Using your periodic table, you will color it according to the following rules. Once your maps are color coded we will go over the properties of each coded section of the periodic table. Color each group on the table as follows:

1. Color the square for Hydrogen pink.
2. Place black dots in the squares of all Group 1 elements.
3. Draw a horizontal line across each box in the Group 2
4. Draw a diagonal line across each box of all groups 3 - 12.
5. Color the boxes 5, 14, 32, 33, 51, 52, 84 purple.
6. Color the everything to the right of the purple boxes orange.
7. Lightly color everything to the left of the purple boxes yellow.
8. Draw small brown circles in each box of Group 17.
9. Draw checkerboard lines through all the boxes of Group 18.
10. Using a black color, trace the zigzag line that separates the yellow from the orange.
11. Color all the lanthanides red.
12. Color all the actinides green.

Fill in the blanks 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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Hydrogen (**PINK**): This element does not match the properties of any other group so it stands alone. It is placed above group 1 but it is not part of that group. It is a very reactive, colorless, odorless gas at room temperature. (1 outer level electron)

Metals (**YELLOW**): Make up approximately 75% of all elements. They are solids at room temperature, shiny, bendable (malleable and ductile), and good conductors of heat and electricity.

Metalloids (**PURPLE**): Lie on the “staircase”. Share properties of both metals and non-metals. Example: Silicon

Non-Metals (**ORANGE**): Most are gases at room temperature. Not shiny or bendable. Generally not good conductors of heat and electricity.

Group 1 (**BLACK DOTS**): Alkali Metals – These metals are extremely reactive and are never found in nature in their pure form. They are silver colored and shiny. Their density is extremely low so that they are soft enough to be cut with a knife. (1 outer level electron)

Group 2 (**HORIZONTAL LINE**): Alkaline-earth Metals – Slightly less reactive than alkali metals. They are silver colored and more dense than alkali metals. (2 outer level electrons)

Groups 3 – 12 (**DIAGONAL LINE**): Transition Metals – These metals have a moderate range of reactivity and a wide range of properties. In general, they are shiny and good conductors of heat and electricity. They also have higher densities and melting points than groups 1 & 2. (1 or 2 outer level electrons)

Group 13: Boron Group – Contains one metalloid and 4 metals. Reactive. Aluminum is in this group. It is also the most abundant metal in the earth’s crust. (3 outer level electrons)

Group 14: Carbon Group – Contains on nonmetal, two metalloids, and two metals. Varied reactivity. (4 outer level electrons)

Group 15: Nitrogen Group – Contains two nonmetals, two metalloids, and one metal. Varied reactivity. (5 outer level electrons)

Group 16: Oxygen Group – Contains three nonmetals, one metalloid, and one metal. Reactive group. (6 outer level electrons)

Groups 17 (**BROWN CIRCLE**): Halogens – All nonmetals. Very reactive. Poor conductors of heat and electricity. Tend to form salts with metals. Ex. NaCl: sodium chloride also known as “table salt”. (7 outer level electrons)

Groups 18 (**CHECKER BOARD**): Noble Gases – Unreactive nonmetals. All are colorless, odorless gases at room temperature. All found in earth’s atmosphere in small amounts. (8 outer level electrons)

Lanthanides (**RED**) and Actinides (**GREEN**): These are also transition metals that were taken out and placed at the bottom of the table so the table wouldn’t be so wide. The elements in each of these two periods share many properties. The lanthanides are shiny and reactive. The actinides are *all* radioactive and are therefore unstable. Elements 95 through 103 do not exist in nature but have been manufactured in the lab.