

Chapter
15**The Theory of Evolution, *continued*****Reinforcement and Study Guide****Section 15.2 Mechanisms of Evolution**

In your textbook, read about population genetics and evolution.

Determine if the statement is true. If it is not, rewrite the italicized part to make it true.

1. *Adaptations* of species are determined by the genes contained in the DNA code. _____
2. When Charles *Mendel* developed the theory of natural selection in the 1800s, he did not include a genetic explanation. _____
3. Natural selection can act upon an individual's *genotype*, the external expression of genes.

4. Natural selection operates on *an individual* over many generations. _____
5. The entire collection of genes among a population is its *gene frequency*. _____
6. If you know the *phenotypes* of all the organisms in a population, you can calculate the allelic frequency of the population. _____
7. A population in which frequency of alleles *changes* from generation to generation is said to be in genetic equilibrium. _____
8. A population that is in *genetic equilibrium* is not evolving. _____
9. Any factor that affects *phenotype* can change allelic frequencies, thereby disrupting the genetic equilibrium of populations. _____
10. Many *migrations* are caused by factors in the environment, such as radiation or chemicals, but others happen by chance. _____
11. Mutations are *important* in evolution because they result in genetic changes in the gene pool.

12. Genetic *equilibrium* is the alteration of allelic frequencies by chance processes. _____
13. Genetic drift is more likely to occur in *large* populations. _____
14. The factor that can significantly change the genetic equilibrium of a population's gene pool is *mutation*. _____
15. The type of natural selection by which one of the extreme forms of a trait is favored is called *disruptive selection*.

Complete the chart by checking the kind of evidence described.

Evidence	Type of Evidence				
	Homologous Structure	Analogous Structure	Vestigial Structure	Embryological Development	Genetic Comparisons
16. A modified structure seen among different groups of descendants					
17. In the earliest stages of development, a tail and pharyngeal pouches can be seen in fish, birds, rabbits, and mammals.					
18. Exemplified by forelimbs of bats, penguins, lizards, and monkeys					
19. Eyes in a blind fish					
20. DNA and RNA comparisons may lead to evolutionary trees.					
21. Bird and butterfly wings have same function but different structures					
22. A body structure reduced in original function but may have been used in an ancestor					