



Maya in the 21st Century

Article

PETÉN, Guatemala (Achieve3000, February 7, 2020). Over 1,500 years ago, when their empire was at its height, the Maya people built vast stone cities. Thousands of homes were arranged around public squares and courtyards. So were palaces, tombs, and temple-pyramids. It was the kind of urban planning that suggests a sophisticated culture steeped in art, mathematics, and science. But then, in the late 8th and 9th centuries, the Maya abandoned their cities. They left behind a civilization that had flourished for almost six centuries—and a host of unanswered questions.

The Maya empire has long fascinated scientists. And they're continuing to uncover pieces of the empire's past. The most recent discoveries have been particularly wondrous. This is because of their sheer number, the high-tech tools used to locate them, and the new information they provide.

In areas of southern Mexico, Guatemala, Belize, Honduras, and El Salvador, many ancient Maya architectural wonders still exist. For example, stepped, flat-topped pyramids rise throughout the region. But many ruins are still hidden.

New technology is changing that, though. In fact, modern-day archaeologists don't even have to leave home to spot a buried Maya city. All they need is LIDAR (Light Detection and Ranging), a game-changing tool in archaeology. LIDAR is light in the form of laser pulses. It's used along with a specialized scanner and GPS receiver to generate detailed, 3D topographical information about natural and humanmade environments. When placed on an airplane or helicopter, it can scan broad areas of land.

In 2018, archaeologists announced that LIDAR technology had helped them uncover an entire Maya megalopolis in Guatemala. Analysis of the scans revealed 61,480 previously unidentified Maya structures. They span over 810 square miles (2,098 square kilometers). Archaeologists have determined that an astounding 7 to 11 million people lived in the area. Many resided in densely packed cities, some in suburban towns, and others in rural zones. (As a point of reference, the Chicago metropolitan area has about 10 million residents.)

The LIDAR scans also brought to laser-light two other startling discoveries. First, the Maya built about 66 miles (106 kilometers) of causeways. These were within and between cities and towns. This suggests a remarkable degree of connectivity between the various sections of their huge megalopolis. And second, they developed a complex agricultural system. It was capable of feeding many millions of people regularly through field irrigation systems in the low-lying wetlands and terraces in the upland areas.

In October 2019, LIDAR technology struck archaeological gold once again. A total of 27 ceremonial sites dating back 3,000 years were discovered in Mexico. Their construction was of a kind that archaeologists had never seen before. It included low-to-the-ground platforms as long as two-thirds of a mile (1.1 kilometers).



Photo credit: AP/Karla Ortega/Mexico's National Institute of Anthropology and History

Archeologists found Maya artifacts in the Cave of the Jaguar God, including bowls, ceramic incense holders, decorated plates, and other items.

But high-tech lasers aren't responsible for *all* 21st-century Maya archaeological discoveries. Some have been pure luck. Take the Cave of the Jaguar God underneath the Maya city of Chichén Itzá in Mexico, for instance. It was opened by an archaeologist in December 2019. He remembered being inside the cave as a boy in 1966, but it was later sealed. As a man in his 60s, he decided to seek it out. Inside the cave were hundreds of well-preserved Maya artifacts.

So what will the future bring as scientists work to unravel the mysteries of the Maya? No one can know for sure. But based on recent discoveries, it's possible that the greatest archaeological findings have yet to be made.

Video credit: Gustavo Huerta / AFPTV+INAH / AFP

Dictionary

artifact (*noun*) a simple object (such as a tool or weapon) that was made by people in the past

causeway (*noun*) a raised road or path that goes across wet ground or water

megalopolis (*noun*) an area that includes a large city or several large cities

metropolitan (*adjective*) of or relating to a large city and the surrounding cities and towns

topography (*noun*) the features (such as mountains and rivers) in an area of land

Activity

PART 1

Question 1

What is this Article mainly about?

- Ⓐ Judging from the arrangement of the 61,480 recently discovered structures in Guatemala, archaeologists determined that 7 to 11 million people resided in the area in densely packed cities, suburban towns, and rural areas.
- Ⓑ LIDAR, short for Light Detection and Ranging, is a game-changing mapping tool in which laser pulses are used with a specialized scanner and GPS receiver to generate detailed, 3D topographical information about natural and humanmade environments.
- Ⓒ The Maya empire has long fascinated scientists, who continue to uncover pieces of the past, including a number of recent discoveries that have been particularly notable because of the high-tech tools used to locate them and the new information they provide about the lost civilization.
- Ⓓ LIDAR technology was not responsible for the recent rediscovery of the Cave of the Jaguar God, which lay sealed beneath the Maya city of Chichén Itzá in Mexico and included hundreds of well-preserved artifacts.

Question 2

What is one inference the reader can make from the Article?

- Ⓐ Archaeologists must be careful when using LIDAR because it is capable of harming ancient sites and artifacts.
- Ⓑ The recently discovered Maya megalopolis found in Guatemala is not easy to detect from the ground.
- Ⓒ Most of the people who inhabited the recently uncovered Guatemalan megalopolis lived in rural areas.
- Ⓓ The Cave of the Jaguar God was first discovered by LIDAR and then explored by an archaeologist in his 60s.

Question 3

The Article states:

Some have been pure luck. Take the Cave of the Jaguar God underneath the Maya city of Chichén Itzá in Mexico, for instance. It was opened by an archaeologist in December 2019. He remembered being inside the cave as a boy in 1966, but it was later sealed. As a man in his 60s, he decided to seek it out. Inside the cave were hundreds of well-preserved Maya artifacts.

The author's purpose for writing this passage was to _____.

- Ⓐ point out why caves are sometimes ignored as possible archaeological sites even though they often contain ancient treasures
- Ⓑ suggest that most of all of the recent discoveries of ancient Maya sites in Mexico have occurred mainly by accident
- Ⓒ explain how the hundreds of Maya artifacts found in the Cave of the Jaguar God were able to stay so well-preserved
- Ⓓ show that not all of the recent discoveries involving the ancient Maya were the result of the use of advanced technology like LIDAR

Question 4

Which two words are the closest **synonyms**?

Only some of these words are used in the Article.

- (A) urban and rural
- (B) sophisticated and refined
- (C) analysis and secrecy
- (D) resided and theorized

Question 5

Suppose Yu Yan wants to find out about LIDAR. She would find **most** of her information _____.

- (A) on a topographical map showing Chichén Itzá in Mexico
- (B) on a video titled "In Search of the Cave of the Jaguar God"
- (C) on a TV program about how the first Maya ruins were discovered
- (D) on a webpage describing the very latest mapping tools

Question 6

The Article states:

In 2018, archaeologists announced that LIDAR technology had helped them uncover an entire Maya megalopolis in Guatemala. *Analysis* of the scans revealed 61,480 previously unidentified Maya structures. They span over 810 square miles (2,100 square kilometers). Archaeologists have determined that an astounding 7 to 11 million people lived in the area.

Which is the closest **synonym** for the word *analysis*?

- (A) withdrawal
- (B) acknowledgment
- (C) investigation
- (D) hatred

Question 7

Based on the Article, the reader can predict that _____.

- (A) the Cave of the Jaguar God will be sealed off permanently so that the treasures found inside will not be damaged or stolen
- (B) more Maya sites will be discovered as the use of LIDAR is expanded to more areas in the region
- (C) the archaeologist who discovered the Cave of the Jaguar God will search for ancient Maya sites in the United States
- (D) archaeologists will come to an agreement that most of the best Maya sites in Mexico have already been found

Question 8

Which information is **not** in the Article?

- Ⓐ Where a recently discovered megalopolis that includes 61,480 structures is located
- Ⓑ Why the Maya abandoned the huge megalopolis that was recently discovered
- Ⓒ How archaeologists discovered a vast Maya community that lay hidden from view
- Ⓓ How LIDAR works with other tools to create an accurate topographical map