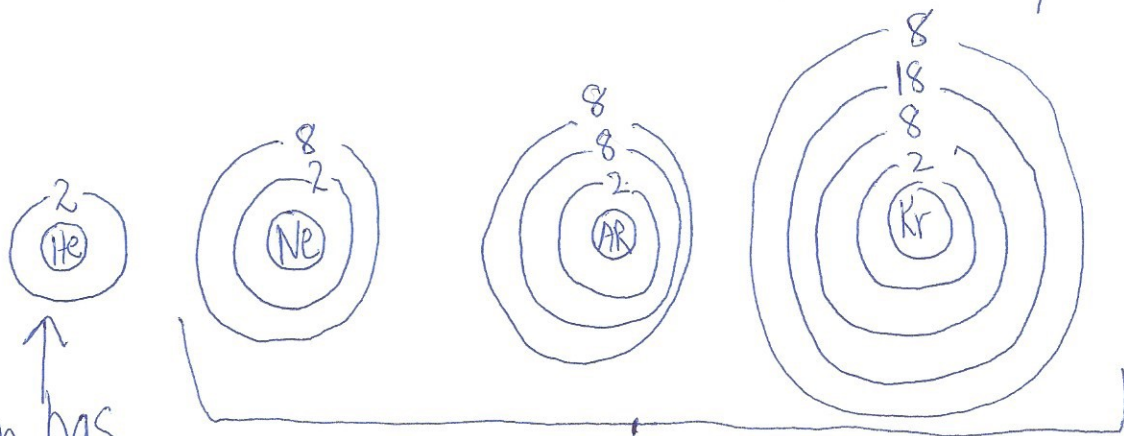


# Lesson 19 - Noble Gas Envy



Helium has 2 electrons in outermost shell

These atoms have 8 valence electrons.

- \* Noble gases are extremely stable.
- \* They have a filled valence shell.
- \* The main group elements have the same # of valence electrons as their group #.

Na <sup>1A</sup> → 1 valence e<sup>-</sup>

F in 7A → 7 valence e<sup>-</sup>

Ca in 2A → 2 valence e<sup>-</sup>

Octet Rule - atoms gain or lose valence electrons to get a full valence shell.

# Lesson 19 Notes

## Noble Gas Envy

12/4/15  
#1

Neon, Ne

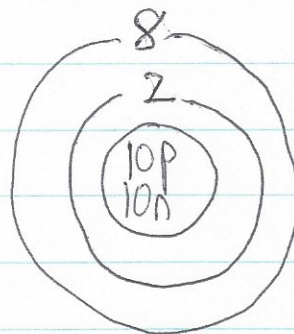
10  $e^-$

2 core

8 valence

10 p

10 neutrons



Noble gases are stable and do not react with other elements.

- They have full valence shells.
- The main group elements have the same valence as the Group #.

Na in 1A  $\longrightarrow$  1 valence  $e^-$

F in 7A  $\longrightarrow$  7 valence  $e^-$

Ne in 8A  $\longrightarrow$  8 valence  $e^-$

The maximum # of valence  $e^-$  in any element is 8 (The Noble gases)

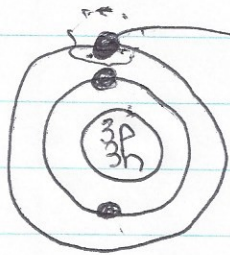
Octet Rule — with the exception of H & He atoms gain or lose  $e^-$  to get a full valence.

12/4/15  
#82

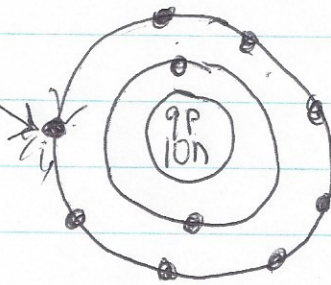
Octet Rule — with the exception of H and He, atoms gain or lose electrons to <sup>↑</sup>valence

get a Noble Gas electron configuration — 8 valence electrons

Lithium



Fluorine



Li ion has 2 electrons and it has a positive charge because it has more protons than neutrons  
 $\text{Li}^+$

F is a nonmetal  
Nonmetals tend to gain electrons and form anions.

Charge  $1^-$   
 $\text{F}^{1-}$