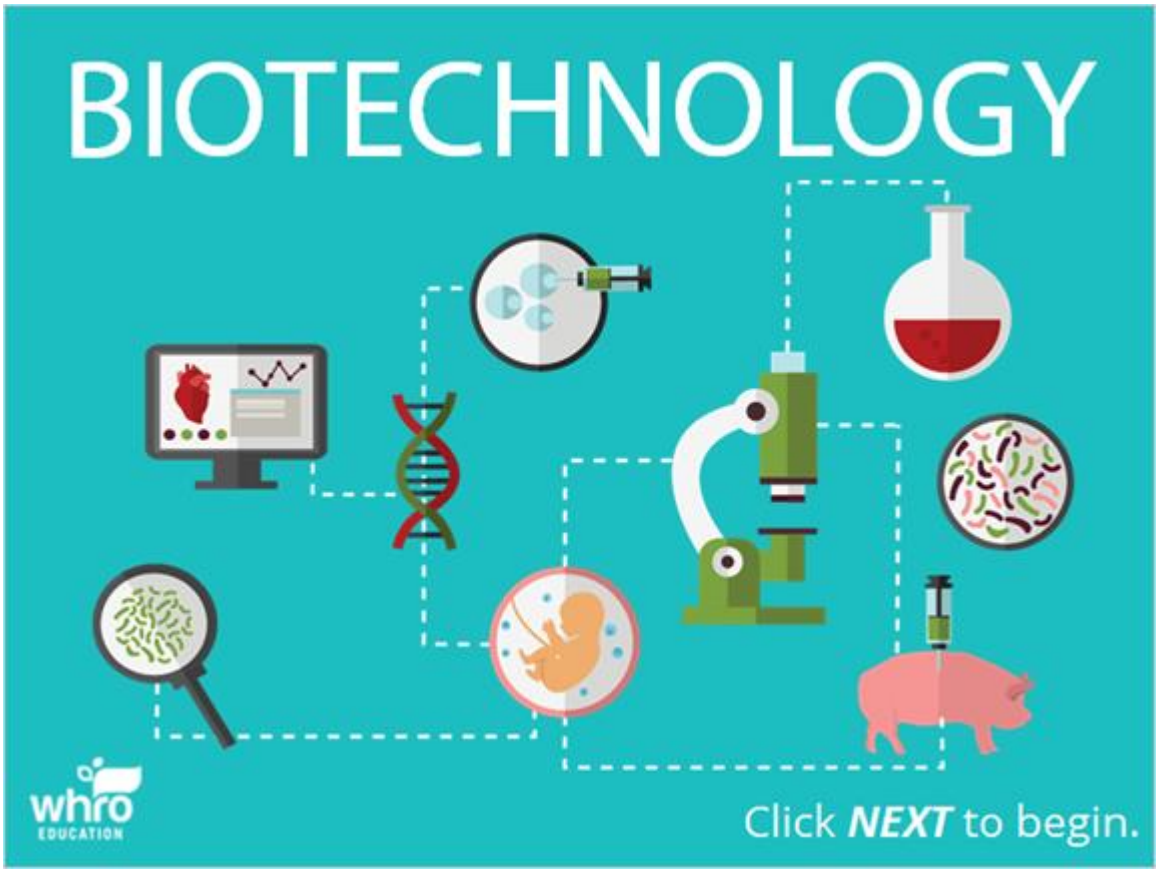
Module 6: DNA, RNA, and Molecular Genetics

Topic 5 Content: Biotechnology Notes



Biotechnology

Click ***NEXT*** to begin.

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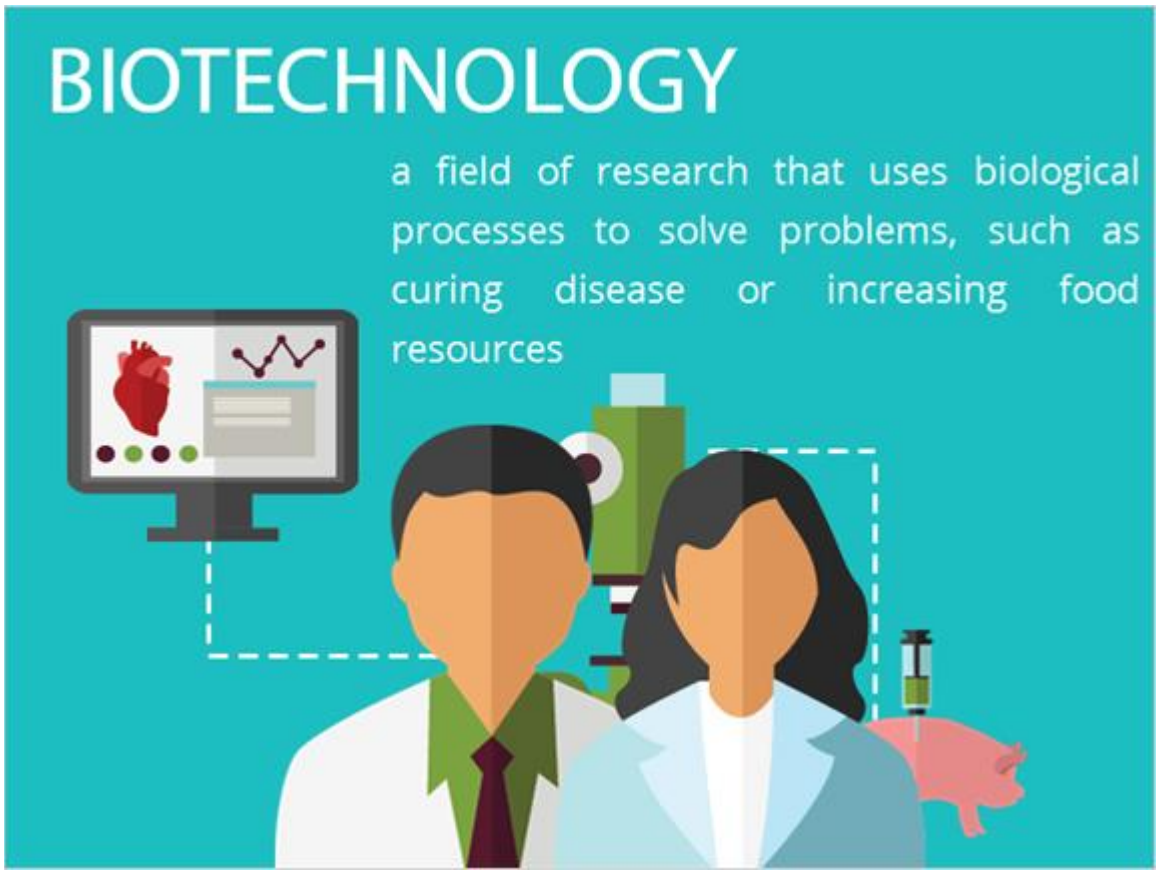

Biotechnology is a field of research that uses biological processes to solve problems, such as curing disease or increasing food resources. Scientists use biotechnology in a number of ways by modifying the genetic materials of living cells in order to produce new substances or perform new functions.

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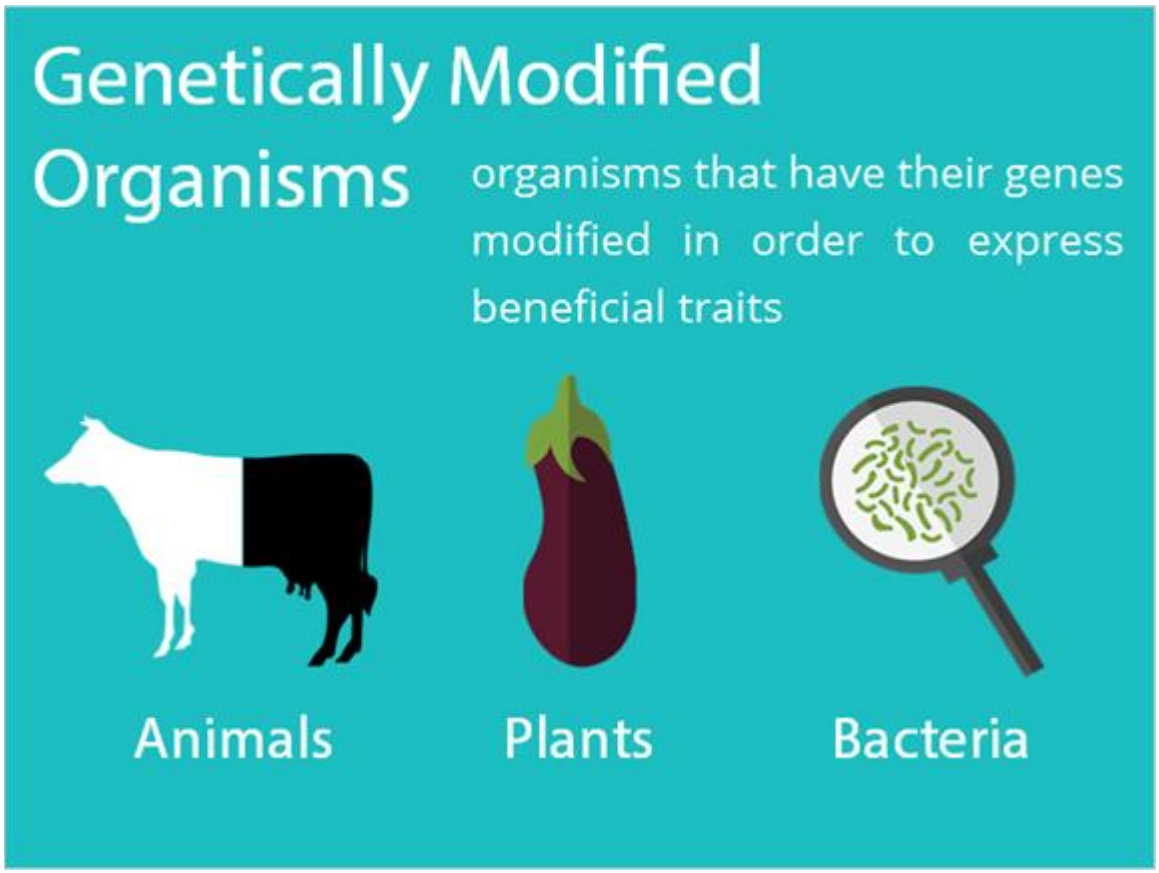

Biotechnology is used in the creation of genetically modified organisms. Genetically modified organisms, or GMOs, have their genes modified in order to express beneficial traits. Gene modification occurs in animals, plants, and bacteria. However, animals are more resistant to gene modification.

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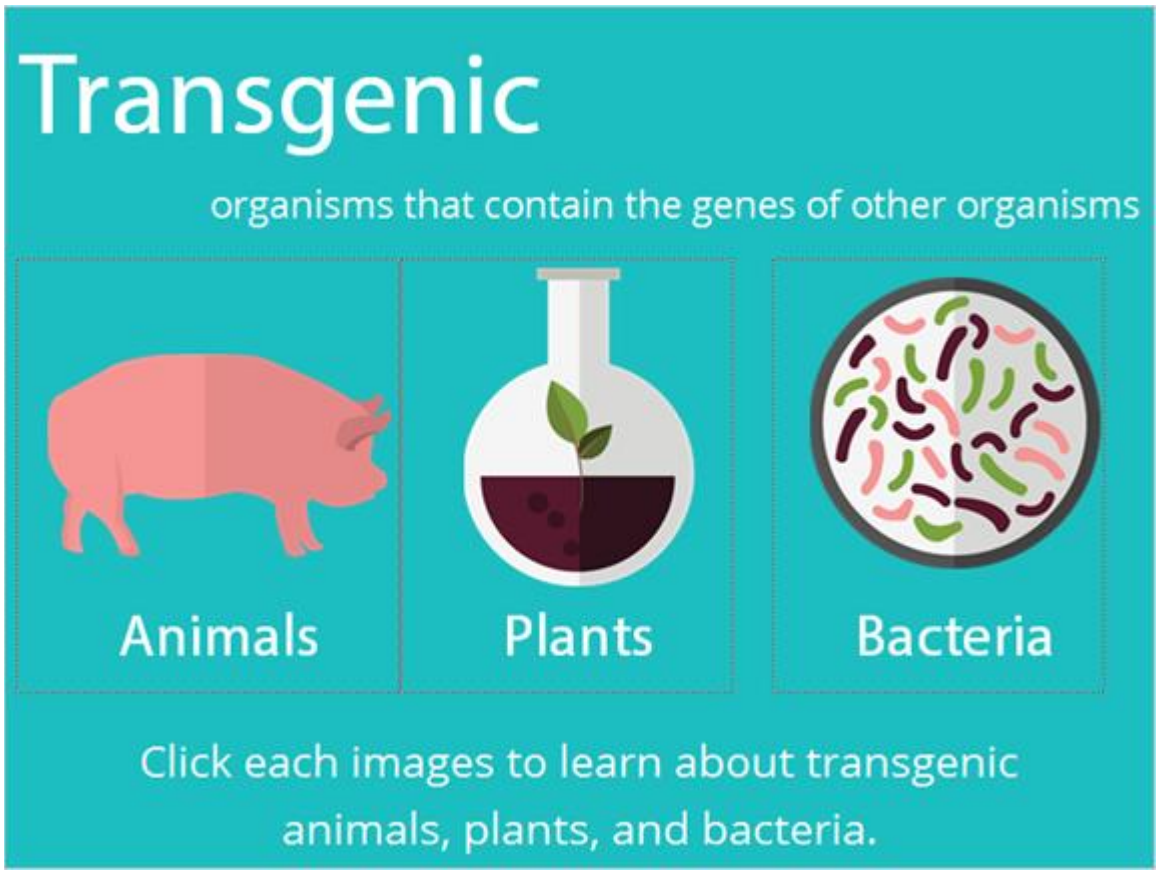

Biotechnology is used in the creation of transgenic animals, plants, and bacteria. A transgenic organism contains the genes of other organisms. Transgenic animals have a variety of uses, including studying the effects of different diseases and finding ways to cure them. Click each of the images to learn about transgenic animals, plants, and bacteria.

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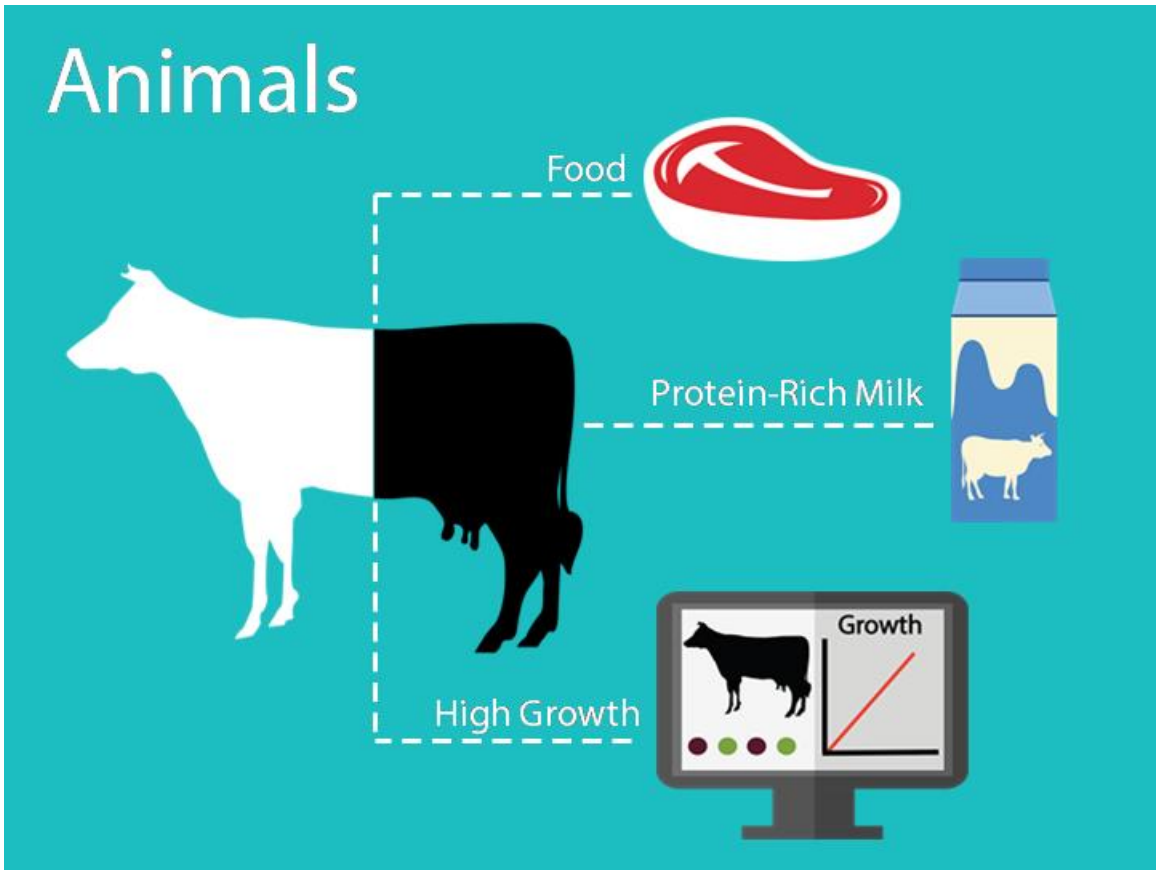
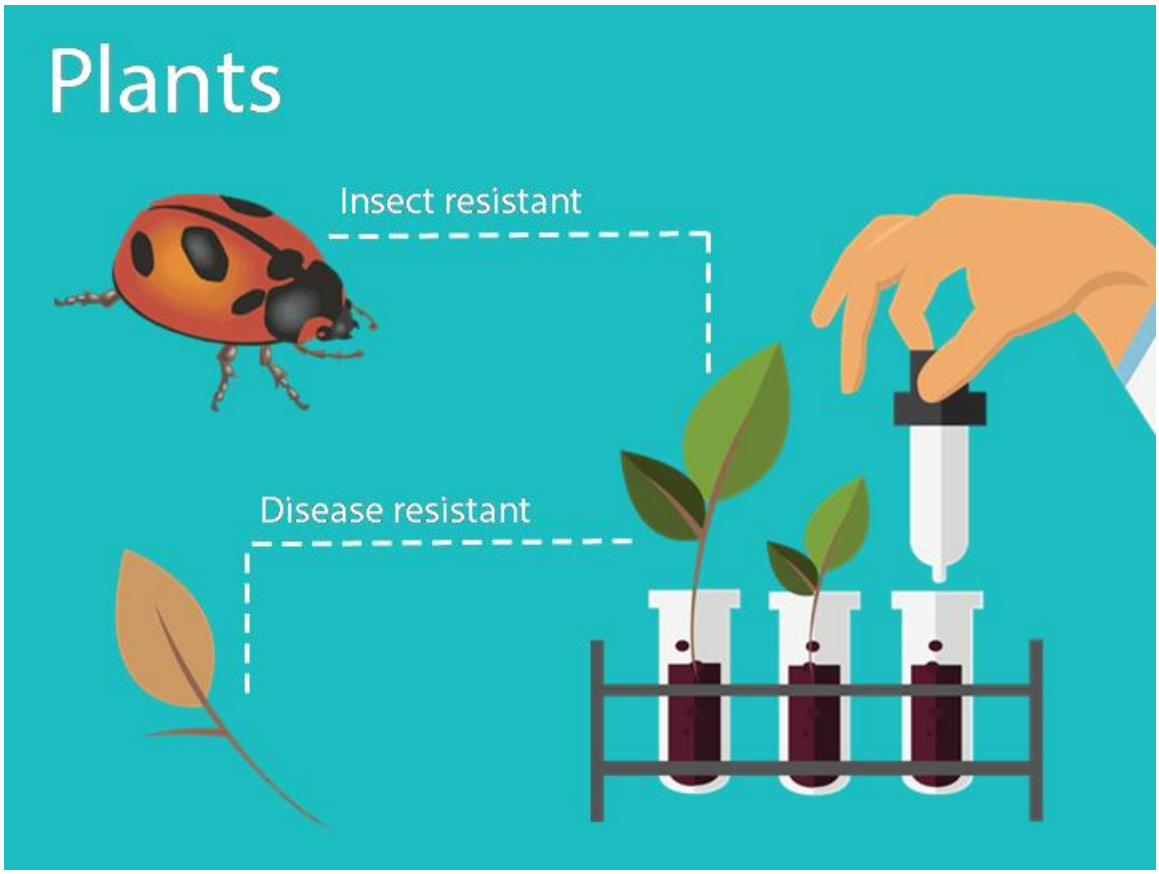


Animals

Transgenic animals, like cattle, are produced to increase food sources for people around the world. Transgenic cattle are created to produce milk that contains beneficially proteins; they are enhanced to have lean muscle mass, and enhanced to have a higher growth rate.



Plants

Transgenic plants have been created to be more resistant to pest insects and disease. The most common transgenic plants being grown today are soybeans, canola, cotton, and corn.

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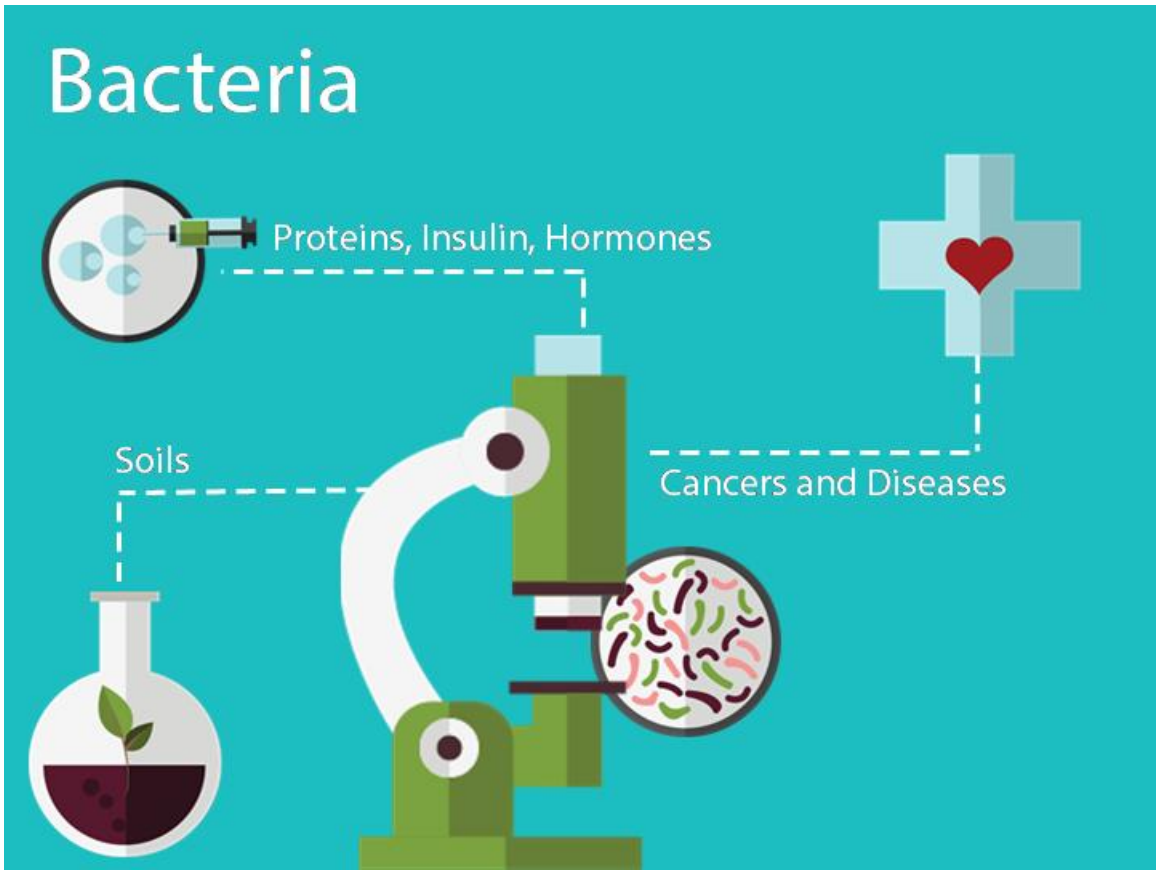

Bacteria

Transgenic bacteria have been used to produce human proteins, insulin, and growth hormones. Transgenic bacteria are being used to fight certain cancers and diseases, as well as used in soils to facilitate crop growth.