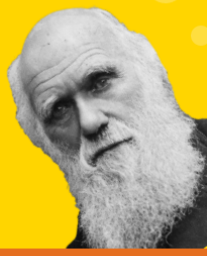
NATURAL SELECTION



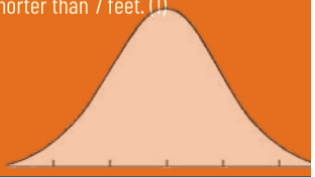
A powerful evolutionary force that acts on differences in traits between organisms of a particular species

1 Selection on Phenotype

Based on the behavior, color, shape, and size of the organism. Air pollution darkened the bark of British forests during the Industrial Revolution, exposing light-colored peppered moths to predators! Black moths became more common because they lived and reproduced. (1)

2 Directional Selection

This favors an extreme or intermediate version of a trait over others. Ever wonder why you seldom see someone over or under 7 and 4 feet tall, respectively? Stabilizing selection favors the in-between: taller than 4 feet but shorter than 7 feet. (1)



3 Sexual Selection

This is when individuals of one gender mate with individuals of another gender based on certain traits. Male peacocks with the showiest feathers can more easily attract mates than other, less showy peacocks, and now it's very rare to see a male without showy feathers. (2)

4 Altruism

This is when individuals put the survival of their kin or colony ahead of their own wellbeing. Prairie dogs will whistle out to warn others of an approaching predator, and in doing so, sacrifice themselves for the sake of other prairie dogs. (3)

LIMITS

1 Only Applies to Existing Traits

Elaborately designed feathers on peacocks cannot be favored for in sexual selection if feathers don't exist in the first place! (1)

2 DNA & Development

Humans will never grow wings, even if we want to. It's just not in our DNA! (1)

3 Traits can be correlated with a number of other traits

If one bone in your leg needs to be longer, so do all of the other closely associated bones. This could be bad, as it would make these bones all more delicate! (1)

FURTHER RESOURCES

Websites

1. Class Notes
2. New England Complex System Institute (*necsi.edu/sexual-selection*)
3. The Scope (yalescientific.org)
4. Understanding Evolution (*evolution.berkely.edu*)
5. Genetics.org (*genetics.org*)
6. Your Genome (*yourgenome.org*)

Videos

Khan Academy (*khanacademy.org*)
Stated Clearly
(*https://www.youtube.com/channel/UC_cznB5YZZmvAmeq7Y3EriQ*)