

READ ALL about IT ! - THE ATOM delg

ATOMIC NUMBER - The atomic number is one of the most important vocabulary words to learning about an atom. The atomic number is the number of protons in the nucleus of an atom. The atomic number (or the number of protons) identifies an atom. For example ALL Hydrogen atoms have one proton and ALL Helium atoms have two protons – this is what identifies them. The atomic number can be found on the periodic table.

PROTON – The proton is one of three particles that make up an atom. It is very important because it is the particle that identifies the atom. For example ALL atoms of Carbon have 6 protons. To find the number of protons of an atom use the periodic table – and look at the Atomic Number. A proton is a positively charged particle that is located in the nucleus. It will never leave the nucleus because it identifies the atom! The mass of a proton is 1 amu.

ELECTRON – The Electron is a negatively charged particle. It is located on the energy levels in the electron cloud. The electron is very small – actually it is almost 2000 times smaller than a proton. Because it is so small it is not included in the mass of an atom. Electrons can move in and out of the electron cloud! When this happens they make an “ion” (more info about ions later!) To find the number of electrons you just need to look at the number of protons! So, if Boron has 5 protons then it will have 5 electrons.

NEUTRON – The neutron is the particle that has NO charge. It is located in the nucleus and it has a mass of 1 amu. The neutron can move in and out of an atom – this will make an “isotope” (more info about isotopes later!) To find a neutron you subtract the atomic number from the mass number. PAY attention! - example - if you are given Boron its atomic number is 5 and its mass number is 11..... so you subtract the atomic number from the mass number ($11-5=6$) so there are 6 neutrons in the Boron atom mentioned above.

ENERGY LEVELS – An energy level is the amount of energy an electron has. This is associated with where the electron is in the electron cloud. To find the energy levels (aka “shells”) you would look at the period number that runs alongside the periodic table. Period 1 has one energy level, period 2 has two energy levels, and so on. There are a total of 7 energy levels. The first energy level can hold a maximum of 2 electrons and the 2nd energy level can hold a maximum of 8 electrons.

MASS NUMBER – The mass number is the sum of the protons and neutrons in the nucleus. The nucleus has ALL the mass of the atom. The mass number is usually written as follows: **Boron - 11**. The mass number 11 is the mass (that means there are 11 particles in the nucleus... 5 of the particles are protons and the other 6 particles must be neutrons!)

ISOTOPE -

NUCLEUS – The nucleus is the center of an atom. It is where the protons and neutrons are! All the mass of the atom is found in the nucleus.

ELECTRON CLOUD – the electron cloud is the area where energy levels are ... it is where the electrons are found.

KVV - Atom Structure & Particles

	Smallest part of an element	The two particles in nucleus are...
	Negatively charged particles	Overall charge of nucleus is
	Tiny region in the center of the atom	What particle can leave the nucleus
	Positively charged particles	Mass number is of _____ &
	Particle with NO electric charge	All the mass of _____ in the _____
	Electrons movement	Only particle in electron cloud
	This is a cloud where <i>electrons can be found</i>	This particle can go in and out of the electron cloud
	Overall charge of the electron cloud	Charge of an Electron
	Charge of a Proton	Charge of a Neutron
	Symbol for a Proton	Symbol for a Neutron
	Symbol for an Electron	Location of a Neutron
	Location of an Electron	Location of a Proton