

Name:

Date:

Class:

Environmental Justice StoryMap #2: Air Quality and Health

Answer Key

Complete the following questions as you explore the [Environmental Justice StoryMap #2 Air Quality & Health](https://storymaps.arcgis.com/stories/336a42de964d4c7f8fff41126890c825) StoryMap #2 Link: <https://storymaps.arcgis.com/stories/336a42de964d4c7f8fff41126890c825>

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

1. How many people die a year from the effects of air pollution?

Outdoor air pollution kills 4 million people per year.

2. How does air pollution get from the air around us to inside our bodies?

Small particulate matter (PM) gets breathed in through our noses and mouth goes into our lungs and causes inflammation. And the smallest particles also get absorbed into the blood through the lungs.

3. Can engineers help reduce air pollution to save lives?

Yes, answers vary

Check for Understanding #1:

4. Of the top 10 causes of premature death, what is the ranking for ambient (outdoor) air pollution?

Ambient air pollution is the 7th leading cause of premature death.

5. Which groups of people in a community are at most risk of the harmful effects of air pollution?

Those most at risk from air pollution are: people with lung diseases such as asthma or COPD, children and teenagers, older adults, people with cardiovascular disease or diabetes, people who have lower incomes, people who work or exercise outdoors, people who live or work near busy highways.

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Check for Understanding #2:

6. Describe how outdoor PM air pollution gets inside the human body?

PM2.5 goes through the mouth and nose and into the lungs. PM gets absorbed by the alveoli in the lungs in the bloodstream where it can travel to the organs.

7. What organs are affected by PM air pollution?

The affected organs mainly affected are the lungs, heart, and brain.

Check for Understanding #3:

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

The affected organs mainly affected are the lungs, heart, and brain.

9. If the AQI rating is 125, what action should you take to stay safe?

Stay inside, limit outdoor activities especially people with health and breathing issues, the young, elderly, and active individuals.

Check for Understanding #4:

10. Which areas in the country currently have good air quality now?

Answers vary.

11. Which areas in the country currently have poor air quality now?

Answers vary.

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Check for Understanding #5:

12. Compare and contrast any patterns that you observe between areas the **locations with probable higher respiratory health risks** (part A) and the locations where communities, including low income and people of color, have **likely higher asthma rates** (part B) in relation to demographics.

Communities of color and low-income communities tend to have higher respiratory health risks and higher asthma rates.

Discussion: Engineering Connections

13. Describe the relationships between particulate matter pollution, public health, and, environmental justice in your own words.

Answers vary.

14. Do you think our current transportation system helps or hurts public health and the environment overall? Why?

Answers vary.

15. What are your thoughts on engineering advances like electric vehicles (EVs) and alternative energy to transform our transportation system to help reduce particulate matter pollution and improve air quality and environmental justice for all?

Answers vary.