Name Period Date

SECTION 11.5

SPECIATION THROUGH ISOLATION

Reinforcement

KEY CONCEPT New species can arise when populations are isolated.

When there is no gene flow between neighboring populations, these populations are said to be isolated from each other. Isolated populations may face different environmental pressures, and over time their gene pools will change. Because there is no gene flow between them, these isolated populations may become more and more genetically different.

If populations become so genetically different that individuals are no longer able to mate successfully with each other, these populations are said to be reproductively isolated. **Reproductive isolation** is the final stage in **speciation,** which is the rise of two or more species from one existing species.

Populations can become isolated in several ways:

- **Behavioral isolation** exists if differences in courtship or mating behaviors prevent individuals of two populations from mating. Behavioral isolation includes differences in courtship dances, courtship songs, and pheromones.
- **Geographic isolation** exists if physical barriers prevent individuals of two populations from mating. Geographic isolation can be caused by rivers, mountains, shifting continents, and even dried lakebeds.
- **Temporal isolation** exists if the timing of reproductive activity prevents individuals of two populations from mating. Temporal isolation includes seasonal differences in life cycles and mating periods, as well as differences in the time of day that most individuals are active.

1. What needs to happen in order for two populations to be isolated?

2. What is reproductive isolation?

3. How can new species arise through isolation?

4. Name and describe three ways in which populations can become isolated.