Unit 5: Cell reproduction and Division

Content Area: **Science**
Course(s): **AP Biology**
Time Period: **Semester 1**
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.A	Students understand core concepts and principles of science and use measurement and observation tools to assist in categorizing, representing, and interpreting the natural and designed world.
SCI.9-12.5.1.12.A.a	Mathematical, physical, and computational tools are used to search for and explain core scientific concepts and principles.
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.4	Distinguish between the processes of cellular growth (cell division) and development (differentiation).
SCI.9-12.5.3.12.A.d	Cells divide through the process of mitosis, resulting in daughter cells that have the same genetic composition as the original cell.
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.3	Demonstrate through modeling how the sorting and recombination of genes during sexual reproduction has an effect on variation in offspring (meiosis, fertilization).
SCI.9-12.5.3.12.D.c	Sorting and recombination of genes in sexual reproduction result in a great variety of possible gene combinations in the offspring of any two parents.
TECH.8.2.12.C.CS3	The role of troubleshooting, research and development, invention and innovation and experimentation in problem solving.

College Board AP Biology Big Ideas

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

How is heritable information passed to the next generation?

Knowledge and Skills

Essential Knowledge 3.A.1: DNA, and in some cases RNA, is the primary source of heritable information.

Essential Knowledge 3.A.2: In eukaryotes, heritable information is passed to the next generation via processes that include the cell cycle and mitosis or meiosis plus fertilization.

Resources

AP Investigation 7: Cell Division: Mitosis and Meiosis; laptops; websites

Assessment

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

Modifications

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