

Bio 3 p.1 Evolution (Ch. 8)

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- > Definition has 3 parts: Change in allele frequencies over time in a population
  - In a given population
  - Over time
  - Change in allele frequencies

Ex > 30% blue eyes + 70% brown eyes →  
30 years from now: 25% blue + 75% brown eyes ⇒ evolution

- > Physical Characteristics change over time creating a new species (microevolution)
  - Behavioral
  - Chemical

> Species: a population or group of pops capable of breeding and creating viable offspring

> For Speciation:

- Reproductive Isolation: separation from each other to develop characteristics
  - overtime or (macroevolution)
  - physically

> Required for Evolution to occur:

- Time

- Population Variation

> Variation + Natural Selection

- Variation shows up in population + passed on by sexual reproduction

> Sexual Reproduction: generates variety

> Evolution Mechanism (at least 4)

- Natural Selection

- Non-random Mating

- Genetic Drift

• Founder Effect

• Bottleneck

- Gene Flow

> Natural Selection: can't make perfect individual

- not goal driven or directional

- individuals w/ characteristics best adapted to environment = most likely to survive/reproduce

- the unequal ability to survive/reproduce = gradual change in characteristics

> Non-Random Mating: mates selecting specific char.

- usually the female

- behavioral, physical, chemical

> Genetic Drift (Small Wright): a subset of genes get separated/isolated, genetic diversity occurs

- Bottleneck: some change eliminates some genetic diversity by elimination

- Founder effect: introduction of new diversity through migration of different characteristics

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- 7 Gene Flow: movement of individuals/gametes between populations
- can alter frequencies in populations
  - tends to reduce differences between populations