

CHAPTER 15

Study Guide

Section 3: Shaping Evolutionary Theory

In your textbook, read about the mechanisms of evolution, speciation, and patterns of evolution.

Write the term or phrase that best completes each statement. Use these choices:

- | | | | |
|------------------------------|------------------------------|------------------------------|-----------------------------|
| adaptive radiation | allopatric speciation | directional selection | disruptive selection |
| founder effect | genetic drift | gradualism | sexual selection |
| stabilizing selection | sympatric speciation | | |

- _____ is a change in allelic frequencies in a population that is due to chance.
- _____ removes individuals with average trait values, creating two populations with extreme traits.
- The most common form of selection, _____, removes organisms with extreme expressions of a trait.
- When a small sample of the main population settles in a location separated from the main population, the _____ can occur.
- In _____, a species evolves into a new species without any barriers that separate the populations.
- _____ will shift populations toward a beneficial but extreme trait value.
- In _____, a population is divided by a barrier, each population evolves separately, and eventually the two populations cannot successfully interbreed.
- _____ is a change in the size or frequency of a trait based on competition for mates.
- One species will sometimes diversify in a relatively short time into a number of different species in a pattern called _____.
- The idea that evolution occurred in small steps over millions of years in a speciation model is currently known as _____.

Refer to the figure. Respond to each statement.

- Specify** which moth would survive if pollution increases.

- State** the name of the phenomenon illustrated.

