

Chemical Periodicity

Textbook References:

- Addison-Wesley *Chemistry*, Chapter 12 *Chemical Periodicity*
- Merrill *Chemistry A Modern Course*, Chapter 9 *Periodic Table*
- Heath *Chemistry: Experiments and Principles*, Chapter 7 *Order Among Atoms and of Atomic Structure*

This unit begins by reviewing concepts covered in grades nine and ten science.

1. List the properties of:
 - a. metals
 - b. nonmetals
 - c. metalloids or semimetals
2. Who is Dmitri Mendeleev, and what was his contribution to chemistry?
3. How is the modern periodic table different from the first periodic table?
4. What is the modern periodic law?
5. Organization of the periodic table. Indicate where the following are located on the periodic table.

a. periods	h. Transition Metals
b. groups	i. Inner Transition Metals
c. Alkali metals	k. Lanthanides
d. Alkaline Earth Metals	l. Actinides
e. Halogens	m. metals
f. Noble Gases	n. nonmetals
g. Representative or Main Group elements	o. metalloids
6. Indicate which elements on the periodic table are:
 - a. gases at room temperature.
 - b. liquids at room temperature.
7. Trends in the periodic table.
 - a. How does the size of the atom vary as you move left to right across the periodic table? Why?
 - b. How does the size of the atom vary as you move down the periodic table? Why?
 - c. What is ionization energy?
 - d. How does the ionization energy vary as you move left to right across the periodic table? Why?
 - e. How does the ionization energy vary as you move down the periodic table? Why?
 - f. What is electron affinity?
 - g. How does electron affinity vary as you move left to right across the periodic table? Why?
 - h. How does electron affinity vary as you move down the periodic table? Why?
 - i. What is electronegativity?
 - j. How does electronegativity vary as you move left to right across the periodic table?
 - k. How does electronegativity vary as you move down the periodic table?