

Natural-Selection Explanation Table

Task

Use the table below to help you analyze any specific case of natural selection and identify the evidence needed for a full explanation of trait changes in a population based on the process of natural selection.

Constructing a Natural-Selection Explanation		
Principle	Definition	Evidence
Variation	Individuals in a population or group differ for some trait of interest.	
Inheritance	The variation for the trait of interest is at least partially inherited (passed from parents to offspring). The origin of the variation stems from genetic mutations that may have arisen many generations in the past.	
Selection	More offspring will be born than can survive. The outcome of this fact is competition among individuals. As a result, some individuals with a trait survive and leave relatively more offspring compared to individuals that don't have the trait. Selection depends on the specific context of a species. Traits that are beneficial in one environment may cause problems in another environment.	
Adaptation	The frequency of the trait that improves fitness will increase in the population over time, as will the alleles that affect the trait. This process can take many generations and extend over very long periods of time.	