

Introduction Biotechnology

- Learning Goals:
 - These hands-on, inquiry-based laboratory activities allow students to investigate and understand some of the important ways that biotechnology is used in modern society. Using a guided-inquiry technique, students explore procedures and topics related to biotechnology, and the Human Genome Project. The theme of bioethics is incorporate throughout the laboratory activities. An understanding of DNA and its components is useful for conducting activities.
 - Students will
 - Develop the skills necessary to analyze DNA fingerprints
 - Review DNA structures and function
 - Be introduced to biotechnology and its uses in society
 - Gain an understanding of ethical issues surrounding biotechnology.

- Age Levels:
 - Seniors and Ambassadors

- Science Content
 - DNA Fingerprinting and Electrophoresis
 - DNA Fingerprinting is the special, individual sequence of base pairs that make up an individual's DNA.
 - Electrophoresis is process in which electric forces that are used to move the DNA through a gel medium.
 - Cloning
 - Human Genome Project
 - The project to map the entire DNA contained in humans.
 - Genetic Modification
 - A technology that alters the genetic make-up of living organisms such as plants, animals, and bacteria.
 - Stem Cells
 - Unspecialized cells that renew themselves for long periods through cellular division.