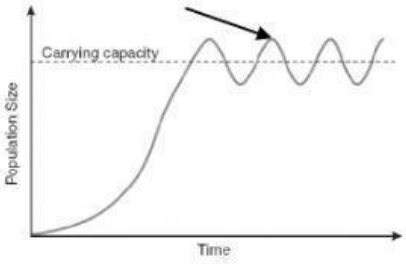
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Homework: Natural Selection and Diversity

Answer the following questions about natural selection and the diversity of species.

1. The diagram to the right shows the changes in a population's size over time. At the point indicated by the arrow, the organisms with the best adaptations are most likely to survive because –

A the population is on the brink of extinction
B the rate of photosynthesis in the ecosystem begins to decline
C the predator population will seek out the strongest prey
D there is not enough resources to support the entire population



2. When organisms with beneficial alleles survive and reproduce, what happens to the frequency of the beneficial allele in the population?

A the frequency increases in the population
B the frequency decreases in the population
C the allele frequency remains constant
D the allele frequency cannot be measured

3. A population of insects becomes divided into two smaller populations that occupy different regions of an island. After several years, one of the populations is found to be mostly green while the other population is found to be mostly brown. The diversity that appeared in this species is most likely the result of each population –

A adapting to different environments
B eating the same food source
C choosing to change colors
D facing no selection pressures

4. What process increases the diversity of a population by introducing new versions of a gene?

A biomagnification **B** ecological succession **C** gene splicing **D** mutation

5. Write the definition of a **species** is in the space below. *Use complete sentences.*

6. Different species, like lions and tigers, can often have many of the same characteristics. However, no matter how similar two populations are to one another they will be considered different species if the members of these populations –

A consume different sources of food
B do not interbreed with each other
C share a common ancestor
D do not have the same coloration

7. When populations are separated from each other, natural selection helps to develop –

A new and useful mutations
B more reliable food sources
C communication between populations
D diversity between the populations

LIVEWORKSHEETS

8. Two populations of birds became separated from each other on different islands. Over time, the birds became adapted to the specific environmental conditions of their island. When humans occupied these islands, they brought birds from one island to the other. The humans noticed that the birds would not mate with members of the other population. This best demonstrates which of the following?

A speciation **B** resistance **C** succession **D** bioaccumulation

9. Only mutations found in which type of cells are inherited by an organism's offspring?

A skin cells **B** red blood cells **C** gamete cells **D** nervous cells

10. A mouse population contains small mice and large mice. The large mice are less agile and easier for predators to see and catch. As a result, which of these changes would be expected in the population of mice?

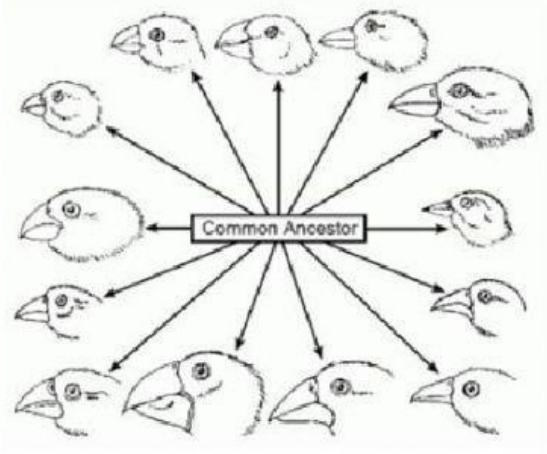
A small mice will stop mating with each other
B smaller mice will become more abundant
C larger mice will change their genes
D mutation rates will increase in large mice

11. Rabbits are a non-native, invasive species in Australia. In an attempt to control the population, a virus was released into the ecosystem that killed rabbits. At first, the rabbit population declined rapidly, but the population finally increased again and now the virus has little effect on rabbits. Why is the virus no longer effective at controlling the rabbit population?

A Rabbits learned to prevent infections by avoiding carriers of the disease.
C Rabbits that were resistant to the virus survived and reproduced.
B Rabbits moved into new habitats that cannot be reached by the virus.
D Rabbits stopped being infected when the original carriers finally died.

12. Each species of finch found in the Galapagos Islands came from a common ancestor. The formation of new species as a result of natural selection is referred to as –

A transcription **C** metamorphosis
B speciation **D** succession



13. Every species of finch in the Galapagos Islands became adapted to an ecosystem as new alleles were introduced into its population that allowed organisms to –

A avoid prey **C** survive longer
B increase competition **D** reproduce less

13. The different species of finches found in the Galapagos Islands have varying styles of beak and come in a wide range of sizes. This is because each species of finch –

A became adapted to a different niche
B returned to the original island
C underwent similar genetic mutations
D kept interbreeding with other species

14. The fact that each species of finch on the Galapagos Islands has a different beak shape indicates that each population utilizes a different –

A feather protein **B** mode of reproduction **C** genetic code **D** food source

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