Periodic Table Basics

Step 1: Complete the squares for each element by adding the atomic number, name, and atomic mass.

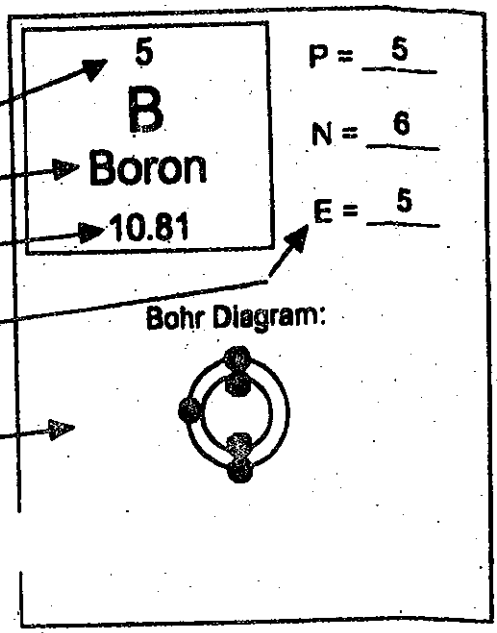
Write the atomic number at the top of the square.

Write the element's name under the symbol.

Write the atomic mass at the bottom of the square.

Step 2: Determine the number of protons, neutrons, and electrons in each element.

Step 3: Create a Bohr diagram for each element.



Step 5: Use the following colors to shade in the square for each element. You should ONLY color in the small square in the upper left-hand corner and not the entire card.

Green = Li & Na	Pink = O & S	Blue = Be & Mg	Purple = F & Cl
Orange = B & Al	Red = C & Si	Tan = N & P	Yellow = He, Ne, & Ar

Step 6: Cut the cards apart and arrange <u>according to atomic number</u> in the pattern shown below. Once you have the cards arranged in the correct order, glue them to a large sheet of construction paper.

1							2
3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18

Step 7: Answer the questions on the back of this worksheet using the information on your Periodic Table.

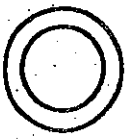
N

P = ___

N = ___

E = ___

Bohr Diagram



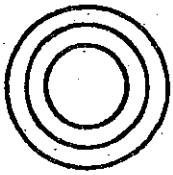
Al

P = ___

N = ___

E = ___

Bohr Diagram



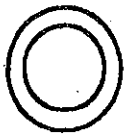
F

P = ___

N = ___

E = ___

Bohr Diagram



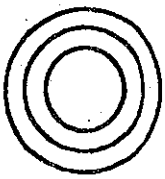
Ar

P = ___

N = ___

E = ___

Bohr Diagram



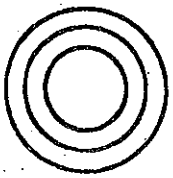
Si

P = ___

N = ___

E = ___

Bohr Diagram



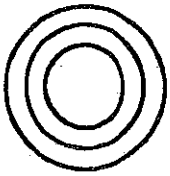
Na

P = ___

N = ___

E = ___

Bohr Diagram



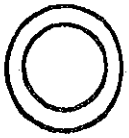
Be

P = ___

N = ___

E = ___

Bohr Diagram



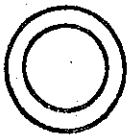
O

P = ___

N = ___

E = ___

Bohr Diagram



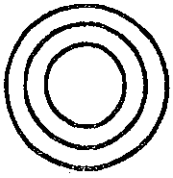
Cl

P = ___

N = ___

E = ___

Bohr Diagram



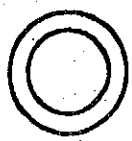
B

P = ___

N = ___

E = ___

Bohr Diagram



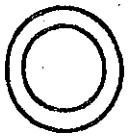
Li

P = ___

N = ___

E = ___

Bohr Diagram



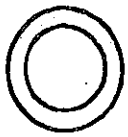
Ne

P = ___

N = ___

E = ___

Bohr Diagram



He

P = ___

N = ___

E = ___

Bohr Diagram

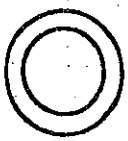
C

P = ___

N = ___

E = ___

Bohr Diagram



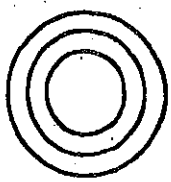
P

P = ___

N = ___

E = ___

Bohr Diagram



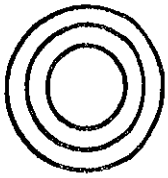
S

P = ___

N = ___

E = ___

Bohr Diagram



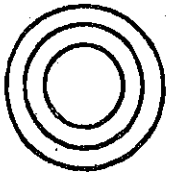
Mg

P = ___

N = ___

E = ___

Bohr Diagram



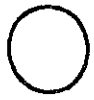
H

P = ___

N = ___

E = ___

Bohr Diagram



NAME _____

Colored Table: 30 pts Questions: 30 points		60

Periodic Table Basics – Analysis Questions *(STAPLE to Periodic Table)*

After you have finished creating your periodic table, answer the following questions:

1. What is a valence electron? (3 points)

2. Which elements have complete outer energy levels (remember the octet rule: 8 electrons is a complete energy level, except for the first level which only holds two electrons)? Give the name and symbol for each: (3 points)

   1. _____ _____
   2. _____ _____
   3. _____ _____

3. Which elements have only 1 valence electron? Give the name and symbol for each: (3 points)

   1. _____ _____
   2. _____ _____
   3. _____ _____

4. What do you notice about the number of valence electrons as you move from left to right across a row on the periodic table? (2 points)

5. What do you notice about the number of valence electrons as you move down a family? (2 points)

6. What do you notice about the number of energy levels or shells as you move down a group or family on the periodic table? (2 points)

7. Elements are organized into families according to their physical and chemical properties. Identify the elements on you periodic table that belong to each family based on the number of valence electrons. **Give the name and symbol of each element:** (8 points)

Alkali Family - 1 valence electron

_____ _____ & _____ _____

Alkaline Earth Metals - 2 valence electrons

_____ _____ & _____ _____

Halogens - 7 valence electrons

_____ _____ & _____ _____

Noble Gases - 8 valence electrons

_____ _____ & _____ _____

8. Predict the number of valence electrons for each element based on its location in the Periodic Table of Elements. (7 points) (Hint: your answer should be a number between 1-8, no higher…remember the octet rule states only 8 electrons in the 2nd and 3rd energy levels)

Barium = _____

Sulfur = _____

Francium = _____

Selenium = _____

Bromine = _____

Silicon = _____

Xenon = _____