

Honors Biology Bellringer:

What are the four conditions necessary for a population to evolve by natural selection?

1. Overproduction
2. Variation
3. Selection
4. Adaptation

Standard: Students will evaluate the role of natural selection in the development of the theory of evolution.

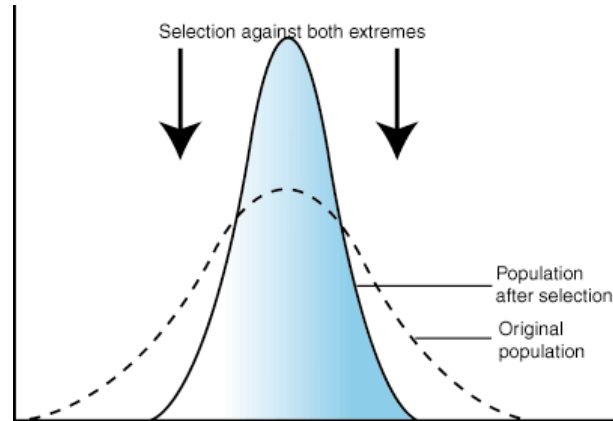
Element: d. Relate natural selection to changes in organisms.

EQ: What are the three types of natural selection?

Types of Natural Selection Outline

I) Types of natural selection

- A) Stabilizing Selection: organisms with extreme traits are selected *against*, leaving a greater proportion of organisms with the intermediate form of the trait to survive and reproduce

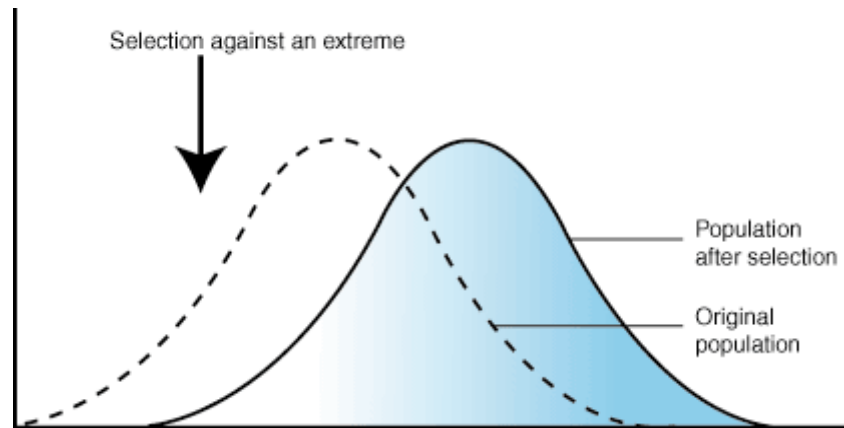


Example: Butterflies can be red, orange, or yellow. In a field of orange marigolds, the red and yellow butterflies would stand out and therefore be eaten more frequently than the orange butterflies. Over time, the population would have a greater proportion of orange butterflies remaining.



Types of Natural Selection Outline

B) Directional Selection: organisms with *one* extreme variation of a trait are selected for, which results in more offspring that have the same extreme trait

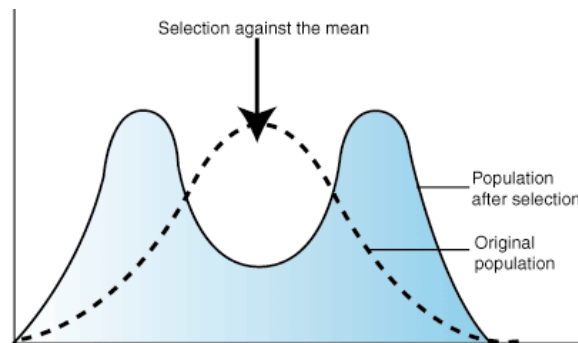


Example: The same orange, red, and yellow butterflies have migrated to a different area dominated by bright red petunias. The orange and yellow butterflies are easily spotted and eaten by birds, resulting in a population that is a greater proportion of red butterflies.



Types of Natural Selection Outline

- C) Disruptive Selection: organisms with the intermediate form of a trait are selected *against*, resulting in a reduction of individuals with the intermediate form and leaving behind individuals of either extreme



Example: The same butterflies are still living among the red petunias, but a local environmental group has planted some native yellow asters in the same field and they begin to flower in the spring. Now both the yellow and the red butterflies have flowers on which to hide and the orange butterflies stand out to the predators. Over time there are fewer and fewer orange butterflies in the population.

