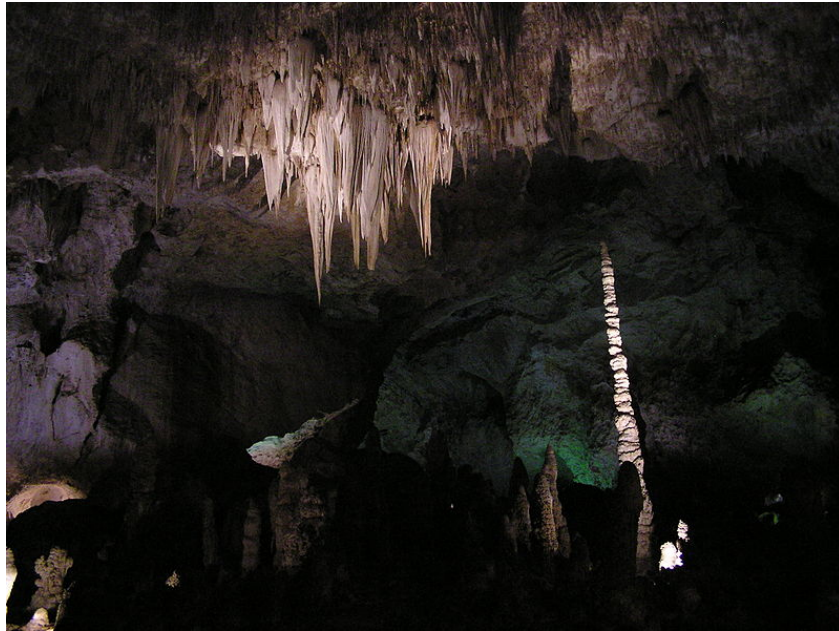


# Bats Galore!

By ReadWorks



Imagine watching hundreds of thousands of bats swirl around you, swarming to form a large, black mass that flies off into the horizon. At Carlsbad Caverns in New Mexico, this scene is a regular occurrence. The caverns, located in a United States National Park, are home to around 400,000 Mexican free-tailed bats that fly out into the night sky each evening at dusk to feed on nearby moths and insects, returning at dawn to their caves. The spectacle draws crowds from around the world into the Chihuahuan Desert, where the park is located. One such visitor was Laurel Mathews, who once visited the caves with her family on a road trip.

“At the entrance to one of the caves, there’s stadium seating for visitors to watch the bats,” she remembers. “We waited a long time to see them. Finally, they started circling out of the cave and they flew off—out came more and more and more, all of them flying in loops and then out into the sky. It was amazing that there were so many!”

Laurel also remembers the sound the bats made, describing the high, screeching noise. “It was really creepy, but also really cool,” she says.

Upon their arrival to the Carlsbad Caverns National Park, the Mathews family was greeted by a lone visitors’ center. “It didn’t look very spectacular when we first drove in,” she admits. “But then we started exploring the big network of underground caves.”

The formation of the caves is a result of a fossilized reef that existed 250 to 280 million years ago in an inland sea that has long since disappeared. Since limestone is typically made up of fragments of coral, a large limestone deposit eventually formed in the area. Today, you can still find several fossilized plants and animals in the caves' limestone that date back to a time before dinosaurs walked the earth. Starting sometime between four and six million years ago, water began moving through the cracks in the stone deposit. This water combined with rainwater, and as a result of their chemical compositions, the two mixed to form a type of acid. This acid slowly dissolved the limestone to eventually form the winding caves that exist today in Carlsbad Caverns. This is a very common process that happens to limestone—many caves all around the world exist in limestone deposits due to the stone's solubility (the ability of a substance to be dissolved) in a mixture of water and acid.

Eventually, speleothems—formations that arise from mineral deposits in caves—began to take shape in the lower levels of the caverns. In fact, these speleothems existed during the last ice age, when instead of a desert, a pine forest sat above the caves. Over the years, park employees and rangers have found clues that hint at the caves' history. For example, according to the National Park Service, people have found some bones of ancient ice age animals scattered around the entrance to some of the caves. In 2003, an employee found a part of a stone scraper dating back to the last ice age near a cave entrance as well. Clearly, the caves have a long history—researchers have discovered that American Indians first inhabited the area sometime between 12,000 and 14,000 years ago. Ever since then, the caves have been explored by several groups, including Spanish explorers in the 1500s, and later by American explorers and guides who drew attention from all across the country to the natural phenomenon.

Laurel remembers this phenomenon very well. "It took us between one and two hours to get all the way to the bottom," she says, recounting the windy pathway leading deeper and deeper into the heart of the caves. "The park had put in blue and red lights to highlight the beautiful rock formations."

Once they reached the bottom, Laurel says that she had to take an elevator to get back to the top. "My ears popped so much in the elevator!" she remembers. "It took a really long time to reach the top; I didn't realize how far down we were until we were on our way back up."

Name: \_\_\_\_\_ Date: \_\_\_\_\_

1. According to the passage, what currently lives in the caves at Carlsbad Caverns National Park?

- A Native Americans
- B bats
- C bears
- D explorers

2. What does the author describe at the beginning of the passage?

- A how speleothems are formed
- B the formation of limestone caves
- C fossils found in Carlsbad Caverns
- D watching bats at Carlsbad Caverns

3. Limestone deposits can help researchers learn about what the area was like thousands of years ago. What evidence from the passage best supports this conclusion?

- A Limestone can contain fossilized plants and animals.
- B Acid can slowly dissolve limestone to form winding caves.
- C Limestone is typically made up of coral fragments.
- D Many caves around the world exist in limestone deposits.

4. "At the entrance to one of the caves, there's stadium seating for visitors to watch the bats." Based on this information, what can you conclude about the popularity of the bats at Carlsbad Caverns?

- A The bats are not a popular attraction at Carlsbad Caverns.
- B People go to Carlsbad Caverns to see the caves, not the bats.
- C The bats are a popular attraction at Carlsbad Caverns.
- D Most people who visit Carlsbad Caverns don't know about the bats.

5. What is this passage mostly about?

- A Laurel Mathews' family vacation
- B how bats navigate using sound
- C how speleothems are formed
- D caves at Carlsbad Caverns National Park

6. Read the following sentences: "The caverns, located in a United States National Park, are home to around 400,000 Mexican free-tailed bats that fly out into the night sky each evening at dusk to feed on nearby moths and insects, returning at dawn to their caves. The **spectacle** draws crowds from around the world into the Chihuahuan Desert, where the park is located."

As used in this sentence, what does the word "**spectacle**" mean?

- A a very impressive show
- B something that happens irregularly
- C something that happens at night
- D something that people watch with glasses

7. Choose the answer that best completes the sentence below.

\_\_\_\_\_, Laurel did not think the Carlsbad Caverns National Park looked very spectacular, but her opinion changed after she explored the caves.

- A For instance
- B Initially
- C Particularly
- D Therefore

8. What are speleothems?

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9. Explain how the limestone caves at Carlsbad Caverns were formed.

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10. Explain how researchers may learn about the history of the caves at Carlsbad Caverns. Support your answer using information from the passage.

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## Teacher Guide &amp; Answers

Passage Reading Level: Lexile 1190

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8. What are speleothems?

**Suggested answer:** Speleothems are formations that arise from mineral deposits in caves.

9. Explain how the limestone caves at Carlsbad Caverns were formed.

**Suggested answer:** Between four and six million years ago, water began moving through the cracks in the limestone deposit. This water combined with rainwater to form a type of acid. This acid slowly dissolved the limestone to eventually form the winding caves that exist today in Carlsbad Caverns.

10. Explain how researchers may learn about the history of the caves at Carlsbad Caverns. Support your answer using information from the passage.

**Suggested answer:** Answers may vary and should be supported by the passage. Students may indicate that researchers may learn about the history of the caves by studying the limestone deposits and the fossilized plants and animals trapped in them. Researchers may also learn about the history of the caves at Carlsbad Caverns by studying the objects found in and near the caves, including animal bones and a stone scraper from the last ice age.