

Glenbard District 87

Course Title: Biology

Unit: DNA

Stage 1 – Desired Results	
<p>Established Goal(s): <i>What relevant goals (e.g. Content standards, course or program objectives, learning outcomes, etc.) will this address?</i> To gain an understanding of how DNA carries the information of heredity.</p> <p>NGSS Goals: HS-LS1-1 Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. HS-LS3-1 Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.</p>	
<p>Understanding(s): <i>Students will understand that...</i></p> <p>DNA carries the information that determines characteristics of life. Genes are regions in DNA that contain the instructions that code for the formation of proteins.</p>	<p>Essential Question(s): <i>What provocative questions will foster inquiry, understanding, and transfer of learning?</i></p> <p>How does the chemical composition of DNA relate to its' transfer of information?</p>
<p>Knowledge: <i>Students will know...</i></p> <ol style="list-style-type: none"> 1. Identify the building blocks of DNA. 2. Describe DNA structure and the rules for base pairing in DNA. 3. Describe the process of DNA replication. 4. Trace the information flow from DNA to protein. 5. Describe how amino acids are coded. 6. Describes the types/causes of mutations that can affect genes. 7. Not all DNA codes for proteins. 	<p>Skills: <i>Students will be able to ...</i></p> <ol style="list-style-type: none"> 1. Compare/contrast DNA transcription and replication. 2. Decode a DNA sequence of nitrogen bases to determine the amino acid sequence. 3. Analyze how the insertion of a nucleotide can change the resulting function of a protein and thus cause disease. 4. Explain how expression can be regulated.