

**8.EE.3 USE NUMBERS EXPRESSED IN THE FORM OF A SINGLE DIGIT TIMES AN INTEGER POWER OF 10 TO ESTIMATE VERY LARGE OR VERY SMALL QUANTITIES, AND TO EXPRESS HOW MANY TIMES AS MUCH ONE IS THAN THE OTHER.**

Write  $.063 \times 10^{-6}$  in scientific notation.

A)  $6.3 \times 10^{-4}$

B)  $6.3 \times 10^{-8}$  *0.000000063*

C) 63,000

*$6.3 \times 10^{-8}$*

D) .000000063

Alyssa estimated that there are five hundred twenty billion grains of sand on a beach. How is this number written in scientific notation?

A)  $5.2 \times 10^9$  *520,000,000,000*

B)  $5.2 \times 10^{10}$

C)  $5.2 \times 10^{11}$

D)  $5.2 \times 10^{12}$

A water tower holds 2,340,000 gallons of water. Express this number in correct scientific notation.

A)  $2.34 \times 10^{-6}$

B)  $23.4 \times 10^5$

C)  $2.34 \times 10^6$

D)  $2.34 \times 10^7$

China has a population of approximately  $1.3 \times 10^9$  people. The United States has a population of approximately  $3 \times 10^8$  people. How many more people live in China than in the United States?

A)  $10^7$  people  *$1.3 \times 10^9 =$*

B)  $10^8$  people *1,300,000,000*

C)  $10^9$  people  *$\frac{1,300,000,000 - 300,000,000}{10^9}$*

D)  $10^{10}$  people *10,000,000,000*

The word *micron* is an abbreviated term for micrometer, or  $\frac{1}{1,000,000}$  of one meter.

Part A: Write an expression in scientific notation that is equivalent to  $\frac{1}{1,000,000}$ . Show your work.

*$\frac{1}{1 \times 10^6} = 1 \times 10^{-6}$*

Part B: Find the area, in square microns, of a rectangular object with a width of 6,000 microns and a length of 2,000,000 microns. Show your work and write your final answer in scientific notation.

*2,000,000*  
*x 6,000*  
*12,000,000,000*  
 *$1.2 \times 10^{10}$*