

Comparing Causes of Death

Suggested Grade Levels: 7 and up

Possible Subject Area(s): Social Studies, Health

Math Skills: reading and interpreting a bar graph; calculating percentages

Overview: Students will be presented with a bar graph showing data on the comparable number of deaths in the United States attributed to seven different causes. They will examine the information and answer a series of questions designed to help them understand the meaning of the data and the limitations of the data (what does the graph mean and what does it not mean).

Student Activities

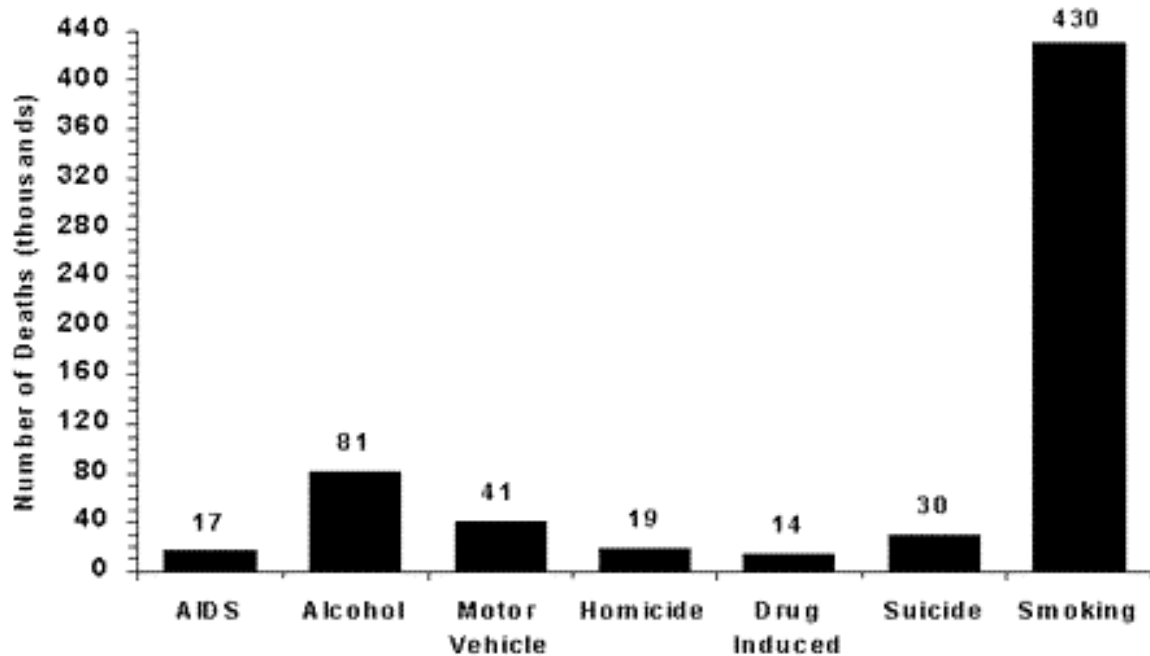
- A. Which do you think contributes to more deaths in the United States in a year: AIDS, motor vehicle accidents, drugs, alcohol, homicide, suicide or smoking?

Which do you think is the second leading cause of death from the list above?

- B. The following bar graph provides some real data on the number of deaths recorded due to these different causes. Carefully review the information in the graph, including the list of sources, and then answer the following questions:

http://www.cdc.gov/tobacco/research_data/health_consequences/andths.htm

Comparative Causes of Death in the United States in 1998



Sources: (AIDS) HIV/AIDS Surveillance Report, 1998; (Alcohol) McGinnis MJ, Foege WH. Review: Actual Causes of Death in the United States. JAMA 1993; 270:2207-12; (Motor vehicle) National Highway Transportation Safety Administration, 1998; (Homicide, Suicide) NCHS, vital statistics, 1997; (Drug Induced) NCHS, vital statistics, 1996; (Smoking) SAMMEC, 1995

1. Were you right? Which contributed to more deaths in the United States in a year: AIDS, motor vehicle accidents, drugs, alcohol, homicide, suicide or smoking?
2. Which was the second leading cause of death from the list above?
3. How many people died from smoking in one year?
4. What year was the smoking data reported?
5. How many people died in motor vehicle accidents in one year?
6. What year was the motor vehicle data reported?
7. Does this graph provide any information about how many people died from cancer or cardiovascular disease?
8. List two other possible causes of death that are not included in the graph:

9. Does this graph provide any information about how many teenagers died in motor vehicle accidents compared to older people?
10. List two different ways someone might die in which “alcohol” might be listed as the cause of death:

C. Use the information from the graph to calculate the total number of deaths represented by these data and the percentage of those deaths attributed to each cause.

Cause	A Number of deaths in one year	B Number of deaths ÷ total number of deaths	C % of total deaths due to cause (column B * 100)
AIDS			
Alcohol			
Motor vehicles			
Homicide			
Drug Induced			
Suicide			
Smoking			
Total			

D. Indicate whether the following statements are true, false or not supported by the graph and explain why.

1. “Homicide accounted for about 20% of all deaths represented in the graph.”
2. “More than half of all deaths in the United States are caused by smoking.”
3. “Approximately twice as many deaths were attributed to alcohol in a year as were attributed to motor vehicle accidents.”

E. Pretend you are making up a quiz using the information presented in the graph. Write one statement that is supported by the graph and one statement that is not supported. Try to make them challenging, as you may be quizzing your classmates.

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Information for the Teacher

Part A can be presented to the whole class and discussed in order to reach a class consensus about which are the two leading causes of death from the list of seven.

Parts B-E can be done individually or by groups of students.

Part E can be clipped from the bottom of the page and distributed to other students as a “mini quiz” so that students can see how others respond to their statements.

Answers to Problems and Questions

1. Were you right? Which contributed to more deaths in the United States in a year:
AIDS, motor vehicle accidents, drugs, alcohol, homicide, suicide or smoking?
smoking
2. Which was the second leading cause of death from the list above?
alcohol
3. How many people died from smoking in one year?
430,000
4. What year were the smoking data reported?
1995
5. How many people died in motor vehicle accidents in one year?
41,000
6. What year were the motor vehicle data reported?
1998
7. Does this graph provide any information about how many people died from cancer or cardiovascular disease?
no
8. List two other possible causes of death that are not included in the graph:
stroke and drowning (there are others)
9. Does this graph provide any information about how many teenagers died in motor vehicle accidents compared to older people?
no
10. List two different ways someone might die in which “alcohol” might be listed as the cause of death:
hit by drunk driver and liver failure (there are others)

Cause	A Number of deaths in one year	B Number of deaths ÷ total number of deaths	C % of total deaths due to cause (column B * 100)
AIDS	17,000	0.026	2.7%
Alcohol	81,000	0.128	13%
Motor vehicles	41,000	0.064	6.4%
Homicide	19,000	0.030	3%
Drug Induced	14,000	0.022	2.2%
Suicide	30,000	0.047	4.7%
Smoking	430,000	0.68	68%
Total	632,000		

D. Suppose someone made the following statements based on the bar graph. Explain why each statement is correct or incorrect or not supported by the graph.

1. “Homicide accounted for about 20% of all deaths represented in the graph.”
False, homicide only accounted for about 3%
2. “More than half of all deaths in the United States are caused by smoking.”
Not supported by the graph because we do not have information on all of the deaths in the United States, just those attributed to these seven causes
3. “Approximately twice as many deaths were attributed to alcohol in a year as were attributed to motor vehicle accidents.”
True, about 81,000 deaths were due to alcohol, which is about twice as many as due to motor vehicle accidents (41,000)

E. Pretend you are making up a quiz using the information presented in the graph. Write one statement that is supported by the graph and one statement that is not supported. Try to make them challenging, as you may be quizzing your classmates.

→The number of AIDS cases increases every year (not supported)

→If there were a total of 1,000 deaths represented by the graph, approximately 64 of them would be due to motor vehicle accidents (supported)

References and Resources

Centers for Disease Control and Prevention

<http://www.cdc.gov>

Leading Causes of Mortality by State

<http://www.cdc.gov/nccdphp/dash/yrbs/pies99/index.htm>

Tobacco-Related Sites

http://www.cdc.gov/tobacco/research_data/health_consequences/andths.htm

<http://www.cdc.gov/tobacco/overview/atrrdths.htm>