



Adaptation



Adaptation

- An adaptation is a feature that is common in a population because it provides some improved function.



Adaptation & Natural Selection

- Adaptations are well fitted to their function and are produced by natural selection.



Different Adaptations

- Adaptations can take many forms: a behavior that allows better evasion of predators or a physical feature that allows the organism to access a valuable resource.

Examples

- Mimicry of leaves by insects is an adaptation for evading predators. This example is a katydid from Costa Rica.



Examples

- The creosote bush is a desert-dwelling plant that produces toxins that prevent other plants from growing nearby, thus reducing competition for nutrients and water.





To qualify as an Adaptation

- **It must be Heritable**

If it has been shaped by natural selection, it must be genetically encoded—since natural selection cannot act on traits that don't get passed on to offspring.



To Qualify

- **Functional**

If it has been shaped by natural selection for a particular task, the trait must actually perform that task.



To Qualify

- **Adaptive**

If it has been shaped by natural selection, it must increase the fitness of the organisms that have it.



Co-evolution

- change in the genetic composition of one species (or group) in response to a genetic change in another.