Scientific Notation KeyNote

Mr. G's Physical Science @ SHS

Name_____ pd.

1) **Multiplying by 10's.** When you:

a) Multiply by 10 you move the decimal _____ place(s) to the _____. example:

b) Multiply by 100 you move the decimal _____ place(s) to the _____. example:

c) Multiply by 1,000,000 you move the decimal _____ place(s) to the _____. example:

2) **Dividing by 10's.** When you:

a) Divide by 10 you move the decimal _____ place(s) to the _____. example:

c) Divide by 1,000 you move the decimal _____ place(s) to the _____. example:

D) Divide by 1,000,000 you move the decimal _____ place(s) to the _____. example:

3) Define scientific notation:_____

_____.

4) Write the Earth's population in 2011 in scientific notation and label the 4 parts:

Note: The coefficient must be between _____ and _____.

5) Write the number of molecules in 18 mL of water in:

a) Standard decimal form:_____

b) Scientific notation:_____

6) What does a positive exponent mean? _____

_____

7) Write the mass of a carbon atom in:

a) Standard decimal form:_____

b) Scientific notation:_____

8) What does a negative exponent mean? _____

_____

9) How would you write 6 cm in scientific notation? _____

10) Explain how you would use your calculator to multiply (6.3×10^{34} km) (5.6×10^{16} km).

Scientific Notation

Name_____pd.__

Express the following in scientific notation. <u>Don't forget to include the unit.</u>

_____ 1. The world's population in 2007 : 6.7 billion people

_____ 2. Elements on the periodic table: 109 elements.

_____ 3. The average American sleeps 190,000 hours in their life.

_____ 4. Corona of Sun: 1.994 million degrees Celsius.

_____ 5. Distance to Sun in summer: 94 million miles.

_____ 6. Distance to Sun in winter: 91.5 million miles.

_____ 7. Distance in a Light year: 10 trillion kilometers.

_____ 8. Mass of an electron:
0.000,000,000,000,000,000,000,000,000,910953 kg.

_____ 9. Number of molecules in a cup of water:
8,360,000,000,000,000,000,000,000 water molecules

_____ 10. There are one hundred billion galaxies in the universe.

_____ 11. Mass of a pulsar the volume of a golf ball:
ninety billion kilograms

_____ 12. Speed of light in a vacuum: 299,792,458 meters/sec.

_____ 13. Number of days in a week.

Write in standard decimal form. Use comas for groups of 3 zeros and include the unit.

_____ 14. Mass of earth: 5.977×10^{24} kg.

_____ 15. Stars in universe: 1×10^{22} stars.

_____16. Groves on the circumference of a quarter: 1.19×10^{2} groves.

_____17. Mass of oxygen atom:
2.567×10^{-23} grams.

_____ 18. Military deaths in World War II: 1.58×10^{7} soldiers

_____ 19. Circumference of earth: 2.49×10^{4} miles

_____ 20. Man has been on the earth for 6×10^{-4} of the earth's existence.