Go to msrobbinspnhs.weebly.com Chemistry Notes Page. Download and go through the Notes 2 Classifying the Elements PowerPoint and go through it as a slide show.

**WS 2 Groups of Elements**

1. Write the name or symbol for each of the following elements and their group name as:

alkali metal , alkaline earth metal , halogen , or noble gas

|  |  |  |
| --- | --- | --- |
| **Name** | **Symbol** | **Group Name** |
| chlorine |  |  |
|  | K |  |
| helium |  |  |
|  | Mg |  |
| bromine |  |  |
|  | Ne |  |
|  | F |  |
| iodine |  |  |
|  | Ca |  |
|  | Be |  |
| lithium |  |  |
|  | Ar |  |
| strontium |  |  |
|  | Ba |  |
| sodium |  |  |
|  | Kr |  |

2. What are valence electrons? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. List the group number and the number of valence electrons for each of the following elements.

|  |  |  |
| --- | --- | --- |
| **name** | **group****number** | **number of valence e–** |
| sodium |  |  |
| potassium |  |  |
| fluorine |  |  |
| chlorine |  |  |
| nitrogen |  |  |
| magnesium |  |  |
| barium |  |  |
| carbon |  |  |
| aluminum |  |  |
| neon |  |  |

4. Because elements in the same group have the same number of valence electrons, they …

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Why are noble gases so unreactive? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. Match the elements with the letter of the category that describes it.

 1) lithium \_\_\_\_

 2) uranium \_\_\_\_

 3) nickel \_\_\_\_ Categories

 4) chlorine \_\_\_\_ A. alkali metal

 5) zinc \_\_\_\_ B. alkaline earth metal

 6) sodium \_\_\_\_ C. halogen

 7) magnesium \_\_\_\_ D. noble gas

 8) einsteinium \_\_\_\_ E. transition metal

 9) fluorine \_\_\_\_ F. inner transition metal

 10) strontium \_\_\_\_

 11) mendeleevium \_\_\_\_

 12) has *d* orbitals \_\_\_\_

 13) most reactive metals \_\_\_\_

 14) almost totally unreactive \_\_\_\_

 15) most reactive nonmetals \_\_\_\_

 16) has *f* orbitals \_\_\_\_

7. Write the ***noble gas core*** electron configuration for: (example: aluminum is [Ne]3*s*23*p*3)

 a. potassium \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 b. rubidium \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 c. strontium \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 d. barium \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 e. bromine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 f. iodine \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_