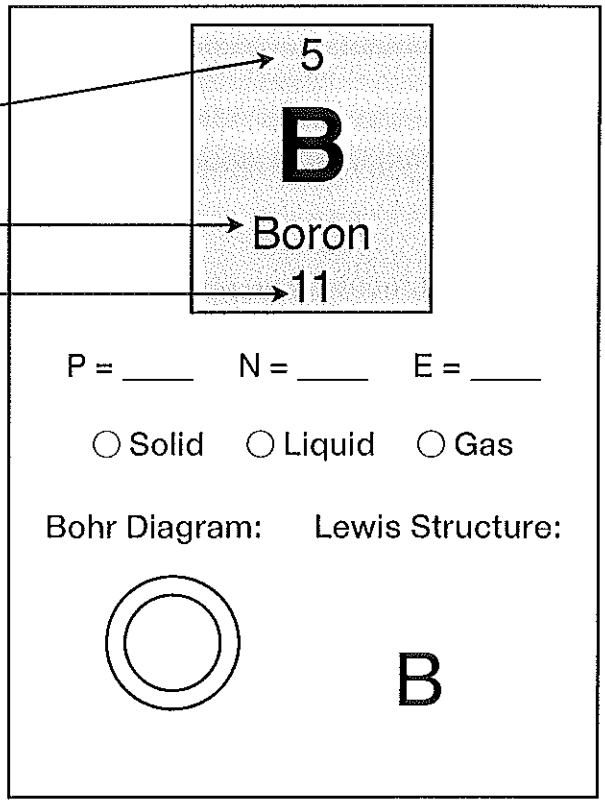
Periodic Table Basics

Step 1: Complete the periodic table box for each element.

- Write the element's atomic number at the top
- Write the element's name under the symbol
- Write the atomic mass at the bottom



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

Step 3: Darken the correct circle to show if the element is a solid (S), liquid (L), or gas (G) at room temperature.

Step 4: Create a Bohr Diagram and a Lewis Structure Diagram for each element.

Step 5: Use colored pencils to shade in ONLY the period table box for each element – notice the grey section of the example. Use the following colors for each:

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

Hydrogen = Leave White

Step 6: Cut the cards apart and arrange by atomic number on a large sheet of construction paper, as shown in the pattern below:

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

Step 7: Arrange the cards on the page so that numbers <u>11 and 18 are at the very edge of the two bottom corners</u>. After you have the cards arranged in the correct order, glue them to the paper. Add a title at the top of the page along with your name.

Name: _____ Per. ____

Periodic Table Basics

1. Which elements have complete valence/outer shells? Give the name and symbol for each.

   _____ ____ _____ ____ _____ ____

2. What do you notice about the location of the elements listed above?

3. Which elements have only one valence electron? Give the name and symbol for each.

   _____ ____ _____ ____ _____ ____

4. What do you notice about the location of the elements listed above?

5. What do you notice about the **number of valence electrons** as you move from <u>left to right</u> across a row or period in the periodic table? (Na → Mg → Al → Si → P → S → Cl → Ar)

6. What do you notice about the **number of energy levels** or shells as you move <u>down a group</u> or column in the periodic table? (H → Li → Na)

7. Write the name of each family at the top of the columns on your periodic table using the following information:

Alkali Metals: 1 e^-	**Nitrogen Family: 5 e^-**
Alkaline Earth Metals: 2 e^-	**Oxygen Family: 6 e^-**
Boron Family: 3 e^-	**Halogens: 7 e^-**
Carbon Family: 4 e^-	**Noble Gases: 8 e^-**

8. What do you notice about the location of the elements in each family?

9. In what family would you classify Hydrogen? Explain your choice.

10. In what family would each of the following elements be classified?

    Radium: _____ Tin: _____

    Iodine: _____ Cesium: _____

11. Predict the number of valence electrons for each element based on its location in the Periodic Table of Elements.

    Barium: ____ Lead: ____ Bismuth: ____ Potassium: ____ Radon: ____