

AP Chemistry Chapter 7 Periodic Table Reading Assignment

A test based on this material will be given when you return to school. You will have an opportunity to ask questions on this material before the test is given.

1. What scientist was responsible for the concept of atomic number? How did he determine the atomic numbers?

2. How does atomic radius vary:

a. Within a group _____ EXPLAIN.

b. Within a period _____ EXPLAIN.

3. Referring to Figure 7.5, describe the atomic radius trend (left to right) for the transition elements. Suggest a reason for this trend.

4. Define ionization energy.

5. How does ionization energy vary:

a. In a group? _____ WHY?

b. In a period? _____ WHY?

6. When successive electrons are removed from an atom, at a certain point there is a large jump in ionization energy. How can you predict when this will occur (at the removal of which electron)?

7. Define electron affinity.

8. What is meant by the term METALLOID? List the elements that are classified as metalloids.

9. List the common name for each of the following groups:

1A	7A
2A	8A

10. How does metallic character vary on the periodic table across a period?

11. How does metallic character vary on the periodic table down a group?

12. Where are the most reactive metals located?

13. Where are the most reactive nonmetals located?

14. Use the details of modern atomic theory to explain each of the following experimental observations.

- a. Within a family (group) such as the alkali metals, the ionic radius increases as the atomic number increases.

- b. The radius of the chlorine atom is smaller than the radius of the chloride ion, Cl^- (Radii: Cl atom = 0.99\AA ; Cl^- ion = 1.81\AA).

- c. The first ionization energy of aluminum is lower than the first ionization energy of magnesium.

- d. For magnesium, the difference between the second and third ionization energies is much larger than the difference between the first and the second ionization energies.