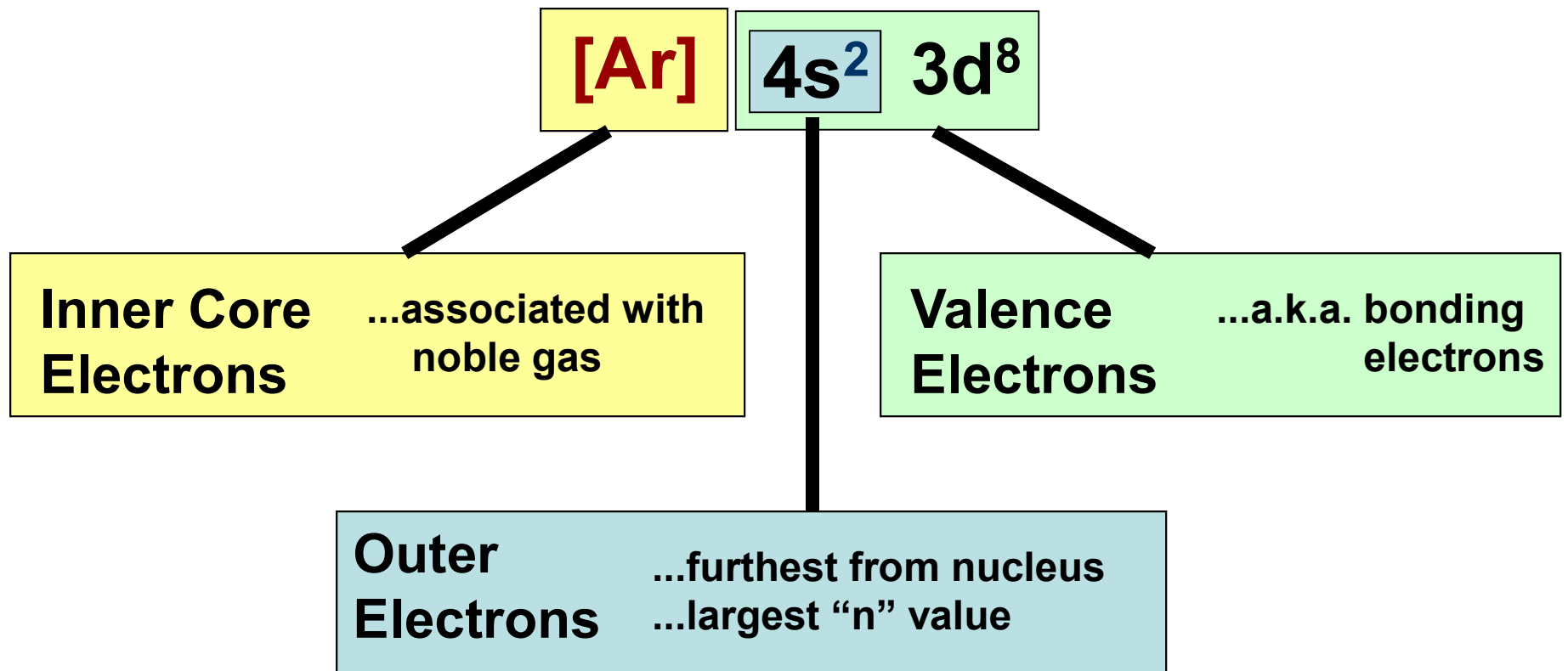


Electron Configuration: A closer look.



Definitions: pg. 303



Electron Configurations: The Periodic Table

“s” block

$1s^1$																		$1s^2$
$2s^1$	$2s^2$											“p” block						
$2p^1$	$2p^2$	$2p^3$	$2p^4$	$2p^5$	$2p^6$													
$3s^1$	$3s^2$	“d” block										$3p^1$	$3p^2$	$3p^3$	$3p^4$	$3p^5$	$3p^6$	
$4s^1$	$4s^2$	$3d^1$	$3d^2$	$3d^3$	$3d^4$	$3d^5$	$3d^6$	$3d^7$	$3d^8$	$3d^9$	$3d^{10}$	$4p^1$	$4p^2$	$4p^3$	$4p^4$	$4p^5$	$4p^6$	
$5s^1$	$5s^2$	$4d^1$	$4d^2$	$4d^3$	$4d^4$	$4d^5$	$4d^6$	$4d^7$	$4d^8$	$4d^9$	$4d^{10}$	$5p^1$	$5p^2$	$5p^3$	$5p^4$	$5p^5$	$5p^6$	
$6s^1$	$6s^2$	$5d^1$	$5d^2$	$5d^3$	$5d^4$	$5d^5$	$5d^6$	$5d^7$	$5d^8$	$5d^9$	$5d^{10}$	$6p^1$	$6p^2$	$6p^3$	$6p^4$	$6p^5$	$6p^6$	
$7s^1$	$7s^2$	$6d^1$	$6d^2$	$6d^3$	$6d^4$	$6d^5$	$6d^6$	$6d^7$										



Electron Configurations: The Periodic Table

“s” block

1s ¹																				1s ²	
2s ¹	2s ²																				
3s ¹	3s ²																				
4s ¹	4s ²	3d ¹	3d ²	3d ³	3d ⁴	3d ⁵	3d ⁶	3d ⁷	3d ⁸	3d ⁹	3d ¹⁰	4p ¹	4p ²	4p ³	4p ⁴	4p ⁵	4p ⁶				
5s ¹	5s ²	4d ¹	4d ²	4d ³	4d ⁴	4d ⁵	4d ⁶	4d ⁷	4d ⁸	4d ⁹	4d ¹⁰	5p ¹	5p ²	5p ³	5p ⁴	5p ⁵	5p ⁶				
6s ¹	6s ²	5d ¹	5d ²	5d ³	5d ⁴	5d ⁵	5d ⁶	5d ⁷	5d ⁸	5d ⁹	5d ¹⁰	6p ¹	6p ²	6p ³	6p ⁴	6p ⁵	6p ⁶				
7s ¹	7s ²	6d ¹	6d ²	6d ³	6d ⁴	6d ⁵	6d ⁶	6d ⁷													

What is the electron configuration for Iron?

1s² 2s² 2p⁶ 3s² 3p⁶ 4s² 3d⁶ ...or... [Ar]4s²3d⁶



Electronic Configurations: The Exceptions

We predict for
molybdenum:



Not Observed:
High Energy

...but a different
configuration is
observed in Nature...



Observed:
Low Energy

Why?

Nature prefers the
lowest energy
electron arrangement.

*$\frac{1}{2}$ full and totally full
orbitals are often associated
with lower energy electron
configurations.*



Electron Configurations: The Exceptions

“s” block

“p” block

1s ¹																		1s ²	
2s ¹	2s ²													2p ¹	2p ²	2p ³	2p ⁴	2p ⁵	2p ⁶
3s ¹	3s ²													3p ¹	3p ²	3p ³	3p ⁴	3p ⁵	3p ⁶
4s ¹	4s ²	3d ¹	3d ²	3d ³	3d ⁴	3d ⁵	3d ⁶	3d ⁷	3d ⁸	3d ⁹	3d ¹⁰	4p ¹	4p ²	4p ³	4p ⁴	4p ⁵	4p ⁶	Kr ⁶	
5s ¹	5s ²	4d ¹	4d ²	4d ³	4d ⁴	4d ⁵	4d ⁶	4d ⁷	4d ⁸	Ag ⁹	4d ¹⁰	5p ¹	5p ²	5p ³	5p ⁴	5p ⁵	5p ⁶		
6s ¹	6s ²	5d ¹	5d ²	5d ³	5d ⁴	5d ⁵	5d ⁶	5d ⁷	5d ⁸	5d ⁹	5d ¹⁰	6p ¹	6p ²	6p ³	6p ⁴	6p ⁵	6p ⁶		
7s ¹	7s ²	6d ¹	6d ²	6d ³	6d ⁴	6d ⁵	6d ⁶	6d ⁷											

What is the electron configuration for Silver?

47
Ag
107.87

