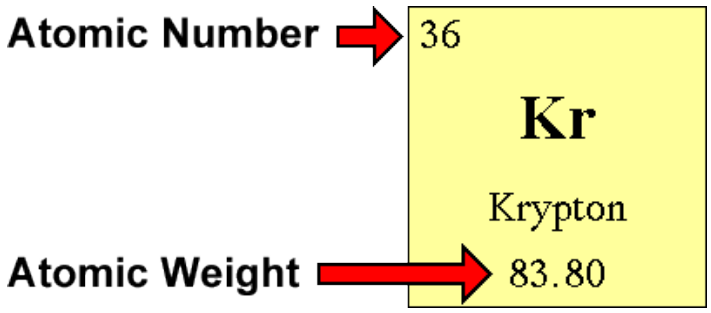
Finding the Number of Protons, Neutrons and Electrons

Step 1 - Gather Information

Use the Table of Elements to find your element's atomic number and atomic weight. The atomic number is the number located in the upper left corner and the atomic weight is the number located on the bottom, as in this example for krypton:



Step 2 - The Number of Protons is...

The **atomic number** is the number of protons in an atom of an element. In our example, krypton's atomic number is 36. This tells us that an atom of krypton has 36 protons in its nucleus.

The interesting thing here is that **every** atom of krypton contains 36 protons. If an atom doesn't have 36 protons, it can't be an atom of krypton. Adding or removing protons from the nucleus of an atom creates a different element. For example, removing one proton from an atom of krypton creates an atom of bromine.

Step 3 - The Number of Electrons is...

By definition, atoms have no overall electrical charge. That means that there must be a balance between the positively charged protons and the negatively charged electrons. Atoms must have **equal numbers of protons and electrons**. In our example, an atom of krypton must contain 36 electrons since it contains 36 protons.

Step 4 - The Number of Neutrons is...

The **atomic weight** is basically a measurement of the **total number of particles in an atom's nucleus**. The mass number is a count of the number of particles in an atom's nucleus. Remember that the nucleus is made up of protons and neutrons.

In Summary...

Number of Protons = Atomic Number
Number of Electrons = Number of Protons = Atomic Number
Number of Neutrons = Mass Number (rounded) - Atomic Number

Name:_____ **Atomic Notation Worksheet** Date:_____

Element	Atomic Number	Atomic Mass	Number of Protons	Number of Neutrons	Number of Electrons
Hydrogen					
Fluorine	9	19			
Sulfur			16	17	
	16	34			
				36	29
			29	34	
	6	14			
		14		7	
		15			
Uranium		238			
		234			92
				2	2
			2	1	
	17				
Francium			87		
	38			52	
					10
			47		

Element Name	**Protons**	**Neutrons**	**Electrons**
Hydrogen			
Carbon 12			
Carbon 14			
Nitrogen			
Nitrogen (-2)			
Nitrogen (-3)			
Oxygen (-2)			
Lithium			
Lithium (+1)			
Uranium (235)			
Uranium (238)			

Carbon 12 and Carbon 14 are the same element, but they have a different number of _____. They are called _____ and have a different Atomic Mass.

Nitrogen (-2) and Nitrogen (-3) are the same element as Nitrogen, but have a different number of _____. They are called _____ and have a different charge.