

Color Coding the Periodic Table

1. Make the **dividing line** (staircase-looking zigzag) between the metals and nonmetals more visible using a highlighter or colored pencil.

1. Label each side with arrows. "**Metals**" on the left and "**Nonmetals**" on the right.

3. "**Metalloids**" are the elements that touch the staircase with a side. Draw diagonal lines in the Metalloid boxes. Label "**Metalloids**."



4. Make a **key** at the bottom using three different colors.

- = liquid
- = gas
- = synthetic
-

5. Color the two **liquid** boxes according to your key. They are atomic numbers 35 (bromine) and 80 (mercury).

6. Color in the 11 **gas** boxes. They are atomic numbers 1, 2, 7, 8, 9, 10, 17, 18, 36, 54, and 86.

7. Use your third color to identify the **synthetic or manmade elements**. There are 20. They are atomic numbers 43, 61, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, and 110

8. Use a fourth color to **outline** the **radioactive element** boxes. There are 29. They are atomic numbers: 43, 61, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, and 110.

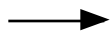
9. Add a fourth color to your key:

- = liquid
- = gas
- = synthetic
- = radioactive
-

10. Near the top left of the page, label the **Groups** and **Periods** with arrows as shown:

Groups

Periods



11. Above Group 1A, in the box, write the **number of electrons in the outer shell**, which is 1. Continue across the top with the remaining numbers of electrons:

Column #	1A	2A	3A	4A	5A	6A	7A	8A
# of Electrons	1	2	3	4	5	6	7	8

12. Write the **number of energy shells** in the boxes in the Period column. Hint: the top row is 1, the bottom is 7.

SUMMARY QUESTIONS:

1. What is more plentiful in the natural world? Metals, Metalloids, or Non- Metals
2. What is more plentiful in the natural world? Radioactive, Solid, Liquid, or Gas
3. How are all Noble Gases alike?
4. How are Metals different from Non-Metals?
5. How are Halogens alike?
6. How are Alkali Metals different from other Metals?
7. Which element on your periodic table has the largest atomic mass?
The smallest?
8. Classify the following elements as Metals, Non-Metals, or Metalloids.
Calcium _____ Carbon _____ Germanium _____
9. Contrast the properties of the Halogens with those of the Noble Gases.
10. List all the elements that make up the Carbon Group.
11. **True or False?**

- _____ a. Elements on the right side of the Periodic Table are better conductors of electricity than atoms on the left.
- _____ b. Atoms get larger as one moves downward in a column of the Periodic Table.
- _____ c. Atoms get smaller as one progresses along a row of the the Periodic Table because the number of protons in the nucleus is increasing from left to right.
- _____ d. As one progresses along a row of the Periodic Table from left to right, atoms tend to become larger in size.
- _____ e. As one progresses along a row of the Periodic Table from left to right, the atomic mass decreases.
- _____ f. We would expect a sodium atom to be larger than a cesium atom.
- _____ g. The Noble Gases do not react (combine) with other atoms easily, which is called **unreactive**.

Bonus: Add another color or pattern to show **man-made elements**: They are #43, 61, 93, 94, 95, 96, 97, 98, 99, 100, 102, 103, 104, 105, 106, 107, 108, 109, 110.