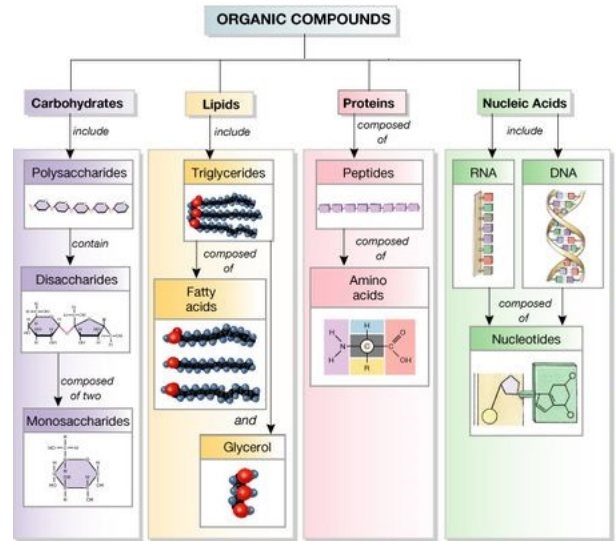


**Midterm Review**

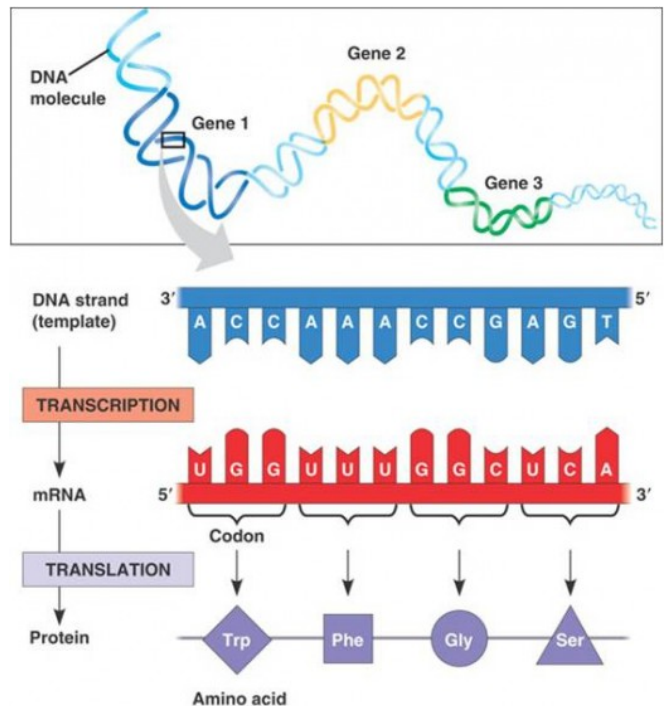
**Unit A: Chemistry of Life and Organic Molecules.....pg. 6-18**

- Differentiate the different types of chemical bonding (Ionic, Covalent and Polar)
- List the six characteristics of water
- Understand pH, the difference between acids and bases, role of buffers in the body
- Describe the difference between organic and inorganic molecules
- Explain why carbon as an essential component of biological molecules
- Describe the two reactions (Condensation Synthesis and Hydrolysis)
- Recognize the monomers of biological molecules
- Explain the structure and Function of the four Biological molecules (Carbohydrates, Lipids, Proteins and Nucleic Acids)
- Explain the role of ATP as an energy molecule.



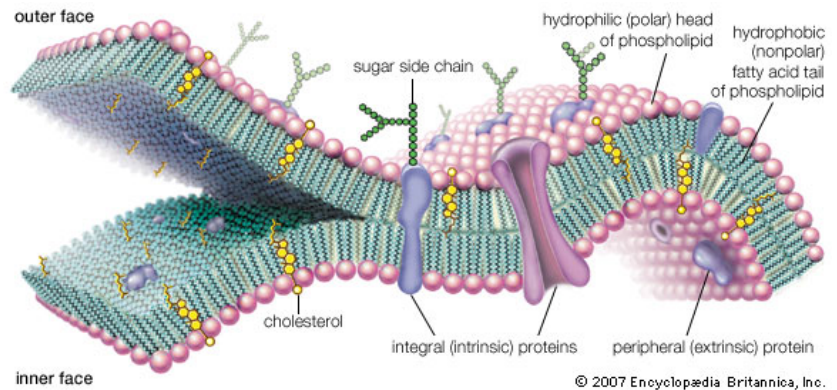
**Unit E: DNA: Replication, Transcription and Translation.....pg. 64-79**

- Describe the structure and function of DNA and RNA
- Understand DNA Replication and be able to name the function of each enzyme (see DNA Replication Foldable)
- Explain how DNA is ultimately responsible for Protein Synthesis (see your Overview of Protein Synthesis Foldable)
- Be able to show your understanding of Transcription and Translation (see your Overview of Protein Synthesis Foldable)
- Understand and be able to explain mutations in DNA
- Be able to know the general issue involved in the following six diseases: Cystic Fibrosis, Tay-Sach's Disease, Sickle-Cell Anemia, Colorblindness, Phenylketonuria, and Hemophilia
- How do errors in DNA relate to Cancer growth
- Understand the roles of biotechnology, specifically recombinant DNA technology, GMO's, Cloning and Gene Therapy



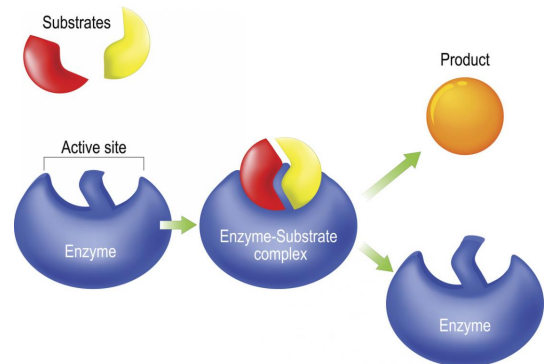
**Unit C: Membrane Structure and Function.....pg. 38-47**

- Explain the hydrophobic and hydrophilic nature of the phospholipid molecule and it's contribution to the membrane system
- Understand and label the Fluid Mosaic Model
- Explain Facilitated and Passive Diffusion, Osmosis, Active Transport with respect to proteins that are embedded in the plasma membrane.
- Distinguish between endocytosis and exocytosis
- Understand the significance of cell survival of the surface area to volume ratio



**Unit B: Enzymes and Metabolism .....pg. 22-34**

- Relate enzymes to metabolism, homeostasis and activation energy
- Describe the Lock and Key Model to the Induced Theory of how enzymes function
- Explain the difference between competitive and non-competitive inhibitors as well as co-factors
- Describe the factors affecting enzymes, and why they may denature and become inactive
- Note: we did not specifically cover p.31-35



**Unit D: Inquiry into Eukaryotic Cells.....pg. 50-59**

- Difference and Similarities between Prokaryotic and Eukaryotic cells
- Can you draw each type of cell and label the parts?
- Structure and Function of membranous organelles (nucleus, rough ER, smooth ER, golgi Apparatus, vesicles, lysosome, mitochondria, chloroplast)
- Structure and Function of non-membranous organelles (ribosomes, cell wall, cytoskeleton, vacuoles, centrosome, cilia, flagella, centrioles)
- Function of the endomembrane system

