Reavis High School
Biology Curriculum Snapshot

Unit 1: Scientific Method, Lab Safety, and Properties of Life

12 - 15 Days	Students will understand the steps of the scientific method with emphasis on applying these to everyday experiences. They will practice these by designing their own experiment, generating and graphing data, and analyzing their results. They will identify potential sources of error, and data analysis will be emphasized. Students will also be introduced to, trained in, and expected to practice proper lab safety procedures.

Unit 2 : Populations

8 - 10 Days	Students will understand the basic mechanisms that cause populations to increase and decrease in size. They will be able to compare and contrast the phenomona of exponential and logistic growth. An additional focus of this unit is the impact that human populations and human activities have on local and global environments.

Unit 3: Ecosystems

13 Days	Students will identify the major features of ecosystems, such as climate, productivity, and the transfer of energy between the trophic levels of a food web. This unit will also focus on the relationships among organisms within an ecosystem, such as the establishment of ecological niches, the coevolution of species, and the three types of symbiotic relationships that exist between organisms of an ecosystem.

Unit 4: Chemistry, Macromolecules, and Enzymes

20 days	Students will describe the atomic structure, and how it interacts to form bonds. Students will identify the general structures and functions of carbohydrates, lipids, proteins, and nucleic acids and the roles they play. Using hands-on lab activities, students will identify various macromolecules.

Unit 5: Cell Structure and Function

10 days	Students will list the components of the Cell Theory. They will identify organelles and common features of plant, animal, and bacterial cells. They will identify the components and functions of the cell membrane and its role in osmoregulation.

Unit 6: Osmosis, Diffusion, and Cell Transport

10 days	Students will explain the processes of diffusion and osmosis and their significance in cell function. Students will distinguish passive transport from active transport across the cell membrane. Students will also describe the processes of endocytosis and exocytosis.

Unit 7: Energy

10 Days	Students will compare and contrast the processes of photosynthesis and cellular respiration, including the chemical reactions of both. Students will also be able to distinguish between aerobic and anaerobic respiration. Finally, they will understand the role of ATP in the storage of energy from food.

Unit 8: Cell Division

15 Days	Students will be able to explain why cells divide and the role of cell division in reproduction, growth, and repair. Additionally, students will be able to describe the steps of mitosis and meiosis as well as compare and contrast the processes of each.

Unit 9: DNA and RNA

15 Days	Students will describe the structure of a DNA and RNA nucleotide. Also, students will describe the process of DNA replication, transcription, and translation. Finally, the students will describe the funtions of tRNA, mRNa, and rRNa, and they will describe the effect a mutation can have on an organism.

Unit 10: Genetics

21 Days	Students will be able to describe Mendel's experiments and how they led to Mendel's Laws. They will use Punnett squares to predict patterns of heredity in monohybrid, incomplete dominance, and multiple allele crosses. Finally, they will be able to interpret a pedigree by following a trait through generations.

Unit 11: Classification

9 Days	Students will discuss the role of Linnaeus in modern taxonomy by explaining the classification system and binomial nomenclature. They will be able to name and describe the three domains and the six kingdoms. Finally, they will be able to understand a dicotymous key and cladogram.