SAT Writing Passage and Test Questions

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Virtual Excavations, Real Results

For decades, research on fossils [Q1] has provided answers to age-old questions about what kinds of life preceded humans on earth. For instance, we now know that, in the United States, [Q2] more dinosaurs species roamed in Florida than in any other state. The information gleaned from such research has been [Q3] mind-blowing, but the research techniques of archaeologists and paleontologists have been rather laborious. Much care must be given to extracting [Q4] fossils from their surrounding material earth, stone, amber or other preserving substances. Some relics are so deeply encrusted that it's all but impossible to remove them without destroying them. Fortunately, technology has found its way into these fields, simplifying the research process and opening doors to new types of information.

Archaeologists [Q5] are generally unwilling to alter the meticulous excavation process to unearth fossils, using such tools as dental picks and tongue depressors to remove soil in very tight places, but have recently found that imaging technology is useful in [Q6] they're line of work. They are now using x-rays and CT scans to inspect fossils at an exterior and interior level. Such technology not only allows scientists to virtually penetrate layers of rock and sediment [Q7] it also enables them to take comprehensive photographs of the fossils that lie within, saving them months or even years of detail-oriented excavation work. This time-saving process offers many benefits to [Q8] scientists. Scientists can then use the scans to virtually recreate the remains with 3D modeling and even 3D printing.

[1] Such reconstructions have been critical in advancing the study of extinct creatures. [2] Dr. Stephan Lautenschlager, a paleontologist who studies extinct vertebrates at the University of Bristol, used the technology in his study of the skull of a large dinosaur called *Erlikosaurus andrewsi*, which, despite its size and relation to the notoriously carnivorous *Tyrannosaurus rex*, was an herbivore with a beaked snout. [3] Despite this fact, Lautenschlager and his team were able to examine the fossil by performing a micro-CT scan. They then used 3D imaging to virtually recreate an image of what the animal looked like 90 million years ago—all without breaking away any of the remaining rock that encapsulated the ancient fossil. [4] This reconstruction led the team to perform stress tests on the animal's jaw and discover that it was so [Q9] weak that it couldn't even chew through leaves. [5] The team was able to conclude that the beast's seemingly inexplicable beak existed to protect its jaw from debilitating strain, [Q10] and many consider this a fascinating discovery. [Q11]

Chart

Type: Map of the United States (Not including Alaska or Hawaii)

Title: Dinosaur Fossils Found in Each State (by species)

Legend:
Dark Gray: 0-10 Species Found
Light Gray: 11-20 Species Found
White With Gray Dotted Line: 21-30 Species Found
White: 31 or more Species Found

Data:
Alabama: 8
Arizona: 15
Arkansas: 1
California: 1
Colorado: 30
Connecticut: 8
Delaware: 0
Florida: 0
Georgia: 0
Idaho: 1
Illinois: 0
Indiana: 0
Iowa: 0
Kansas: 4
Kentucky: 0
Louisiana: 0
Maine: 0
Maryland: 3
Massachusetts: 3
Michigan: 0
Minnesota: 1
Mississippi: 0
Missouri: 2
Montana: 50
Nebraska: 0
Nevada: 0
New Hampshire: 0
New Jersey: 6
New Mexico: 13
New York: 1
North Carolina: 3
North Dakota: 0
Ohio: 0
Oklahoma: 6
Oregon: 1

Pennsylvania: 1
Rhode Island: 0
South Carolina: 0
South Dakota: 13
Tennessee: 0
Texas: 29
Utah: 0
Vermont: 0
Virginia: 0
Washington: 0
West Virginia: 0
Wisconsin: 0
Wyoming: 34

QUESTION 1

A. NO CHANGE
B. are providing
C. have provided
D. provide

ANSWER: A

QUESTION 2

Which choice offers an accurate interpretation of the data in the chart?

A. NO CHANGE
B. the fossils of more than 20 dinosaur species have been found in each state on the west coast.
C. the same number of dinosaur species lived in both Maine and Texas.
D. Montana and Wyoming have yielded the most fossils of different dinosaur species.

ANSWER: D

QUESTION 3

The writer wants to convey an attitude of genuine interest to avoid the appearance of mockery. Which choice best accomplishes this goal?

A. NO CHANGE
B. valuable,
C. unbelievable,
D. preposterous,

ANSWER: B

QUESTION 4

A. NO CHANGE
B. fossils—from their surrounding material,
C. fossils from their surrounding material;
D. fossils from their surrounding material:

ANSWER: D

QUESTION 5

Which choice most effectively sets up the contrast in the sentence and is consistent with the information in the rest of the passage?

A. NO CHANGE
B. once relied exclusively on
C. almost entirely disregard
D. are skeptical of

ANSWER: B

QUESTION 6

A. NO CHANGE
B. their line of work.
C. their lines to work.
D. there line of working.

ANSWER: B

QUESTION 7

A. NO CHANGE
B. and also enables
C. but also enables
D. enabling

ANSWER: C

QUESTION 8

A. NO CHANGE
B. scientists, but scientists
C. scientists, and these scientists
D. scientists, who

ANSWER: D

QUESTION 9

A. NO CHANGE
B. week that
C. weak as
D. weak and

ANSWER: A

QUESTION 10

Which choice most effectively concludes the sentence and paragraph?

A. NO CHANGE
B. which may have broken the creature's jaw.
C. showing that 3D imaging is far superior to 2D imaging.
D. thus validating technology's usefulness in a once entirely hands-on field.

ANSWER: D

QUESTION 11

To improve the cohesion and flow of this paragraph, the writer wants to add the following sentence.

When Lautenschlager received an *E. andrewsi* fossil from a fellow scholar, the fossil was still partially fixed in stone.

The sentence would most logically be placed after

A. sentence 1.
B. sentence 2.
C. sentence 3.
D. sentence 4.

ANSWER: B