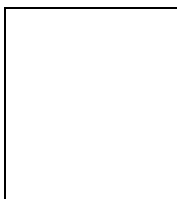


Chapter 5 Periodic Table Guided Notes

A Typical Nuclide on the periodic table:



Periodic Table of the Elements

1 H 1.00794	2 He 4.002602											13 Al 26.981538	14 Si 28.085584	15 P 30.973762	16 S 32.06	17 Cl 35.453	18 Ar 39.948																				
3 Li 6.941	4 Be 9.012242											19 K 39.0983	20 Ca 40.078					29 Cu 63.546	30 Zn 65.38	31 Ga 69.723	32 Ge 72.64	33 As 74.9216	34 Se 78.96	35 Br 79.904	36 Kr 83.798												
11 Na 22.989769	12 Mg 24.304	21 Sc 44.955912	22 Ti 47.88	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938045	26 Fe 55.845	27 Co 58.933195	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.38	31 Ga 69.723	32 Ge 72.64	33 As 74.9216	34 Se 78.96	35 Br 79.904	36 Kr 83.798	37 Rb 85.4678	38 Sr 87.62	39 Y 88.90584	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc 98	44 Ru 101.07	45 Rh 101.07	46 Pd 106.3675	47 Ag 107.8682	48 Cd 112.4118	49 In 114.818	50 Sn 118.710	51 Sb 121.757	52 Te 127.603	53 I 126.90547	54 Xe 131.29		
55 Cs 132.90545196	56 Ba 137.327	57-70 Lanthanide series	71 Lu 174.967	72 Hf 178.49	73 Ta 180.94788	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.222	78 Pt 195.084	79 Au 196.966569	80 Hg 200.59	81 Tl 204.3833	82 Pb 207.2	83 Bi 208.9804	84 Po 209	85 At 210	86 Rn 222	87 Fr 223	88 Ra 226	89-102 Actinide series	103 Lr 260.1065	104 Rf 261	105 Db 262	106 Sg 263	107 Bh 264	108 Hs 265	109 Mt 266	110 Ds 271	111 Rg 272	112 Cn 285	113 Nh 286	114 Fl 289	115 Mc 290	116 Lv 293	117 Ts 294	118 Og 294

Recognizing a Pattern

Dimitri Mendeleev:

- The father of the _____
- Organized elements in rows by increasing atomic mass.
- Noticed _____ among the _____
- He started a _____ each time the _____ of _____
- His table was used to _____ that _____.
- What element was named after him? _____

Henry Moseley 1913:

- He _____ had some with the properties of some elements fitting in with their _____.
- Moseley arranged elements by their _____, or number of _____.
- What did he help recognize?

The Modern Periodic Table

- _____ - when the elements are _____ of increasing number of _____, the _____ tend to _____.
- The table puts elements into _____ with _____.
- Allows us to _____ over the _____ of _____
- Atomic Mass and Atomic Number increases as you move across and down.

Periodic table Trends (Label Trends on Your Pink Sheet)

Atomic Radius

- Atomic Radius decreases from left to right.
- Down a group, the atomic radius increases.
- The greater the number of protons present, the stronger the attraction that holds the electrons closer to the nucleus, and the smaller the size of the shells.

Periods

- _____ - a _____ of elements in the periodic table.
 - Protons and electrons increases as you move across a period from left to right.
 - Shows how many energy levels the atom has.
- Elements become _____ as you move to the _____ each period.

Phases at Room Temperature

Trend	How its organized on the Periodic Table
Gases	
Liquids	
Solids	

Chemical Reactivity

- how likely an atom will react with other substances

Trend	How its organized on the Periodic Table
Reactivity Group 1	
Reactivity Group 17	

How Are Elements Classified?

- Elements in each category have _____

Three main categories of elements			
Categories	Metals	Metalloids/Semiconductors	Nonmetals
Characteristics	<ul style="list-style-type: none"> • Good _____ of heat and _____ • Shiny • _____ - can be flattened into sheets • _____ - can be stretched or shaped into wires • Most are _____ at room temperature. • Tend to lose _____ • Ex: _____ 	<ul style="list-style-type: none"> • _____ ability to conduct _____ • Can be used to make _____ (materials that can conduct electricity ONLY under _____) • Share properties of _____ and _____ 	<ul style="list-style-type: none"> • Poor conductors of heat and electricity • Mostly _____ (not shiny) • _____, not _____ or _____ • Many are _____ at room temperature. • Tend to _____
Families	<ol style="list-style-type: none"> 1. 2. 3. 	Elements that border on the _____.	<ol style="list-style-type: none"> 1. 2. 3.

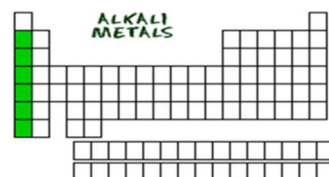
Metals

- Almost _____ of all elements are _____ as _____.
- They are classified based on their _____ properties: _____, shininess, _____, conductivity, _____, and ductility
- _____ properties: Ease and speed of an element to _____ with other _____ is called its "_____."
- Metals show a _____ of chemical properties, or reactivity.
 - Iron will react with oxygen in the air to form _____ (rust).
 - Gold and chromium are _____.
- Alloys
 - An "_____ " is a _____ of _____...
 - Combine the _____ of 2 or more metals
 - Example:

Families of Metals:

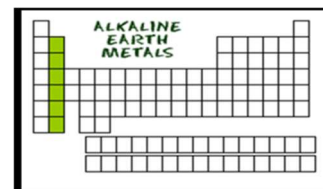
1. Alkali Metals

- Group _____
- Very _____
- 1 _____
- Form _____ because electron is easily _____.
- _____ and _____ metals
- Are usually found in _____ as a _____.
- Are stored in _____ to prevent their _____ with _____.
- _____: Incredibly _____ in water.



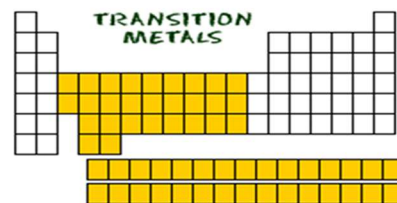
2. Alkaline- earth metals

- Group _____
- Are harder, _____, stronger, and have higher _____ points than _____.
- _____ reactive, but _____ as _____ as _____ metals
- 2 _____ Form positive ion _____
- Not found _____ in nature.



3. Transition Metals

- Groups _____
- _____ reactive
- Usually found _____ (not in _____ form)
- Can lose _____, _____, or _____ e- to form _____
- They can use the _____ shell electrons to bond before using the _____ shell.
- Are harder, more _____, and have higher melting points than _____ or _____ metals (except _____ which is a _____ at room temp).
- Used in _____, plumbing, _____ filaments.



- * _____ and _____
- Also known as the "_____,"
 - Rare, _____, _____ metals.
 - Some actinides are highly _____ (they have unstable nuclei)

Metalloids/()

- On the _____ between the _____ and the _____ are the "_____."
- Metalloids have _____ of _____ and some properties of _____.
- As "_____ " they're varying ability to _____ makes them useful in _____
- Example: _____
- Can be _____ and be _____.

Semiconductors



Nonmetals

- All _____ nonmetals are extremely important to _____.
- _____ of the zigzag line on the P.T, except _____
- Most are _____, some are crumbly _____, and _____ is the only _____.
- Chemical properties
 - Most _____ easily to form _____
 - _____ elements transfer their _____ to the _____ | when combine.
 - _____ with other _____, valence electrons are _____.

Families of Nonmetals:

1. _____ Family
2. _____ Family
3. _____ Family
4. _____

- Group _____ and are very _____.
- _____ as gas, but form compounds that are very useful.

5. The _____

- Full valence shell (_____). _____ rule
- Except _____
- Do _____ at all with any other elements.
- _____, _____ gases at room temp
- Glow brightly when _____ passes through them.

6. _____ Family

- Stands _____
- _____, colorless, _____ as at room temp, _____ reaction with _____.

1																	18
H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca											Ga	Ge	As	Se	Br	Kr
Rb	Sr											In	Sn	Sb	Te	I	Xe
Cs	Ba																

Metal
 Metalloid
 Non-metal

Synthetic elements

- All elements greater than atomic _____ are _____ (synthetic).
 - Are _____.
- *** radioactive elements are _____ even in _____, so do not handle them unprotected.

