

Biotechnology: Old and New

Learning Objectives

1. Define the term “biotechnology” and which scientific areas make up biotechnology.
2. Appreciate the multidisciplinary nature of biotechnology, knowing the many fields that biotechnology impacts.
3. Know that biotechnology has a long history, tracing back ten thousand years. Be familiar with selective breeding practices in ancient times.
4. Know the importance of plant germplasm in ancient and modern times.
5. Define “fermentation,” and know the many items that were produced in ancient times using fermentation and where those items were produced. Also be aware of how fermentation has evolved in modern times.
6. Compare classical biotechnology to ancient and modern biotechnology. Know the timeframes for each stage of biotechnology, as well as the major accomplishments in each of these stages.
7. List the major events that served as the basis of modern biotechnology.
8. List the events that led up to the determination of the structure of DNA. Also list the events that built upon the structure of DNA and formed the foundation of molecular biology.
9. Be familiar with the first recombinant DNA, electrophoresis, and DNA cloning experiments.