

Air Pollution

1. Complete the following table of criteria air pollutants:

Criteria Air Pollutant	Formula	Main Source
	CO	Fossil Fuels
Nitrogen Dioxide		
_____ Dioxide	SO ₂	Fossil Fuels
Particulates	PM	Fossil Fuels
Ozone		
Lead		Industry

2. How are secondary pollutants formed? What additional ingredients are required for the formation of sulfuric acid from sulfur dioxide.

3. Which highly reactive secondary pollutant, which is harmful to most living organisms, dominates a photochemical smog episode? Give the general chemical reaction that summarizes its formation.

4. Why is there a lag in the diurnal cycle of ozone formation?

5. What name is given to the phenomenon where a layer of cold, more dense air is trapped below a layer of warm, less dense air? What are its harmful effects?

6. Explain the meaning of the EPA slogan: 'good up high, bad nearby'.

7. What is thought to have been the main cause of turning localized bad air quality (smog) into the regional problem of acid rain?

8. What do scientists mean by acid deposition? Why is this pollution not called acid rain?

9. What does radon release in the home that causes cancer? Why would some homes have radon problems whilst their neighbors are not affected?

10. Identify the two main pollution control devices used at coal burning facilities. Which device works using 'chemistry', which device uses 'physics'?

BONUS: One of the criteria air pollutants has actually increased after the Clean Air Act of 1970 came into affect. Why do you think this occurred?