Unit 7: Inheritance of Characteristics

Content Area: **Science**
Course(s): **AP Biology**
Time Period: **Semester 2**
Length: **3 weeks**
Status: **Published**

Standards

SCI.9-12.5.1.12	All students will understand that science is both a body of knowledge and an evidence-based, model-building enterprise that continually extends, refines, and revises knowledge. The four Science Practices strands encompass the knowledge and reasoning skills that students must acquire to be proficient in science.
SCI.9-12.5.1.12.B	Students master the conceptual, mathematical, physical, and computational tools that need to be applied when constructing and evaluating claims.
SCI.9-12.5.3.12	All students will understand that life science principles are powerful conceptual tools for making sense of the complexity, diversity, and interconnectedness of life on Earth. Order in natural systems arises in accordance with rules that govern the physical world, and the order of natural systems can be modeled and predicted through the use of mathematics.
SCI.9-12.5.3.12.A	Living organisms are composed of cellular units (structures) that carry out functions required for life. Cellular units are composed of molecules, which also carry out biological functions.
SCI.9-12.5.3.12.A.6	Describe how a disease is the result of a malfunctioning system, organ, and cell, and relate this to possible treatment interventions (e.g., diabetes, cystic fibrosis, lactose intolerance).
SCI.9-12.5.3.12.D	Organisms reproduce, develop, and have predictable life cycles. Organisms contain genetic information that influences their traits, and they pass this on to their offspring during reproduction.
SCI.9-12.5.3.12.D.2	Predict the potential impact on an organism (no impact, significant impact) given a change in a specific DNA code, and provide specific real world examples of conditions caused by mutations.
SCI.9-12.5.3.12.D.b	Inserting, deleting, or substituting DNA segments can alter the genetic code. An altered gene may be passed on to every cell that develops from it. The resulting features may help, harm, or have little or no effect on the offspring's success in its environment.

College Board AP Biology Big Ideas

Big Idea 2: Biological systems utilize free energy and molecular building blocks to grow, to reproduce, and to maintain dynamic homeostasis.

Big Idea 3: Living systems store, retrieve, transmit, and respond to information essential to life processes.

Enduring Understanding - College Board AP Biology

Enduring Understanding 3.A. Heritable information provides for continuity of life.

Essential Questions

Can the transfer of genetic traits from parents to offspring be predicted according to reliable patterns?

Knowledge and Skills

Essential knowledge **3.A.3** Mendelian genetics provides a basic understanding of the underlying causes of the pattern traits from parent to offspring.

Essential knowledge 3.A.4 The inheritance pattern of many traits cannot be explained by simple Mendelian genetics.

Resources

Problem sets on patterns of inheritance, Chi-Squared Analysis of patterns of gene expression; gene linkage problems; sex-linkage; Inheritance of coat color in cats

Assessment

https://docs.google.com/document/d/1wR7bQF-8AQoRrt0g4C3hKja0yjwDjC9_BiAmONWbTcI/edit

Modifications

https://docs.google.com/document/d/1ODqaPP69YkcFiyG72fIT8XsUIe3K1VSG7nxuc4CpCec/edit