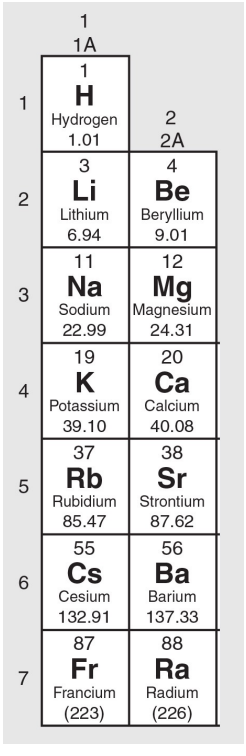
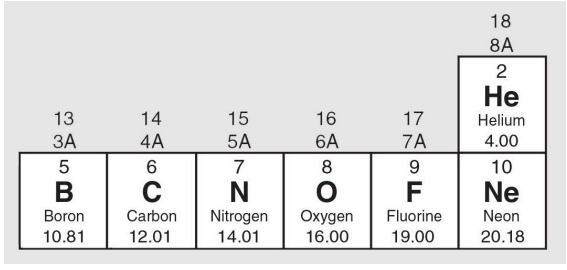


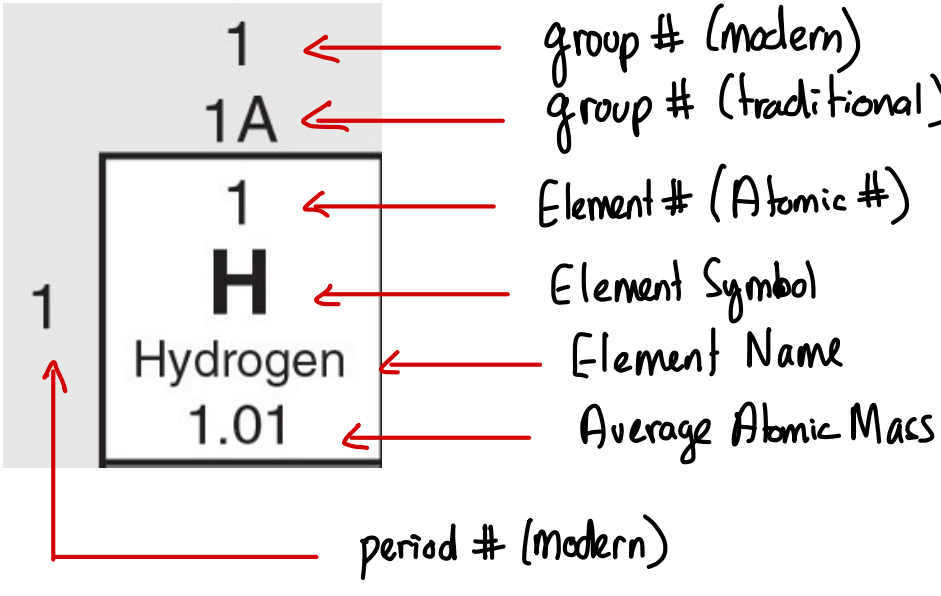


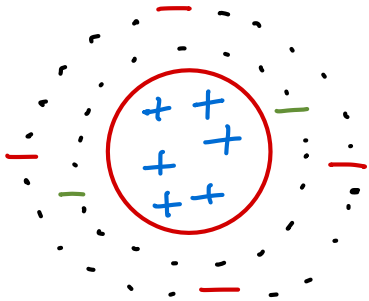
period ⟷

Groups: up and down (18 groups*, 1-18)

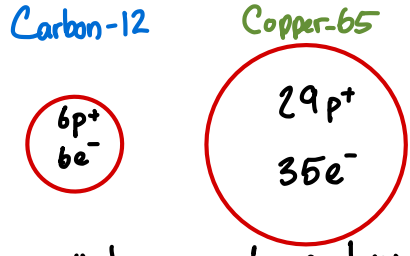
* Traditional: 1A-8A, 1B-10B

Periods: left to right (7 periods, 1-7)





Carbon: $6p^+ + 6e^-$

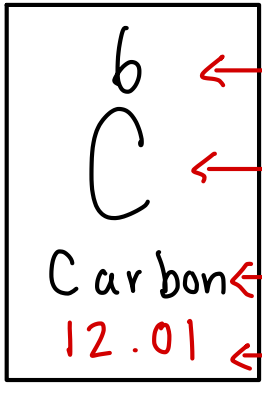


small atoms
$p^+ = n^0$

large atoms
$p^+ < n^0$

Neutral Atom	$\#p^+ = \#e^-$
Atomic #	$= \#p^+ = e^-$

Mass #	$= p^+ + n^0$
Atomic Mass	= Particles In Nucleus



6 ← Atomic #

C ← Symbol

Carbon ← Name

12.01 ← Atomic Mass (not mass #!)

$6p^+$, $6e^-$, C, Carbon

n^0 and mass # not given!

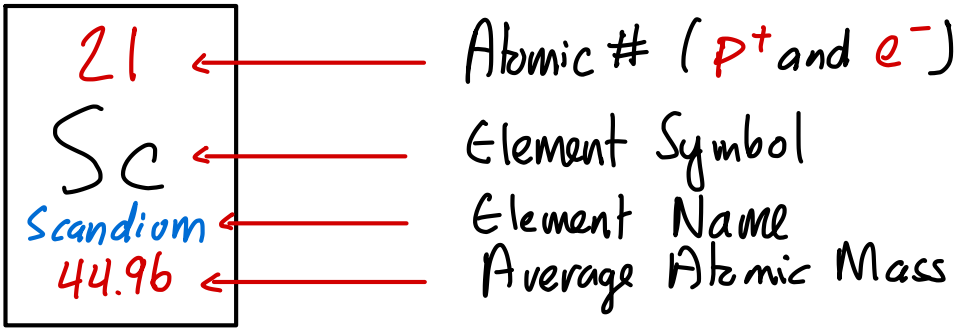
Overall Subatomic Particle Relationships:

Atomic # = $p^+ = e^-$
= Element Name
= Element Symbol

Mass # = $p^+ + n^0$

n^0 = Mass # - Atomic #

n^0 not on periodic table



From Periodic Square Above

Atomic #: 21 #p^+: 21 #e^-: 21
Element Name: Scandium Element Symbol: Sc

n° and mass

#n° = Mass # − Atomic #

Mass # = 45, find n°

n° = 45 − 21

n° = 24

Mass # = #p^+ + #n°

n° = 24, find mass #

mass # = 21 + 24

mass # = 45

Isotope Notation

Scandium − 45
Element Mass #

$^{45}_{21}Sc$ ← Mass # ← Element Symbol ← Atomic #

Scandium only has 1 isotope (scandium-45)