$\qquad$ Date $\qquad$

## Lesson 7: Magnitude

## Exit Ticket

1. Let $M=118,526.65902$. Find the smallest power of 10 that will exceed $M$.
2. Scott said that 0.09 was a bigger number than 0.1 . Use powers of 10 to show that he is wrong.
$\qquad$

## Lesson 8: Estimating Quantities

Exit Ticket

Most English-speaking countries use the short-scale naming system, in which a trillion is expressed as $1,000,000,000,000$. Some other countries use the long-scale naming system, in which a trillion is expressed as $1,000,000,000,000,000,000,000$. Express each number as a single-digit integer times a power of ten. How many times greater is the long-scale naming system than the short-scale?

Name $\qquad$ Date $\qquad$

## Lesson 9: Scientific Notation

## Exit Ticket

1. The approximate total surface area of Earth is $5.1 \times 10^{8} \mathrm{~km}^{2}$. All the salt water on Earth has an approximate surface area of $352,000,000 \mathrm{~km}^{2}$, and all the freshwater on Earth has an approximate surface area of $9 \times 10^{6} \mathrm{~km}^{2}$. How much of Earth's surface is covered by water, including both salt and fresh water? Write your answer in scientific notation.
2. How much of Earth's surface is covered by land? Write your answer in scientific notation.
3. Approximately how many times greater is the amount of Earth's surface that is covered by water compared to the amount of Earth's surface that is covered by land?
$\qquad$ Date $\qquad$

## Lesson 10: Operations with Numbers in Scientific Notation

## Exit Ticket

1. The speed of light is $3 \times 10^{8}$ meters per second. The sun is approximately $230,000,000,000$ meters from Mars. How many seconds does it take for sunlight to reach Mars?
2. If the sun is approximately $1.5 \times 10^{11}$ meters from Earth, what is the approximate distance from Earth to Mars?
$\qquad$ Date $\qquad$

## Lesson 11: Efficacy of the Scientific Notation

## Exit Ticket

1. Two of the largest mammals on earth are the blue whale and the African elephant. An adult male blue whale weighs about 170 tonnes or long tons. ( 1 tonne $=1000 \mathrm{~kg}$ )
Show that the weight of an adult blue whale is $1.7 \times 10^{5} \mathrm{~kg}$.
2. An adult male African elephant weighs about $9.07 \times 10^{3} \mathrm{~kg}$.

Compute how many times heavier an adult male blue whale is than an adult male African elephant (i.e., find the value of the ratio). Round your final answer to the nearest one.
$\qquad$ Date $\qquad$

## Lesson 12: Choice of Unit

## Exit Ticket

1. The table below shows an approximation of the national debt at the beginning of each decade over the last century. Choose a unit that would make a discussion about the growth of the national debt easier. Name your unit, and explain your choice.

| Year | Debt in Dollars |
| :---: | :---: |
| 1900 | $2.1 \times 10^{9}$ |
| 1910 | $2.7 \times 10^{9}$ |
| 1920 | $2.6 \times 10^{10}$ |
| 1930 | $1.6 \times 10^{10}$ |
| 1940 | $4.3 \times 10^{10}$ |
| 1950 | $2.6 \times 10^{11}$ |
| 1960 | $2.9 \times 10^{11}$ |
| 1970 | $3.7 \times 10^{11}$ |
| 1980 | $9.1 \times 10^{11}$ |
| 1990 | $3.2 \times 10^{12}$ |
| 2000 | $5.7 \times 10^{12}$ |

2. Using the new unit you have defined, rewrite the debt for years 1900, 1930, 1960, and 2000.
$\qquad$ Date $\qquad$

# Lesson 13: Comparison of Numbers Written in Scientific Notation and Interpreting Scientific Notation Using Technology 

## Exit Ticket

1. Compare $2.01 \times 10^{15}$ and $2.8 \times 10^{13}$. Which number is larger?
2. The wavelength of the color red is about $6.5 \times 10^{-9} \mathrm{~m}$. The wavelength of the color blue is about $4.75 \times 10^{-9} \mathrm{~m}$. Show that the wavelength of red is longer than the wavelength of blue.
