

Name:

Date:

Class:

## Post-Lecture Quiz Answer Key

Answer the following questions.

1. How would you explain to a stranger why air quality is important?  
In other words, why do researchers study air quality?

*Example answer:* Pollutants have the power to affect the health of humans and other living things, the overall health and livability of our planet through climate change, and our quality of life through odors and haze. By studying air quality, we are better able to protect our interdependent health and environment.

2. Provide one example of a human-made or human-caused source of air pollution.  
Also provide one example of a natural source of air pollution.

*Human-made:* automobiles, fueled transportation vehicles, power plants, industry, manufacturing  
*Natural:* VOCs from trees, forest fires, volcanos, etc.

3. List three examples of primary pollutants and their sources.  
Provide one example of a secondary pollutant and explain where it comes from.

*Example answer:*

- Primary 1: CO<sub>2</sub> (carbon dioxide) from vehicle combustion
- Primary 2: NO<sub>2</sub> (nitrogen dioxide) from power plant emissions
- Primary 3: VOCs (volatile organic compounds) from paint in a new home
- Secondary 1: O<sub>3</sub> (ozone) formed from NO<sub>x</sub> and VOCs reacting in the presence of sunlight

4. List one example of a technology or strategy used to improve air quality and a recap of how it works.

*Possible answers:* Technologies we use every day include catalytic converters, HVAC filters and stove hoods. Larger-scale technologies (like scrubbers) are used at factories, power plants and other industrial settings (like refineries). Other strategies try to encourage changes in people's behaviors, such as driving less to reduce pollution emissions. These technologies and strategies aim to capture pollutants before they are emitted into the Earth's atmosphere, transform them into something less harmful, or limit the emission of pollutants in the first place.

5. Next to each pollutant listed, circle whether it is a gas-phase pollutant or particulate matter (PM).

<b>Carbon dioxide</b>	gas-phase pollutant	particulate matter
<b>Unburnt fuel in smoke</b>	gas-phase pollutant	particulate matter
<b>Nitrogen dioxide</b>	gas-phase pollutant	particulate matter
<b>Volatile organic compounds</b>	gas-phase pollutant	particulate matter
<b>Black diesel smoke</b>	gas-phase pollutant	particulate matter