

Benchmark Study Guide (Ch. 1-6, 8-9, 25)

1. Know how to define, identify and separate element, compounds and mixtures. Know what BrINCIHOF means!!!
2. Know what problem, experiment, variable, hypothesis, law, theory and conclusion. Also, know how they are related.
3. Where is most of the mass of an atom located? What takes up most of an atom's volume?
4. Calculate the number of protons, neutrons and electrons an element has based on atomic number and atomic mass.
5. Define isotope.
6. Know the symbol, name and characteristics of alpha, beta and gamma particles and how they change nuclei.
7. Balance nuclear reactions and know the three types of reactions. What holds a nucleus together?
8. What equation relates mass and energy?
9. Calculate easy half life problems.
10. How can you tell what a distant star is made of?
11. Identify electron configurations (also for ions) and orbital diagrams.
12. Use the periodic table to find # of valence electrons.
13. Define cation and anion. Also, how do ionic bonds form? Be able to identify the type of bonding in a substance.
14. Know the periodic groups (alkali metals, etc.) and know how atomic number, atomic mass, atomic radius, ionization energy, electronegativity changes as you move about the periodic table (remember the dots!).
15. Know your sig figs!