Scoring Guide - Score Point 4

a. The widely separated areas in Map 2 can have fossils of the same extinct plant species because (as shown in Map 1), 500 million years ago, parts of Africa and South America were connected. 500 million years ago, the plant species could have been in an area that included both Africa and South America. When the two seperated, they would both have the species that would fossilize.
b. The extinct species does have modern descendants that are very different from one another in Africa and South America because of the change in environments. Those in South America had to adapt to the different location. The species were seperated over years and they adapted to different things to make them so different from one another.

Scoring Guide - Score Point 3

A) They can have fossils of the same extinct species because 500 million years ago they were attached and the plant lived on both sides of it then it separated.

B) They have modern decendents that are very different because the environments are now diffe, ent.

Scoring Guide - Score Point 2

Two ways that finches provide evidence of evolution is that during passing years the finches have adapted to their envirement physically. Survival of the fittest plays a role showing that nature provides organisms with traits such as large or smaller beaks in order to obtain food

Scoring Guide - Score Point 1

These finches provide evidence that supports evolution because they clearly came from a common ancestor, and have adapted to be more readily capable of eating the food available from the food sources on their island.

Scoring Guide - Score Point 0

The two ways that these finches provide evidence are larg seeds and small seeds. These finches provide themselves by small and larg seeds. Some finches are big and they eat bigger seeds and the finches that are small they eat small seeds

Scoring Guide - Score Point 4

Darwin's finches in the Galapagos Islands are perfect examples of evolution. One way in which these finches support the theory of evolution is the variation in beak size among the finches. Finches that prey on small insects have adapted and evolved to have small pointed beaks useful for eating insects. Finches that feed on cactus flowers, fruits, and nectar have slightly larger beaks in order to penetrate into cactus fruit and cactus epidermis. Finches that eat large seeds have adapted to have large beaks capable of crushing seeds easily.

Another way in which the finches provide evidence that supports evolution is their relation to the South American finch. Because they are genetically similar, it shows that they all descended from a common ancestor. Some finches flew 1,000 km to the Galapagos Islands and continued to evolve to suit their environment, experiencing divergent evolution.

Scoring Guide - Score Point 3

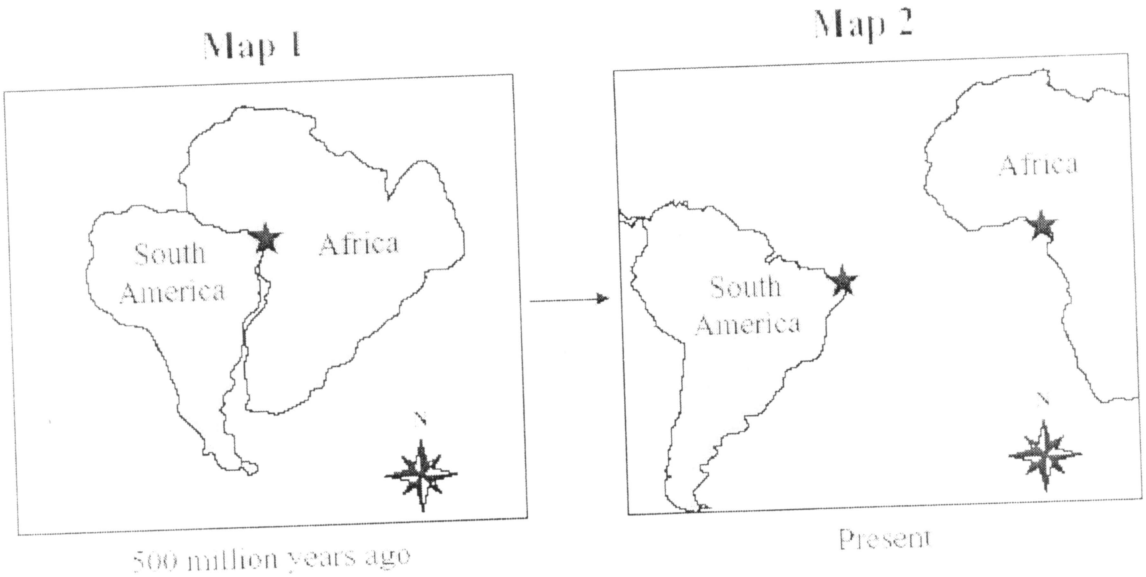
These 13 different species of finches support the theory of evolution in several ways. First, they resemble are genetically similar species on the South American mainland. This allows one to theorize that the Galápagos finches evolved from this one particular finch. Second, the shape of each finch's beak directly corresponds to it's diet. For example one finch has a large strong beak that allows it to easily crack large seeds. Another finch has a small narrow beak that allows for consumption of insects.

Scoring Guide - Score Point 4

The map and bird illustrations support the theory of evolution in two ways. Firstly, the genetic similarity of a Galápagos finch and mainland finch, combined with the map shows the common ancestry of the Galápagos finches and the mainland finches. The islands are close enough that when they were even closer, some mainland finches migrated to the islands, as shown by the genetic similarity between mainland & Galápagos finches. The differences among the current Galápagos finches show that this common ancestor evolved into several different species of finch. Thus, genetic similarity, the map, and current phenotypic differences are one way that these finches support the theory of evolution.

Secondly, the connection between the beaks of the finches and their individual food sources also supports the theory of evolution. Because of the limited resources on the Galápagos islands, competition between finches that shared a food source ensued and there was evolutionary pressure to adapt. Thus, new species evolved, each with a different food source. The finch that eats small insects, for example, as a small, thin beak whereas the finch that eats large seeds has a very large, sturdy beak. These different beaks, so well-suited to the finches' individual food sources, is another way that finches support the theory of evolution

The maps below show South America and Africa. Areas where fossils of the same extinct plant species have been found are marked with a star.

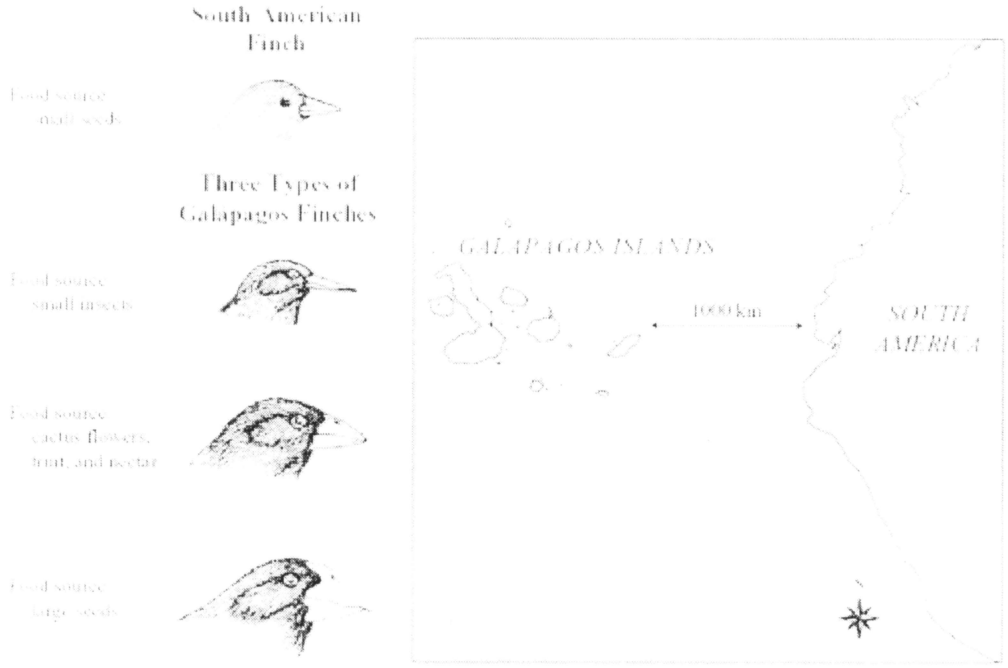


a. Explain how the widely separated areas marked in Map 2 can have fossils of the same extinct plant species.

In both South America and Africa, there are plants descended from this extinct species. These modern plants are very different from one another.

b. Explain how the extinct species has modern descendants that came to be very different from one another.

The illustrations below show a South American finch and some of the species of finches found on the Galápagos Islands. The map shows the relationship of the Galápagos Islands to the west coast of South America.



There are 13 species of finches found on the Galápagos Islands. These finches have a wide variety of food sources and beak shapes. There is one genetically similar species of finch found on the South American mainland. This finch eats small seeds.

Use the map and the bird illustrations to identify and explain two ways that these finches provide

2007, Biology - High School
Question 19: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

Similar structures are present in the embryos of fish, chickens, and rabbits. In fish, these structures develop into gills, but in chickens and rabbits, they either disappear or develop into other body parts later in embryonic development.

Which of the statements below best explains the presence of these structures in the embryos of all three species?

A. The embryos of the three species are similar in size.

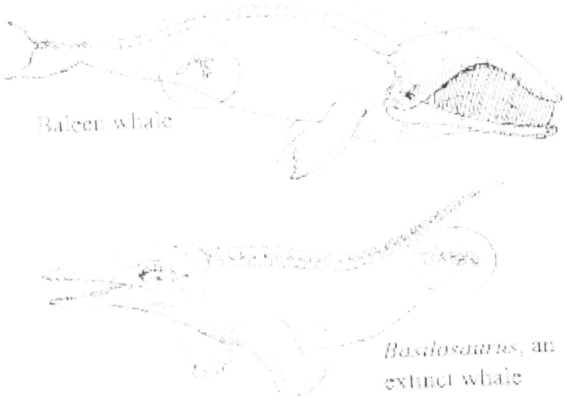
B. Breathing structures are similar among the young of the three species.

C. The three species have a common ancestor with these embryonic structures.

D. The reproductive mechanisms are similar among the adults of the three species.

2007, Biology - High School
Question 27: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

The illustrations below show vestigial pelvic bones of a baleen whale and vestigial hind limb bones of an extinct whale.



The presence of these bones in the baleen whale and extinct whale provides evidence of which of the following?

A. Whales can travel on land when necessary.
B. Whales evolved from four-legged animals.
C. Whales have functional legs that are hidden by fat and skin.
D. Whales are developing into animals with four functioning limbs.

2007, Biology - High School
Question 8: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

Caytonia is an extinct plant that existed between 200 and 140 million years ago. It had reproductive structures that resemble structures in modern flowering plants.

How do scientists know about the structures of this ancient extinct plant?

A. Scientists study the DNA sequences of Caytonia.
B. Scientists genetically engineer modern plants to produce Caytonia.
C. Scientists excavate and examine the fossilized remains of Caytonia.
D. Scientists observe the adaptations of plants in habitats resembling those of Caytonia.

2009, Biology - High School
Question 9: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

Lemur body types can vary widely. In addition to fossils and comparative anatomy, which of the following types of evidence can scientists reliably use to study the evolution of the variety of lemur body types?

A. lifespan
B. population sizes
C. DNA sequences
D. male-to-female ratio

2009, Biology - High School
Question 39: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

In a population of moths, wing color became darker over time. Which of the following is the best evidence that the change in wing color was an evolutionary change?

A. The size of the moth population changed.
B. The average length of the moths' dark wings increased.
C. The number of eggs that females laid during each breeding season increased.
D. The frequencies of the alleles for dark wing color in the moth population changed.

2008, Biology - High School
Question 1: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

Which of the following provides the most conclusive evidence that organisms of two different species share a common ancestor?

A. They live in the same ecosystem.
B. They reproduce at the same time.
C. They have similar DNA sequences.
D. They have similar body movements.

2008, Biology - High School
Question 16: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

Which of the following best explains how the fossil record provides evidence that evolution has occurred?

A. It indicates that forms of life existed on Earth at least 3.5 billion years ago.
B. It indicates the exact cause of structural and behavioral adaptations of organisms.
C. It shows how the embryos of many different vertebrate species are very similar.
D. It shows that the form and structure of groups of organisms have changed over time.

2006, Biology - High School
Question 4: Multiple-Choice
Reporting Category: Biology
Standard: Evolution and Biodiversity - 5.1

There are two types of modern whales: toothed whales and baleen whales. Baleen whales filter plankton from the water using baleen, plates made of fibrous proteins that grow from the roof of their mouths. The embryos of baleen whales have teeth in their upper jaws. As the embryos develop, the teeth are replaced with baleen.

Which of the following conclusions is best supported by this information?

A. Primitive whales had teeth as adults.
B. Toothed whales descended from baleen whales.
C. Baleen whales are evolving into toothed whales.
D. Descendants of modern baleen whales will have both teeth and baleen as adults.

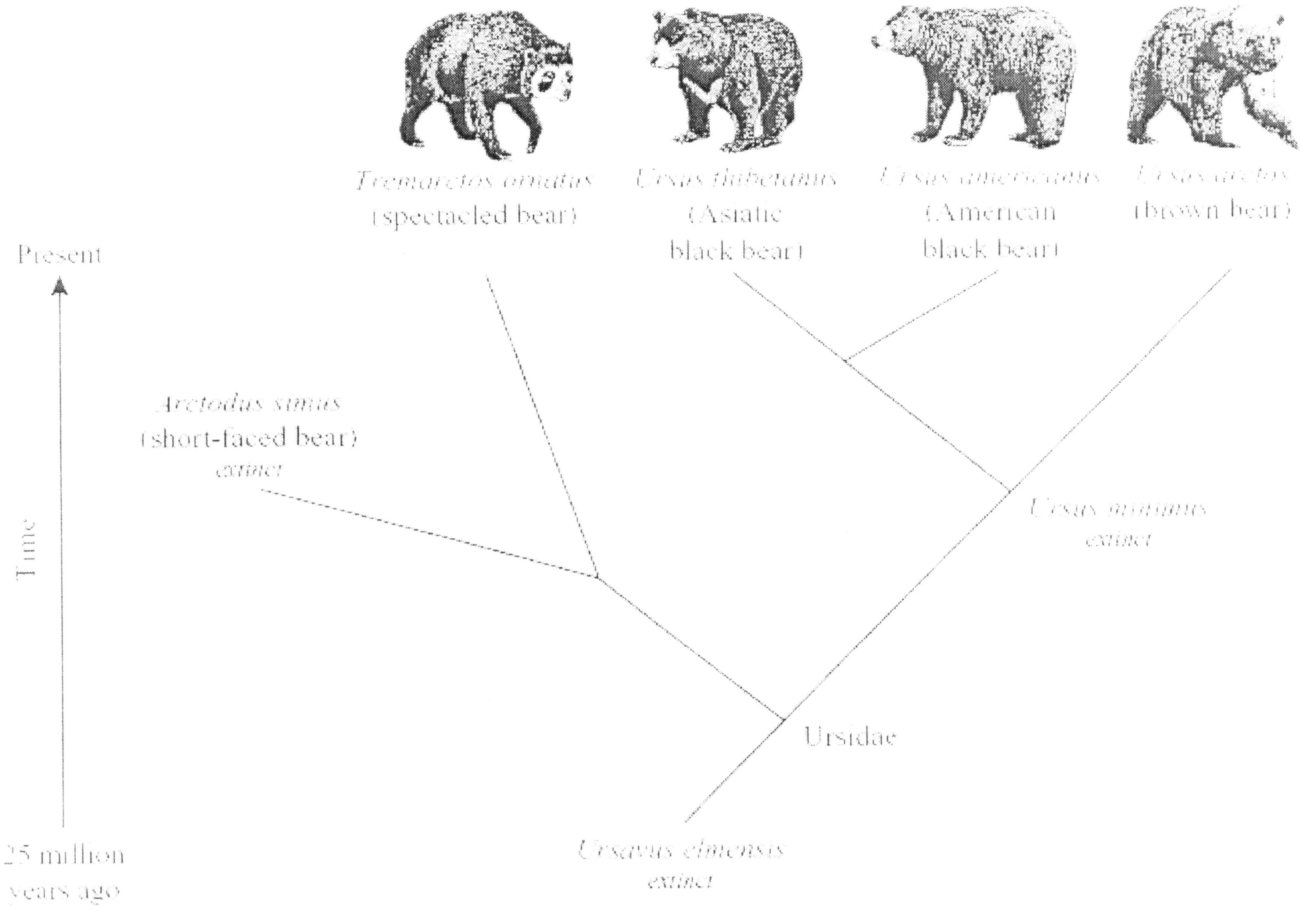
2005, Biology - High School
Question 2: Multiple-Choice
Reporting Category: Biology
Standard: Evolution and Biodiversity - 5.1

In comparisons of the evolutionary relationships between four species of birds, which of the following would be most useful?

A. color of feathers
B. gene sequences
C. nesting behaviors

2006, Biology - High School
Question 45: Multiple-Choice
Reporting Category: Biology
Standard: Evolution and Biodiversity - 5.1

A student researching bears found the chart below in a textbook. The chart shows the classifications of several types of bears.



Which of the following conclusions is best supported by the data given in this chart?

A. Modern bears evolved from species that are now extinct.

B. The short-faced bear was the ancestor of the Asiatic black bear.

C. Present day bear species are more closely related than their ancestors were.

D. Natural selection favored the brown bear over the American black bear.

2008, Biology - High School
Question 22: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

Frogs, lizards, and birds all have a similar arrangement of bones in their limbs. Which of the following does this similarity most likely indicate about these animals?

A. They move in the same way.

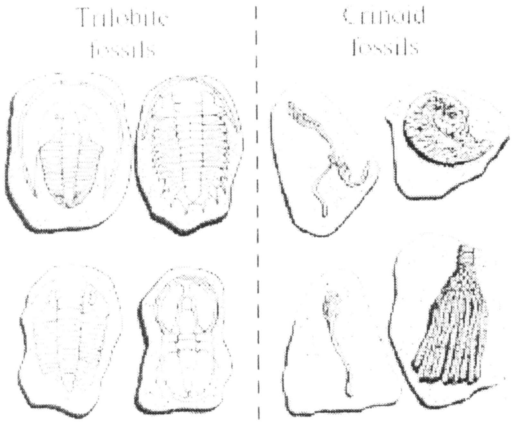
B. They have a common ancestry.

C. They evolved at the same time.

D. They are comparable in size as adults.

2007, Biology - High School
Question 34: Multiple-Choice
Reporting Category: Evolution and Biodiversity
Standard: Evolution and Biodiversity - B 5.1

The drawings below show some trilobite and crinoid fossils.



Which of the following is the most reasonable conclusion when fossils of these two different types of organisms are found in the same layers of rock?

A. Crinoids were prey for trilobites.
B. Crinoids were ancestors of trilobites.
C. Crinoids and trilobites had similar behaviors.
D. Crinoids and trilobites lived at the same time.

2004, Biology - High School
Question 13: Multiple-Choice
Reporting Category: Biology
Standard: Evolution and Biodiversity - 5.1

More than 1.5 million species of animals have been described, yet all of them have DNA that is made of the same building blocks. This is evidence that all animals have

A. a common ancestor.
B. identical fossils.
C. similar appearances.
D. the exact same DNA sequences.