

Life Science Unit 3- Desired Results		
ESTABLISHED GOALS: MS-LS3-1: Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. [Clarification Statement: Emphasis is on conceptual understanding that changes in genetic material may result in making different proteins] MS-LS3-2: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. [Clarification Statement: Emphasis is on using models such as Punnett squares, diagrams, and simulations to describe the cause and effect relationship of gene transmission from parent(s) to offspring resulting in genetic variation.]	<i>Transfer</i> <i>Students will be able to independently use their learning to...</i> Support a scientific explanation or argument based on evidence Observe and explore a given system or concept to deepen scientific understanding	
	<i>Meaning</i> UNDERSTANDING: <i>Students will understand that...</i> Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, composition, and relationships among its parts, therefore complex natural and designed structures/systems can be analyzed to determine how they function. (MS-LS3-1)	<i>Meaning</i> ESSENTIAL QUESTIONS How do living organisms pass traits from one generation to the next?
	<i>Acquisition</i> <i>Students will know...</i> <i>Inheritance of traits</i>	<i>Acquisition</i> <i>Students will be skilled at...</i> Develop and use a model to

Trimester 2: Heredity: Inheritance and Variation of Traits

Duration: 5 Weeks

	• Genes are located in the chromosomes of cells, with each chromosome pair containing two variants of each of many distinct genes. Each distinct gene chiefly controls the production of specific proteins, which in turn affects the traits of the individual.(MS-LS3-1) • Changes (mutations) to genes can result in changes to proteins, which can affect the structures and functions of the organism and thereby change traits. (MS-LS3-1) • Variations of inherited traits between parent and offspring arise from genetic differences that result from the subset of chromosomes (and therefore genes) inherited. (MS-LS3-2) Variation of Traits: • In addition to variations that arise from sexual reproduction, genetic information can be altered because of mutations. (MS-LS3-1) • Though rare, mutations may result in changes to the structure and function of proteins. (MS-LS3-1) • Some changes are beneficial, others harmful, and some neutral to the organism. (MS-LS3-1) • In sexually reproducing organisms,	
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	each parent contributes half of the genes acquired (at random) by the offspring. Individuals have two of each chromosome and hence to alleles of each gene, one acquired from each parent. These versions may be identical or may differ from each other. (MS-LS3-2) Growth and Development of Organisms: Organisms reproduce, either sexually or asexually, and transfer their genetic information to their offspring. (MS-LS3-2)	
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Stage 2 - Evidence

Evaluate Criteria	Assessment Evidence
	PERFORMANCE TASK(S):
	OTHER EVIDENCE: 6th Grade Introduction to Life Science Quarter 3 District Assessment: Heredity - Inheritance and Variation of Traits

Stage 3 - Learning Plan

Summary of Key Learning Events and Instruction