

# **Chemistry**

## ***Periodic Table Activity***

### **Introduction**

The periodic table is an organized display of information about the elements. There are patterns to the information which can make it possible to predict and understand both the physical properties and chemical behavior of these elements. In this activity, you will label and code the periodic table in order to better see its organization and patterns.

### **Purpose**

To label and code the main parts of the periodic table.

### **Materials**






blank periodic table  
colored pencils

periodic table (handout, book, planner, poster)  
textbook

### **Safety Considerations**

- *None for this activity beyond standard class rules and lab procedures.*

### **Procedure**

1. Label the groups with 1-18 at the top of each column.
2. Label the periods with 1-7 at the left of each row.
3. Using a dark color, draw a zig-zag diagonal staircase that divides the metals from the nonmetals (to the left of B; between B & Al; between Al & Si; between Si & Ge; between Ge & As; between As & Sb; between Sb & Te; between Te & Po; between Po & At).
4. Label the Representative Elements with roman numerals IA – VIIIA at the top of each column.
5. Label each of the specially named groups above the roman numerals (see Chapter 5.4 for help).
6. Using a , block and label the transition metals.
7. Using a , block and label the inner transition or “rare earth” metals.
8. Label the Lanthanide Series to the left of the proper row.
9. Label the Actinide Series to the left of the proper row.
10. Using a , block and label the *s*, *p*, *d* and *f* elements (see Chapter 14.1 for help).
11. Using whatever colors you prefer, separately color in the metals, metalloids and nonmetals using three different colors. Since there is a change across the periodic table from metal to metalloid to nonmetal, you may want to choose three colors that blend well together (i.e., red to orange to yellow).
12. Make a legend or key in the bottom left-hand corner of your periodic table sheet.
13. Use cross-hatching (i.e., ) to mark all the transition metals.
14. Use different cross-hatching (i.e., ) to mark all the inner transition or “rare earth” metals.
15. Darkly outline the *s*, *p*, *d* and *f* blocks.
16. Place a \* in the boxes of elements 57 and 89.

### **Clean-up and Disposal**

1. Return the colored pencils to their proper location.

# Periodic Table of the Elements

1 H																	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 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt					114		116		118	

58 <b>Ce</b>	59 <b>Pr</b>	60 <b>Nd</b>	61 <b>Pm</b>	62 <b>Sm</b>	63 <b>Eu</b>	64 <b>Gd</b>	65 <b>Tb</b>	66 <b>Dy</b>	67 <b>Ho</b>	68 <b>Er</b>	69 <b>Tm</b>	70 <b>Yb</b>	71 <b>Lu</b>
90 <b>Th</b>	91 <b>Pa</b>	92 <b>U</b>	93 <b>Np</b>	94 <b>Pu</b>	95 <b>Am</b>	96 <b>Cm</b>	97 <b>Bk</b>	98 <b>Cf</b>	99 <b>Es</b>	100 <b>Fm</b>	101 <b>Md</b>	102 <b>No</b>	103 <b>Lr</b>

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

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#### **Questions**

1. What color did you select for the metals?
2. What is the name of the element in group III, period 4?
3. What is the name of the 4<sup>th</sup> halogen?
4. How many elements are in the lanthanide series?
5. What is the name of group IIA? Why does it have this name?
6. What is the group number for the halogens?
7. How many transition metals are there in period 2? How many in period 3?
8. How many nonmetals are there?
9. Is barium a metal, metalloid or nonmetal? How do you know?
10. What families are included in the “s” block?
11. Why were you asked to put asterisks (\*) next to lanthanum and actinium?
12. Copper, silver and gold are all excellent conductors of electricity. From this information, what can you conclude about elements that share the same column of the periodic table?