# Air Pollution Review Worksheet

Name KEY 2021

Date_____ Per_____

1. What is the difference between primary and secondary pollutants?

primary: released directly into the atmosphere

secondary: formed from reactions of primary pollutants w/ atmosphere

2. Write definitions for each of the following and classify as a primary or secondary pollutant.
   - Particulate matter particles (dust) suspended in air → primary
   - Volatile organic compounds compounds that produce toxic fumes → primary
   - Carbon Monoxide poisonous gas released from burning fuels → primary
   - Smog "dirty" air (smoke + fog) → secondary
   - Sulfur dioxide greenhouse gas released from burning fuels → primary; mainly responsible for acid rain
   - Ground Level Ozone $O_3$, produced from release of $NO_x$ compounds → secondary

3. List at least three effects of climate change due to increased $CO_2$ levels.

- global temperatures rising
- less sea ice
- ocean acidification
- more extreme weather events

4. Describe where ozone is good and where ozone is bad.

ozone in stratosphere blocks out harmful UV rays = good

ozone in troposphere is a secondary pollutant = bad

5. List 5 greenhouse gases.

- $CO_2$
- $CH_4$
- $H_2O$
- $O_3$
- $NO_x$

6. Acid precipitation is formed when
   a. sulfur oxides or nitrogen oxides combine with water.
   b. sulfur oxides combine with nitrogen oxides.
   c. ozone combines with automobile exhaust.
   d. nitric or sulfuric acids

7. What is not a consequence of acid precipitation?
   a. an increase in the pH of soil and water → decrease in pH = acidic
   b. the death of aquatic plants and animals
   c. the destruction of calcium carbonate in building materials
   d. a change in the balance of soil chemistry

8. Describe normal rain (is it naturally acidic or basic? how did it get this way?).

normal rain is slightly acidic due to natural levels of $CO_2$ (produces carbonic acid, $H_2CO_3$ when combined with water)