Name

STUDENT

HANDOUT

Citizen Science: How Particulate Matter Pollution Affects a Community

Data

|  |  |  |  |
| --- | --- | --- | --- |
|  | People living within 200 feet of a major roadway | People living between 200 feet and 1,000 feet of a major roadway | People living beyond 1,000 feet of a major roadway |
| Cardiovascular disease rate  |  |  |  |
| Lung function in women(volume of air) |  |  |  |
| % of children with asthma who went to the ER in the last year for asthma symptoms  |  |  |  |
| COPD (bronchitis) rates(women) |  |  |  |

What do each of these health effects mean?

* Cardiovascular disease:
* Lung function:
* Childhood emergency room visits for asthma:
* COPD (bronchitis/emphysema):

Analysis

For each variable, decide whether the data goes up, goes down, or neither the farther you get from the roadway:

* Cardiovascular disease:
* Lung function:
* Childhood emergency room visits for asthma:
* COPD:

For each variable, decide whether the health outcome gets better (healthier), worse (less heathy), or neither the farther away you get from the roadway. Remember, just because a number goes up or down doesn’t mean it’s getting better or worse:

* Cardiovascular disease:
* Lung function:
* Childhood emergency room visits for asthma:
* COPD:

For each variable, decide how big the difference in health outcome is between the 200-foot health outcomes and the 1,000-foot health outcomes (ex. what is the difference in the numbers?). Write the difference as a part of a complete sentence (ex. the cardiovascular disease rate is <blank> percent lower/higher at less than 200 feet away compared to 1,000 or more feet away.)

* Cardiovascular disease:
* Lung function:
* Childhood emergency room visits for asthma:
* COPD:

Create graphs of each variable using graph paper provided by your teacher, or use a computer to make your graphs.

Conclusions

Based on these data, and other things you have learned throughout this investigation, do you think that living near a major roadway poses a health risk to humans? Write a claim-evidence-reasoning statement to make an argument based on your research. Use the guide below to help with your statement:

Claim: Your claim should answer the question about whether living near a roadway poses a health risk.

Evidence: Your evidence should use data from the activity to support your claim.

Reasoning: Your reasoning should explain how your evidence supports your claim. It should answer the question: how can living near a roadway affect a person’s health? You will need to use information you learned earlier in the investigation for your reasoning.