



Popped Secret: The Mysterious Origin of Corn

OVERVIEW

In the HHMI film [*Popped Secret: The Mysterious Origin of Corn*](#), evolutionary biologist Dr. Neil Losin embarks on a quest to discover the origin of maize (or corn). While the wild varieties of common crops, such as apples and wheat, looked much like the cultivated species, there are no wild plants that closely resemble maize. As the film unfolds, we learn how geneticists and archaeologists have come together to unravel the mysteries of how and where maize was domesticated nearly 9,000 years ago.

KEY CONCEPTS

- A. Humans have transformed wild plants into useful crops by artificially selecting and propagating individuals with the most desirable traits or characteristics—such as size, color, or sweetness—over generations.
- B. Evidence of early maize domestication comes from many disciplines including evolutionary biology, genetics, and archaeology.
- C. The analysis of shared characteristics among different species, including extinct ones, enables scientists to determine evolutionary relationships.
- D. In general, the more closely related two groups of organisms are, the more similar their DNA sequences will be. Scientists can estimate how long ago two populations of organisms diverged by comparing their genomes.
- E. When the number of genes is relatively small, mathematical models based on Mendelian genetics can help scientists estimate how many genes are involved in the differences in traits between species.
- F. Regulatory genes code for proteins, such as transcription factors, that in turn control the expression of several—even hundreds—of other genes. As a result, changes in just a few regulatory genes can have a dramatic effect on traits.

CURRICULUM CONNECTIONS

Standards	Curriculum Connections
NGSS (2013)	LS1.A, LS3.A, LS3.B, LS4.A
AP Biology (2015)	1.A.4, 1.C.2, 3.A.1, 3.A.3, 3.B.1, 3.C.1
AP Environmental Science (2013)	II.C
IB Biology (2016)	2.7, 3.1, 3.4, 5.1, 9.3, 10.2
IB Environmental Systems and Societies (2017)	5.2
Common Core (2010)	ELA.RST.9-12.2, WHST.9-12.4
Vision and Change (2009)	CC1, CC2, CC3

KEY REFERENCE

Beadle, G.W. 1977. "The origin of *Zea mays*." In *Origins of Agriculture*, edited by C. E. Reed, 615–535. The Hague: Mouton.