

# FROZEN FOR TENS THOUSAND YEARS

**T**en thousand years ago, enormous hairy creatures roamed the Arctic regions in great herds. The animals moved slowly, lumbering across the frozen tundra in search of food. They were woolly mammoths, and for many years they thrived in their frigid surroundings.

<sup>2</sup> In many ways, the woolly mammoth looked like an elephant. The elephant, however, can survive only in warm climates, whereas the mammoth was built to live in a much colder environment. It was slightly bigger than an elephant and had long, curled tusks that it used for digging in the hard dirt. It also had a high hump on its forehead. A coat of long coarse hair and a thick layer of fat kept the mammoth warm during the long winter months.

<sup>3</sup> Although the woolly mammoth was well suited to its environment, about 10,000 years ago this awesome animal perished. Like the dinosaurs, which died out 60 million years ago, the mammoth became extinct. The dinosaurs, however, lived and died long before there were people on the earth. The mammoth lived

*This baby mammoth died 10,000 years ago at the age of nine. The body was found frozen in an excavation area in northeastern Siberia on June 23, 1977.*



at the same time as the early cave people. These people made drawings of mammoths on the walls of their caves. Long after these huge animals died out, people told legends of a great wild, woolly elephant.

4 Stories were not all that survived down through the ages. Every now and then a hunter in Siberia or Alaska would come upon a massive tusk as he dug for food. These tusks were too big to have come from elephants. Each time one was found, stories of giant woolly mammoths gained strength.

5 Then, in 1800, the chief of the Tungus tribe in northern Siberia noticed a tusk sticking out of a frozen mound of earth. At first the chief was terribly frightened, because he had never seen a tusk that big before. Like the other members of his tribe, he believed that the center of the Earth was filled with dangerous animals. Even the sight of one of these animals was said to cause death. The chief feared that the tusk belonged to such a creature.

6 It took him months to find the courage to take a closer look at the tusk. By this time it was spring, and the ground had begun to thaw. When the chief returned to the tusk, he was able to clear away some of the dirt that surrounded it. As he dug, the chief was amazed to find

that the tusk was still attached to a frozen carcass. The chief had discovered the frozen body of a woolly mammoth.

7 Word of the Tungus chief's discovery spread quickly, and soon many people were digging in the wastelands of Siberia in search of woolly mammoths. They were interested in the ivory tusks of the beasts, which were very valuable. Scientists also became interested and began to search the area, hoping to find out more about the animals themselves.

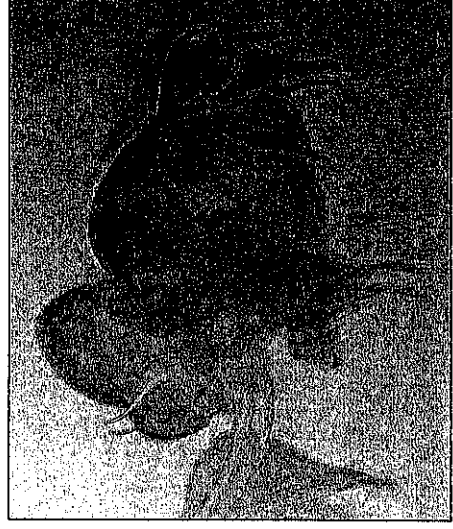
8 Tons of bones were found in many spots throughout the Arctic, but in the end only 39 frozen mammoths were discovered. While mammoth bones were unearthed in several different places, frozen mammoths were uncovered only in Siberia and northern Alaska. Even among these carcasses, only four were intact. The remaining 35 were incomplete.

9 Still, the discoveries these researchers made were remarkable. They found frozen remains of some mammoths still in an upright position. They found others with green grass, meadow plants, and twigs still in their stomachs. The flesh of some of the mammoths was still quite fresh. The meat had decayed too much for people to eat, but sled dogs were eager to consume it.

10 What did these findings mean? Some scientists concluded that the mammoths

must have died very quickly. The upright position of some of the woolly mammoths seemed to support the idea that they had been flash-frozen in place. All of the preserved remains indicated that the mammoths had been healthy and robust when they died. They had not died slowly by starving or freezing.

11 In the late 1800s, a scientist named Henry Howorth suggested that the mammoths had perished in a great flood. There is no evidence, however, that these animals drowned. Not many people today agree with Howorth. Still there are a number of people who do think that all



A painting of a mammoth found in Magdalenian Cave, Font de Gaume, France

the woolly mammoths died quickly in a worldwide disaster. These people point to the fact that the blood cells of the mammoths had not burst, indicating that the animals were frozen quickly rather than slowly under the mud and muck of the tundra. The people with this view believe that there must have been a sudden, major change in the world's climate, which could have produced a rapid drop in the temperature.

<sup>12</sup> Most experts today, however, have a different idea. They believe that a change in the climate did, indeed, hurt the mammoths. But the scientists also think that people helped to destroy the mammoths by killing too many of them.

<sup>13</sup> Ten thousand years ago, in the closing days of the last Ice Age, the world's climate began to change quickly.

Apparently the woolly mammoths had trouble adjusting to the changes. In addition to this, the animals were being stalked by the early cave people. Hunters killed hundreds of mammoths by driving them off cliffs. Thus, in the space of only 200 years, the number of woolly mammoths dwindled from over 50,000 to zero.

<sup>14</sup> Most scientists think that the mammoths that were found frozen were simply the rare ones that happened to die and then freeze before their bodies could rot. In other words, these frozen mammoths were the victims of freak accidents. Woolly mammoths were giant, awkward creatures. Those that were preserved in the earth could have slipped

off the edges of cliffs or cracked through thin layers of late-summer ice. In any event, these few must have sunk into the thick mud of the tundra and become buried. Protected from direct exposure to the air, they did not decay rapidly. As the weather became colder, the soil around them froze and their bodies were trapped. This explanation accounts for the healthy condition and full stomachs of the unearthed carcasses.

<sup>15</sup> A final solution to the mystery of the woolly mammoths does not seem likely. Some people like their answers to fit within the known laws of nature; they like to see things evolve slowly. Others look for sudden disasters to explain the mysteries of this planet. Whatever the real answer is, the woolly mammoth is gone forever. ❧

*If you have been timed while reading this article, enter your reading time below. Then turn to the Words-per-Minute Table on page 195 and look up your reading speed (words per minute). Then enter your reading speed on the Reading Speed graph on page 196.*

**Reading Time: Lesson 16**

Minutes      Seconds

### A Finding the Main Idea

One statement below expresses the main idea of the article. One statement is too general, or too broad. The other statement explains only part of the article; it is too narrow. Label the statements using the following key:

M—Main Idea      B—Too Broad      N—Too Narrow

- \_\_\_\_\_ 1. The woolly mammoth, with its huge size and curved tusks, looked much like an elephant.
- \_\_\_\_\_ 2. Though some people believe that the extinction of the woolly mammoth was caused by a great disaster, most experts believe that the mammoth died out from a combination of changing climate and over-hunting.
- \_\_\_\_\_ 3. Many animals have died as a result of changes in the world's climate.

\_\_\_\_\_ Score 15 points for a correct M answer.  
 \_\_\_\_\_ Score 5 points for each correct B or N answer.  
 \_\_\_\_\_ Total Score: Finding the Main Idea

### B Recalling Facts

How well do you remember the facts in the article? Put an X in the box next to the answer that correctly completes each statement about the article.

1. The woolly mammoth died out
  - a. around 10,000 years ago.
  - b. just before the time of the first cave people.
  - c. around 60 million years ago.
2. The first person who discovered a frozen mammoth in Siberia was
  - a. a scientist.
  - b. an ancient hunter.
  - c. a tribal chief.
3. The number of frozen mammoth carcasses found so far is
  - a. 39.
  - b. 35.
  - c. 200.
4. The frozen mammoths were
  - a. healthy when they died.
  - b. all killed by hunters.
  - c. all found in Siberia.
5. Henry Howarth believed that the mammoths died from
  - a. a sudden change of climate.
  - b. the cold of the Ice Age.
  - c. a huge flood.

Score 5 points for each correct answer.  
 \_\_\_\_\_ Total Score: Recalling Facts

### C Making Inferences

When you combine your own experience and information from a text to draw a conclusion that is not directly stated in that text, you are making an inference. Below are five statements that may or may not be inferences based on information in the article. Label the statements using the following key:

C—Correct Inference      F—Faulty Inference

1. The thickness of an animal's coat, or fur, indicates the kind of climate in which it lives.
2. Woolly mammoths are the only extinct animals whose passing has remained somewhat of a mystery to scientists.
3. Sudden changes in the climate would wipe out all animal life.
4. After the first woolly mammoth carcass was uncovered, many members of the Tungas tribe no longer were afraid when they saw tusks in the ground.
5. The meat of the woolly mammoth was a part of the diet of early cave people.

Score 5 points for each correct answer.

\_\_\_\_\_ Total Score: Making Inferences

### D Using Words Precisely

Each numbered sentence below contains an underlined word or phrase from the article. Following the sentence are three definitions. One definition is closest to the meaning of the underlined word. One definition is opposite or nearly opposite. Label those two definitions using the following key; do not label the remaining definition.

C—Closest      O—Opposite or Nearly Opposite

1. The animals moved slowly, lumbering across the frozen tundra in search of food.
  - \_\_\_\_\_ a. stepping clumsily
  - \_\_\_\_\_ b. walking carefully
  - \_\_\_\_\_ c. slipping
2. Although the woolly mammoth was well suited to its environment, about 10,000 years ago this awesome animal perished.
  - \_\_\_\_\_ a. inspired fear
  - \_\_\_\_\_ b. died out
  - \_\_\_\_\_ c. flourished
3. Even among these carcasses, only four were intact. The remaining thirty-five were incomplete.
  - \_\_\_\_\_ a. diseased
  - \_\_\_\_\_ b. lacking some parts
  - \_\_\_\_\_ c. whole

### Author's Approach

Put an X in the box next to the correct answer.

1. The author uses the first sentence of the article to
  - a. describe a prehistoric setting.
  - b. describe the qualities of the woolly mammoth.
  - c. compare woolly mammoths and elephants.
2. Which of the following statements from the article best describes the woolly mammoth?
  - a. "It was slightly bigger than an elephant and had long, curled tusks that it used for digging in the hard dirt."
  - b. "In many ways, the woolly mammoth looked like an elephant."
  - c. "The mammoth lived at the same time as the early cave people."
3. Choose the statement below that is the weakest argument for explaining the extinction of the woolly mammoth.
  - a. The mammoths died following a sudden, major change in the world's climate.
  - b. The mammoths perished in a great flood.
  - c. People destroyed the mammoths by killing too many of them.
4. The author probably wrote this article in order to
  - a. express an opinion about how the woolly mammoths perished.
  - b. inform the reader about the relationship between mammoths and the early cave people.
  - c. encourage the reader to think about what killed the mammoths.

4. All of the preserved remains indicated that the mammoths had been healthy and robust when they died.

- \_\_\_\_\_ a. strong and vigorous
- \_\_\_\_\_ b. fat and woolly
- \_\_\_\_\_ c. weak and tired

5. In addition to this, the animals were being stalked by the early cave people.

- \_\_\_\_\_ a. protected
- \_\_\_\_\_ b. eaten
- \_\_\_\_\_ c. hunted

\_\_\_\_\_ Score 3 points for each correct C answer.

\_\_\_\_\_ Score 2 points for each correct O answer.

\_\_\_\_\_ Total Score: Using Words Precisely

Enter the four total scores in the spaces below, and add them together to find your Reading Comprehension Score. Then record your score on the graph on page 197.

Score	Question Type	Lesson 16
_____	Finding the Main Idea	
_____	Recalling Facts	
_____	Making Inferences	
_____	Using Words Precisely	
Reading Comprehension Score		_____

\_\_\_\_\_ Number of correct answers

Record your personal assessment of your work on the Critical Thinking Chart on page 198.

## Summarizing and Paraphrasing

Put an X in the box next to the correct answer.

- Below are summaries of the article. Choose the summary that says all the most important things about the article but in the fewest words.
  - a. The woolly mammoth, a huge elephant-like creature that roamed the Arctic regions, became extinct about 10,000 years ago. Many scientists believe that a sudden climate change as well as hunting practices led to the animal's destruction.
  - b. Although woolly mammoths were well suited to their environment, the animals perished about 10,000 years ago. Some scientists believe that the mammoths died in a great flood, while others suggest that a sudden change in the world's climate brought about their extinction.
  - c. Woolly mammoths perished about 10,000 years ago. Scientists disagree about what caused the animals' extinction.
- Read the statement about the article below. Then read the paraphrase of that statement. Choose the reason that best tells why the paraphrase does not say the same thing as the statement.  
 Statement: Scientists discovered traces of food in the stomachs of the mammoths found frozen in the tundra, and the animals' flesh was still relatively fresh.  
 Paraphrase: The frozen mammoths that the scientists found were well preserved.
  - a. Paraphrase says too much.
  - b. Paraphrase doesn't say enough.
  - c. Paraphrase doesn't agree with the statement about the article.

\_\_\_\_\_ Number of correct answers

Record your personal assessment of your work on the Critical Thinking Chart on page 198.

## Critical Thinking

Put an X in the box next to the correct answer for questions 1 and 2. Follow the directions provided for the other questions.

- Which of the following statements from the article is an opinion rather than a fact?
  - a. "Ten thousand years ago, in the closing days of the last Ice Age, the world's climate began to change quickly."
  - b. "The dinosaurs lived and died long before there were people on the earth."
  - c. "All the woolly mammoths died quickly in a worldwide disaster."
- From the article, you can predict that if another sudden, major change occurred in the world's climate,
  - a. the woolly mammoths would return.
  - b. some animal species would not survive the change.
  - c. everything on Earth would die instantly.
- Using what you know about elephants and what is told about woolly mammoths in the article, name three ways an elephant is similar to and different from a woolly mammoth. Cite the paragraph number(s) where you found details in the article to support your conclusions.

Similarities

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**CRITICAL THINKING**

Differences:

**Personal Response**

I agree with the author because

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. Think about cause-effect relationships in the article. Fill in the blanks in the cause-effect chart, choosing from the letters below.

Effect

Cause

Mammoths were buried in the tundra. \_\_\_\_\_  
\_\_\_\_\_ Cave dwellers made drawings of mammoths.  
\_\_\_\_\_ A Tungan chief fled from a mammoth tusk.

- a. Mammoths lived at the same time as people.
- b. They did not decay rapidly.
- c. He believed that it belonged to an animal that could cause his death.

5. In which paragraph did you find the information or details to answer question 2?

\_\_\_\_\_

**Self-Assessment**

Before reading this article, I already knew

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_ Number of correct answers

Record your personal assessment of your work on the Critical Thinking Chart on page 198.