Name: _____

Date: _____

Block: _____

Atomic Theory Worksheet

Use your periodic table to fill in the missing information.

	Name	Symbol	Atomic Number	Atomic Mass	Protons	Neutrons	Electrons	Period	Group	Metal or Non-metal
1	Lithium	Li	3	6.9	3	4	3	2	1	Metal
2	Magnesium									
3			50							
4							53			
5		Pb								
6				16						
7								3		Metal
8		Th								
9	Yttrium									
10					80					
11			20							
12								4	9	
13		Mn								
14					4	5				
15	Arsenic									

Space for work:

Name: _____

Date: _____

Block: _____

Atoms vs Ions & Bohr Models Worksheet

1. Identify the number of occupied shells for the following elements.

a) Calcium

b) Krypton

c) Sulfur

d) Iodine

2. Identify the number of valence electrons for the following elements.

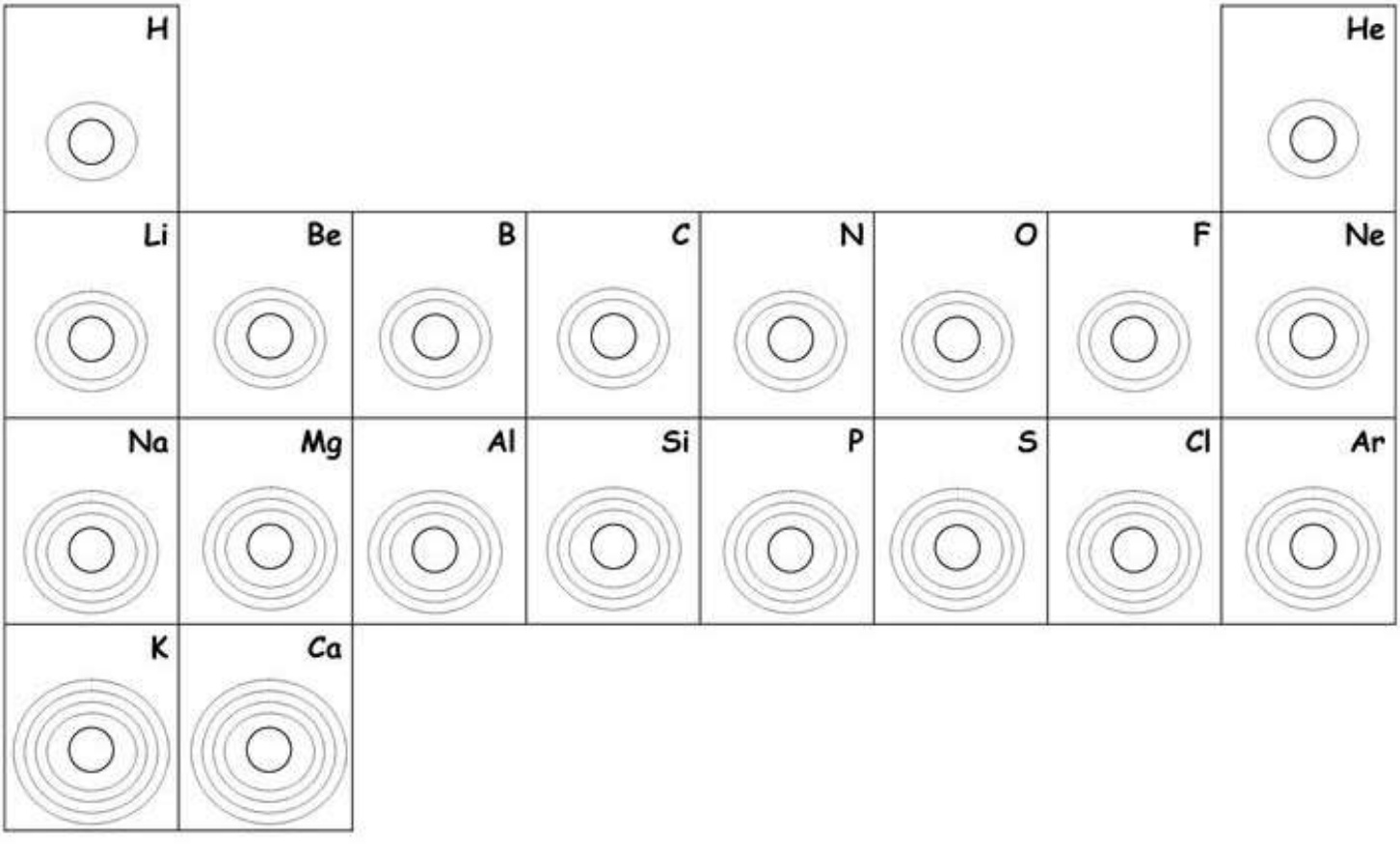
a) Chlorine

b) Strontium

c) Magnesium

d) Oxygen

3. Complete the table below by drawing Bohr diagrams for each atom.
Don't forget to label the nucleus.



4. Draw the appropriate Bohr diagram for each element. Watch out for atom vs ion!

a) Beryllium ion

b) Carbon atom

c) Hydrogen ion

d) Aluminum ion

e) Chlorine ion

f) Potassium atom

SCI 10 Name _____Date _____

Drawing Bohr Diagrams of Ionic Compounds Assignment

Ion with its charge	Ion with its charge	Total net charge	Diagram of the Ionic Compound	Name of resulting Ionic Compound
Ca^{2+}	F^{1-} How many ions are needed to get ZERO net charge?			
Mg^{2+}	Cl^{1-}			

Na^{1+}	S^{2-}			
K^{1+}	O^{2-}			
Mg^{2+}	O^{2-}			

Covalent Compounds

Covalent compounds are formed by non-metals sharing electrons. Like ionic compounds, both elements involved in the reaction achieve full valence shells. Complete the following activity involving covalent compounds. The first example is done for you.

1. H_2O (water)

Elements	How many valence electrons are shared?	Are both elements non-metals?
2 Hydrogen 1 Oxygen	2 pairs of electrons	Yes

Use Bohr diagrams to show how electrons are being shared:

2. Cl_2 (Chlorine gas)

Elements	How many valence electrons are shared?	Are both elements non-metals?

Use Bohr diagrams to show how electrons are being shared:

6. HCl (hydrochloric acid)

Elements	How many valence electrons are shared?	Are both elements non-metals?

Use Bohr diagrams to show how electrons are being shared:

3. SiH_4

Elements	How many valence electrons are shared?	Are both elements non-metals?

Use Bohr diagrams to show how electrons are being shared:

4. CF_4

Elements	How many valence electrons are shared?	Are both elements non-metals?

Use Bohr diagrams to show how electrons are being shared:

Name: _____

Date: _____

Block: _____

Lewis Structures and Ionic&Covalent Compounds

1) Draw the Lewis dot structure for each atom.

a) Carbon

b) Sulphur

c) Helium

d) Phosphorus

e) Aluminium

f) Sodium

2) Draw the Lewis dot structure for each ion.

a) Beryllium

b) Aluminium

c) Nitrogen

d) Potassium

e) Fluorine

f) Oxygen

3) Draw the Lewis dot structure for each ionic compound. Make sure you check that the net charge is zero.

a) Sodium and Fluorine

b) Aluminium and Nitrogen

c) Sodium and Sulfur

4) Draw the Lewis dot structure for each covalent compound.

a) Fluorine and Hydrogen

b) Sulfur and Sulfur

c) Carbon and Oxygen

d) Oxygen and Sulfur

e) Hydrogen and Carbon

f) Chlorine and Chlorine