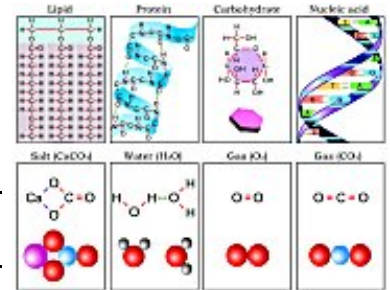


Chemical Bonding

Directions:

Insert and install your Interactions: Foundations CD.

- Click the "Contents" button.
- Open the *Chemistry Level of Organization* file.
- Click on *Animations*.
- Work through *Chemical Bonding*.

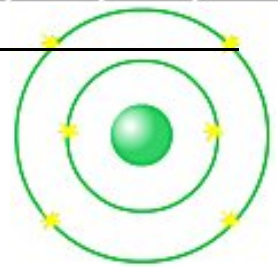


Introduction

1. Why are chemical bonds important? _____

2. a. Describe atomic structure. _____

b. Explain the importance of the outer (valence) electrons relative to bonding.



Covalent Bonds

3. First, explore *covalent bonds*.

a. Describe the electron activity. _____

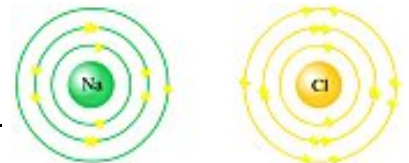
b. Describe an oxygen molecule as an example. _____

c. How is covalent bonding critical to human anatomy and physiology? _____

4. Next, explore *ionic bonds*.

a. Describe the electron activity. _____

b. Why do chlorine and sodium have charges after electron transfer? _____



c. What causes the attraction between ions forming an ionic bond? _____

d. Describe the "strength" of ionic bonds. Use salt as your example. _____

e. How common is ionic bonding in the body? _____

f. How are ions important to the body? Examine each of the following in your research.

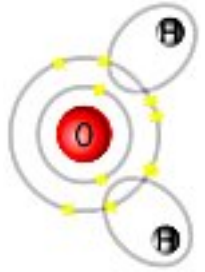
Nerve impulses - _____

pH regulation - _____

Bone formation - _____

Hydrogen Bonds

1. Explain why water molecules have positive and negative "poles." _____



2. Explain the relationship between polar molecules, like water, and formation of *hydrogen bonds*.

3. What is the importance of hydrogen bonding for human anatomy and physiology? Specify within the following structures.

protein structure - _____

DNA structure - _____
