Periodic Table Basics

Atomic Number → 2 P = 2 N = 2
Atom's Name → He E = 2 Helium
Atomic Mass → 4

Lewis Diagram → 

P = N = H E =							
P = N = Li E =	P = N = Be E =	P = N = B E =	P = N = C E =	P = N = N E =	P = N = O E =	P = N = F E =	P = N = Ne E =
							
P = N = Na E =	P = N = Mg E =	P = N = Al E =	P = N = Si E =	P = N = P E =	P = N = S E =	P = N = Cl E =	P = N = Ar E =

Periodic Table Basics

Step 1: Complete the Periodic Table Basics Chart. Your chart will include the element's:

(a) atomic number

(b) name

(c) atomic mass

(d) number of protons, neutrons, and electrons

(e) Lewis diagram

Step 2: Shade the upper rectangle for each element. Elements in the same column should be shaded with the same colour.

Step 3: Answer the following questions.

1. What is meant by the following statement:

   The atom has a complete outer shell.

   _____

   _____

   _____

2. Do all atoms require the same number of electrons to complete their outermost shell? Explain.

   _____

   _____

   _____

3. Which three elements on your chart have a complete outer shell? Give the name and symbol for each.

   (a) (b) (c)

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

   _____

   _____

   _____

5. Which elements have only one electron in its outermost shell?

6. What do you notice about the location of the elements in question # 5?

_____

_____

_____

7. What do you notice about the number of electrons in the outermost shell as you move from left to right across a row or period in the chart?

_____

_____

_____

8. What do you notice about the number of shells each element has as you move from top to bottom of a column or group on the chart?

_____

_____

_____

9. Elements are organized into families according to their physical and chemical properties. Write the family names above the correct column on your chart.

Alkali metals have one valence electron

Alkaline Earth metals have 2 valence electrons.

Halogens have 7 valence electrons.

Noble Gases have 8 valence electrons.

10. Using the periodic table and your chart, predict the number of valence electrons for each element based on its location on the periodic table.

	Shells	Valence Electrons
Calcium	_____	_____
Chlorine	_____	_____
Barium	2	_____
Lead	_____	_____
Xenon	_____	_____
Potassium	_____	1

11. Make a rule for the number shells and valence electrons an atom will have using the information above?