

# Periodic Table's



## Most Wanted

There is an element on the periodic table that does not want to be located! Actually, this element is "hiding out." In an effort to elude you, the element has provided many false identities and it is your job to follow this trail of false identities to locate the element's true name. This element is not as smart as it thinks; we know that all of these false identities are connected to each other. Therefore, providing the correct identity for each clue will ultimately help lead you to the correct element (this means you should use each answer as a reference to get the next one). So, if you make **just one** mistake it will affect all the clues and identities that follow...thus allowing this perpetrator to get away.

**BE SAFE, BE SMART, BE VIGILANT!!!**

Detective Name:

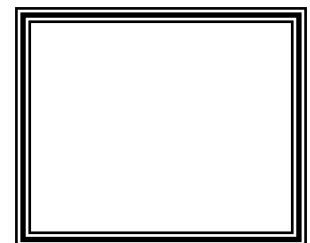
Period:

Seat Number:

**TURN INTO BASKET BEFORE YOU GLUE  
INTO NOTEBOOK!**

- 1) Period two, group one is where I sit \_\_\_\_\_
- 2) The number of valence electrons in the previous answer plus 23 is my atomic number \_\_\_\_\_
- 3) Five groups to the right of the previous answer, in period five, is my location \_\_\_\_\_
- 4) The number of neutral particles in the previous answer is my atomic number \_\_\_\_\_
- 5) If you reverse the atomic number in the previous answer, you will know my mass \_\_\_\_\_

- Draw a "mug shot" of me (Bohr diagram)
- Write my electron configuration



6) The number of negative particles in the second energy level of my "mug shot," divided by two and multiplied by 10 is equal to my atomic number \_\_\_\_\_

7) The previous answer's group number represents my atomic mass \_\_\_\_\_

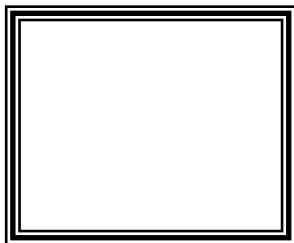
8) The previous answer's group and period six is where I reside \_\_\_\_\_

9) The first number of the previous answer's mass represents my atomic number \_\_\_\_\_

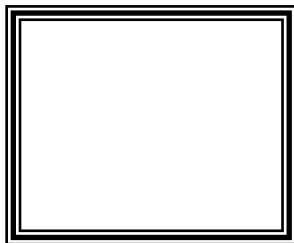
- Draw the "mug shots" (Bohr diagrams) of my three family members that come directly below me. (Remember - 2, 8, 8, 18, 32)

- Write the electron configurations of each of these family members

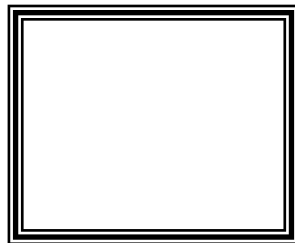
Member #1



Member #2



Member #3



10) The total sum of the number of valence electrons for all the three members drawn represents my mass (use your periodic table to find the number of valence electrons for each of these members)

\_\_\_\_\_

- Calculate the # of protons, neutrons and electrons for the members of the previous answer's group that reside in periods 4, 5, and 6 **if they were all ions with a 3- charge** (meaning, they each have 3 extra electrons than normal) Use the table to help you do this

Ion (Symbol with charge)	Protons	Neutrons	Electrons (Don't forget the extra three electrons!)

**Sum** all numbers in the table = \_\_\_\_\_

11) The sum of all the protons, neutrons, and electrons from the table above, divided by four represents my atomic number once you reverse the two digits \_\_\_\_\_

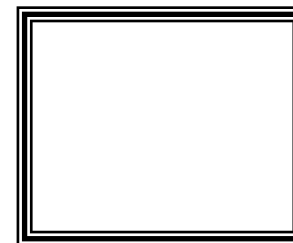
Based on my atomic number, my name is \_\_\_\_\_

12) Go to the teacher to check your answer to #11. If it is correct you are one step away from finding the true identity of the element!

13) If your answer was correct ask the teacher how many valence electrons I have. This number of valence electrons is the same as my true atomic number.

### **WHO AM I???**

Draw my mug shot and fill out the required information



**True Name:**

**Atomic Number:**

**Electron Configuration:**