winmath
Career Infused Capstone Projects

Name:

CDC Report

Answer the questions to submit your proposal to the CDC to order the necessary vaccines for the clinics in your assigned city. Use information from your Proposal Planning Sheets to provide the answers needed.

Shots for Tots Final Report

Question 1

a. For what city is this proposal prepared?

b. $\frac{1}{10}$ of the population is between 0 and 10 years old. How many children in the city are between 0 and 10 years? (Round to the nearest whole number.)

c. Show or explain how you found the answer to part b. Explain in terms of moving the decimal point?

d. Suppose you need to calculate 100 times this number. Explain how you could do this without doing the multiplication. Show or explain why your method works.

e. What is the approximate number of children in poverty in this city? (Round to the nearest whole number.)

Question 2

The CDC needs correct estimates to provide the correct amount of vaccine. In Bushmont, there are about 3,489 children living in poverty. A worker made a mistake and reported that 3,849 children are living in poverty. 3,849 children are living in poverty.

Use the place value of the digits 4 and 8 to describe how this error changes the number.

Question 3

a. In the first month, you expected to vaccinate of the 3,489 children. The number you expected to vaccinate is show below in expanded notation.
$(4 \times 100) + (3 \times 10) + (6 \times 1) + 1 \times \frac{1}{10}) + (2 \times \frac{1}{100}\ ) + (5 \times \frac{1}{1000}\ )$

What is the number in standard form?

b. In the second month, you expected to vaccinate another $\frac{1}{7}$ of the 3,489 children. How many children did you expect to vaccinate in the second month? (Round your answer to the nearest thousandth.)

children

c. Write your answer for part b in expanded notation.

d. Write a comparison between the numbers, rounded to the nearest thousandths, of children the clinic predicts will be vaccinated in the first and second months. Use >, = or < to record the results of the comparison.

Question 4

For most of the vaccines (with the exception of Rotavirus), each dose is 0.0005 liter. The Rotavirus vaccine dosage is 0.001 liter. When changing a unit of metric measurement to the next smaller unit of measurement, multiply the number by 10. To complete the table below, use your knowledge of moving the decimal point when multiplying by 10.

a. Complete the table to show the dosages in the next smaller unit of measurement, deciliters, centiliters, and milliliters.

Vaccine Type	Dosage in Liters	Dosage in Deciliters	Dosage in Centiliters	Dosage in Milliliters
Rotavirus	0.001			
All other vaccines	0.0005			

b. What is the dosage, in liters, for a polio vaccine? Write your answer expanded notation.

c. What is the dosage, in liters, for polio in words?

d. Write a statement that compares the value of the digit "1" in the number 0.001 and the number 0.1.

e. Write an explanation to describe how the numbers changed as you converted between the metric units. In your explanation, describe how moving the decimal point changes the size of the numbers.

Question 5

Now you will determine the amount of money the CDC's Vaccines for Children program should budget for vaccines.

Complete the following table by rounding, to the nearest whole number, the cost of each dose of the vaccine to the CDC clinics. Then, use your answers to complete the questions that follow.

Vaccine	Cost per dose to the CDC clinic	Cost per does to the CDC clinic, rounded to the nearest dollar	Dosage
Hepatitis B	**$11.08**		**0.5 mL**
Rotavirus	**$63.96**		**1.0 mL**
DTaP	**$15.38**		**0.5 mL**
Pneumonia	**$112.44**		**0.5 mL**
Polio	**$12.46**		**0.5 mL**
MMR	**$19.91**		**0.5 mL**
Varicella	**$78.34**		**0.5 mL**
Hepatitis A	**$16.17**		**0.5 mL**

Question 6

a. For each type of vaccine, calculate the cost of all age groups of children who will use the CDC clinics in the city you selected. Use the rounded number to the whole number for your calculations. You will use your answers to complete the questions below. Make certain your calculations are correct.

Vaccine	Cost for All Age Groups
Hepatitis B	$
Rotavirus	$
DTaP	$
Pneumonia	$
Polio	$
MMR	$
Varicella	$
Hepatitis A	$

b. What is the total cost for all the vaccines for all the age groups for the city you selected?

$

c. Explain how you could determine one-tenth of the total cost without calculating the answer.

d. Explain how you could determine 100 times the total cost without calculating the answer.

