.

• Human activities, like burning \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_, add greenhouse gases to the atmosphere.

• Current CO2 concentration is approximately \_\_\_\_\_\_\_\_\_\_\_\_ parts per million (ppm).

• Earth's average surface temperature has increased \_\_\_\_\_\_\_\_\_\_\_\_°C since 1880.

• Feedback loop:

1. Increased greenhouse gases trap more \_\_\_\_\_\_\_\_\_\_\_\_

2. Temperatures \_\_\_\_\_\_\_\_\_\_\_\_

3. More water becomes \_\_\_\_\_\_\_\_\_\_\_\_ vapor

4. Water vapor is a greenhouse gas, trapping more energy

5. Cycle \_\_\_\_\_\_\_\_\_\_\_\_

• Effects of climate change:

1. Changes in \_\_\_\_\_\_\_\_\_\_\_\_ patterns

2. Increased frequency and severity of \_\_\_\_\_\_\_\_\_\_\_\_

3. Some regions experience \_\_\_\_\_\_\_\_\_\_\_\_ conditions

• Climate change impacts are \_\_\_\_\_\_\_\_\_\_\_\_ across different regions.

**Real World Examples:**

1. Polar bears: Threatened by melting sea ice, which they use for hunting.

2. Antarctica to North Carolina: Melting ice in Antarctica can lead to \_\_\_\_\_\_\_\_\_\_\_\_ in distant locations like North Carolina.

**Word Bank:**

greenhouse

carbon

vapor

methane

absorb

reradiate

fossil fuels

409

0.8

energy

rise

water

continues

precipitation

storms

drier

varied

flooding