

Expectations and Outcomes

Grade Level/Course: 9-12

Content Area: Science

Unit Title	Guarantees
Unit 1: Introduction to Biology and Cells	<ul style="list-style-type: none"> • The student will be able to state and discuss the 3 main themes of biology and the 7 characteristics of life. • The student will be able to apply the scientific method to lab explorations. • The student will be able to identify all major cell structures and explain their functions. • The student will be able to compare and contrast a prokaryotic vs eukaryotic cell and a plant vs animal cell. • The student will be able to explain material transport in cells in relation to the plasma membrane and using the terms hypotonic, isotonic, and hypertonic. • The student will be able to compare and contrast passive vs active transport
Unit 2: Cell Metabolism	<ul style="list-style-type: none"> • The student will be able to identify the processes involved in cellular respiration and photosynthesis. • The student will be able to distinguish between cellular respiration and photosynthesis. • The student will be able to explain the importance of cellular respiration and photosynthesis as a cycle to how organisms gain and use energy. (plants/animals, autotrophs/heterotrophs)
Unit 3: Cell Reproduction	<ul style="list-style-type: none"> • The student will be able to identify the parts of a chromosome and relate it to inheritance. • The student will be able to distinguish between and describe the stages of mitosis and meiosis. • The student will be able to explain the importance of cell division within an organism and discuss chromosomal abnormalities.
Unit 4: DNA and RNA	<ul style="list-style-type: none"> • The student will be able to list and describe the steps of DNA replication. • The student will be able to list and describe the process of protein synthesis; distinguishing between translation and transcription. • The student will be able to compare and contrast DNA and RNA. • The student will be able to discuss genetic research listing pros and cons and explain basically cloning and stem cell science.

Unit Title	Guarantees
Unit 5: Genetics	<ul style="list-style-type: none"> • The student will be able to discuss Gregor Mendel’s experiments and relate them to the understanding of genetics. • The student will be able to create a Punnett square for both monohybrid and dihybrid crosses. • The student will be able to analyze monohybrid and dihybrid crosses and predict possible outcomes of such crosses. • The student will be able to state and discuss causes of human genetic disorders.
Unit 6: Evolution	<ul style="list-style-type: none"> • The student will be able to compare and contrast theories in the origins of life. • The student will be able to discuss the principle of evolution by the means of natural selection, and relate it to evidence shown by species. • The student will be able to identify species adaptations and understand the form leading to function. • The student will be able to breakdown and evaluate events into a timeline to demonstrate the fossil record.
Unit 7: Taxonomy, Protists, Bacteria, Fungi	<ul style="list-style-type: none"> • The student will be able to identify each level of classification and explain the importance of a universal classification system. • The student will be able to distinguish between types of bacteria. • The student will be able to describe various environments different bacterial types can be found in and state benefits or diseases each may cause. • The student will be able to compare and contrast bacteria and viruses. • The student will be able to discuss what types of organisms are classified as Fungi and describe diseases and benefits of each. • 6) The student will be able to state what types of organisms are classified as Protists, identify various protists, and discuss diseases or benefits of these organisms.
Unit 8: Animal Kingdom: Invertebrates	<ul style="list-style-type: none"> • The student will be able to correctly place an invertebrate into its phylum based on specific characteristics. • The student will be able to describe the various functions of structures on each organism and relate them to how and where the organism lives. • The student will be able to discuss how organisms adapt to their environment and what adaptations increase their complexity. • The student will be able to list and describe the various body systems of organisms in each phylum.

Unit Title	Guarantees
Unit 9: Ecology	<ul style="list-style-type: none"> • The student will be able to identify the major biomes of the world and list characteristics of each; including environment and organisms found there. • The student will be able to trace the flow of energy through any given ecosystem as a food chain, food web, or food pyramid. • The student will be able to identify various species interactions and discuss their impact on each species. • The student will be able to discuss human and other environmental impacts on each type of biome or ecosystem.
Unit 10: Plants	<ul style="list-style-type: none"> • The student will be able to discuss various uses of plants. • The student will be able to classify plants as monocot or dicot. • The student will be able to state the structure and function of roots, stems, leaves, and seeds. • The student will be able to list all structures of the flower and relate them to their role in plant reproduction. • The student will be able to identify various methods of seed dispersal.
Unit 11: Human Body	<ul style="list-style-type: none"> • The student will be able to list and describe the systems of the human body. • The student will be able to give the general function of the major internal organs of the human body. • The student will be able to assess common afflictions of the human body and how they affect the human body. • The student will be able to compare and contrast how body systems relate in the major mammal classes.