

Name:

Date:

Class:

# Environmental Justice StoryMap #1: Air Quality **Answer Key**

Instructions: Complete the following questions as you explore the [Environmental Justice StoryMap #1 Air Quality](#)

StoryMap #1 Link: <https://storymaps.arcgis.com/stories/f22c138d99a049cf9328b477f9c06d72>

Think About It: Watch the [video](#) and think about what you observe:

1. Do gas-powered vehicles change how clean the air is?  
**Yes.**
2. Does dirty air affect the health of people and the environment equally?  
**No.**
3. Are there ways to engineer cleaner and healthier transportation options for all?  
**Yes.**

## Check for Understanding #1:

4. What are the two sizes of PM air pollution?  
**10 and 2.5**
5. Which size of PM is visible to the human eye?  
**PM10**

## Check for Understanding #2:

6. List three kinds of PM particles that are found in the air.  
**Dust, dirt, soot, smoke, vehicle exhaust, power plant emissions**
7. Name one human-made source and one natural source of PM air pollution.  
**Human-made: traffic, power plants, farming**

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Natural: volcanoes, dust storms, wildfires

**Check for Understanding #3:**

8. Which Air Quality Index (AQI) colors represent healthy air? Unhealthy air?

Healthy air: yellow and green

Unhealthy air: orange, red, purple maroon

9. If the AQI is 125, what is the level of health concern?

Unhealthy for sensitive groups

**Check for Understanding #4:**

10. When the wind speed is higher, is the Air Quality Index generally good or poor air quality?

High winds cause air quality to generally be better since air pollution can't build up.

11. When the wind speed is lower, is the Air Quality Index generally good or poor air quality?

Low winds cause air quality to generally be worse because air pollution can build up.

**Check for Understanding #5:**

12. Compare and contrast any patterns that you observe between areas the locations with higher PM pollution and sources (part A) and the locations where communities have higher levels of PM<sub>2.5</sub> exposure risk (part B).

Answers vary.

**Discussion: Engineering Connections**

13. Energy and transportation are essential parts of our lives. What are some examples of sustainable energy and transportation options that you have heard about?

Answers vary. Electric vehicles. Public transportation such as buses, trains, light rail, and subways.

14. How do you think the current transportation system affects the level of particulate matter air pollution and air quality in urban communities? In rural communities?

Answers vary. Communities situated nearer roadways or that have surrounding large road networks are likely to have more air pollution and worse air quality. Rural communities with less or further away from major roadways are likely to have less transportation-related air quality issues.

15. What are some ideas that you have on how engineers can tackle the problem of transportation-related air pollution to improve air quality for everyone?

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Answers vary. Engineers could design more vehicles and power plants that use clean energy sources like wind and solar to generate sustainable electricity instead of burning coal and gas.