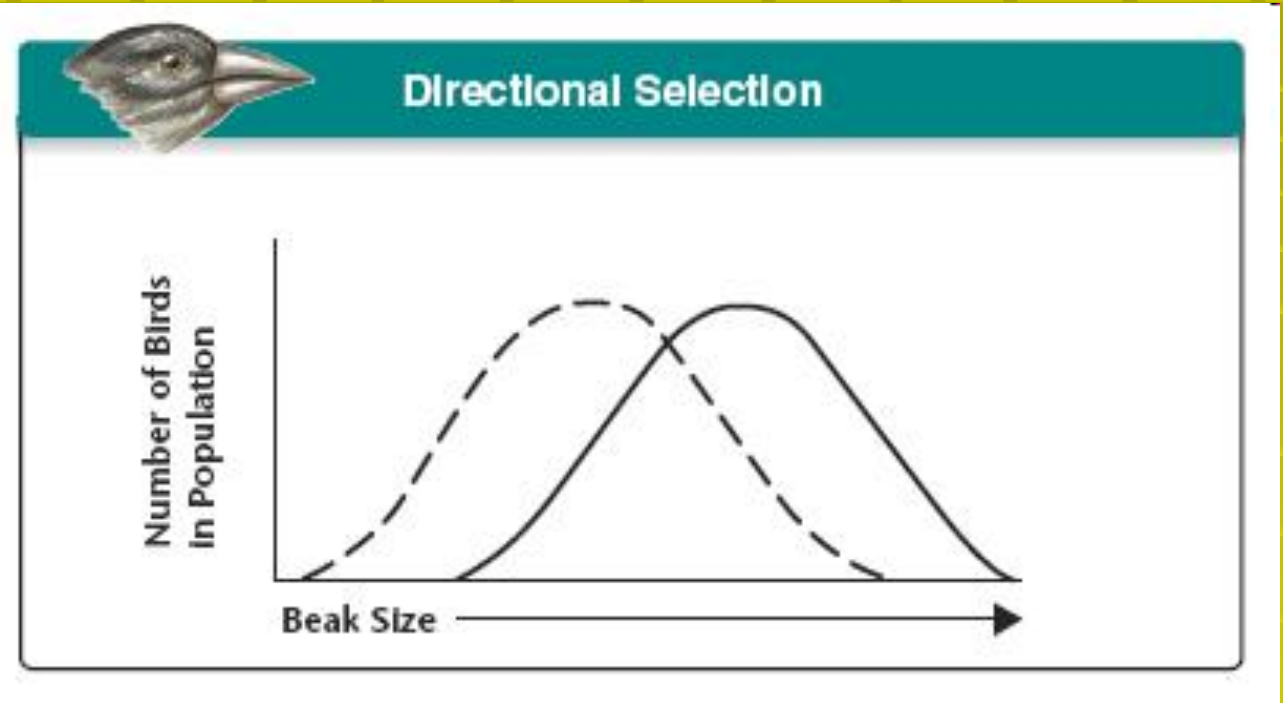
Chapter 16-2: Evolution as Genetic Change

Essential Questions:

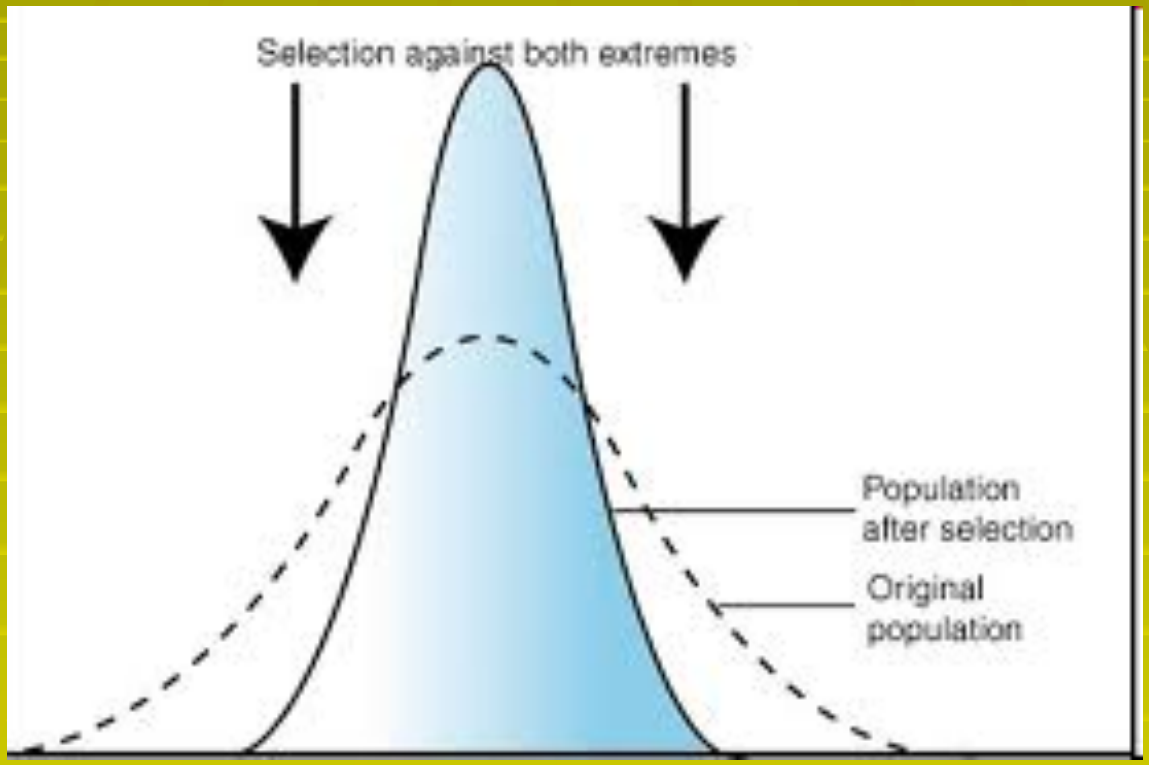
- How does natural selection affect single-gene & polygenic traits?
- What is ***genetic drift?***
- What are 5 conditions needed to maintain ***genetic equilibrium?***

- Natural selection on single-gene traits
  - Can lead to changes in allele frequencies
  - Example: lizard: orange color allele could become less frequent

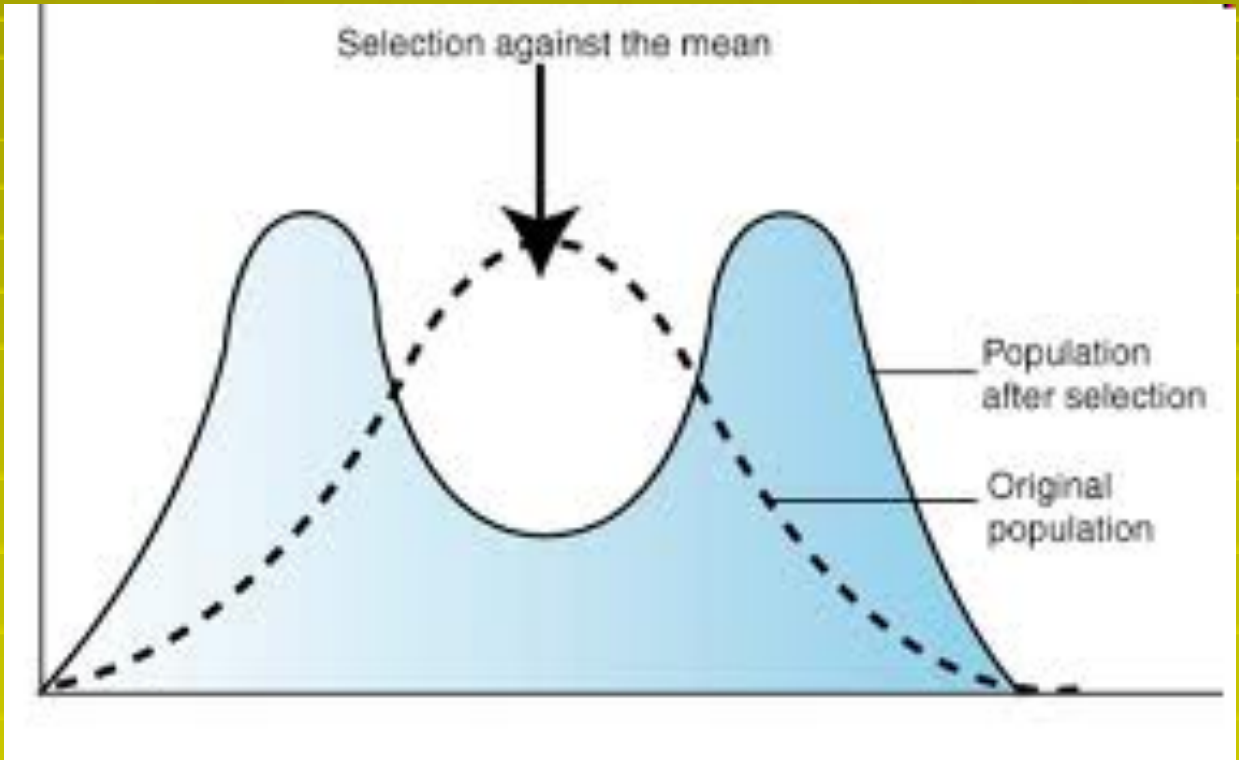
- Natural selection on polygenic traits
  - Directional selection
    - Individuals at one end of the curve are more fit



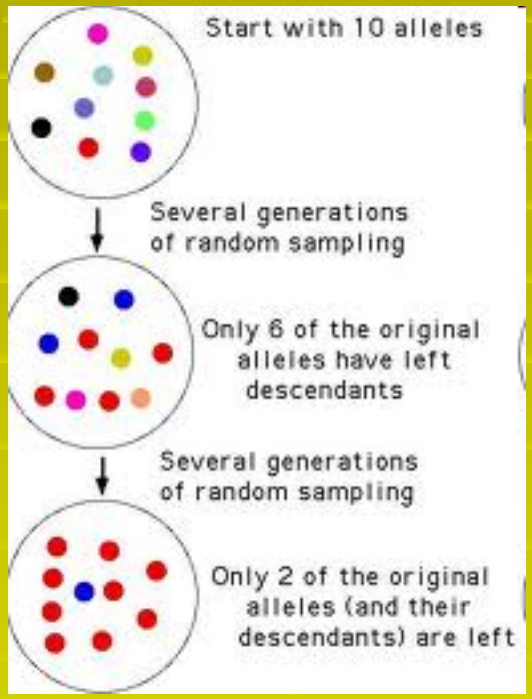
- Stabilizing selection
  - Indivs. near the center of curve are more fit



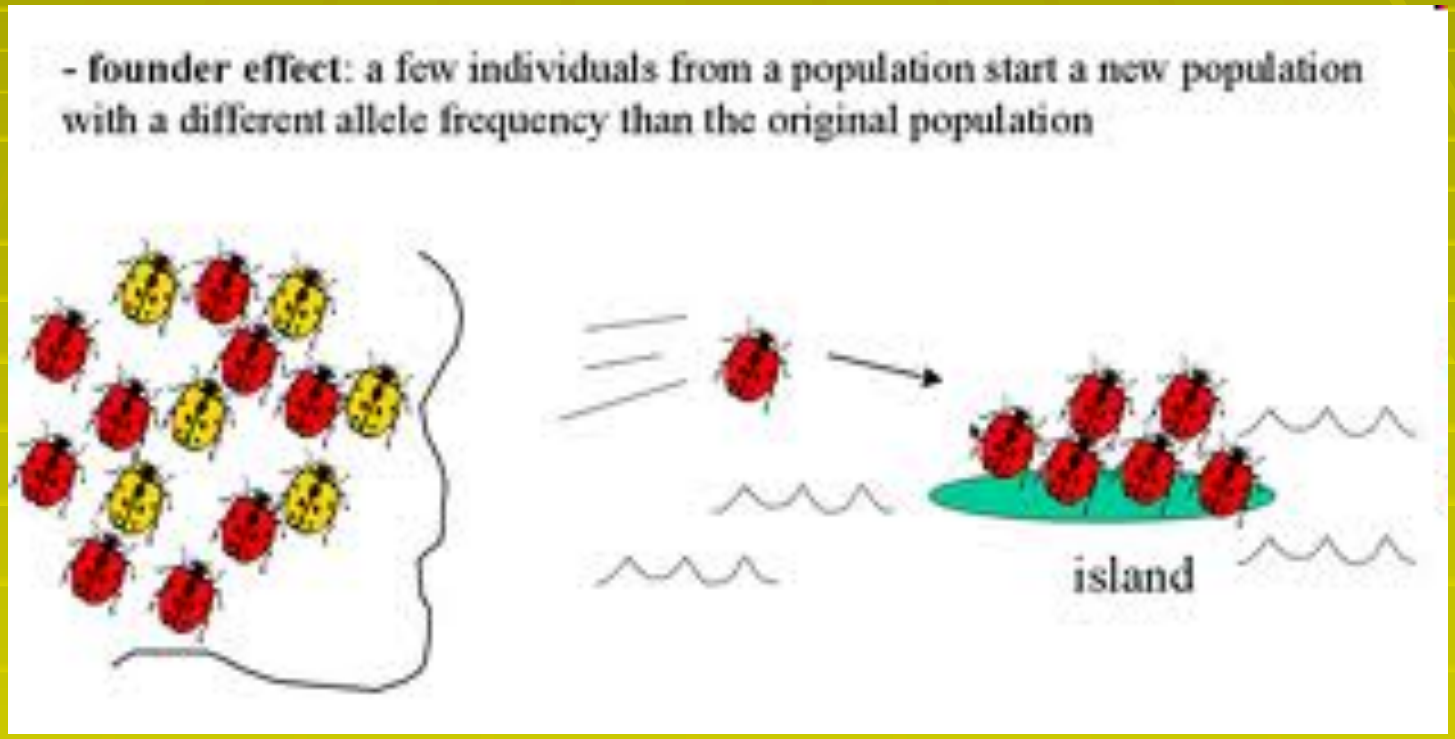
- Disruptive selection
  - Indivs. @ high and low ends of curve are more fit



- Genetic drift
  - In small pops., indivs. that carry particular allele may leave more descendents just by chance
  - That allele can become more common in pop. over time w/out selection pressure



- Founder effect
  - Migration causes changes in allele frequency
  - Natural selection not a factor



- Evolution vs. genetic equilibrium
  - Hardy-Weinberg principle
    - Allele frequencies in a pop. will be constant unless 1 or more factors cause change
      - Random mating – rare
      - Large population – no genetic drift
      - No movement in/out of the pop.
      - No mutations
      - No natural selection (all genotypes have equal chance of survival)