Ozone Depletion

- ____% of the planet's ozone is in the ozone layer in the stratosphere (10-50 kilometers above the Earth's surface).
- Stratospheric ozone is a naturally-occurring g_____ that filters the sun's ultraviolet (UV) radiation.
- d_______ ozone layer allows more UV to reach the Earth.
- Overexposure to UV rays can lead to s_______ cancer, c_______, and weakened i_______ systems.
- Increased UV can also lead to reduced c_______ yield and disruptions in the m_______ food chain.
- Ozone destruction occurs when the release of c___________ (CFCs) and other ozone-depleting substances (ODS), widely used as refrigerants, insulating foams, and solvents.
- CFCs are heavier than air, can take as long as ________ years to reach the stratosphere.
- Stratospheric measurements are made from b__________, aircraft, and satellites.
- When CFCs reach the stratosphere, the U___ from the sun causes them to break apart and release c___________ atoms which react with ozone, starting chemical cycles of ozone destruction that deplete the ozone layer.
- One chlorine atom can break apart more than ________ ozone molecules.
- Other chemicals that damage the ozone layer include:
  - m_________ bromide (used as a pesticide)
  - h_________ (used in fire extinguishers)
  - m_________ chloroform (used as a solvent in industrial processes).
- As methyl bromide and halons are broken apart, they release bromine atoms, which are 40 times more destructive to ozone molecules than chlorine atoms.
- Halon-1301 has _____ times depleting potential as CFC-11.
- Total chlorine is d__________, while bromine from industrial halons is increasing.
- v_________ and o_______ release large amounts of chlorine, the chlorine from these sources is easily dissolved in water and washed out of the atmosphere in rain.
- CFCs are not broken down in the lower atmosphere and do not d________ in water.
- The increase in stratospheric c___________ since 1985 matches the amount released from CFCs and other ozone-depleting substances produced and released by human activities.
- In 1978, the use of CFC p___________ in spray cans was banned in the U.S.
- In the 1980s, the Antarctic "o_________ hole" appeared and an international science assessment more strongly linked the release of CFCs and ozone depletion.
- 1987, the Montreal Protocol was signed and the signatory nations committed themselves to a r_________ in the use of CFCs and other ozone-depleting substances.
- Since that time, the treaty was amended to ban CFC production after 1995 in d___________ countries, and later in developing countries.
- Today, over 160 countries have signed the treaty. Since January 1, 1996, only re_________ and stockpiled CFCs have been available for use in developed countries.
- This production phaseout is possible because of efforts to ensure that there will be s___________ chemicals and technologies for all CFC uses.
- But provided that we stop producing ozone-depleting substances, n_________ ozone production reactions should return the ozone layer to normal levels by about ________.