Unit 8 - Inheritance & Variation Traits

Content Area: **Science**
Course(s): **Science 7**
Time Period: **March**
Length: **~20 days**
Status: **Published**

Unit Summary

Students develop and use models to describe how gene mutations and sexual reproduction contribute to genetic variation. Students understand how genetic factors determine the growth of an individual organism. They also demonstrate understanding of the genetic implications of sexual and asexual reproduction. The crosscutting concepts of cause and effect and structure and function provide a framework for understanding how gene structure determines differences in the functioning of organisms. Students are expected to demonstrate proficiency in developing and using models. Students use these science and engineering practices to demonstrate understanding of the disciplinary core ideas.

Standards

Student Learning Objectives

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.] [Assessment Boundary: Assessment does not include specific changes at the molecular level, mechanisms for protein synthesis, or specific types of mutations.]* **(MS-LS3-1)**

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 and resulting genetic variation.]* (MS-LS3-2)

Driving Questions

Why do kids look similar to their parents?

How do structural changes to genes (mutations) located on chromosomes affect proteins or affect the structure and function of an organism?

How do asexual reproduction and sexual reproduction affect the genetic variation of

offspring?