

#### 9<sup>th</sup> Grade Biology Expectations:

The Biology curriculum is designed to continue student investigations of the life sciences that began in grades K-8 and provide students the necessary skills to be proficient in biology. By the end of 9<sup>th</sup> grade, students will be able to:

- Explain the relationships between the structures and functions in living cells.
- Explain how traits are passed on to successive generations.
- Describe the dependence of organisms on one another and the flow of energy and matter through an ecosystem.
- Evaluate the role of natural selection in the development of the theory of evolution.
  - Develop an understanding of a Christian worldview of evolution.

#### 10<sup>th</sup> Grade Physical Science Expectations:

The Physical Science curriculum is designed to continue student investigations of the physical sciences that began in grades K-8 and provide students the necessary skills to have a richer knowledge base in physical science. This course is designed as a survey course of chemistry and physics. At the end of this course, students will be able to:

- Explain our current understanding of the atom.
- Distinguish the characteristics and components of radioactivity.
- Determine the trends and arrangement of the periodic table.
- Compare and contrast the phases of matter and the relationship between molecular movement.
- Describe the properties of solutions.
- Identify energy transformations within a system.
- Determine relationships among force, mass, and motion.
- Describe properties of waves.
- Describe the properties of electricity and magnetism.

#### 11<sup>th</sup> Grade Chemistry Expectations:

The Chemistry curriculum includes more abstract concepts such as the structure of atoms, structure and properties of matter, and the conservation and interaction of energy and matter. By the end of the course, students will be able to:

- Identify substance based on physical and chemical properties.
- Identify and balance chemical equations.
- Solve stoichiometry problems.
- Explain the characteristics of atoms.
- Describe the organization of the Periodic Table and use it to predict properties of elements.
- Understand that the rate at which a chemical reaction occurs can be affected by changing concentration, temperature, or pressure and the addition of a catalyst.
- Describe the properties of solutions and the nature of acids and bases.

#### 12<sup>th</sup> grade Anatomy & Physiology Expectations:

The Anatomy and Physiology course is designed to be an avenue towards understanding the interconnectedness of the human structure and its systems and provide understanding of the organization of how these anatomical structures serve unique and specialized functions. By the end of the course, students will be able to:

- Relate the anatomical structures and their physiological functions.
- Relate the role of the integumentary, skeletal, and muscular systems to their roles in movement, protection, and support of the human body.
- Describe how the endocrine and nervous systems regulate the activities of the body.
- Explain how the cardiovascular, respiratory, digestive, excretory, and immune systems regulate the processes of transportation, absorption, and excretion in the human body.