

1 **Chapter 11 The Evolution of Populations**

11.3 Other Mechanisms of Evolution

I. Gene flow is the movement of alleles between populations-

- A. Gene flow is the movement of alleles from one population to another as an individual organism moves and reproduces in a new area.

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1. Increases genetic variation in the receiving population
2. Gene flow between two populations keeps the gene pools similar.
3. Lack of gene flow can cause two populations to become different.

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Turn to your elbow partner and in 1 minute discuss the following. Be prepared to share your answer!

Q1. Which of the following would increase gene flow between two populations?

1. A new freeway is built across the habitat of a population of jack rabbits who are unable to cross successfully.
2. Pollen is blown by the wind across two different fields of flowers.
3. Two ponds with fish are connected by a small stream they can swim through.

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II. Genetic drift is a change in allele frequency due to chance-

- A. Genetic drift is change in allele frequency due to random chance.

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- B. Affects smaller populations more since there is a smaller gene pool, less alleles.
- C. Reduces genetic variation, therefore the population may not be able to survive changes in the environment.

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1. Bottleneck effect – an event that greatly reduces the size of a population and the genetic diversity of the population

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2. Founder effect – when a small number of individuals colonizes a new area, reducing the genetic diversity of the new population

8 9

Q2. Which process can cause genetic drift to occur?

1. Directional selection
2. Founder effect
3. Soda bottleneck

Q3. Which process can lead to a smaller population?

1. Bottleneck effect
2. Founder effect

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II. Sexual selection occurs when certain traits increase mating success

A. Intrasexual selection occurs when there is competition for mates.

1. Bighorn sheep fight for females
2. Jacana females fight for males

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B. Intersexual selection is when a mate attracts another by having certain traits.

1. Peacocks tails attract peahens

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Wrap-it-up

Main Ideas:

- Gene flow is the movement of alleles between populations.
- Genetic drift is a change in allele frequencies due to chance.
- Sexual selection occurs when certain traits increase mating success.

1. How does gene flow affect neighboring populations?
2. Name two processes through which genetic drift can occur.
3. How does sexual selection occur?