Name:_____
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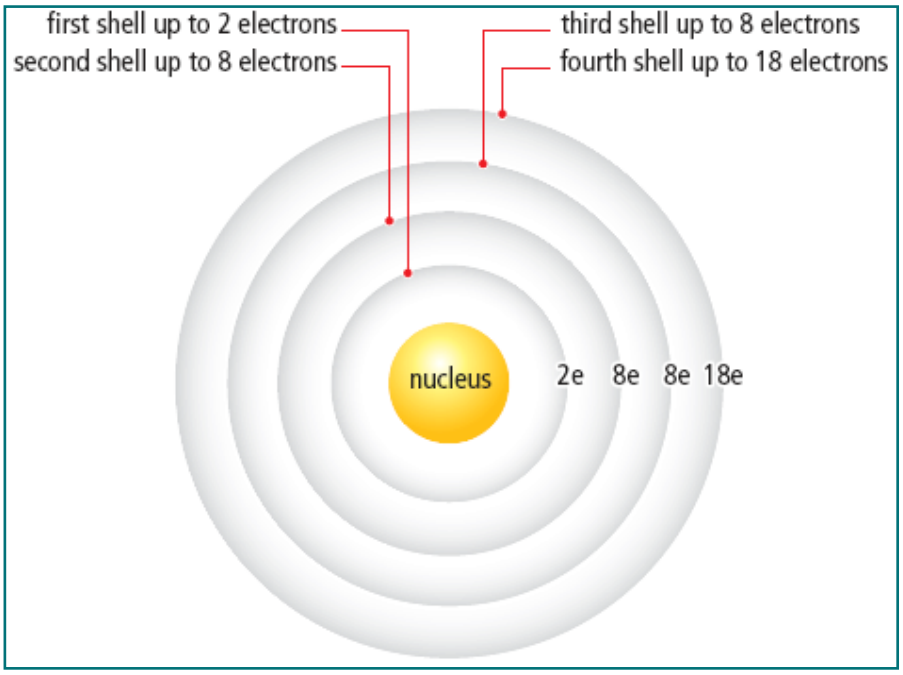
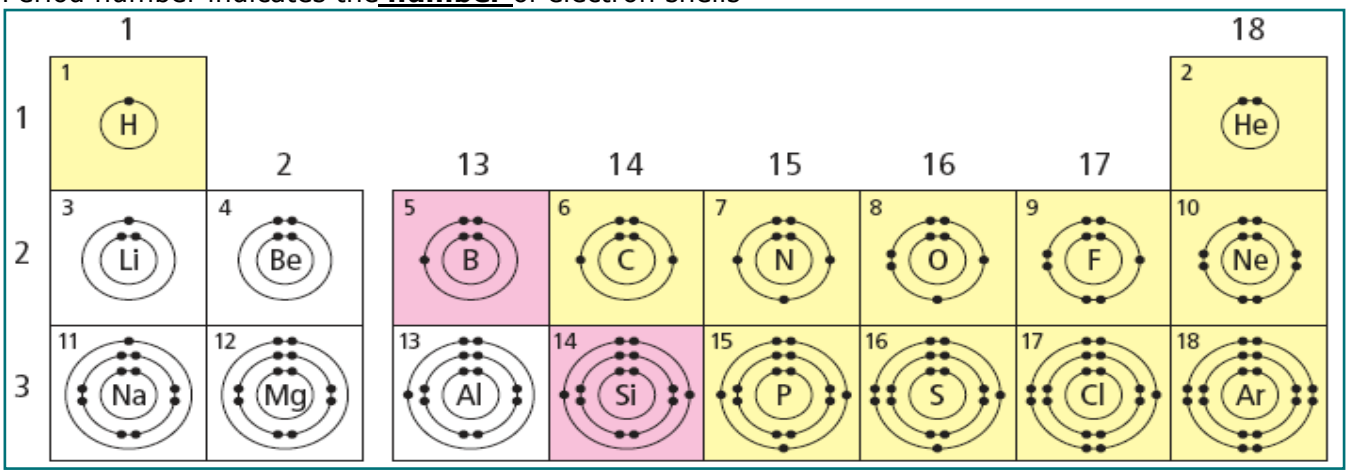
Science 9
Notes on:2.3Periodic Table and Atomic Theory

Elements with similar properties have similar **electron arrangements**
Bohr models display the following electron arrangement in shells:



Bohr model patterns

Chemical families on the periodic table have the same number of **valence electrons**
Elements in the **same period** have the same number of **shells**
Period number indicates the **number** of electron shells



Atom Stability

Noble gases are very **unreactive** because their atoms have filled **valence shells**.A filled valence shell makes atoms **stable.** Atoms with filled shells do not easily trade or share electrons. Other atoms **gain or lose electrons** in order to achieve the stability displayed by the **noble gases**. Gaining or losing electrons turns atoms into **ions**.

Metals **lose** electrons to form **positive ions**
Non-metals **gain** electrons to form **negative ions**
Ions have a similar electron arrangement to the nearest **noble gas**
Example: Sodium ion (**Na^+**) has 11 protons (**11^+**) and 10 electrons (**10^-**) for a total charge of **1^+**

	Lithium	Magnesium	Chlorine
Atom	Li 3 p 2, 1	Mg 12 p 2, 8, 2	Cl 17 p 2, 8, 7
Ion	Li^+ 3 p 2	Mg^{2+} 12 p 2, 8	Cl^- 17 p 2, 8, 8