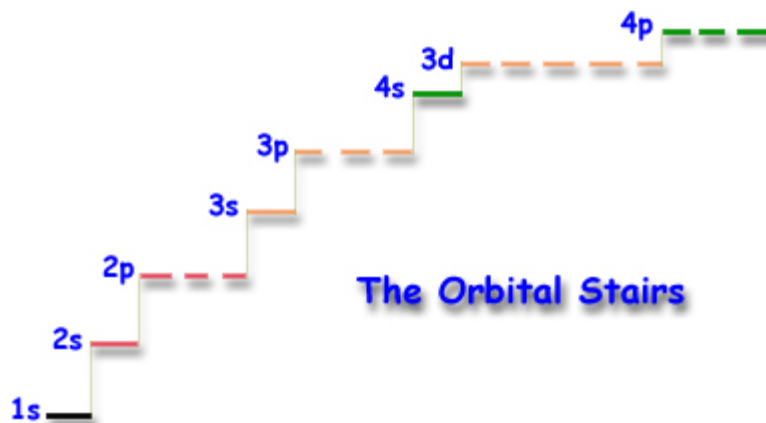


2.6 Various Ways to Show How the Electrons in an Atom are Arranged



Rules Governing Electron Configurations:

1. Orbitals fill in order of increasing energy - from lowest to highest
2. Each orbital can hold a maximum of 2 electrons.
3. When there is a set of orbitals of equal energy, electrons occupy each single first - then they pair up.

Electron Configurations Worksheet.

Gp		#e	1s	2s	2p	3s	3p	Electronic Configuration	Noble Gas	Valence	Lewis Dot
1A	H	1	↑					$1s^1$		1	H·
8A	He	2	↑↓					$1s^2$		2	He:
1A	Li	3	↑↓	↑				$1s^2 2s^1$	[He]2s ¹	1	Li·
2A	Be	4	↑↓	↑↓				$1s^2 2s^2$	[He]2s ²	2	Be:
3A	B	5	↑↓	↑↓	↑			$1s^2 2s^2 2p^1$	[He]2s ² 2p ¹	3	B·
4A	C	6	↑↓	↑↓	↑ ↑			$1s^2 2s^2 2p^2$	[He]2s ² 2p ²	4	·C·
5A	N	7	↑↓	↑↓	↑ ↑ ↑			$1s^2 2s^2 2p^3$	[He]2s ² 2p ³	5	·N·
6A	O	8	↑↓	↑↓	↑↓ ↑ ↑			$1s^2 2s^2 2p^4$	[He]2s ² 2p ⁴	6	·O·
7A	F	9	↑↓	↑↓	↑↓ ↑↓ ↑			$1s^2 2s^2 2p^5$	[He]2s ² 2p ⁵	7	·F·
8A	Ne	10	↑↓	↑↓	↑↓ ↑↓ ↑↓			$1s^2 2s^2 2p^6$	[He]2s ² 2p ⁶	8	:Ne:
1A	Na	11	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑		$1s^2 2s^2 2p^6 3s^1$	[Ne] 3s ¹	1	Na·
2A	Mg	12	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓		$1s^2 2s^2 2p^6 3s^2$	[Ne] 3s ²	2	Mg:
3A	Al	13	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑	$1s^2 2s^2 2p^6 3s^2 3p^1$	[Ne] 3s ² 3p ¹	3	Al·
4A	Si	14	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑ ↑	$1s^2 2s^2 2p^6 3s^2 3p^2$	[Ne] 3s ² 3p ²	4	·Si·
5A	P	15	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑ ↑ ↑	$1s^2 2s^2 2p^6 3s^2 3p^3$	[Ne] 3s ² 3p ³	5	·P·
6A	S	16	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑↓ ↑ ↑	$1s^2 2s^2 2p^6 3s^2 3p^4$	[Ne] 3s ² 3p ⁴	6	·S·
7A	Cl	17	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑↓ ↑↓ ↑	$1s^2 2s^2 2p^6 3s^2 3p^5$	[Ne] 3s ² 3p ⁵	7	·Cl·
8A	Ar	18	↑↓	↑↓	↑↓ ↑↓ ↑↓	↑↓	↑↓ ↑↓ ↑↓	$1s^2 2s^2 2p^6 3s^2 3p^6$	[Ne] 3s ² 3p ⁶	8	:Ar: