**Guided Notes: Greenhouse Gases and Ozone**



\_\_\_\_\_\_\_\_\_\_\_\_ gases absorb and reradiate infrared radiation in the atmosphere, contributing to the \_\_\_\_\_\_\_\_\_\_\_\_ effect and climate change.

**Key Concepts:**

• The greenhouse effect:

 - Earth's surface absorbs \_\_\_\_\_\_\_\_\_\_\_\_ and near-infrared light

 - Surface reradiates energy as \_\_\_\_\_\_\_\_\_\_\_\_ infrared

 - Some gases absorb and \_\_\_\_\_\_\_\_\_\_\_\_ this energy, warming the atmosphere

• Main greenhouse gases:

 1. Water \_\_\_\_\_\_\_\_\_\_\_\_

 2. Carbon \_\_\_\_\_\_\_\_\_\_\_\_

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

 4. Nitrous \_\_\_\_\_\_\_\_\_\_\_\_

 5. \_\_\_\_\_\_\_\_\_\_\_\_ (in troposphere)

 6. Industrial gases (e.g., \_\_\_\_\_\_\_\_\_\_\_\_)

• Ozone (O3):

 - "Good ozone" in \_\_\_\_\_\_\_\_\_\_\_\_: forms protective layer against UV radiation

 - "Bad ozone" in \_\_\_\_\_\_\_\_\_\_\_\_: can cause respiratory issues

 - Ozone hole: \_\_\_\_\_\_\_\_\_\_\_\_ in ozone over Antarctica

• Montreal Protocol (1987):

 - Agreement to stop production of \_\_\_\_\_\_\_\_\_\_\_\_-depleting gases

 - Has led to slow \_\_\_\_\_\_\_\_\_\_\_\_ of the ozone hole

**Real World Examples:**

1. Car interior heating: Similar to greenhouse effect, trapping heat inside

2. Seasonal ozone variations: Levels \_\_\_\_\_\_\_\_\_\_\_\_ at middle and high latitudes in winter and peak in spring

**Word Bank:**

Greenhouse

greenhouse

visible

far

reradiate

vapor

dioxide

methane

oxide

ozone

chlorofluorocarbons

stratosphere

troposphere

decrease

ozone

reduction

increase