Name_____Block_____Due Date_____

All About Atoms

Directions:

Go to **Chem4Kids.com** and select the green "**Atoms**" choice. "**Atom Basics**" is located on the right side of the page as a map of the specific area of the website just for Atoms. As you read each page, starting on the "**Atoms Around Us**" overview page, please fill in the blanks listed below. The missing words can be found in order of the web pages. Be sure to select the green "**Next Page on Atoms**" at the bottom of each page to help you navigate the website successfully.

1. Elements are the alphabet in the language of molecules.
2. Atoms are the general term used to describe pieces of matter.
3. Molecules are groups of atoms bonded together in the same way that words are groups of letters.
4. While the atoms have different masses and organization for each element, they are all built with the same parts. Electrons, protons, and neutrons
5. Atoms are the foundation of chemistry.
6. Electrons are the smallest of the three particles that make up atoms.
7. Electrons are found in shells or orbitals that surround the nucleus of an atom.
8. Protons and neutrons are found in the nucleus.
9. The atomic number is also called the proton number.
10. The electron always has a "-", or negative, charge. The proton always has a "+", or positive, charge.
11. The third particle is the neutron. It has a neutral charge, also known as a charge of zero.
12. Since the number of protons in an atom does not change, fewer or extra electrons can create a special atom called an ion. Cations have fewer electrons and have a positive charge. Anions have extra electrons that create a negative charge.

13. Electrons are always moving. They spin very quickly around the nucleus of an atom. As the electrons zip around, they can move in any direction, as long as they stay in their shell.
14. Electrons are found in areas called shells. A shell is sometimes called an energy level.

15. Each of those shells has a name (K, L, M, N, O, P, Q). The "K" shell is the one closest to the nucleus, and "Q" is the farthest away.

16. The K shell only holds two electrons. The L shell only holds eight electrons. The M shell only holds eight electrons. The M shell can actually hold up to 18 electrons as you move to higher atomic numbers. The maximum number of electrons you will find in any shell is 32.

17. Electrons play a major role in all chemical bonds.

18. There is one type of bonding called electrovalent bonding (ionic), where an electron from one atom is transferred to another atom.

19. The second type of bonding is called covalent bonding, where electrons are actually shared between two or more atoms in a cloud.

20. Whenever an atom has full shells, we say it is "happy".

21. Your whole goal as an atom was to become a "happy atom" with completely filled electron shells.

22. Neutrons play a major role in the mass and radioactive properties of atoms. Isotopes are created when you change the normal number of neutrons in an atom.

23. We have already learned that ions are atoms that are either missing or have extra electrons. Let's say an atom is missing or has an extra neutron. That type of atom is called an isotope.

24. Molecule is the general term used to describe any atoms that are connected by chemical bonds.

25. Every combination of atoms is a molecule. A compound is a molecule made of atoms from different elements. All compounds are molecules, but not all molecules are compounds.