

# Unit 7: The Periodic Table



Name \_\_\_\_\_

Class Website: <http://pilarz.weebly.com>

PS:7 TLW categorize elements of the periodic table according to common properties and explain how elements differ in structural parts and electrical charges of atoms.



## History of the Atomic Structure

### What is an atom?

**Atom:**

### **Atomic Structure**

- Atoms are composed of 2 regions:
  - o \_\_\_\_\_: the center of the atom that contains the \_\_\_\_\_ of the \_\_\_\_\_ of an atom
  - o \_\_\_\_\_: region that surrounds the nucleus that contains the \_\_\_\_\_ of the \_\_\_\_\_ in the atom
- What's in the nucleus?
  - o The nucleus contains 2 of the 3 subatomic particles:
    - \_\_\_\_\_ (p+): \_\_\_\_\_ charged subatomic particles
    - \_\_\_\_\_ (n°): \_\_\_\_\_ charged subatomic particles
- What's in the electron cloud?
  - o The 3<sup>rd</sup> subatomic particle resides outside of the nucleus in the electron cloud
    - \_\_\_\_\_ (e-): the subatomic particle with a \_\_\_\_\_ charge and relatively \_\_\_\_\_
- How do these particles interact?
  - o \_\_\_\_\_ and \_\_\_\_\_ live compacted in the tiny positively charged \_\_\_\_\_ accounting for \_\_\_\_\_ of the \_\_\_\_\_ of the atom
  - o The \_\_\_\_\_ charged \_\_\_\_\_ are \_\_\_\_\_ and have a relatively \_\_\_\_\_ but occupy a \_\_\_\_\_ of space outside the nucleus

### How did we figure this out?... The history of atomic structure...

#### **Democritus**

- His theory: matter could \_\_\_\_\_ be divided into smaller and smaller pieces forever, eventually the smallest possible piece would be obtained
- This piece would be \_\_\_\_\_
- He named the smallest piece of matter " \_\_\_\_\_ ", meaning " \_\_\_\_\_ "



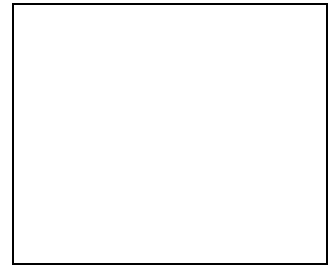
#### **John Dalton**

- Elements consist of tiny particles called atoms
  - o Looked like tiny \_\_\_\_\_
- He thought elements all have the same \_\_\_\_\_



### JJ Thomson

- Discovered the \_\_\_\_\_ with the \_\_\_\_\_
  - o Electrons in a vacuum
- Plum Pudding Model



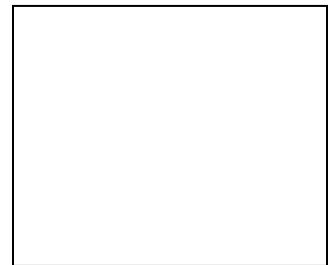
### Ernest Rutherford

- Experimented with \_\_\_\_\_
- Discovered that...
  - o An atom is \_\_\_\_\_
  - o There is a \_\_\_\_\_ in an atom

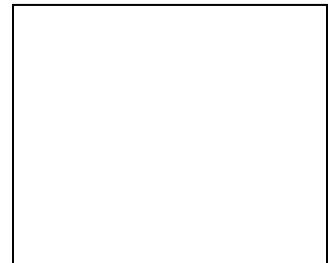


### Niels Bohr

- Atomic theory that is there is a \_\_\_\_\_ in an atom and that \_\_\_\_\_ orbit around it
- \_\_\_\_\_!



Now we use the \_\_\_\_\_ model (or \_\_\_\_\_ model)...



	Indivisible	Electron	Nucleus	Orbits	Electron Cloud
Democritus					
Dalton					
Thomson					
Rutherford					
Bohr					
Wave					

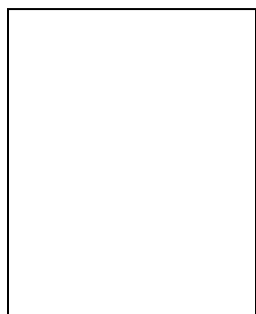
### Dmitri Mendeleev

- \_\_\_\_\_ into the periodic table

## Atomic Theory Summary Sheet

**Atomic Structure:**

**Periodic Table:**



**P/N/E Practice for Stable Elements:**

Element	Symbol	Atomic Number	Mass number	Number of...		
				Protons	Neutrons	Electrons

**Bohr Models:**

**Lewis Dot Structures:**

# Periodic Table Basics

## Groups:

## Periods:

Using the periodic table below... Color the different types of elements, be sure to fill in the key below. Then list brief descriptions of elements that fall into these categories.

Metals

Non-Metals

Metalloids

**Periodic Table of the Elements**

Group 1 IA		2 IIA												13 IIIA	14 IVA	15 VA	16 VIA	17 VIIA	18 VIIIA				
1	H 1.008 Hydrogen													B 10.81 Boron	C 12.011 Carbon	N 14.007 Nitrogen	O 15.999 Oxygen	F 18.998 Fluorine	Ne 20.179 Neon				
2	Li 6.941 Lithium	Be 9.012 Beryllium												Al 26.982 Aluminum	Si 28.086 Silicon	P 30.974 Phosphorus	S 32.066 Sulfur	Cl 35.453 Chlorine	Ar 39.948 Argon				
3	Na 22.990 Sodium	Mg 24.305 Magnesium																					
4	K 39.098 Potassium	Ca 40.08 Calcium	Sc 44.956 Scandium	Ti 47.88 Titanium	V 50.942 Vanadium	Cr 51.996 Chromium	Mn 54.938 Manganese	Fe 55.847 Iron	Co 58.933 Cobalt	Ni 58.69 Nickel	Cu 63.546 Copper	Zn 65.39 Zinc	Ga 69.72 Gallium	Ge 72.61 Germanium	As 74.922 Arsenic	Se 78.96 Selenium	Br 79.904 Bromine	Kr 83.80 Krypton					
5	Rb 85.468 Rubidium	Sr 87.62 Strontium	Y 88.906 Yttrium	Zr 91.224 Zirconium	Nb 92.906 Niobium	Mo 95.94 Molybdenum	Tc 98 Technetium	Ru 101.07 Ruthenium	Rh 102.906 Rhodium	Pd 106.42 Palladium	Ag 107.868 Silver	Cd 112.41 Cadmium	In 114.82 Indium	Sn 118.71 Tin	Sb 121.763 Antimony	Te 127.60 Tellurium	I 126.905 Iodine	Xe 131.29 Xenon					
6	Cs 132.905 Cesium	Ba 137.33 Barium	La 138.905 Lanthanum	Hf 178.49 Hafnium	Ta 180.948 Tantalum	W 183.84 Tungsten	Re 186.207 Rhenium	Os 190.23 Osmium	Pt 192.22 Platinum	Au 196.967 Gold	Hg 200.59 Mercury	Tl 204.38 Thallium	Pb 207.2 Lead	Bi 208.980 Bismuth	Po (209) Polonium	At (210) Astatine	Rn (222) Radon						
7	Fr (223) Francium	Ra 226.025 Radium	Ac 227.028 Actinium	Rf (261) Rutherfordium	Db (262) Dubnium	Sg (263) Seaborgium	Bh (264) Bohrium	Hs (265) Hassium	Mt (266) Meitnerium														
				Lanthanide Series																			
				Actinide Series																			
				58 Ce 140.12 Cerium	59 Pr 140.908 Praseodymium	60 Nd 144.24 Neodymium	61 Pm (145) Promethium	62 Sm 150.36 Samarium	63 Eu 151.97 Europium	64 Gd 157.25 Gadolinium	65 Tb 158.925 Terbium	66 Dy 162.50 Dysprosium	67 Ho 164.930 Holmium	68 Er 167.26 Erbium	69 Tm 168.934 Thulium	70 Yb 173.04 Ytterbium	71 Lu 174.967 Lutetium						
				90 Th 232.038 Thorium	91 Pa 231.036 Protactinium	92 U 238.029 Uranium	93 Np 237.048 Neptunium	94 Pu (244) Plutonium	95 Am (243) Americium	96 Cm (247) Curium	97 Bk (247) Berkelium	98 Cf (251) Californium	99 Es (252) Einsteinium	100 Fm (257) Fermium	101 Md (261) Mendelevium	102 No (259) Nobelium	103 Lr (262) Lawrencium						

Mass numbers in parentheses are those of the most stable or most common isotope.

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Using the periodic table below... Color the different families, be sure to fill in the key below. Then list brief descriptions of elements that fall into these categories.

Alkali Metals

Alkali Earth Metals

Transition Metals

Halogens

Nobel Gases

**Periodic Table of the Elements**

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				90 Th 232.038 Thorium	91 Pa 231.036 Protactinium	92 U 238.029 Uranium	93 Np 237.048 Neptunium	94 Pu (244) Plutonium	95 Am (243) Americium	96 Cm (247) Curium	97 Bk (247) Berkelium	98 Cf (251) Californium	99 Es (252) Einsteinium	100 Fm (257) Fermium	101 Md (261) Mendelevium	102 No (259) Nobelium	103 Lr (262) Lawrencium						

Mass numbers in parentheses are those of the most stable or most common isotope.

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## Ions Notes and Practice

**Big Idea** → Elements will gain or lose electrons to become \_\_\_\_\_, by gaining or losing electrons atoms become \_\_\_\_\_, atoms with a charge are called \_\_\_\_\_.

Let's break it down...

### **What does it mean to be stable?**

- To be stable elements must have a \_\_\_\_\_
  - o The \_\_\_\_\_ energy level wants \_\_\_ electrons
  - o All other will be \_\_\_\_\_ with \_\_\_\_\_
- Examples: Stable or not stable?

### **What happens with the electrons?**

- Quick review – remember that \_\_\_\_\_ and \_\_\_\_\_ are found in the \_\_\_\_\_ and have a \_\_\_\_\_ force holding them together... so I can't mess around with those.
- \_\_\_\_\_ will be \_\_\_\_\_ or \_\_\_\_\_ based on whatever is \_\_\_\_\_ to have a \_\_\_\_\_ outer shell...
- Examples:

### **What is with the charge?**

- There are three types of atoms: \_\_\_\_\_ (no charge), \_\_\_\_\_ (positive charge), \_\_\_\_\_ (negative charge)
- Examples:

Let's work through some examples together...

Element	Atomic Number	Bohr Model	Valance Electrons	How many lost or gained to become stable?	What is its charge?

Applying this to the periodic table...

IA																		VIIA										VIIIA			
1 H 1.00794																	5 B 10.811	6 C 12.0107	7 N 14.00642	8 O 15.999	9 F 18.9984032	10 Ne 20.1797									
3 Li 6.941	4 Be 9.012182																	13 Al 26.981538	14 Si 28.0855	15 P 30.97376	16 S 32.06	17 Cl 35.4527	18 Ar 39.948								
11 Na 22.98976928	12 Mg 24.304																	19 K 39.0983	20 Ca 40.078	VIII										35 Br 79.904	36 Kr 83.80
19 K 39.0983	20 Ca 40.078	21 Sc 44.955910	22 Ti 47.867	23 V 50.9415	24 Cr 51.9961	25 Mn 54.938045	26 Fe 55.845	27 Co 58.933200	28 Ni 58.6934	29 Cu 63.546	30 Zn 65.39	31 Ga 69.723	32 Ge 72.64	33 As 74.92160	34 Se 78.96	35 Br 79.904	36 Kr 83.80														
37 Rb 85.468	38 Sr 87.62	39 Y 88.90585	40 Zr 91.224	41 Nb 92.90638	42 Mo 95.94	43 Tc 98	44 Ru 101.07	45 Rh 102.90550	46 Pd 106.42	47 Ag 107.8682	48 Cd 112.411	49 In 114.818	50 Sn 118.710	51 Sb 121.757	52 Te 127.60	53 I 126.90447	54 Xe 131.29														
55 Cs 132.90545	56 Ba 137.327	57 La* 138.9055	72 Hf 178.49	73 Ta 180.9479	74 W 183.84	75 Re 186.207	76 Os 190.23	77 Ir 192.222	78 Pt 195.078	79 Au 196.96655	80 Hg 200.59	81 Tl 204.3873	82 Pb 207.2	83 Bi 208.98040	84 Po (209)	85 At (210)	86 Rn (222)														
87 Fr (223)	88 Ra (226)	89 Ac** (227)	104 Rf (261)	105 Db (262)	106 Sg (263)	107 Bh (264)	108 Hs (265)	109 Mt (266)	110 Ds (269)	111 Uu (271)	112 Uub (272)	114 Uug (285)		116 Uuh (289)	118 Uuo (289)																
* Lanthanide series		58 Ce 140.116	59 Pr 140.90765	60 Nd 144.24	61 Pm (145)	62 Sm 150.36	63 Eu 151.964	64 Gd 157.25	65 Tb 158.92534	66 Dy 162.50	67 Ho 164.93032	68 Er 167.26	69 Tm 168.93423	70 Yb 173.04	71 Lu 174.967																
** Actinide series		90 Th 232.0377	91 Pa 231.03688	92 U 238.02891	93 Np (237)	94 Pu (244)	95 Am (243)	96 Cm (247)	97 Bk (247)	98 Cf (251)	99 Es (252)	100 Fm (257)	101 Md (258)	102 No (259)	103 Lr (262)																



## Isotopes Notes and Practice

An \_\_\_\_\_ is an atom that has the \_\_\_\_\_ but a \_\_\_\_\_ compared to other atoms of the \_\_\_\_\_ element

\*\* If I change the number of \_\_\_\_\_, I change the \_\_\_\_\_ I have, so the number of \_\_\_\_\_ will never change for a particular element

\*\*The number of \_\_\_\_\_ can change, it's called an \_\_\_\_\_

**We can write isotopes two ways (show them both below, be sure to label the mass number and atomic number where applicable)**

### Isotope Practice

Isotope	Number of Protons	Number of Neutrons	Number of Electrons
Neon – 20			
Strontium - 88			
Sodium – 23			
Boron – 11			
${}^{19}_{9}\text{F}$			
${}^{27}_{13}\text{Al}$			
${}^{65}_{30}\text{Zn}$			
${}^{40}_{18}\text{Ar}$			

## Chemistry Practice Review: Practice finding the protons, neutrons and electrons for ions and isotopes

**Isotopes:** Atoms that have the same number of protons and electrons but the number of \_\_\_\_\_ changes

1. How do you figure out the number of protons for an isotope?
2. How do you figure out the number of neutrons for an isotope?
3. How do you figure out the number of electrons for an isotope?

### **B-10**

Protons:  
Neutrons:  
Electrons:

### **C-12**

Protons:  
Neutrons:  
Electrons:

### **O-18**

Protons:  
Neutrons:  
Electrons:

### **O-16**

Protons:  
Neutrons:  
Electrons:

### **B-11**

Protons:  
Neutrons:  
Electrons:

### **C-14**

Protons:  
Neutrons:  
Electrons:

**Ions:** Atoms with a \_\_\_\_\_!

1. How do you figure out the number of protons for an ion?
2. How do you figure out the number of neutrons for an ion?
3. How do you figure out the number of electrons for an ion?

### **Fl<sup>-1</sup>**

Protons:  
Neutrons:  
Electrons:

### **Al<sup>+3</sup>**

Protons:  
Neutrons:  
Electrons:

### **N<sup>-3</sup>**

Protons:  
Neutrons:  
Electrons:

### **Mg<sup>+2</sup>**

Protons:  
Neutrons:  
Electrons:

### **Na<sup>+1</sup>**

Protons:  
Neutrons:  
Electrons:

### **S<sup>-2</sup>**

Protons:  
Neutrons:  
Electrons:

# The Golden Penny Lab

Purpose: To learn common lab procedures by using lab equipment and to learn about elements by working with some common ones.

Materials: Zinc (Zn) dust, sodium hydroxide (NaOH), pre-1982 penny, tongs, 2 beakers, safety goggles, burner, spoon, forceps (tweezers), hot plate, scale

## Procedure:

1. Use spoon to put 5 g of zinc dust into beaker.
2. Add sodium hydroxide to beaker, just enough to cover zinc.
3. Warm the mixture on a hot plate.
4. Use forceps (tweezers) to place penny in the mixture.
5. Remove the beaker from hot plate, use heat gloves to do so.
6. Observe the penny, record any observations below.
7. Remove penny from mixture with forceps and clean off in beaker of clean water, dry on paper towel.
8. Light the burner, then pick up penny with forceps and hold in flame for a couple of seconds
9. Return penny to beaker of clean water to cool off.
10. Cut penny with pliers to see inside

## Questions:

1. What happened when you put the penny in the NaOH and Zn solution?
2. What happened when you held the penny to the flame?
3. After cutting the penny open, describe what you see.
4. Did you turn copper (Cu) into gold (Au) ?



## Review Sheet – Unit 7 Atomic Theory and Periodic Table Test

### Objective: History of the Atomic Theory

1. What were the major discoveries of the following scientists?
  - a. Dalton –
  - b. JJ Thomson –
  - c. Rutherford –
  - d. Bohr –
  - e. Mendeleev –
2. What is an atom?

### Objective: Periodic Table Arrangement

3. Label the families of the periodic table. Transitional metals, metalloids, nonmetals, halogens, alkali metals, noble gases, alkali earth metals. Be prepared to know basic properties of each.

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				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				104	Rf	105	Db	106	Sg	107	Bh	108	Hs	109	Mt	110	Ds	111	Rg	112	Uub	113	Uut	114	Uuq	115	Uup	116	Uuh	117	Uus	118	Uuo
				57	La	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			
				89	Ac	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			

4. Define the following vocabulary words:
  - a. Ductile –
  - b. Malleable –
  - c. Alloy –

### Objective: Atomic Structure

5. Draw a picture below of an atom, in your picture label the following: nucleus, electron cloud, protons, neutrons, electrons
  
  
  
  
  
  
  
  
  
  
6. List the three subatomic particles of an atom then describe their size and charge:
  - 1.
  - 2.
  - 3.

7. What are valence electrons?
8. Using a drawing, depict how many electrons make up each energy level in a Bohr model.
9. Assume the following are neutral atoms (with no charge, complete the table below).

	Symbol	Atomic Number	Mass Number	Protons	Neutrons	Electrons
Oxygen						
Carbon						
Calcium						
Potassium						

**Objective: Ions and Isotopes**

10. What is an ion?
11. What is an isotope?
12. How many protons, neutrons and electrons do the following elements have?

	Proton	Neutron	Electron
Carbon - 14			
Oxygen - 18			
Magnesium - 22			
F <sup>-</sup>			
O <sup>2-</sup>			
Mg <sup>+2</sup>			
C <sup>+4</sup>			
Na <sup>+</sup>			

# The Periodic Table of the Elements



<b>1</b> <b>H</b> Hydrogen 1.01																	<b>2</b> <b>He</b> Helium 4.00								
<b>3</b> <b>Li</b> Lithium 6.94	<b>4</b> <b>Be</b> Beryllium 9.01																	<b>5</b> <b>B</b> Boron 10.81							
<b>11</b> <b>Na</b> Sodium 22.99	<b>12</b> <b>Mg</b> Magnesium 24.31																	<b>13</b> <b>Al</b> Aluminum 26.98							
<b>19</b> <b>K</b> Potassium 39.10	<b>20</b> <b>Ca</b> Calcium 40.08	<b>21</b> <b>Sc</b> Scandium 44.96	<b>22</b> <b>Ti</b> Titanium 47.87	<b>23</b> <b>V</b> Vanadium 50.94	<b>24</b> <b>Cr</b> Chromium 52.00	<b>25</b> <b>Mn</b> Manganese 54.94	<b>26</b> <b>Fe</b> Iron 55.85	<b>27</b> <b>Co</b> Cobalt 58.93	<b>28</b> <b>Ni</b> Nickel 58.69	<b>29</b> <b>Cu</b> Copper 63.55	<b>30</b> <b>Zn</b> Zinc 65.39	<b>31</b> <b>Ga</b> Gallium 69.72	<b>32</b> <b>Ge</b> Germanium 72.61	<b>33</b> <b>As</b> Arsenic 74.92	<b>34</b> <b>Se</b> Selenium 78.96	<b>35</b> <b>Br</b> Bromine 79.90	<b>36</b> <b>Kr</b> Krypton 83.80								
<b>37</b> <b>Rb</b> Rubidium 85.47	<b>38</b> <b>Sr</b> Strontium 87.62	<b>39</b> <b>Y</b> Yttrium 88.91	<b>40</b> <b>Zr</b> Zirconium 91.22	<b>41</b> <b>Nb</b> Niobium 92.91	<b>42</b> <b>Mo</b> Molybdenum 95.94	<b>43</b> <b>Tc</b> Technetium (98)	<b>44</b> <b>Ru</b> Ruthenium 101.07	<b>45</b> <b>Rh</b> Rhodium 102.91	<b>46</b> <b>Pd</b> Palladium 106.42	<b>47</b> <b>Ag</b> Silver 107.87	<b>48</b> <b>Cd</b> Cadmium 112.41	<b>49</b> <b>In</b> Indium 114.82	<b>50</b> <b>Sn</b> Tin 118.71	<b>51</b> <b>Sb</b> Antimony 121.76	<b>52</b> <b>Te</b> Tellurium 127.60	<b>53</b> <b>I</b> Iodine 126.90	<b>54</b> <b>Xe</b> Xenon 131.29								
<b>55</b> <b>Cs</b> Cesium 132.91	<b>56</b> <b>Ba</b> Barium 137.33	<b>57</b> <b>La</b> Lanthanum 138.91	<b>72</b> <b>Hf</b> Hafnium 178.49	<b>73</b> <b>Ta</b> Tantalum 180.95	<b>74</b> <b>W</b> Tungsten 183.84	<b>75</b> <b>Re</b> Rhenium 186.21	<b>76</b> <b>Os</b> Osmium 190.23	<b>77</b> <b>Ir</b> Iridium 192.22	<b>78</b> <b>Pt</b> Platinum 195.08	<b>79</b> <b>Au</b> Gold 196.97	<b>80</b> <b>Hg</b> Mercury 200.59	<b>81</b> <b>Tl</b> Thallium 204.38	<b>82</b> <b>Pb</b> Lead 207.2	<b>83</b> <b>Bi</b> Bismuth 208.98	<b>84</b> <b>Po</b> Polonium (209)	<b>85</b> <b>At</b> Astatine (210)	<b>86</b> <b>Rn</b> Radon (222)								
<b>87</b> <b>Fr</b> Francium (223)	<b>88</b> <b>Ra</b> Radium (226)	<b>89</b> <b>Ac</b> Actinium (227)	<b>104</b> <b>Rf</b> Rutherfordium 178.49	<b>105</b> <b>Db</b> Dubnium (262)	<b>106</b> <b>Sg</b> Seaborgium (266)	<b>107</b> <b>Bh</b> Bohrium (264)	<b>108</b> <b>Hs</b> Hassium (269)	<b>109</b> <b>Mt</b> Meitnerium (268)	<b>110</b> <b>Ds</b> Darmstadtium (281)	<b>111</b> <b>Rg</b> Roentgenium (272)	<b>112</b> <b>Cn</b> Copernicium (285)														
												<b>58</b> <b>Ce</b> Cerium 140.12	<b>59</b> <b>Pr</b> Praseodymium 140.91	<b>60</b> <b>Nd</b> Neodymium 144.24	<b>61</b> <b>Pm</b> Promethium (145)	<b>62</b> <b>Sm</b> Samarium 150.36	<b>63</b> <b>Eu</b> Europium 151.96	<b>64</b> <b>Gd</b> Gadolinium 157.25	<b>65</b> <b>Tb</b> Terbium 158.93	<b>66</b> <b>Dy</b> Dysprosium 162.50	<b>67</b> <b>Ho</b> Holmium 164.93	<b>68</b> <b>Er</b> Erbium 167.26	<b>69</b> <b>Tm</b> Thulium 168.93	<b>70</b> <b>Yb</b> Ytterbium 173.04	<b>71</b> <b>Lu</b> Lutetium 174.97
												<b>90</b> <b>Th</b> Thorium 232.04	<b>91</b> <b>Pa</b> Protactinium 231.04	<b>92</b> <b>U</b> Uranium 238.03	<b>93</b> <b>Np</b> Neptunium (237)	<b>94</b> <b>Pu</b> Plutonium (244)	<b>95</b> <b>Am</b> Americium (243)	<b>96</b> <b>Cm</b> Curium (247)	<b>97</b> <b>Bk</b> Berkelium (247)	<b>98</b> <b>Cf</b> Californium (251)	<b>99</b> <b>Es</b> Einsteinium (252)	<b>100</b> <b>Fm</b> Fermium (257)	<b>101</b> <b>Md</b> Mendelevium 168.93	<b>102</b> <b>No</b> Nobelium (259)	<b>103</b> <b>Lr</b> Lawrencium (262)

## Element Report

You are going to prepare and present a PowerPoint slide show on an element. The report will be done as an election campaign against other elements. Your job is to find facts about the element you signed up for and convince the class that it is more important than the other elements you are running against. 25pts

### PowerPoint must include:

- 6-10 slides
- a works cited slide at the end listing all your information sources
- must use some type of transition from one slide to another
- each slide can have no more than 3 points/facts on it

### Content:

- Physical description of the element and a picture
- how plentiful, where is it found, use a map
- how useful it is for humans, use pictures to help explain
- two more interesting facts you come across

Set up your presentation with the idea of pointing out how cool, important etc this element is why the class should vote for your element instead of the others. Use catchy slogans, pictures, maps etc.

Due Date: \_\_\_\_\_

## Grading Rubric

Assignment:	Points Possible:	Points Earned:
1. History of the Atomic Structure	10	_____
2. Atomic Theory Summary Sheet	5	_____
3. Periodic Table Basics	5	_____
4. Ions Notes and Practice	10	_____
5. Isotopes Notes and Practice	10	_____
6. Chemistry Practice Review (signed)	10	_____
7. Review Sheet (signed)	10	_____
<b>Lab Grades:</b>		
1. The Golden Penny Lab	10	_____
<b>Element Report:</b>		
1. Presentation Grade	25	_____