

Speciation

Speciation

- **Species**: a group of organisms that can successfully interbreed (produce fertile offspring).
- **Speciation**: formation of a new species.
 - some organisms of a population change so much that they can no longer reproduce together, and so they become a separate species.

Speciation by Physical Separation - Allopatric

- A physical barrier divides a population into 2 or more populations
- After enough time, they will no longer be able to breed with one another



Abert squirrel



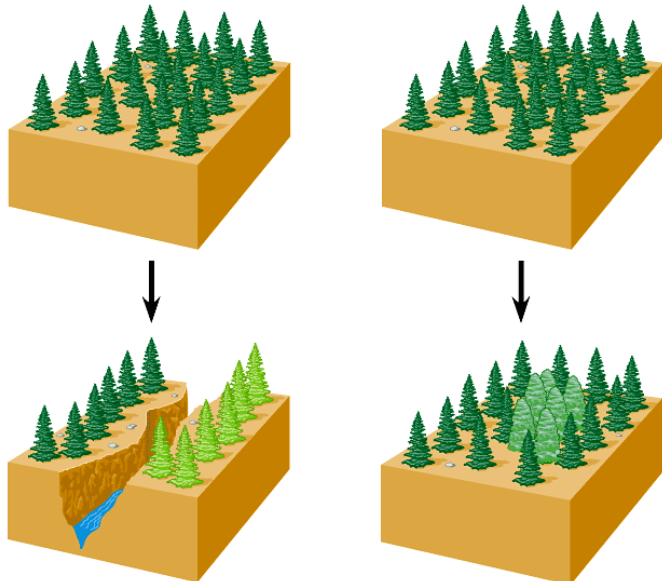
Kaibab squirrel

Speciation While Living Together - Sympatric

- A species evolves into two separate species without a physical barrier—they live side by side
- Happens frequently in plants
- Example:

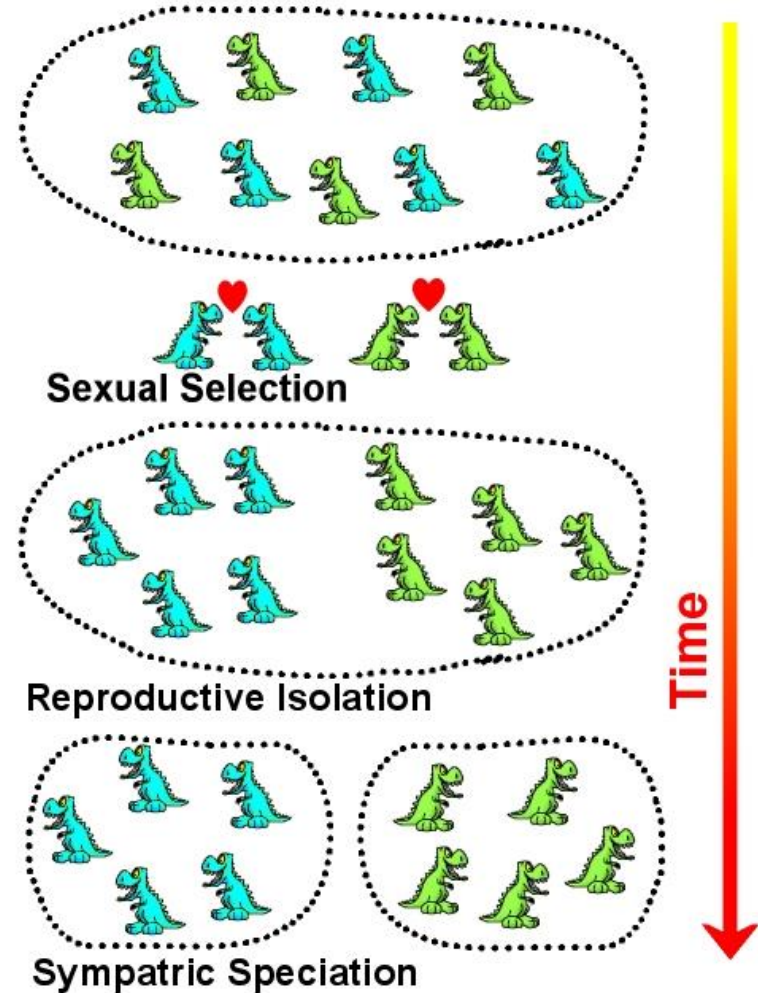
– Apple Maggot Flies—new species

beginning of time



(a) Allopatric speciation

(b) Sympatric speciation



Speciation Example (Sympatric)

- Eastern vs. Western Meadowlark have different mating song and don't interbreed
- Closely related species of fireflies mate at different times of night
- Different species of trout live in the same stream but breed at different times of the year



Speciation: Offspring That Can't Survive

- Fertilization occurs, but the hybrid offspring can't develop or reproduce
- Example:
 - A lion and tiger are separate species because even though they can mate, the offspring—a liger—is sterile



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- **Species**: a group of organisms that can _____ (produce fertile offspring).
- **Speciation**: formation of a _____.
 - some organisms of a population change so much that they can _____, and so they _____.

Speciation by Physical Separation - Allopatric

- A _____ into 2 or more populations (they are in 2 different places).
- After enough time, they will _____ with one another and will become different species.



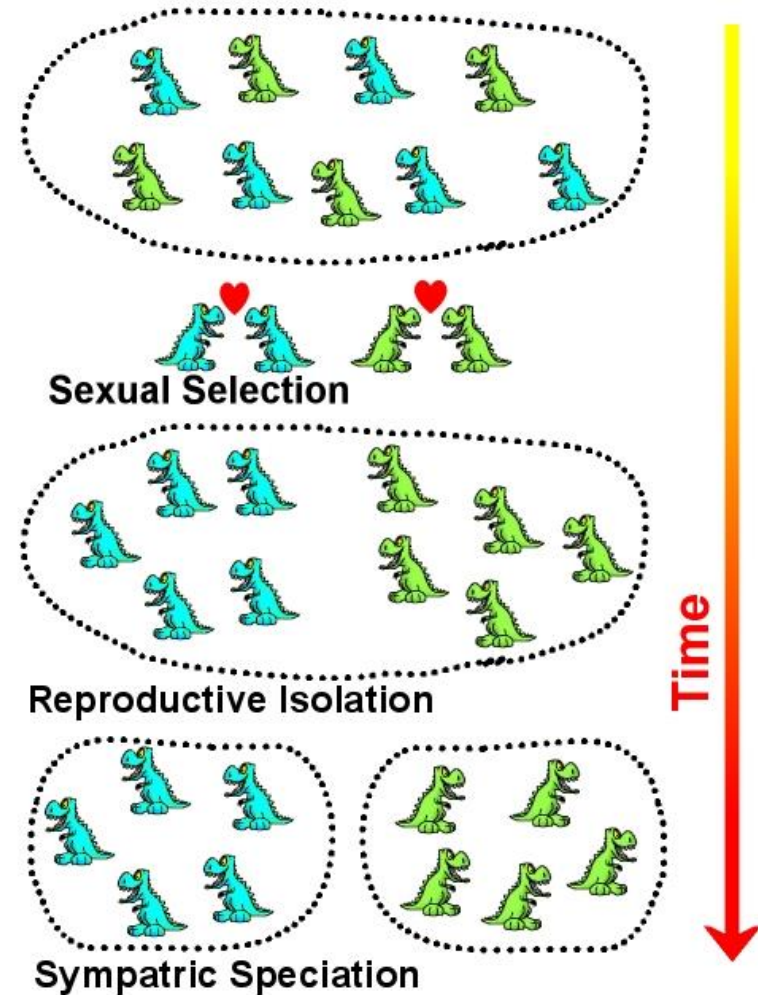
Abert squirrel



Kaibab squirrel

Speciation While Living Together - Sympatric

- A species evolves into two separate species without a physical barrier - _____
_____.
- Happens frequently in plants
- Example:
 - Apple Maggot Flies—new species based on type of fruit they eat



Speciation Example (Sympatric)

- Eastern vs. Western Meadowlark have different mating song and _____
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