

You should know the following:

1. How to determine the density of air,  $[M]$ , from temperature and pressure.
2. What a mixing ratio means and how it relates to concentration.
3. How pressure changes with altitude.
4. The definition of pH.
5. Definition of an equilibrium constant.
6. Spectrum of the sun (relative amounts of UV, visible, and IR light)
7. Types of reactions (unimolecular, bimolecular, termolecular, photolysis)
8. Combustion (complete vs. incomplete)
9. Box models and the concept of steady state
10. Atmospheric stability and temperature inversions
11. Rate constants and the rate of a reaction
12. How to balance a chemical reaction
13. Catalysts and intermediates
14. How OH forms in the troposphere
15. Oxidation of hydrocarbons in the troposphere – formation of ozone and carbon monoxide.
16. Major pollutants
17. Carbon dioxide and carbonic acid
18. Regulating pollutants – organics versus NO<sub>x</sub>
19. Wavelength, frequency, and energy of light
20. Reaction energies
21. What an ozone column means
22. When the ozone hole was discovered
23. Relating volume, mass, and energy content of fuels
24. What the main point of your project was