STUDENT MATERIALS

PART 1: THE SCIENCE OF MATH

1. The distance from Earth to the Sun is 1.5×10^8 km. Scientists would like to place a weather station halfway between the Earth and the Sun. How far away from the Earth would the weather station be in scientific notation? Give your answer in scientific notation.

$$75,000,000 K_{M}$$

$$1.5 \times 10^{8} = 150,000,000$$

$$15,000,000$$

$$75,000,000$$

2. A bacteria sample contains 2.1×10^3 bacteria and doubles every hour. What is the size of the bacterial population after 2 hours? Give your answer in scientific notation.

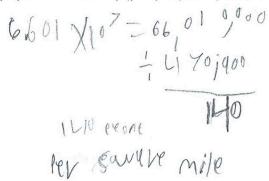
PART 2: SCIENTIFIC NOTATION IN THE SOUTH OF AFRICA

3. There are two countries, Lesotho and Eswatini, located within South Africa. Eswatini has a population of 1.192×10^6 . Lesotho has a population of 2,281,000. What is the total population of these two countries in scientific notation?

 $1, |92 \times 10^6 = 1, |92|000$ $2, 291 \times 10^6$ $2, 291 \times 10^6$

4. Population density is a measurement of population per unit of land area. Eswatini has a land area of 6,704 miles². With a population of 1.192×10^6 , what is the approximate population density (people per square mile) of Eswatini?

1,192,000 -,6704 178,000119 5. South Africa has a land area of 470,900 miles². With a population of 6.601×10^7 , what is the approximate population density (people per square mile) of South Africa?



6. In the problems 4 and 5, you explored the population density of Eswatini and South Africa. What do you think the challenges are for each country based on their size and population density?

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