**Ch. 24: The Origin of Species**

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| Questions/Learning Criteria | Answers |
| 1. What is the difference between microevolution and macroevolution?
 | **MICROEVOLUTION**:**MACROEVOLUTION**: |
| 1. What is **SPECIATION**?
 |  |
| 1. What is the biological definition of a **SPECIES**?
 |  |
| 1. Are there other definitions of a species?
 | 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – by body shape, size, and other structural features
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – niche/role in community
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – share common ancestry, branch on tree of life
 |
| 1. How do new species originate?
 | * Populations must become \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (geographically and/or reproductively) and then evolve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Isolation may be allopatric or sympatric
 |
| 1. What is **REPRODUCTIVE ISOLATION?**
 |  |
| 1. Compare the 2 main modes of speciation
 | **ALLOPATRIC SPECIATION****“*other country*”**  | **SYMPATRIC SPECIATION****“*same country*”** |
|  | * Geographically \_\_\_\_\_\_\_\_\_\_ populations
* Caused by geologic events or processes
* Evolves by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **Ex:** Squirrels on N/S rims of
* Grand Canyon

*Draw a picture!* | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ populations within home range
* Gene flow between subpopulations blocked by:
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_ selection
* \_\_\_\_\_\_\_\_\_\_\_ differentiation

**Ex:** polyploidy in crops  (oats, cotton, potatoes, wheat)*Draw a picture!* |
| 1. Allopatric speciation can lead to **ADAPTIVE RADIATION**
 | Adaptive Radiation is when \_\_\_\_\_\_\_\_\_\_\_\_\_ new species arise from a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ common ancestorOccurs when:* A few organisms make way to new, distant areas (**allopatric speciation**)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ change 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 🡪 new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for survivors
 |
| 1. Compare the types of **REPRODUCTIVE BARRIERS?**
 | **PREZYGOTIC Reproductive Barriers** | **POSTZYGOTIC Reproductive Barriers** |
| Impede \_\_\_\_\_\_\_/ \_\_\_\_\_\_\_\_\_\_\_\_\_ | Prevent hybrid zygote from \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| Types |
| 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isolation
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isolation
3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isolation
4. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isolation
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isolation
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ isolation
 | 1. Reduced hybrid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Reduced hybrid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Hybrid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
 |
| 1. What are **HYBRID ZONES**?
 | * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reproductive barriers
* Possible outcomes:
 |
| 1. What are rates (tempos) of evolution?
 |  |  |
| * Common ancestor
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

outil_bleu09_img02 | * Long period of \_\_\_\_\_\_\_\_\_\_\_\_ punctuated by short bursts of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| *24_17SpeciationTempo-L.jpgWhich is it?* |

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