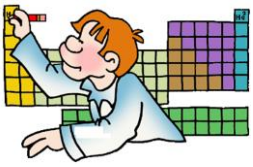
Name: _____
Date: _____



THE PERIODIC TABLE

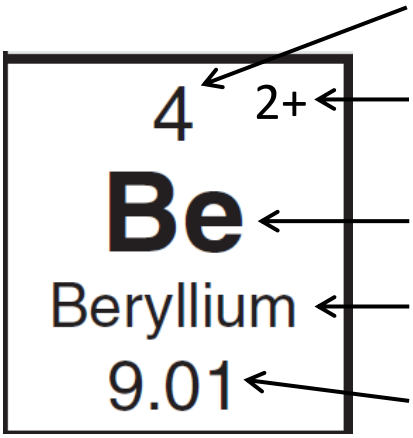
PowerPoint Worksheet

INTRODUCING THE PERIODIC TABLE

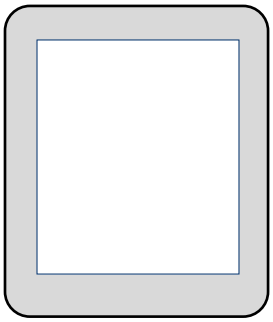
1. What is the periodic table? _____
   _____
   _____
2. It was developed in _____ by a man named _____ who was a Russian chemist and inventor.
3. In his time, there were only _____ discovered, but his periodic table _____ and left room for _____.

INFORMATION ON THE PERIODIC TABLE

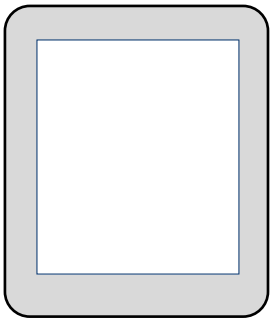
4. Each element on the periodic table is represented within an _____ which contains a few pieces of basic information.
5. Using the diagram below, label the information provided by the element box.



b) Draw the element box for the element that has an atomic mass of 107.87.



a) Draw the element box for the element that has the element symbol Pt.



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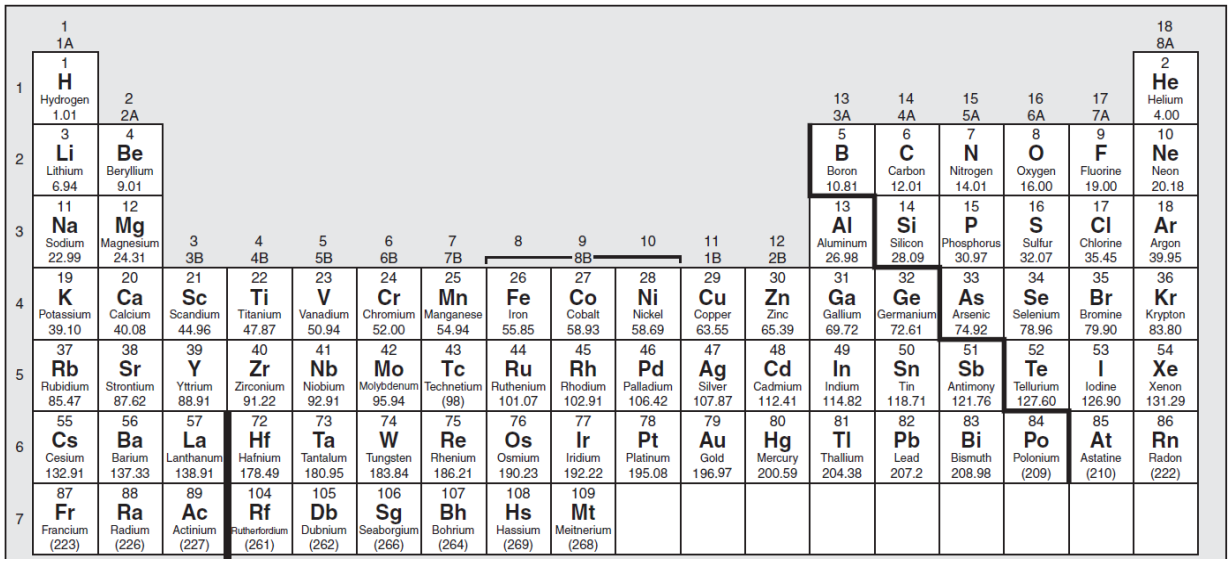
ORGANIZATION OF THE PERIODIC TABLE

6. How is the periodic table arranged? _____

   ⇨ Each **column** on the periodic table is called a _____ and there are _____ of them.

   ⇨ Each **row** on the periodic table is called a _____ and there are _____ of them.



	1 1A												13 3A	14 4A	15 5A	16 6A	17 7A	18 8A
1	1 H Hydrogen 1.01	2 2A																2 He Helium 4.00
2	3 Li Lithium 6.94	4 Be Beryllium 9.01											5 B Boron 10.81	6 C Carbon 12.01	7 N Nitrogen 14.01	8 O Oxygen 16.00	9 F Fluorine 19.00	10 Ne Neon 20.18
3	11 Na Sodium 22.99	12 Mg Magnesium 24.31	3 3B	4 4B	5 5B	6 6B	7 7B	8	9 8B	10	11 1B	12 2B	13 Al Aluminum 26.98	14 Si Silicon 28.09	15 P Phosphorus 30.97	16 S Sulfur 32.07	17 Cl Chlorine 35.45	18 Ar Argon 39.95
4	19 K Potassium 39.10	20 Ca Calcium 40.08	21 Sc Scandium 44.96	22 Ti Titanium 47.87	23 V Vanadium 50.94	24 Cr Chromium 52.00	25 Mn Manganese 54.94	26 Fe Iron 55.85	27 Co Cobalt 58.93	28 Ni Nickel 58.69	29 Cu Copper 63.55	30 Zn Zinc 65.39	31 Ga Gallium 69.72	32 Ge Germanium 72.61	33 As Arsenic 74.92	34 Se Selenium 78.96	35 Br Bromine 79.90	36 Kr Krypton 83.80
5	37 Rb Rubidium 85.47	38 Sr Strontium 87.62	39 Y Yttrium 88.91	40 Zr Zirconium 91.22	41 Nb Niobium 92.91	42 Mo Molybdenum 95.94	43 Tc Technetium (98)	44 Ru Ruthenium 101.07	45 Rh Rhodium 102.91	46 Pd Palladium 106.42	47 Ag Silver 107.87	48 Cd Cadmium 112.41	49 In Indium 114.82	50 Sn Tin 118.71	51 Sb Antimony 121.76	52 Te Tellurium 127.60	53 I Iodine 126.90	54 Xe Xenon 131.29
6	55 Cs Cesium 132.91	56 Ba Barium 137.33	57 La Lanthanum 138.91	72 Hf Hafnium 178.49	73 Ta Tantalum 180.95	74 W Tungsten 183.84	75 Re Rhenium 186.21	76 Os Osmium 190.23	77 Ir Iridium 192.22	78 Pt Platinum 195.08	79 Au Gold 196.97	80 Hg Mercury 200.59	81 Tl Thallium 204.38	82 Pb Lead 207.2	83 Bi Bismuth 208.98	84 Po Polonium (209)	85 At Astatine (210)	86 Rn Radon (222)
7	87 Fr Francium (223)	88 Ra Radium (226)	89 Ac Actinium (227)	104 Rf Rutherfordium (261)	105 Db Dubnium (262)	106 Sg Seaborgium (266)	107 Bh Bohrium (264)	108 Hs Hassium (269)	109 Mt Meitnerium (268)									

7. There is a _____ that separates the periodic table into two sides. This zigzag is also called the _____.

   ⇨ To the _____ of the staircase you will find all the _____.

   ⇨ To the _____ of the staircase you will find all the _____, except for the element _____, which is a _____ found on the _____ side.

8. Directly to either side of the staircase you will find elements called _____. There are _____ of these elements.

METALS, NON-METALS AND METALLOIDS

9. Fill in the chart below to summarize the **metals, non-metals** and **metalloids**.

Type	State of Matter	Properties	Examples
Metals	• All metals are _____ at room temperature except for _____ which is a _____.	• Many metals are _____, _____ in color, _____, _____, _____ and some are _____.	
Non-metals	• Most non-metals are _____, except for _____ which is a _____, and five non-metals are _____. These ones are: _____ , _____, _____, _____ and _____.	• Non-metal elements are either _____ or have _____. They are _____, _____, _____ when solid, _____ and _____.	

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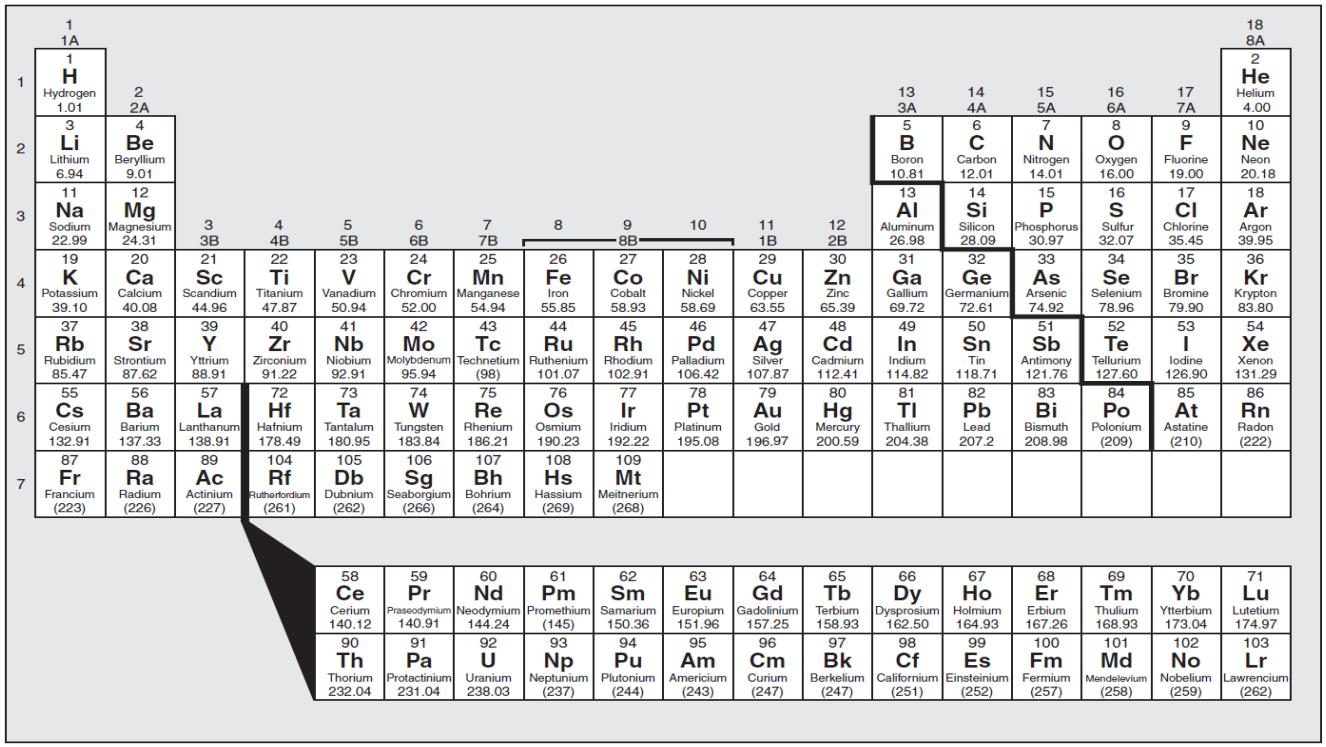
Metalloids	• Metalloids are _____ at room temperature.	• They have some properties of _____ metals and non-metals. They are mostly _____ in appearance but they are _____. They are _____ electrical conductors.	

CHEMICAL FAMILIES ON THE PERIODIC TABLE

10. What is a **chemical family**? _____
_____

11. Using pencil crayons, identify, color in and label the important categories of elements on the periodic table below. On the next two pages, summarize each category.



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12. Fill in the chart to **summarize** information on the important categories of elements on the periodic table.

Name of Group	Group #	Elements in Group	Description of Properties and Facts
Alkali Metals			• This group of elements are all _____ and _____-colored _____. • They are the _____ reactive of all the metals because they only have ____ valence electron. ⇨ They each very readily _____ with other elements by _____ their valence electron to each become a stable _____, meaning they have a _____ outer orbital. ⇨ The bond between the ions creates a _____ substance called a _____. • They are all reactive with _____. • To prevent contact with _____ in the air, they are stored in _____. • Elements get _____ reactive as you go _____ the group. ⇨ _____ is the most reactive….and it's _____.
Alkaline Earth Metals			• These elements are also all _____-colored _____. • They are also reactive with _____ but _____ so than group 1 elements. ⇨ They each have _____ valence electrons. ⇨ Similar to group 1 elements, they readily **bond** with other elements. However, in this case, they **transfer** their _____ valance electrons to become stable **ions** with **full** outer orbitals. • Elements get _____ reactive as you go _____ the group. ⇨ _____ is the most reactive….and it's also _____.
Halogens			• This group of elements are all _____ and are found in all _____ states. • They are the _____ reactive of the non-metals because they have _____ valence electrons. ⇨ 1 electron short of a full outer orbital. ⇨ They readily **combine** with other elements to _____ valence electron from them to become stable **ions** (with **full** outer shells). • Halogens become **more** reactive as you move _____ the group. ⇨ _____ is the most reactive.

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Name of Group	Group #	Elements in this Group	Description of Properties and Facts
Noble Gases			• These non-metal elements are _____ gases. • They _____ bond with other elements because they have _____ outer orbitals. • Since they don't react with other elements, they _____ form _____. ⇨ Noble gases are also described as _____.
Transition Metals			• These groups contain metals that have the usual **properties of metals**. *(Lustrous, malleable, ductile, electrically conductive etc.)* • These metals are found in the **solid** state except for _____ which is a _____ at room temperature.
Lanthanides			• They are all _____ that have been misleadingly labeled "_____" in the past.
Actinides			• They are _____ that are _____. They will spontaneously _____ in the air.

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