

Color Coding the Periodic Table

Student Worksheet

This worksheet will help you understand how the periodic table is arranged. Your teacher will give you a copy of the periodic table to color. Using map pencils, color each group on the table as follows:

1. Color the square for Hydrogen sky blue.
2. Lightly color all metals yellow.
3. Place black dots in the squares of all alkali metals.
4. Draw a horizontal line across each box in the group of alkaline earth metals.
5. Draw a diagonal line across each box of all transition metals.
6. Color the metalloids purple.
7. Color the nonmetals orange.
8. Draw small brown circles in each box of the halogens.
9. Draw checkerboard lines through all the boxes of the noble gases.
10. Using a black color, trace the zigzag line that separates the metals from the nonmetals.
11. Color all the lanthanides red.
12. Color all the actinides green.

When you are finished, make a key that indicates which color identifies which group.

Family Ties

Student Worksheet

Follow the instructions below to label the major groups and divisions of the periodic table.

1. The vertical columns on the periodic table are called _____.
2. The horizontal rows on the periodic table are called _____.
3. Most of the elements in the periodic table are classified as _____.
4. The elements that touch the zigzag line are classified as _____.
5. The elements in the far upper right corner are classified as _____.
6. Elements in the first group have one outer shell electron and are extremely reactive. They are called _____.
7. Elements in the second group have 2 outer shell electrons and are also very reactive. They are called _____.
8. Elements in groups 3 through 12 have many useful properties and are called _____.
9. Elements in group 17 are known as "salt formers". They are called _____.
10. Elements in group 18 are very unreactive. They are said to be "inert". We call these the _____.
11. The elements at the bottom of the table were pulled out to keep the table from becoming too long. The first period at the bottom called the _____.
12. The second period at the bottom of the table is called the _____.

Name: _____

Secret Agent Activity

Because of the science skills you have demonstrated, you have been chosen for a top secret mission. The mission, should you choose to accept it (and it is in your best interest to do so), is to work with the sketches of the characters contained in the envelope. These represent members of a family of secret agents, but the most important member has never been sketched. You are to organize the pictures and sketch the missing secret agent.

If you do not accomplish this task in 30 minutes, this envelope will self-destruct!
GOOD LUCK!

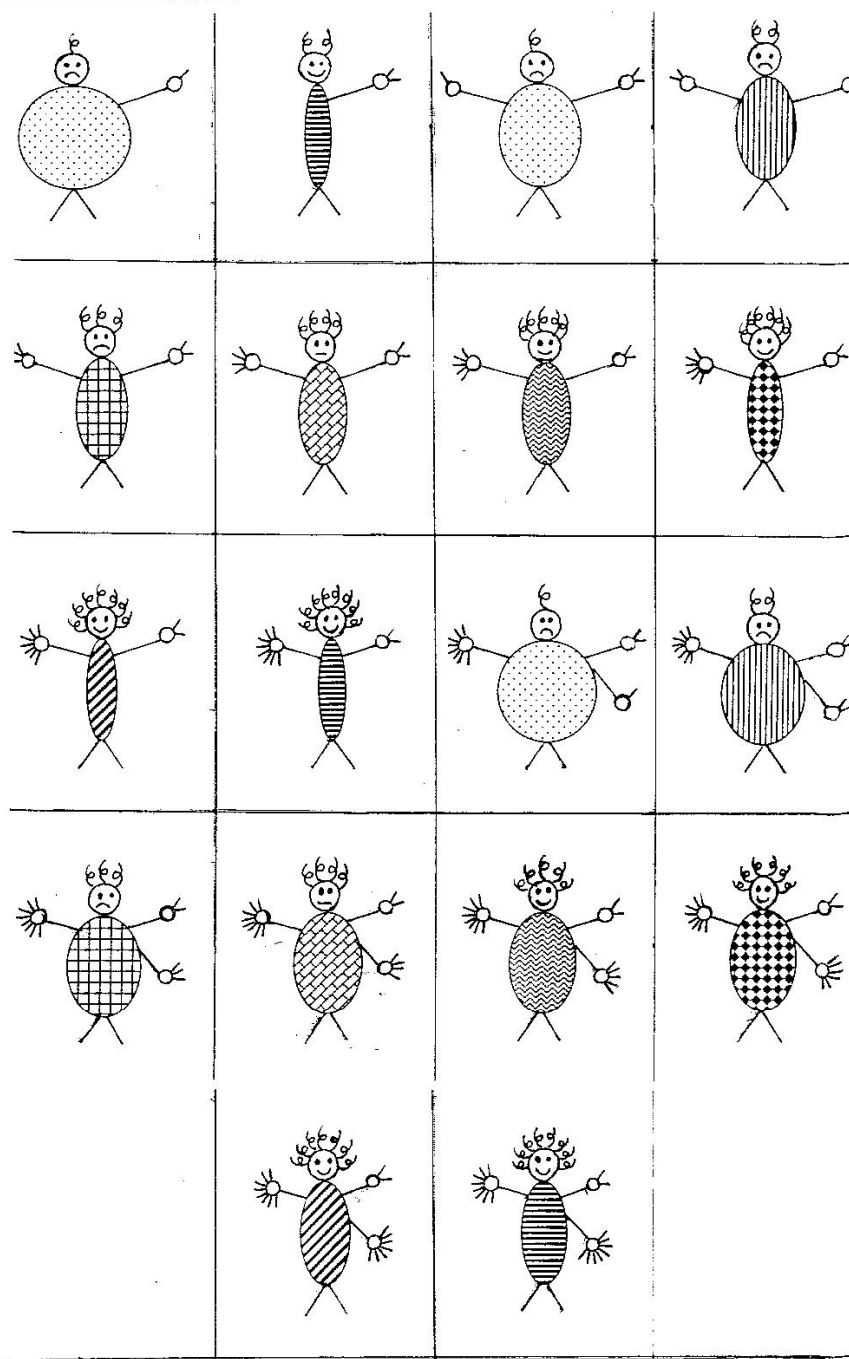
Clue One: Each secret agent is different from every other one in two of the properties.

No two sketches have the same amount or kind of these properties. If you can find one of these two it will be possible to sequence the sketches correctly.

Clue Two: You will have three rows when you are finished. The rows do not have to have the same number of sketches in each row. The goal is that all members of a row will have something in common and all members of a column have something in common. There should also be a logical progression as you go from row to row and from column to column.

Questions:

1. In what two ways are all of the secret agents different?
2. List all of the things that secret agents in the same row have in common.
3. List all of the things that secret agents in the same column have in common.
4. Draw the missing secret agent.
5. Relate at least three characteristics of the agents to properties of the element on the Periodic Table.



NAME _____ DATE _____ HOUR _____

Use the periodic table of elements to find the following information: atomic number, atomic mass, number of protons, neutrons, and electrons.

Element	Period Number	Atomic Number	Mass Number	Number of Protons	Number of Neutrons	Number of Electrons
Potassium						
Helium						
Silicon						
Nickel						
Chlorine						
Fluorine						
Radium						
Nitrogen						
Oxygen						
Carbon						
Beryllium						
Aluminum						

Element	Group Number	Natural Phase of matter	Type of substance (M, N, S)	Found in Nature (pure sub or cmpds)	Number of Valence electrons	Number of electron shells
Potassium						
Helium						
Silicon						
Nickel						
Chlorine						
Fluorine						
Radium						
Nitrogen						
Oxygen						
Carbon						
Beryllium						
Aluminum						

Review for PERIODIC TABLE QUIZ

1. On the blank periodic table below, show the following areas:
metals, nonmetals, semi-metals, noble gases, transition metals, inner-transition metals, and halogens



2. Be able to fill in the following chart for neutral atoms:

Element Name	Symbol	# protons	# Neutrons	# total electrons	# Valence electrons
		53			
	Sr				

3. Be able to draw both Bohr models for the following elements:

Ca

Si

Cl

B

4. Be able to draw the structure of an atom and label and describe all of the parts.

5. Know the characteristics of metals and non-metals. Know the difference between atoms, elements, and compounds.

6. Fill in the following table for ions and isotopes:

Element	Symbol	Protons	Neutrons	Electrons	Ion or Isotope?
	Li +1				
carbon-14					
	S 2-				
Uranium-298					

7. Describe how the periodic table is set up.