**Ch. 23 - The Evolution of Populations**

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| 1. What is the smallest level of evolution? |  |
| 1. What are sources of genetic variation? | **Point Mutations:**  **Chromosomal Mutations:**  **Sexual Recombination:** |
| **VOCABULARY** | **DEFINITIONS** |
| **Population** |  |
| **Gene Pool** |  |
| **Fixed Allele** |  |
| 1. What is the **Hardy-Weinberg Principle**? | **Hardy-Weinberg Principle**: The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a population will remain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from generation to generation*…UNLESS they are acted upon by forces* other than Mendelian segregation and recombination of alleles.  **Equilibrium**: |
| 1. List the **5 Conditions for H-B Equilibrium** | If at least one of these conditions is NOT met, then… |
| 1. What is the **Hardy-Weinberg Equation**? | Allele Frequencies:  p:  q:  Genotypic Frequencies:  p2  2pq  q2 |
| Strategies for Solving H-W Problems | 1. If you are given the **genotypes** (AA, Aa, aa), 2. If you know **phenotypes**, 3. Use p2 + 2pq + q2 to find \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ frequencies. 4. If p and q are not constant from gen. to gen., |
| 1. What are **5 causes of evolution**? | 1. |
| 2. |
| 3. |
| 4.  Examples: |
| 5. |
| 1. What is the **Founder Effect**? | * A type of genetic drift |
| 1. What is the **Bottleneck Effect**? | * A type of genetic drift |
| 1. How does natural selection bring about adaptive evolution? | Fitness:  Directional Selection:  Disruptive Selection:  Stabilizing Selection: |
| 1. What is **Sexual Selection?** |  |
| 1. How is genetic variation preserved? | Diploidy:  Heterozygote advantage: |
| Natural Selections Cannot Fashion Perfect Organisms… | 1. Selection can act only on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 2. Evolution is limited by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 3. Adaptations are often \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. 4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, natural selection, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interact. |