

Science Curriculum
Morris County USD #417
Grades 9/10 – Biological Science

**Understand: "understand" does not mandate "belief." While students may be required to understand some concepts that researchers use to conduct research and solve practical problems, they may accept or reject the scientific concepts presented. This applies particularly where students' and/or parents' beliefs may be at odds with current scientific theories or concepts. (KS Science Standards, February 14, 2001, p. 76)*

Indicator	Description	Date(s)			
10.KS1.1.2	Develop questions and identify concepts that help develop scientific investigation.				
10KS1.1.3	Design/conduct a scientific investigation.				
10KS1.1.4	Use technology, mathematics, and tools to improve investigations and data collections.				
10.KS3.1.1	Identify the relationship of specialized structures and functions of cells.				
10KS3.1.2	Address specific chemical reactions that occur within cells.				
10KS3.1.3	Understand the role of DNA and RNA in relation to cellular replication of cells.				
10KS3.1.4	Chloroplast and their role with the photosynthetic process.				
10KS3.2.1	Mendelian genetics and the many patterns of inheritance.				
10KS3.2.2	History through experimentation of existence of DNA and RNA.				
10KS3.2.3	Nucleotides and their various sequences show specific characteristics of most organisms.				
10KS3.3.2	Present day biodiversity is explained in theory through evolution.				
10KS3.3.4	Variation among organisms have value in relation to our existence.				
10KS3.4.1	The relationships atoms and molecules play among living and nonliving components of the biosphere.				
10KS3.4.2	Energy relationships dispersed through ecosystems by autotrophic and heterotrophic organisms.				
10KS3.4.3	Competition and cooperation of organisms within an ecosystem.				
10KS3.4.4	Organisms have ability to produce infinite numbers of populations, but environments and resources are infinite.				
10KS3.4.5	Human relationships that live within and impact ecosystems.				
10KS3.5.1	Living systems require a continuous input of energy to maintain their chemical and physical organization.				
10KS3.5.2	All energy for life is primarily derived from the sun through photosynthesis.				
10KS3.5.3	Cellular respiration is the means to break apart the energy contained in food molecules.				
10KS3.5.5	The distribution and abundance of organisms and populations in ecosystems are limited by the availability of matter and energy, and the ability of the ecosystem to recycle materials.				
10KS3.6.2	The nervous systems of most multicellular animals underlie their behavior.				
10KS3.7.1	The basic biology, diversity, ecology, and medical effects of microbiological agent, including viruses, bacteria and protist.				

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10KS3.7.2	The basic biology, diversity, ecology, and medical effects of fungi.				
10KS3.7.3	The basic biology, diversity, ecology, and human relationships with plants.				
10KS3.7.4	The basic biology, diversity, anatomy, ecology and medical effects of major animal groups.				
10KS6.2.1	Population changes are determined by the effects of birth, death, emigration and immigration, which also affects the rate of change.				
10KS6.2.3	Populations can reach limits to growth.				
10KS7.2.1	Demonstrate an understanding of the nature of scientific knowledge.				
10KS7.3.1	Demonstrate an understanding of the history of science.				