

Name: _____

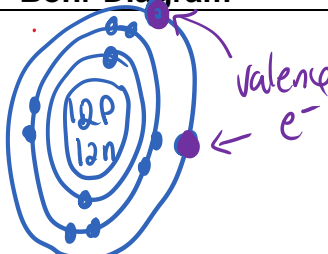
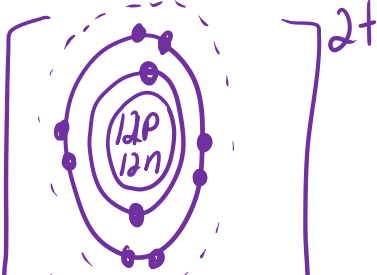
Date: _____

Block: _____

Chemical Reactions:

Lesson 5 -Lewis Diagrams

Lewis Diagrams: Simple diagrams that only show the valence electrons with the chemical symbol

Bohr Diagram	Magnesium	Lewis Dot Structure
	Atom	Mg^{2+}
	Ion	$[Mg]^{2+}$ Metal elements valence shell is EMPTY

Lewis Dot Structure

Ex. Oxygen Atom

- Step 1 Write symbol
- Step 2 How many valence e^- does it have.

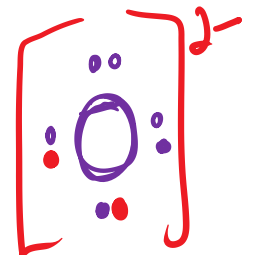


Ex. Oxygen Ion

* Ions are different!

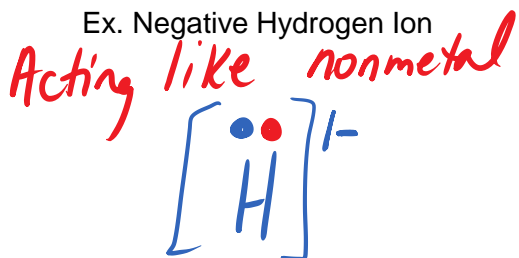
- Step 1 Write symbol
- Step 2 Put e^- around.

- Step 3 Add extra e^- to get full shell

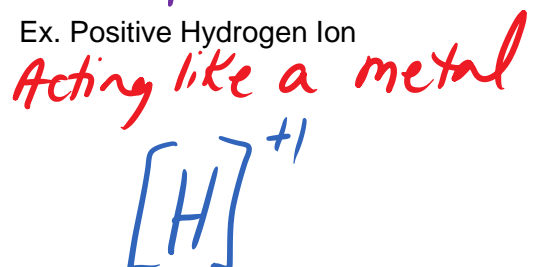


POSITIVE IONS DO NOT HAVE e^- dots in Lewis diagram: Negative Ions show all $8e^-$

Ex. Negative Hydrogen Ion



Ex. Positive Hydrogen Ion



Ex. Aluminum Atom

metal,



Ex. Aluminum Ion

metal ion

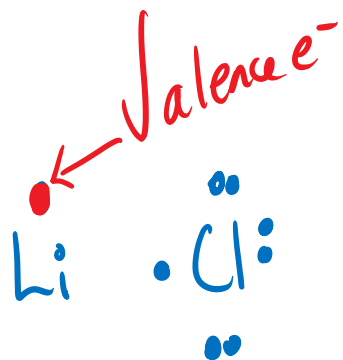


A: Lewis Diagram for IONIC COMPOUNDS

a) Draw a Lewis Diagram for Lithium Chloride.

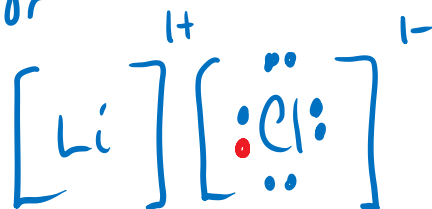
Step 1:

Draw the Lewis for the atoms



Step 2:

Draw the Lewis for compound:



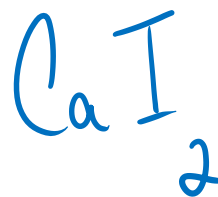
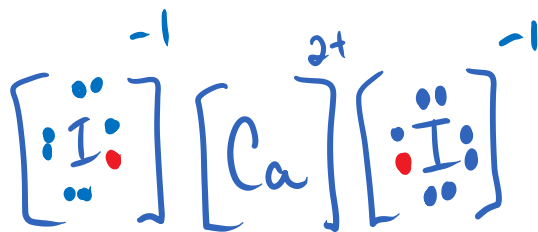
b) Draw a Lewis Diagram for Calcium Iodide.

Step 1:



* We must have 2 Iodine !

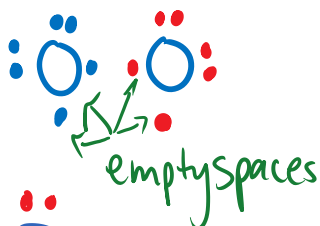
Step 2:



B: Lewis Diagrams for COVALENT COMPOUNDS

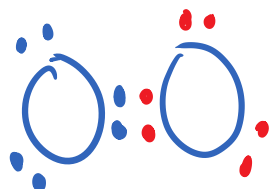
a) Draw a Lewis Diagram of an Oxygen Molecule O_2

Step 1: Draw atoms.

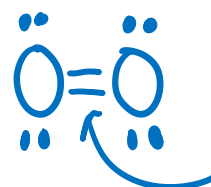


Step 2:

Connect them
Sharing
needed e^-



OR



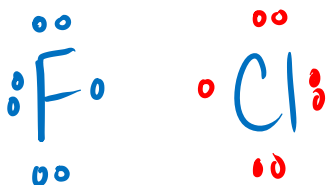
double bond

* No brackets needed
as no charges exist

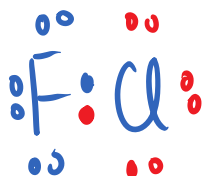
* Simply have to fill
empty / missing e^-

c) Draw a Lewis Diagram of the molecule formed when Fluorine bonds with Chlorine (FCl)

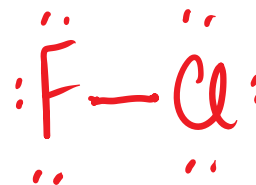
Step 1:



Step 2:



OR



Ionic Bonds	Covalent Bonds
Metal and non-metal	Non-metal and non-metal
Use ions	Use atoms
Gaining or losing electrons	Sharing electrons