**High Plains Technology Center**

**Health Careers**

**Learning Activity Packet (LAP) Chemical Basis for Life**

**Related Unit of Instruction**

Anatomy and Physiology

**Approximate Completion Time:**

15 hours

**Rationale for the LAP**

This lap is designed to help the learner understand the basic chemistry in relation to the human body.

**Criteria for Successful Completion:**

By the end of this LAP the student will

1. Read and turn in work sheets from the study guide for chapter 2 in Patton, Essentials of Anatomy and Physiology book.
2. Complete lecture notes and pass quizzed.
3. Pass the chapter test.

**Learning Objectives**

1. Explain how the study of living materials requires understanding of chemistry.  
2. Describe the relationships among matter, atoms and molecules.  
3. Identify three major types of chemical reactions that occur in the body.  
4. Differentiate between a salt, an acid, and a base.  
5. Describe factors that affect chemical reaction rates.  
6. Compare the processes of osmosis, diffusion and filtration and give examples of their uses in the body.  
7. Explain the importance of water and salts to body homeostasis.  
8. Distinguish between organic and inorganic compounds.  
9. Compare the structures and functions of carbohydrates, lipids, proteins and nucleic acids.  
10. Distinguish between different types of proteins.  
11. Describe how and where enzymes work in the body.  
12. Compare and contrast the structure and functions of DNA and RNA.  
13. Explain the role of ATP in cell metabolism.