

MeTEOR Performance Task

Eighth Grade

Mathematics
Scientific Notation



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MeTEOR
CONNECTING THE DOTS

Task/Question 2:

Write each number in Scientific Notation:

A. 0.000006

B. 54000000

C. 60

D. .009

Write each number in Standard Notation:

E. 0.9×10^{-1}

F. 2×10^{-1}

G. 2×10^5

H. 804×10^2

Task/Question 3:

Below is a table that shows the amount of soda consumed by the United States and 10 other countries.

- A.** Complete the table, showing scientific notation rounded to two decimal places. The first one is done for you.

Country	Liters of Soda Consumed Annually	Liters of Soda Consumed Annually (Scientific Notation)
United States	54,087,370,000	5.41×10^{10}
Australia	1,998,698,500	
Canada		3.57×10^9
China		1.23×10^{10}
India	3,734,940,000	
Japan	4,067,200,000	
Mexico		1.75×10^{10}
Norway	532,935,832	
Russia	4,311,000,000	
Sweden		6.87×10^8
United Kingdom	5,351,220,000	

- B.** Which country outside of the United States consumes the most soda? How do you know?
- C.** Which country outside of the United States consumes the least soda? How do you know?
- D.** Approximately how many more times is the soda consumption of the United States per year compared to the countries above? Choose three countries and show how you know for each.

Task/Question 4:

- A.** To better compare the consumption of soda in each country, you must look at how much soda is consumed per capita in each country. Complete the table below. If the Per Capita Consumption is not in liters, be sure to convert it first. The first one is done for you.

Country	Liters of Soda Consumed Yearly In Scientific Notation (From Page 1)	Population	Per Capita Consumption (Amount Per Person)
United States	5.41×10^{10}	318,161,000	170 liters
Australia		23,514,100	
Canada		35,344,962	101 liters
China		1,364,840,000	
India		1,244,980,000	
Japan			32 liters
Mexico		119,713,203	
Norway		5,124,383	
Russia			30 liters
Sweden		9,675,885	
United Kingdom			84 liters

- B.** Which country consumes the most soda per capita? How do you know?

- C.** Which country consumes the least amount of soda per capita? How do you know?

D. Choose three countries and compare the soda consumption of each to the United States. What do you notice?

E. Which of the 10 countries do you think that a company should expand into? Be prepared to defend and justify your answer.

Task/Question 5:

In the United States about 148 million liters of soda are consumed per day, or a little less than half a liter per day, per person.

A. Using the completed chart in Task 4 choose 5 of the countries (including the country with the least consumption) and determine how much soda is consumed by each country per day, and how much is consumed per person per day. Please express your answer in scientific notation.

B. What is the advantage of looking at the amount consumed per person per day instead of the total amount of soda?

C. What does this number tell us about how much soda people consume? Do all people drink the same amount, or do some drink more and some less? Discuss how soda consumption might vary from person to person.

Task/Question 6:

Choose 1 or more tasks to complete:

- A.** Why would a country have a low amount of soda consumption? Carry out further research on a few of the 10 countries to determine why. Consider population, other beverages that are consumed, the economy of the country, and other factors. Prepare a presentation to give to the class with your results.

- B.** Choose a favorite soda or one that you've heard of. Complete further research to find out more about this product and where the company that manufactures it has expanded in the world. Where is the company located? Where do they sell their soda? How much soda do they sell per year? How does this compare to the numbers you've seen in this worksheet? Create an info graphic or other visual representation to show your results. Be prepared to share this information with your classmates.

- C.** How has the consumption of soda changed over time; either world-wide or in the United States? Conduct further research to see how the consumption of soda has changed over the past 10 to 100 years. Prepare a line graph or other visual representation to display your results. Be prepared to share this information with your classmates.



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