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

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| 1. What is the smallest level of evolution?
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| 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:p22pqq2 |
| 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?**
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| 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.
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