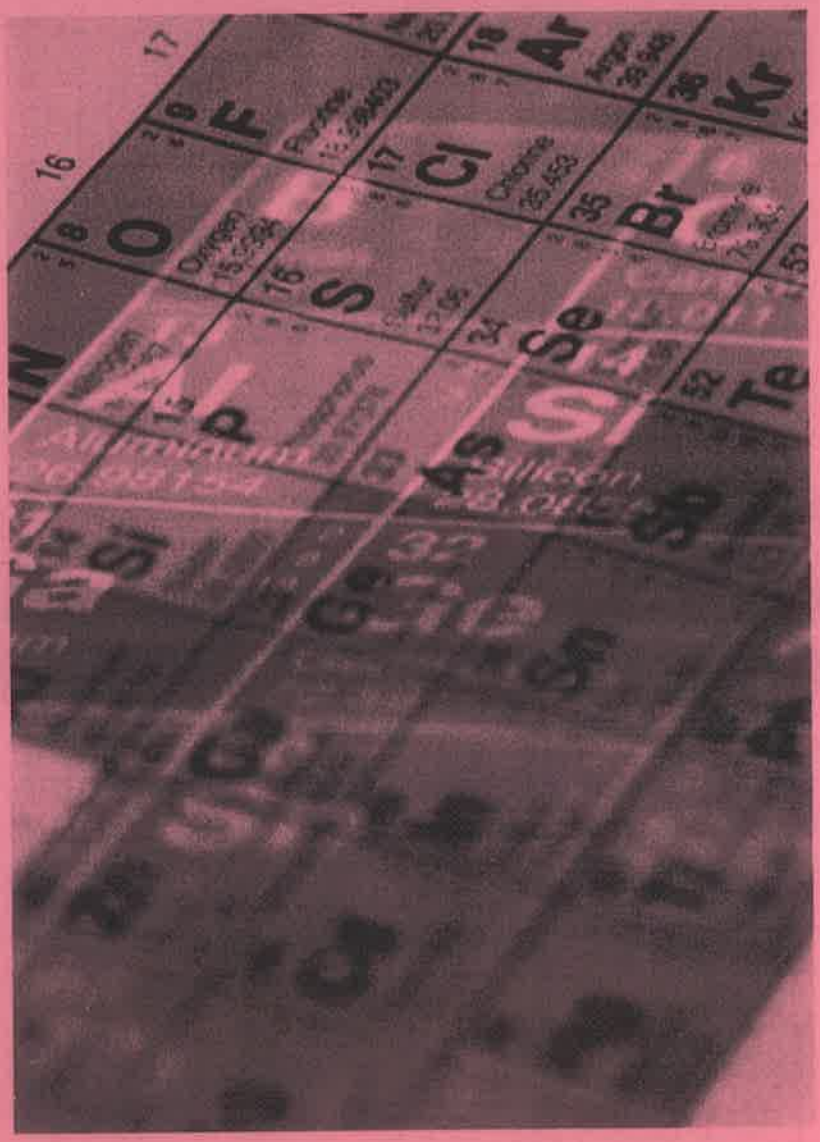
UNIT FOUR:



Periodic Table

Unit Four:

NAME: DATE:

TRENDS OF THE PERIODIC TABLE

PURPOSE:

MATERIALS:

PROCEDURE:

Fill in the following data table and plot it on the appropriate graph

Atomic Number	Name	Symbol	Atomic Radius (pm)	Electronegativity	Ionization Energy (KJ/mol)
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
31					
32					
33					
34					
35					
36					

DATA AND OBSERVATIONS:

On the attached Graph Paper, plot three graphs as follows:

- Graph One- Atomic Number (x) vs. Atomic Radius (y)
- Graph Two- Atomic Number (x) vs. Electronegativity (y)
- Graph Three- Atomic Number (x) vs. Ionication Energy (y)

Plot Each GROUP a different color as stated below:

Group 1:	Red	Group 15:	Orange
Group 2:	Blue	Group 16:	Brown
Group 3:	Green	Group 17:	Yellow
Group 4:	Black	Group 18:	Purple

Draw a dotted line parallel to the Y axis between periods 2 & 3 and between periods 3 & 4.

ANALYSIS AND CONCLUSIONS:

1. What are the general trends for atomic number versus radius-
    a. Within a group-
    b. Within a period-
2. What are the general trends for atomic number versus electrognegativity-
    a. Within a group-
    b. Within a period-
3. What are the general trends for atomic number versus ionization energy-
    a. Within a group-
    b. Within a period-
4. What is periodic law? How does this relate to this lab activity?
5. Elements are generally classified in three types- what are they?
6. The elements are given seven different classifications according to their position on the Period Table- what are they?
7. What are the physical properties of metals? What are the physical properties of non- metals? What are the physical properties of metalloids?
8. What are the horizontal rows of the periodic table called? What are the vertical rows of the periodic table called?
9. Define electronegativity, ionization energy and atomic radius?
10. Where can all this information be found?

Name:_____ Date: _____

SECRET AGENT PERIODICITY

INTRODUCTION:

PURPOSE: To become familiar with the organization of the periodic table.

SAFETY:

Make a list of all safety procedures related to this lab.

MATERIALS:

Secret Agents	Large Paper
Scissors	Glue

PROCEDURE:

1. Cut out the secret agents.
2. Arrange the agents into columns and rows.
3. When you have settled upon an arrangement, glue the squares onto a larger sheet of paper.
4. Sketch the missing secret agent and answer the questions.

CLUES:

- **Group the agents by similar characteristics.**
- **Each row has something in common.**
- **Each Secret Agent is different from every other one in two of the characteristics.**
- **You will have three rows when you are finished.**
- **The rows do not have the same number of Secret Agents**
- **The goal is that all members of a row have something in common and all members of a column have something in common.**

QUESTIONS:

Copy and complete the following questions in your lab notebook.

1. In what two ways are all the secret agents different?
2. What do the agents in a row have in common?
3. What do the agents in a column have in common?
4. From questions 2 and 3 above, what are these analogous to on the periodic table?
5. What do the elements in a family on the periodic table have in common?
6. How is the modern periodic table arranged?
7. Define periodicity and explain how ti relates to the secret agents.
8. Sketch the missing Secret Agent!