PROCESS OF EVOLUTION

Microevolution

A population is all of the members of a _____

Population genetics studies the variation in alleles in a_____.

Basically, microevolution studies small changes in alleles that occur within a population. Over time, these small changes can _____, resulting in major differences within the population. Dogs have been artificially selected for certain traits, resulting in a wide range of breeds with very _____

What is the gene pool?

Industrial Melanism

What caused the moths to shift in color?

A. Causes of Microevolution

1. Genetic Mutations

What is polymorphism?

_____can be harmful or beneficial.

*Relative Fitness- harmful genes may incur an advantage if the environment changes

2. Gene Flow

Alleles move among populations, increasing variation and_____.

Sketch how gene flow would appear in a population:

Does gene flow increase or decrease diversity?

What are subspecies.

3. Mating

What is random mating?

What is non-random mating

Example:

Which method of mating do humans use?

Can you think of any organisms that mate randomly?

What is assortive mating?

Does this increase or decrease the diversity in the population?

Sexual selection occurs when males_____ for females. This can result in extreme characteristics, like the feathers of a peacock, or the larger sizes of males.

(sexual dimorphism)_____

4. Genetic Drift

- Refers to changes in allele frequencies of a _____

Sketch how this effect works:

_____ is caused by a severe reduction in population, (possibly by natural disaster) followed by a recovery. _____

Example of bottleneck effect

_____ is an example of _____ where rare alleles occur in higher frequency from in a population_____ from the general populations

Example of founder effect

Macroevolution

Macroevolution refers to any evolutionary change at or _____

Speciation : The splitting of_____

A. What is a Species?

- _____

- _____is an offspring of two distinct species, example: Liger, Mule

What prevents cross-species mating in the flycatcher?

What would happen if two birds from different species did mate?

C. Modes of Speciation

1. Allopatric speciation :_____

2. Sympatric speciation: would occur when members of a single population_____

_____

D. Adaptive Radiation

1. Adaptive radiation is _____

_____

CHAPTER 18: PROCESS OF EVOLUTION

18.1 Microevolution

A population is all of the members of a single species

Population genetics studies the variation in alleles in a gene pool.

Basically, microevolution studies small changes in alleles that occur within a population. Over time, these small changes can accumulate, resulting in major differences within the population. Dogs have been artificially selected for certain traits, resulting in a wide range of breeds with very different characteristics

What is the gene pool?

What caused the moths to shift in color?

A. Causes of Microevolution

1. Genetic Mutations

What is polymorphism?

Mutations can be harmful or beneficial.

*Relative Fitness- harmful genes may incur an advantage if the environment changes

2. Gene Flow

Alleles move among populations, increasing variation and prevents speciation.

Sketch how gene flow would appear in a population:

Does gene flow increase or decrease diversity?

These are considered subspecies.

3. Mating

What is nonrandom mating?

What is random mating

Example:

Which method of mating do humans use?

Can you think of any organisms that mate randomly?

What is assortive mating?

Does this increase or decrease the diversity in the population?

Sexual selection occurs when males compete for females. This can result in extreme characteristics, like the feathers of a peacock, or the larger sizes of males. (sexual dimorphism)

4. Genetic Drift

- Refers to changes in allele frequencies of a gene pool due to chance

The bottleneck effect is caused by a severe reduction in population, followed by a recovery. Reduces diversity

Example of bottleneck effect

The founder effect is an example of genetic drift where rare alleles occur in higher frequency; isolated populations

Example of founder effect

18.3 Macroevolution

Macroevolution refers to any evolutionary change at or above the species level.

What is speciation?

What prevents cross-species mating in the flycatcher?

What would happen if two birds from different species did mate?

A. What is a Species?

- a group of actually or potentially interbreeding populations

- a hybrid is an offspring of two distinct species, example: Liger, Mule

C. Modes of Speciation

1. Allopatric speciation :

2. Sympatric speciation:

D. Adaptive Radiation

1. Adaptive radiation is a rapid development from a single ancestral species of many new species.