

Names \_\_\_\_\_



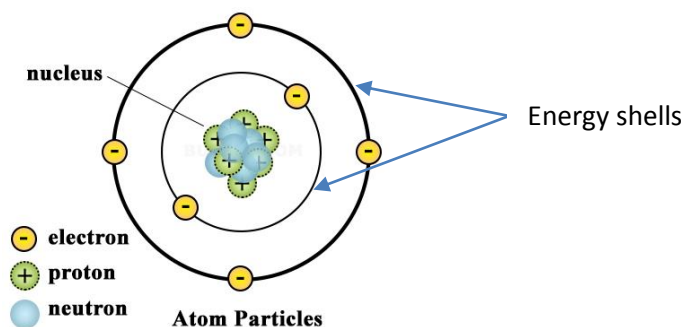
To start class today, you and your partner must first finish this paper and show Mr Schmitt. You may use your textbook!

- On this diagram, label the following chemical families: Noble Gases, Alkali Metals, Alkaline Earth Metals, Transition Metals, and Halogens.

**Periodic Table of the Elements**

1 H																	2 He																												
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne																												
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar																												
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr																												
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe																												
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn																												
87 Fr	88 Ra	89 Ac	104 Unq	105 Unp	106 Unh	107 Uns	108 Uno	109 Une	110 Unn																																				
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>58 Ce</td><td>59 Pr</td><td>60 Nd</td><td>61 Pm</td><td>62 Sm</td><td>63 Eu</td><td>64 Gd</td><td>65 Tb</td><td>66 Dy</td><td>67 Ho</td><td>68 Er</td><td>69 Tm</td><td>70 Yb</td><td>71 Lu</td> </tr> <tr> <td>90 Th</td><td>91 Pa</td><td>92 U</td><td>93 Np</td><td>94 Pu</td><td>95 Am</td><td>96 Cm</td><td>97 Bk</td><td>98 Cf</td><td>99 Es</td><td>100 Fm</td><td>101 Md</td><td>102 No</td><td>103 Lr</td> </tr> </table>																		58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu	90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr
58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu																																
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- Label the following diagram: Proton, neutron, electron, nucleus, energy shell

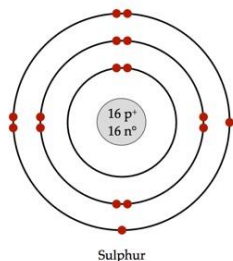


- What is the name of an atom that has gained or lost electrons? **IONS**
- What is the name of an atom that gains an electron? anion Will it be positively or negatively charged? negative What type of element gains electrons (**non-metal**)?
- What is the name of an atom that loses an electron? cation Will it be positively or negatively charged? positive What type of element loses electrons? (**metal**)
- The name of the electrons in the outside energy shell of the atom are called
  - Multivalent electrons
  - Valence electrons**
  - velocity electrons
  - multi electrons

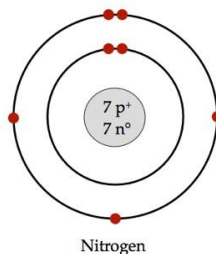
7. For an atom to be stable (it doesn't want to change) how many valence electrons does it want in its outside energy shell if it is in period 1? 2 Period 2? 8 Period 3? 8
8. Which family of elements has a full valence shell? Noble gases

9. Draw a Bohr diagram for:

a) Sulfur



b) Nitrogen



10. Complete the following table:

Element or Ion Name	Symbol	Mass Number	Atomic Number	# Protons	Charge on Nucleus	#Electrons	#Neutrons	Charge
Carbon	C	12	6	6	6	6	6	0
Fluorine	F	19	9	9	9	9	10	0
Beryllium	Be	9	4	4	4	4	5	0
Oxygen Ion	O <sup>2-</sup>	16	8	8	8	10	8	-2
Silicon	Si	28	14	14	14	14	14	0
Sodium Ion	Na <sup>+</sup>	23	11	11	11	10	12	+1
Chlorine-35	Cl	35	17	17	17	17	18	0
Chlorine-37	Cl	37	17	17	17	17	20	0
Chlorine-35 Ion	Cl <sup>-</sup>	35	17	17	17	18	18	-1

11. Give an example of a **multivalent** metal. **Iron Fe 3+/2+**

12. For the diagram to the right:

a) What is the name of the element? **sodium**

b) What is the mass number? **23**

c) Is this an ion or not an ion? **ion**

d) Is this a multivalent metal? **no**

