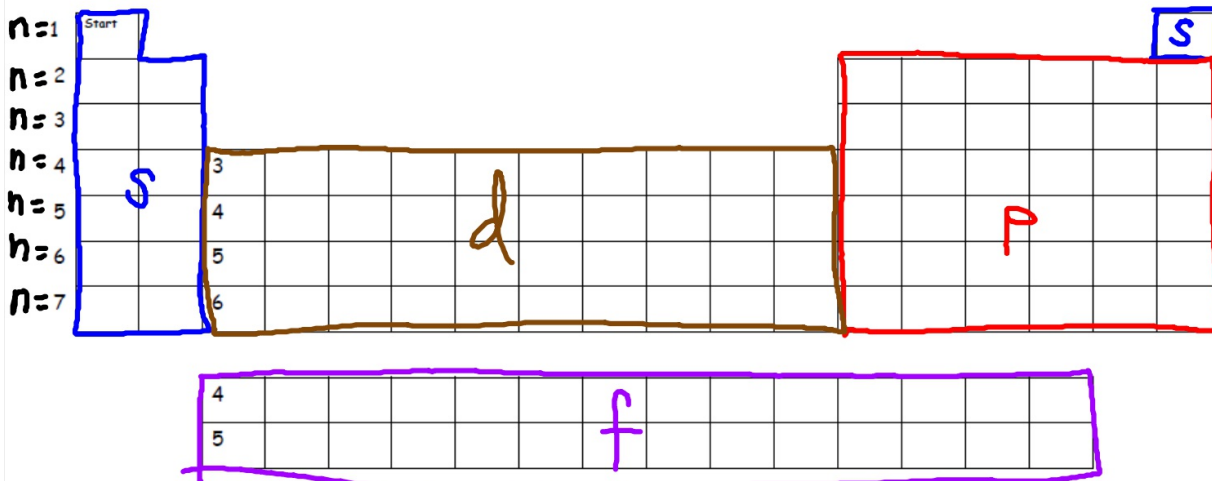


RULES for Electron Configuration:

Aufbau	start w/ the lowest E level (First E level) (1s, 2s, etc).
Hund	every orbital w/in a sublevel gets one e ⁻ each before getting a 2nd e ⁻
Pauli	maximum of 2 e ⁻ per orbital. e ⁻ in same orbital have opposite spins (↑↓)

Electron configuration gives directions to the location of electrons. Always start @ start box, must move left to right.

n = Energy Level ℓ = Sub-level (a.k.a. "block") (s, p, d or f)



Each Sub-level ("block") tells us the shape of the electron cloud. Each orbital ("shape") can have a max of 2 electrons.

Sub-level	Energy	Shape(s)	# of orbitals (i.e. shapes)	Max # of e ⁻ in sub-level
s	Least		1	2
p	↓		3	6
d			5	10
f			7	14
		Most		

The directions are given in the following manner:

E Level block

electrons


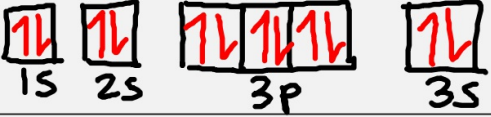

e⁻ in highest E level


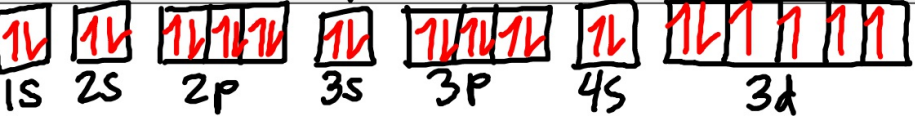
Element	# e ⁻	e ⁻ configuration	# E levels	# valence e ⁻
H	1	1s ¹	1	1
He	2	1s ²	1	2
Li	3	1s ² 2s ¹	2	1
Be	4	1s ² 2s ²	2	2
B	5	1s ² 2s ² 2p ¹	2	3
C	6	1s ² 2s ² 2p ²	2	4
N	7	1s ² 2s ² 2p ³	2	5

Element	# e ⁻	e ⁻ configuration	# E levels	# valence e ⁻
O	8	1s ² 2s ² 2p ⁴	2	6
F	9	1s ² 2s ² 2p ⁵	2	7
Ne	10	1s ² 2s ² 2p ⁶	2	8
Ca	20	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ²	4	2
V	23	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ³	4	2
Ni	28	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ⁸	4	2
Ge	32	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ¹⁰ 4p ²	4	4
Se	34	1s ² 2s ² 2p ⁶ 3s ² 3p ⁶ 4s ² 3d ¹⁰ 4p ⁴	4	6

Orbital Diagrams/Notation

Stable = unreactive = E level is completely full

O Is it stable? NO	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^4$
Mg Is it stable? NO	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6 3s^2$
Ne Is it stable? Yes	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6$

Cl Is it stable? NO	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^5$
Fe Is it stable? NO	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$

Sr <small>38</small> Is it stable?	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6 5s^2$
Zn <small>30</small> Is it stable?	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10}$

Kr <small>36</small> Is it stable?	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^6$
As <small>33</small> Is it stable?	Orbital Diagram	
	Electron Configuration	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^3$