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chemistry

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| **Across**  **1.** if two or more different compounds are composed of the same two elements with a certain mass of the first element is always a ratio of small whole numbers  **3.** the mass number is written with a hyphen after the name of the element  **4.** experiments done in this tube with electrons and a magnet  **5.** a proton or neutron; particle found in the nucleus  **7.** is a general term for a specific isotope of an element  **12.** isotope of hydrogen with a total of 3 nucleons  **15.** postively charged particles in the nucleus; mass of 1 amu  **16.** the smallest particle of an element that retains the chemical properties of that element  **20.** is a very small region located at the center of an atom  **21.** states that mass is neither created nor destroyed during ordinary reactions or physical changes  **22.** is the amount of a substance that contains as many particles as there are atoms in exactly 12g of carbon-12  **23.** the most common type of hydrogen; an isotope with one nucleon  **24.** negatively charged particles present in a cloud around the nucleus; have a mass of almost zero  **26.** is the total number of protons and neutrons that make up the nucleus of an isotope  **27.** neutral particles in the nucleus of an atom; mass of 1 amu  **28.** Thomson's model for the atom; electrons are present scattered throughout a positive field  **29.** shows the composition of a nucleus (mass and atomic number) | **Down**  **2.** the fact that a chemical compound contains the same elements in exactly the same proportions by mass regardless of the size of the sample or source of the compound  **6.** protons, neutrons and electrons  **8.** isotopes made in a lab  **9.** is the weighted average of the atomic masses of the naturally occuring isotope of an element  **10.** these short range proton-neutron, proton-proton, and neutron-neutron forces hold the nuclear particles together  **11.** 1 amu, or is exactly 1/12 the mass of a carbon-12 atom  **13.** the mass of one mole of a pure substance  **14.** positively charged particles with about four times the mass of a hydrogen atom  **17.** the number of protons of each atom of that element  **18.** 6.0221415 x 10^23 is the number of particles in exactly one mole of a pure substance  **19.** isotope of hydrogen with a total of 2 nucleons  **25.** atoms of the same element that have different masses; vary in number of neutrons |