

**AP Biology**  
**Chapter 24 Guided Reading: The Origin of Species**  
**10ed**

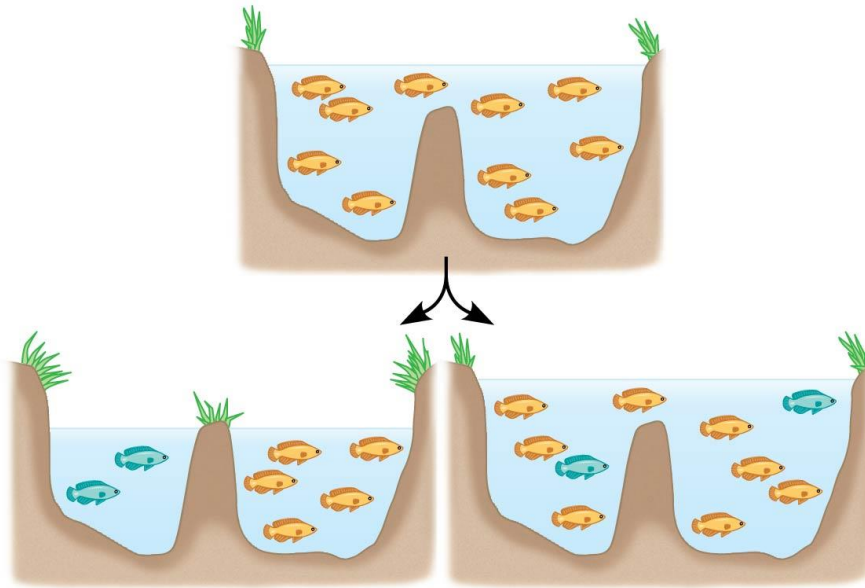
Name \_\_\_\_\_

1. What was Darwin's "mystery of mysteries?"
2. Define *speciation*.
3. Distinguish between *microevolution* and *macroevolution*.
4. Use biological species concept to define *species*.
5. What is required for the formation of new species?
6. What are *hybrids*?
7. Explain the two types of barriers that maintain *reproductive isolation*.
8. The following chart summarizes the various ways of *reproductive isolation* is maintained. Explain and give an example of each type of isolating mechanism.

<b>Prezygotic Reproductive Barriers</b>	<b>Explanation</b>	<b>Examples</b>
Habitat isolation		
Temporal isolation		
Behavioral isolation		
Mechanical isolation		
Gametic isolation		

Postzygotic Reproductive Barriers	Explanation	Example
Reduced hybrid viability		
Reduced hybrid fertility		
Hybrid breakdown		

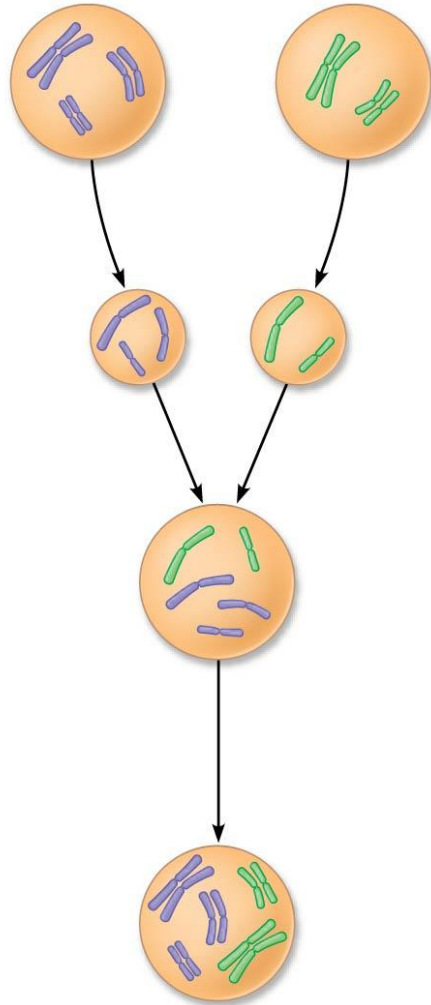
9. Explain and give an example of each by labeling and annotating this figure, which shows an ancestral species of fish and then the two modes of speciation.



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10. What type of speciation is caused by a barrier such as the Grand Canyon?
11. *Sympatric speciation* occurs in populations that live in the same geographic area. How is this possible?
12. Explain *autopolyploidy*. (A diagram would be helpful!)

13. Now, use this figure to explain *allopolyploid speciation*.



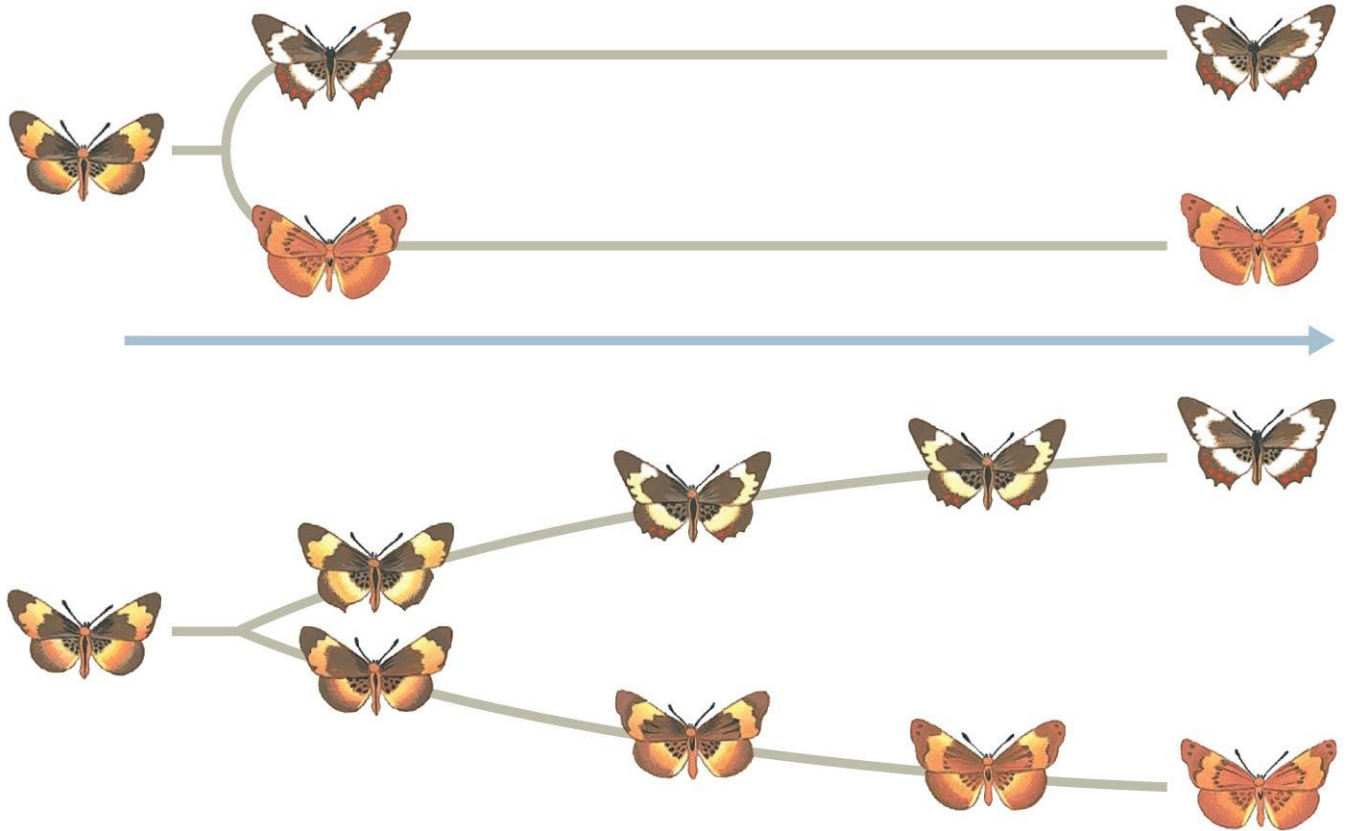
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14. Before we leave allopatric and sympatric speciation, explain what happens in *sexual selection*, and how this process can drive sympatric speciation.

15. What are *hybrid zones*?

16. Stephen Jay Gould and Niles Eldredge coined the term *punctuated equilibria*. What is meant by a punctuated pattern?

17. Label the figure, and explain how each of the pictures explains speciation.



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