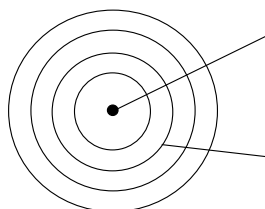




ATOMIC STRUCTURE

Atoms consist of a central containing protons and The nucleus is compared to the size of the whole atom. The nucleus is surrounded by in energy levels (also called). Atoms have no electric charge because they contain the same number of protons and

sub-atomic particle	relative mass	relative charge
proton		
neutron		
electron		



Atomic number = number of

Mass number = number of + number of

The number of protons, neutrons and electrons in an atom can be worked out using the atomic number and mass number.

Number of protons =

Number of neutrons =

Number of electrons =

Atoms can be represented as follows:

$\begin{matrix} \text{mass number} \\ \text{atomic number} \end{matrix} \text{Symbol}$ e.g. ${}_{9}^{19}\text{F}$ protons = neutrons = electrons =

Atoms of the same element have the same number of In fact, it is the number of that determines what type of atom it is (e.g. all atoms with 6 protons are carbon atoms). Atoms of different elements have different numbers of

Isotopes are atoms with the same number of but a different number of This means they are atoms of the same with the same number but a different number.

	${}_{17}^{35}\text{Cl}$	${}_{17}^{37}\text{Cl}$
protons		
neutrons		
electrons		

Atom	Atomic number	Mass number	Number of protons	Number of neutrons	Number of electrons
${}_{11}^{23}\text{Na}$					
Li	3	7			
Ar		40	18		
K			19	20	
Al				14	13
${}_{92}^{235}\text{U}$					
${}_{92}^{238}\text{U}$					