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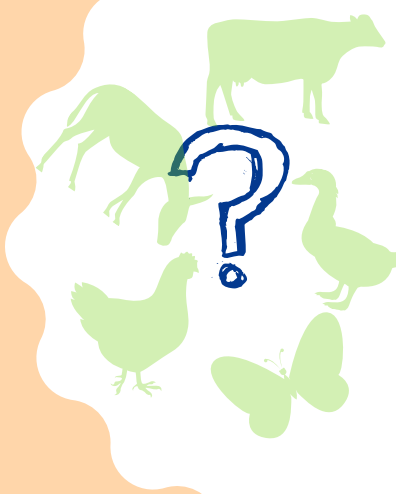
Natural Selection Brought Us All the Animals We Love

What is natural selection?

Natural selection is a force of evolution. Organisms that are more adapted to their environment are more likely to survive and pass on the genes that aided them in their success. They reproduce and pass these traits to future generations, leading to changes in species over time.



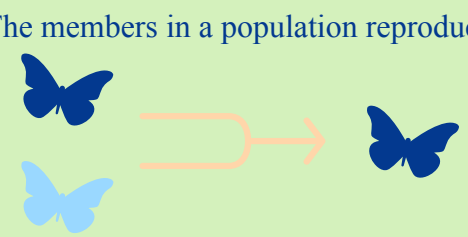
But When Does it Occur?

There are 4 conditions for natural selection:

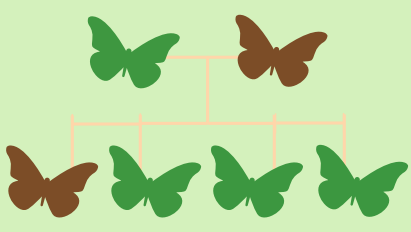
1. There is variation among members in a population

2. The variation in a trait is associated with variation in fitness (reproductive success)

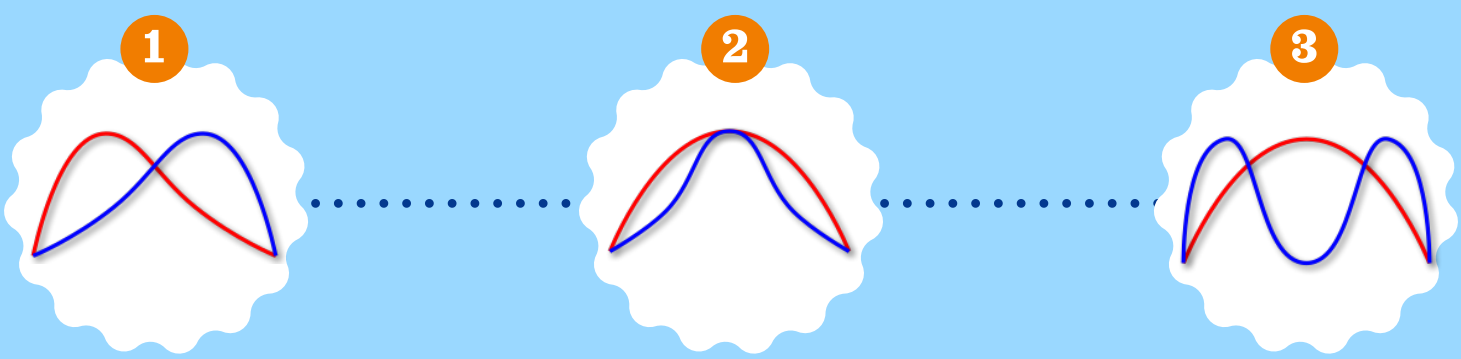
3. The members in a population reproduce



4. The variation is heritable and can be passed to their offspring



There are three types of selection:



Directional Selection

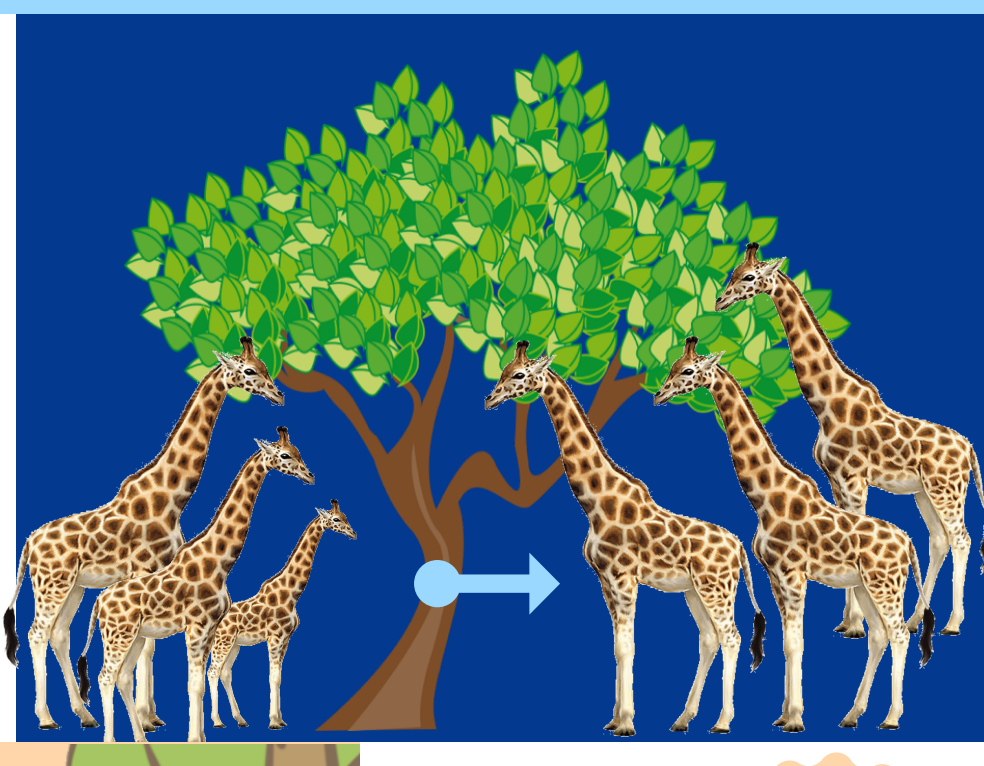
favors a shift in one direction

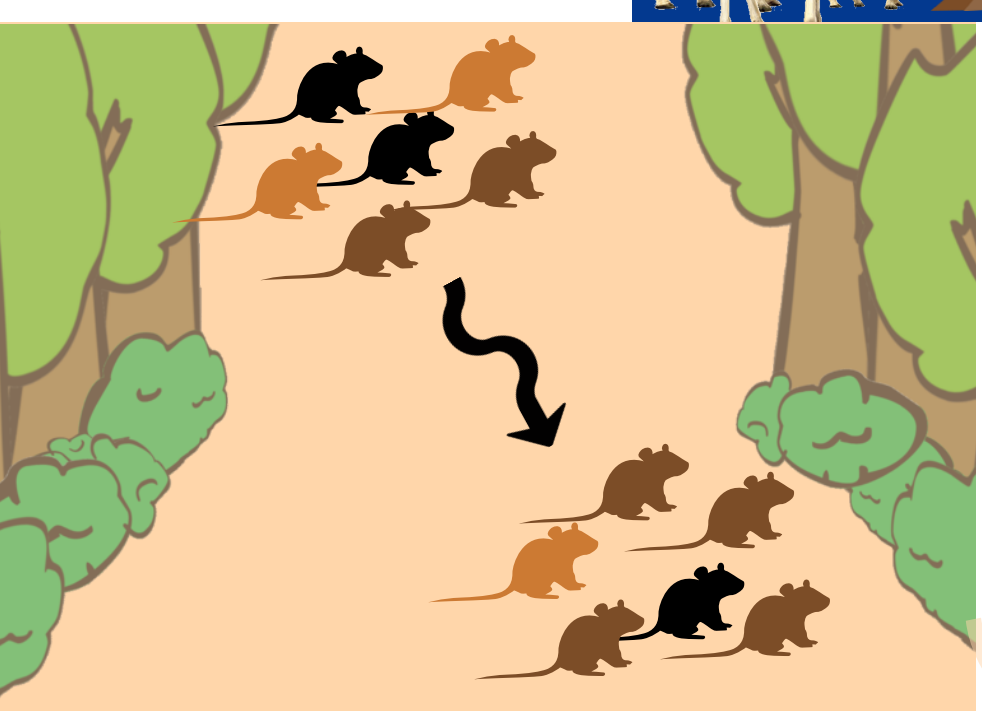
There are two types of giraffes: tall and short

It rains a lot and all of the trees grow very tall

Shorter giraffes cannot access food from the trees as well as taller giraffes

The mean height of the population increases





favors the average

Stabilizing Selection

There is a population of mice living in the woods

The dark brown mice blend in with the forest floor while the light brown and black mice stand out to predators

Dark brown becomes the favored color

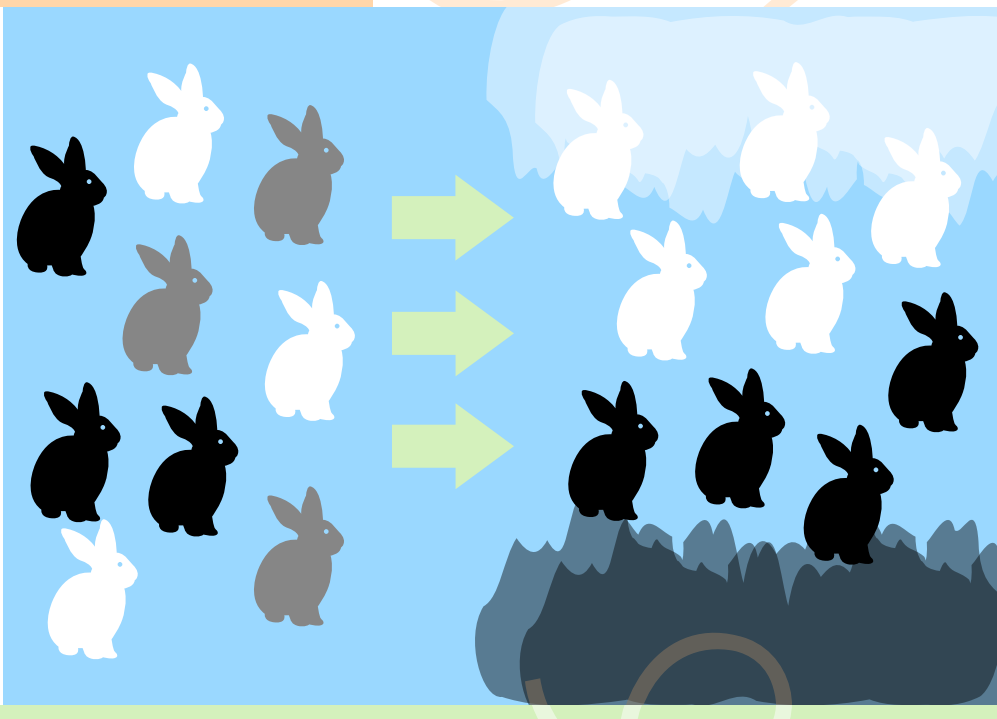
Disruptive Selection

favors the extremes

There are black, gray, and white rabbits in a population
The white rabbits blend in with the white rocks

The black rabbits blend in with the black rocks

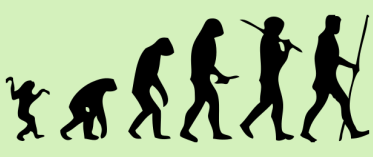
The gray rabbits cannot camouflage and are easily preyed on by predators

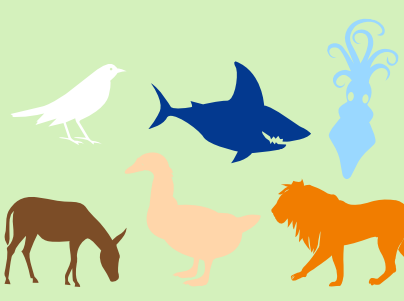


Okay, but who cares? YOU SHOULD

It is the reason we can drink milk.

It is the reason we humans exist at all





It is the reason we have so many different animals to love and care for

It is the Engine that Drives Evolution

References

- Osterloff, Emily. “What Is Natural Selection?” *Natural History Museum*, https://www.nhm.ac.uk/discover/what-is-natural-selection.html.
- Libretexts. “19.3b: Stabilizing, Directional, and Diversifying Selection.” *Biology LibreTexts*, Libretexts, 9 June 2022, https://bio.libretexts.org/Bookshelves/Introductory_and_General_Biology/Book%3A_General_Biology_(Boundless)/19%3A_The_Evolution_of_Populations/19.03%3A_Adaptive_Evolution/19.3B%3A_Stabilizing_Directional_and_Diversifying_Selection.