WKS 1-2
Chemistry & Matter

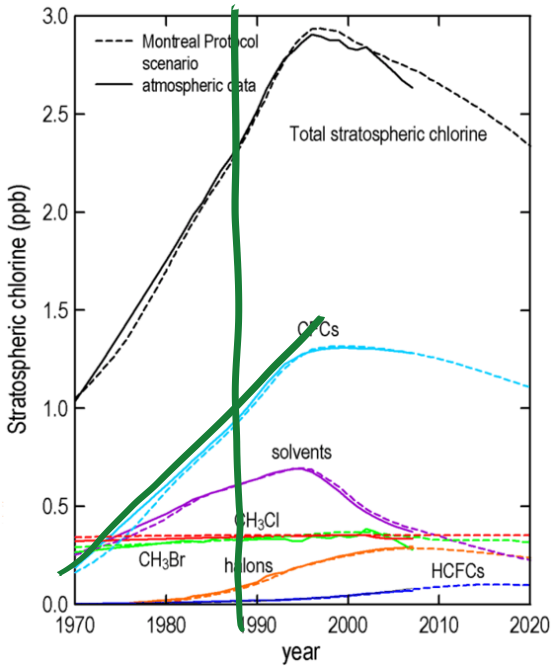
NAME Answer Key
Period _____ **Date** _____

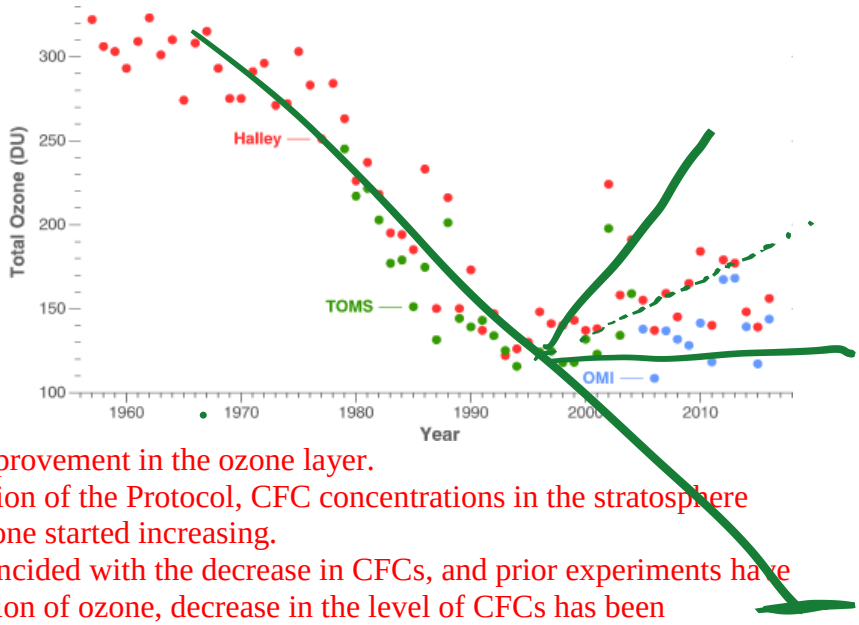
Read Ch. 1.1-1.2, pp. 2-9

1. Why is ozone important in the atmosphere and where is it located in the atmosphere?
   Ozone absorbs harmful ultraviolet (UV) light from the sun. It is located in the stratosphere.

2. What are CFCs? How are they used?
   Chlorofluorocarbons, molecules made of chlorine, fluorine and carbon. They are used as refrigerants, in foams, and as propellants in spray cans.

3. In class we discussed how CFCs released in the atmosphere were causing the destruction of the protective ozone layer. In 1987 the Montreal Protocol mandated decreases in production of ozone depleting chemicals. Below are two graphs showing the concentrations of CFCs (left) and ozone (right) in the years before and after Montreal. Use the CER model to discuss whether the reduction of CFCs was successful.





Claim: The Montreal Protocol led to an improvement in the ozone layer.
Evidence: Around 1993, after implementation of the Protocol, CFC concentrations in the stratosphere decreased. In 1993, the concentration of ozone started increasing.
Reasoning: Since the increase in ozone coincided with the decrease in CFCs, and prior experiments have connected the presence of CFCs to destruction of ozone, decrease in the level of CFCs has been responsible for increasing the level of ozone.

4. What are the 3 domains with which we can describe chemistry, and how are they applied?
   Macroscopic—observed; **submicroscopic**—particles; **symbolic**—models

5. On what level do the chemical changes we observe macroscopically occur?
   The changes you see with your eyes all begin with changes at the submicroscopic level.

6. Define Matter.
   Anything that has mass and volume.