

# 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.

5 <b>B</b> Boron 10.81	P = <u>  5  </u> N = <u>  6  </u> E = <u>  5  </u>
Bohr Diagram:	
Lewis structure:	

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

**Step 3: Create a Bohr diagram for each element.**

**Step 4: Draw the Lewis Structure 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

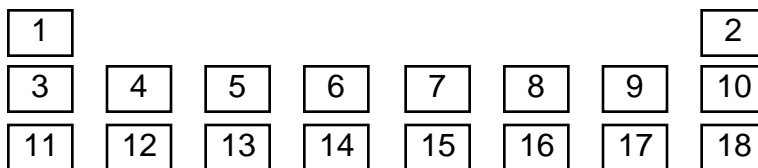
Orange = B & Al

Red = C & Si

Tan = N & P

Yellow = He, Ne, & Ar

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



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

1. Which 3 elements had enough electrons to complete their outer shells? Give the name and symbol for each.

2. Where is the location of all the elements in question 1?

3. Which 3 elements had only one valence electron?

4. What do you notice about the location of all the elements in question 3?

5. What do you notice about the number of valence electrons as you move from left to right 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 down a group or column in the periodic table? (H => Li => Na)

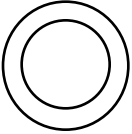
7. Elements are organized into groups according to their physical and chemical properties. Fill in the table below with the elements that you used today based on the number of valence electrons. Give the name and symbol for each element.

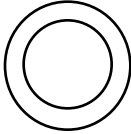
Alkali Metals Group= 1 valence electrons			Hydrogen H
Alkaline Earth Metals = 2 valence electrons			
Boron Group = 3 valence electrons			
Carbon Group = 4 valence electrons			
Nitrogen Group = 5 valence electrons			
Oxygen Group = 6 valence electrons			
Halides Group = 7 valence electrons			
Noble Gases = Filled outermost shell			Helium He

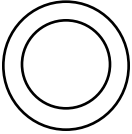
8. What relationship is there between the location of an element on the periodic table and its number of valence electrons?


9. Predict the number of valence electrons for each element based on its location in the Periodic Table of Elements. You will need to use the periodic table.

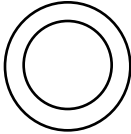
Barium = \_\_\_\_\_ Xenon = \_\_\_\_\_ Potassium = \_\_\_\_\_

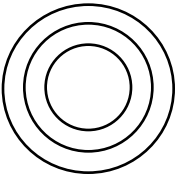
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>B</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>B</b>	

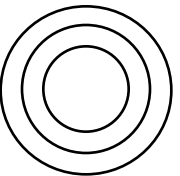
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>Li</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>Li</b>	

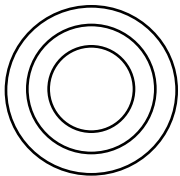
<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>Ne</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>Ne</b>	


<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>He</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>He</b>	

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>C</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>C</b>	

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>P</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>P</b>	

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>S</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>S</b>	

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>Mg</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>Mg</b>	

<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; margin: 0;"><b>H</b></p> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> <hr style="border: 0; border-top: 1px solid black; margin: 2px 0;"/> </div>	<p>P = ___</p> <p>N = ___</p> <p>E = ___</p>
Bohr Diagram	
	
Lewis Structure <b>H</b>	

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>N</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>Al</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>F</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>Ar</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>Si</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>Na</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>Be</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>O</b>

	P = ____ N = ____ E = ____
Bohr Diagram	
Lewis Structure	<b>Cl</b>