B*e able to define and understand the following words:*

Evolution

Natural Selection

Trait

Variation

Adaptation

Extinction

Fitness

Resistance

Predator

Prey

Coevolution

Artificial Selection

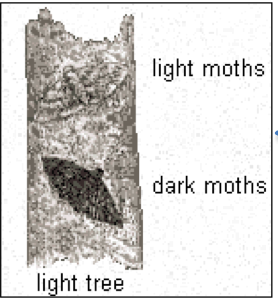
Fossil

Autotrophs

Heterotrophs  
Species

Population

Competition

1. How does variation play a role in evolution?
2. Where does variation come from?
3. What type of variation exists in the moth population in the picture below?
4. Naturalists have observed that dark moths are eaten at a higher rate than the light moths in areas with more light trees. The opposite is true in areas with more dark trees. Which moths are most fit for a dark-tree environment? Why?
5. What two things must all “fit” individuals do?

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1. Explain why the following statement is not always true:

*Fitness means being big and strong.*

1. Give one specific example of a predator adaptation.
2. Give one specific example of a prey adaptation.

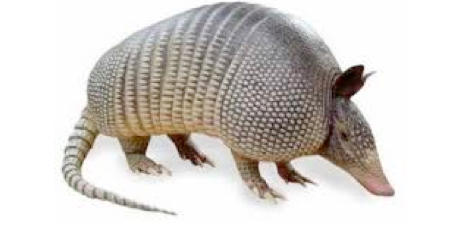
1. True or False? Individual organisms can adapt to their environment.
2. With springtime approaching, Mr. Jones recently began gardening. As his plants grew, he discovered that there were several weedy thistles taking over his garden. He sprayed the thistles with herbicide, hoping that would solve the problem. A couple of days later, Mr. Jones noticed that the majority of the thistles had died but a couple of the thistles did not. Mr. Jones decides to try and spray the surviving thistles with the herbicide again. Explain why this will most likely not work.
3. Flamingos are typically known for their pink-colored feathers. If a wildlife biologist studying the flamingo population in South America comes across a white-colored flamingo, what might he hypothesize?
   1. The variation of feather color in the flamingo population has decreased
   2. The number of white flamingos may increase if the trait is an advantage
   3. The number of white flamingos may decrease if the trait is an advantage
   4. None of the above

**Read the following paragraphs and then complete the table below.**

The armadillo is really strange looking. Although most armadillo species look like they have no hair, they do have wiry hairs on their sides and belly. Some people refer to the hairs as curb feelers since armadillos can feel their way around an area at night as the hairs touch objects.

The one thing that tells everyone they are looking at an armadillo is the roly-poly shell with what are called “armored” bands. The number of bands depends on the species. The pleated look of most armadillos is made of these hardened, overlapping sections. Although the bands are tough like fingernails, the shell is flexible, with softer skin that expands and contracts between the bands.

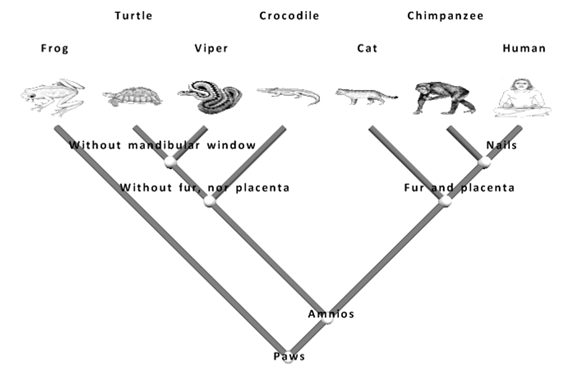
Armadillos also have long claws for digging and foraging for food. Their peg-shaped teeth crunch through the bodies of insets, an armadillo’s favorite food.



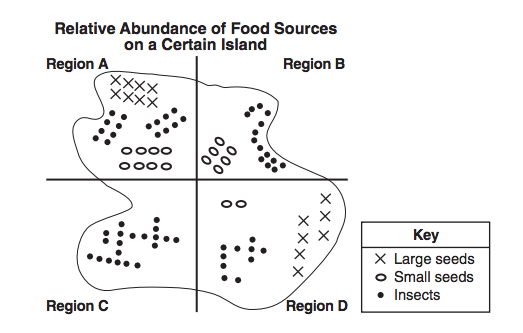
|  |  |
| --- | --- |
| **Adaptation** | **Why is it an adaptation?** |
| 1. | 1. |
| 2. | 2. |

**There are 100 students in a class. Ninety-six did well in the course whereas four blew it totally and received a grade of F. Sorry. In the highly unlikely event that these traits are genetic rather than environmental, if these traits involve dominant and recessive alleles, and assuming the four represent the recessive phenotype, please calculate the following:**

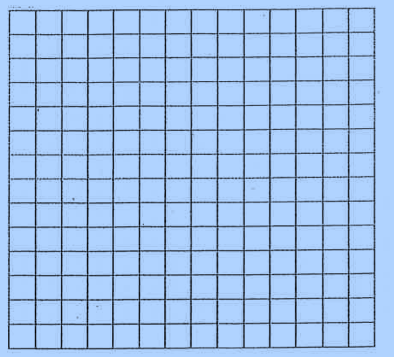
* 1. **The frequency of the recessive allele.**
  2. **The frequency of the dominant allele.**
  3. **The frequency of heterozygous individuals.**

**Use the diagram to answer the questions below.**  
  


1. Which two species are the least closely related?
2. Who is more closely related - A turtle and a frog or a turtle and a crocodile?
3. Which species are turtles the most closely related to?
4. Which species are frogs the most closely related to?



What kind of food can be found in Region D?

Draw a bar graph to show the amount of large seeds in each region.