

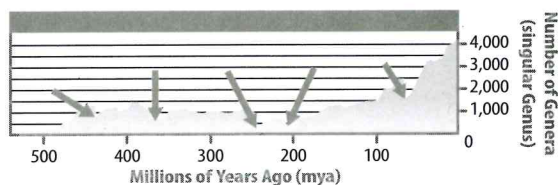
Chapter 13 Review

Understand Key Concepts

Circle the correct answer below.

- Why do scientists think the fossil record is incomplete? **SC.7.L.15.1**
 - Fossils decompose over time.
 - The formation of fossils is rare.
 - Only organisms with hard parts become fossils.
 - There are no fossils before the Phanerozoic eon.

- What do the arrows on the graph below represent? **SC.7.L.15.3**



- extinction events
 - meteorite impacts
 - changes in Earth's temperature
 - the evolution of a new species
- What can scientists learn about fossils using techniques of absolute-age dating? **SC.7.L.15.1**
 - estimated ages of fossils in rock layers
 - precise ages of fossils in rock layers
 - causes of fossil disappearances in rock layers
 - structural similarities to other fossils in rock layers
 - Which is the sequence by which natural selection works? **SC.7.L.15.2**
 - selection → adaptation → variation
 - selection → variation → adaptation
 - variation → adaptation → selection
 - variation → selection → adaptation
 - Which type of fossil forms through carbonization? **SC.7.L.15.1**
 - cast
 - mold
 - fossil film
 - trace fossil

- Which is the source of variations in a population of organisms? **SC.7.L.15.2**
 - changes in environment
 - changes in genes
 - the interaction of genes with an environment
 - the interaction of individuals with an environment

- Which is an example of a functional adaptation? **SC.7.L.15.2**

- a brightly colored butterfly
- birds flying south in the fall
- the spray of a skunk
- thorns on a rose

- Which is NOT an example of a vestigial structure? **SC.7.L.15.2**

- eyes of a blind salamander
- pelvic bones in a whale
- thorns on a rose bush
- wings on a flightless bird

- Which do the images below represent? **SC.7.L.15.2**

Human



Cat



- analogous structures
 - embryological structures
 - homologous structures
 - vestigial structures
- Which is an example of a sudden change that could lead to the extinction of species? **SC.7.L.15.3**
 - a mountain range isolates a species
 - Earth's tectonic plates move
 - a volcano erupts
 - sea level changes



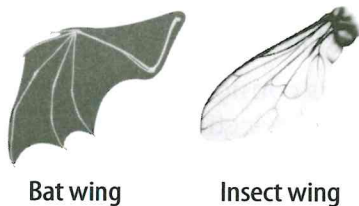
Science Benchmark Practice

Mark your answer in the answer bubbles below each question.

Multiple Choice

- According to the theory of natural selection, why are some individuals more likely than others to survive and reproduce? **SC.7.L.15.2**
 - They do not acquire any adaptations.
 - They are better adapted to exist in their environment than others.
 - They acquire only harmful characteristics.
 - The environment randomly decides which organisms will reproduce.
- What do homologous structures, vestigial structures, and fossils provide evidence of? **SC.7.L.15.1**
 - analogous structures
 - food choice
 - populations
 - evolution

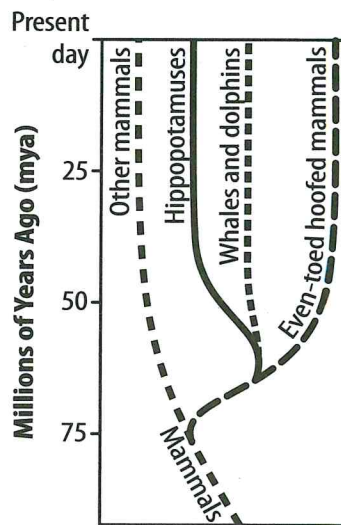
Use the figure below to answer question 3.



- The analogous structures shown above are not related. However, they both evolved through natural selection. What are they both examples of? **SC.7.L.15.2**
 - vestigial organs
 - homologous structures
 - adaptations
 - variations

- What is an adaptation? **SC.7.L.15.2**
 - a body part that has lost its original function through evolution
 - a characteristic that better equips an organism to survive in its environment
 - a feature that appears briefly during early development
 - a slight difference among the individuals in a species
- What causes variations to arise in a population? **SC.7.L.15.2**
 - changes in the environment
 - competition for limited resources
 - random mutations in genes
 - rapid population increases

Use the image below to answer question 6.

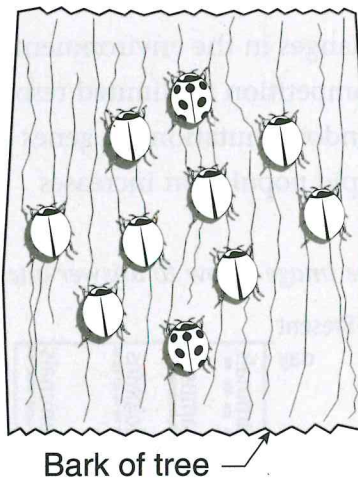


- The molecular clock above shows that even-toed hoofed mammals and other mammals shared a common ancestor. When did this ancestor live? **SC.7.L.15.1**
 - 25–35 million years ago
 - 50–60 million years ago
 - 60–75 million years ago
 - 75 million years ago

NGSSS for Science Benchmark Practice continued

- 7 What is an extinct species? **SC.7.L.15.3**
- (A) a species that blends in easily with its environment
 - (B) a species that resembles another species
 - (C) a species that was unable to adapt and died out
 - (D) a species that is bred for specific characteristics

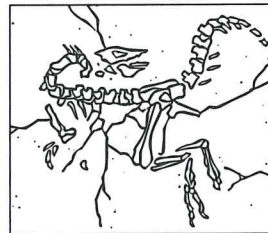
Use the figure below to answer question 8.



- 8 What unique characteristic would the beetles shown above develop through biological adaptation if, over a period of years, the bark on the trees shown became spotted? **SC.7.L.15.2**
- (F) The beetles would become spotted.
 - (G) The beetles would become plain.
 - (H) About half of the beetles would become spotted, and half would not.
 - (I) There would be no change.

- 9 When compared with other fossils, what structure indicates the ancestors of whales used to walk on land? **SC.7.L.15.1**
- (A) pharyngeal pouches
 - (B) camouflage
 - (C) homologous wings
 - (D) vestigial pelvic bones

Use the figure below to answer question 10.



- 10 What method can scientists use to determine when the fossil above appeared on Earth? **SC.7.L.15.1**
- (F) mimicry
 - (G) selective breeding
 - (H) relative-age dating
 - (I) biological evolution
- 11 Which is considered an important factor in natural selection? **SC.7.L.15.2**
- (A) limited reproduction
 - (B) competition for resources
 - (C) no variations within a population
 - (D) plentiful food and other resources

Note-taking
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