

Sci Method and Numeracy Warm Up

1. This is the variable that is changed during an experiment
2. This is the variable that is measured during an experiment
3. Data points that are very close to each other, but not close to the accepted value (standard) could be described as being:
4. Don't forget about the problems on the next slide.... 😊

Sci Method and Numeracy Warm up

Cont'd

1. Solve the following with the correct number of sig fig:
 - $100.0 \text{ cm} / 10. \text{ cm} =$
 - $1.075 \text{ Km} - 0.1020 \text{ Km} =$
2. Convert $4.0 \text{ nm} \rightarrow \text{Km}$ and show dimensional analysis conversion
3. Calculate the molar mass of CO_2
4. Calculate the number of molecules present in 1 g of CO_2 (hint: mass \rightarrow mole \rightarrow particle)

Matter Warm Up

1. The Law of _____ states that when two elements combine they do so in a small whole number ratio.
2. The Law of _____ states that two elements may combine in more than one small whole number ratio.
3. Salt water can be classified as a:
4. Salt (NaCl) can be classified as a:
5. True or false: oxidation is an intensive physical property
6. How many of each type of atom are present in the following formula: H_3PO_4

Atomic Structure/Theory Warm up

1. Identify the number of protons, neutrons, and electrons in a neutral atom of C-14. Rewrite using a different form of isotope notation.
2. Identify the number of protons, neutrons, and electrons in a neutral atom of C-13. Rewrite using a different form of isotope notation.
3. The scientist accredited with developing the plum pudding model is:
4. The _____ experiment proved that the center of an atom is composed of a positively charged nucleus

Nuclear Warm Up

1. $^{222}_{86}\text{Rn} \rightarrow ^4_2\text{He} + \underline{\hspace{2cm}}$
2. A nucleus has 145 neutrons, and 45 protons. What type of decay, if any, will this nucleus undergo?
3. Calculate the percent remaining of a sample that has a half life of 5 hrs, after 25 hrs

Quantum Warm Up

1. Calculate the energy of a photon that is absorbed when an electron transitions from $n=6 \rightarrow n=3$
2. Calculate the wavelength and frequency of this energy
3. The maximum number of electrons that can fill a p sublevel:
4. The maximum number of electrons that can fill the 2nd energy level:
5. The shape of an orbital in the p-sublevel is:
6. Write the electron configuration for an atom of calcium, and the ion it will form to fulfill the octet rule
7. Draw an atom of calcium. Be sure to include AND label: all subatomic particles, energy levels, and orbitals