

# THE AMAZING ADVENTURES OF WILLY THE WOOLLY STUDY GUIDE

*History, Science, Art, Music, Drama, Character Education*

## THE ICE AGE

The Pleistocene, or Ice Age, began over 2.5 million years ago and ended 10,000 years ago.

- Ice sheets formed and moved south from Canada into the United States.
- Periodically the climate warmed and the glaciers receded, only to form and surge south again.

The last Ice Age, the Wisconsinan, began about 50,000 years ago. As the environment cooled, a large ice sheet formed in the Hudson's Bay region, and began to spread south.

Humans came to North America near the end of the Wisconsinan era, perhaps about 25,000 years ago. Scientists continue to debate when humans arrived, but they probably arrived here in small groups, and families soon spread across all of North America.

The Upper Midwest was a mix of grasslands and forests of spruce, aspen, and oak. Stretching north, in areas where the ice had melted, marshes and bogs were common. Animals included:

- mammoth
- mastodon
- giant ground sloth
- musk ox
- bison
- elk
- saber-toothed cat
- short-faced bear
- horses
- tapirs
- porcupines
- peccaries



•many smaller animals, including shrews, moles, squirrels, rats, mice, rabbits, beavers, and others.

We do not know if humans were here at this time, but they may have been. We do know that soon they would be in the Upper Midwest, hunting the mammoth, mastodon, and other game.

Within a few centuries, the temperatures warmed and the ice melted for the last time. New forests filled the river valleys, prairies stretched out to the west and south, and marshlands continued to the north. The subtle changes brought great change to the inhabitants—extinction for some, and opportunity for others.



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## THE AMAZING ADVENTURES OF WILLY THE WOOLLY

is an original story written by Monica Leo. The music was composed by Ron Hillis, and Monica Leo built the puppets and scenery. The story follows Willy, the young woolly mammoth, and his friend Bonny the Bunny as they overcome the dangers of sinkholes and saber tooth tigers with the help of their friends Cornelia and Crow. The production features tabletop marionettes, rod puppets, and shadow puppets along with live music and sound effects.

The story was inspired by the fate of Dima, a well preserved baby mammoth carcass that was found by a bulldozer operator in Siberia in 1977. Dima is believed to have perished in a sinkhole.

You can read more about him at:

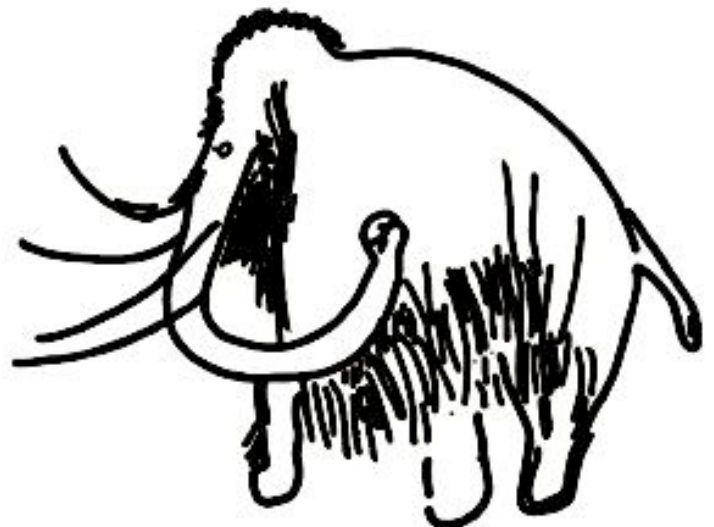
[http://library.thinkquest.org/27130/eng/3\\_4\\_1\\_5.htm](http://library.thinkquest.org/27130/eng/3_4_1_5.htm)



DIMA

### A few questions for discussion before attending the show

1. Did woolly mammoths and humans live at the same time? (Yes, mammoths were not yet extinct when humans first arrived in North America.)
2. Was there always snow on the ground during the latter years of the last Ice Age? (No, but of course there was lots of snow in the winter.)
3. Did humans draw pictures of mammoths? (Yes, there are examples of cave drawings of woolly mammoths. Here are two examples)



4. What were mammoth tusks and how did they grow? *(Tusks were oversized upper front teeth, which had become specialized for particular uses. They continued to grow throughout the mammoth's life. Tusks could grow as long as nine feet on the woolly mammoth. They grew from the top; if a tip broke off, it would not grow back.)*

5. What did mammoths eat? *(They were herbivores, eating grass and other vegetation.)*

6. What was a sinkhole and why was it dangerous? *(Sinkholes were formed when earth was removed or collapsed. They often filled up with warm spring water, and grass grew in the warm moist soil. Mammoths would enter the hole to eat, drink or bathe and then could not escape.)*



This is a sinkhole in Ohio that was excavated in the late 1990's. Scientists found bones of many late Ice Age animals that had perished in the sinkhole. The rarest was a short-faced bear that would have weighed twice as much as a modern grizzly bear.

7. Could a mammoth be friends with a saber tooth tiger? *(Not likely; although saber tooth cats were not large enough to pose a danger to an adult mammoth, they often hunted baby mammoths.)*

#### **A few questions for discussion after attending the show**

1. What kind of puppets did the puppeteers use? *(tabletop marionette, rod and shadow.)* What do you have at home that you could use to put on a tabletop puppet show? *(stuffed animals, Beanie Babies, webkinz, dolls, etc.)*



2. Do you think Cornelia really followed the bunny and the mammoth into the Ice Age or did she imagine the adventure? Why?

3. In Bonny's friendship with Willy, who was the leader and who was the follower? How could you tell?

4. What two reasons did Cornelia have to be worried about Willy and Bonny? How did she find out about these two dangers?

5. What different things did you notice in the cave? *(a cave drawing of a woolly mammoth; a spider; a bat; a snake)*

6. Did you have a favorite character? Why?

## Recommended Reading List

### Natural History/Archaeology/History

Agenbroad, Larry D., Dr. and Nelson, Lisa, Mammoths: Ice Age Giants, Lerner Pub., Minnesota, 2002.

Aliki, Fossils Tell of Long Ago, Harper Collins Pub., New York, 1990.

Aliki, Wild & Woolly Mammoths, Harper Collins Pub., New York, 1996.

Arnold, Caroline, When Mammoths Walked the Earth, Clarion Books, New York, 2002.

Chorlton, Windsor, Woolly Mammoth: Life, Death and Rediscovery, Scholastic Inc., New York, 2001.

Duke, Katie, Archaeologists Dig For Clues, Harper Collins Pub., New York, 1997.

Giblin, James Cross, The Mystery of the Mammoth Bones and How It Was Solved, Harper Collins Pub., New York, 1999.

Lange, Ian, Ice Age Mammals of North America, Mountain Press Pub., 2002.

Levy, Elizabeth, Who Are You Calling A Woolly Mammoth? Scholastic Inc., New York, 2000.

Liptak, Karen, North American Indian Survival Skills, Franklin Watts, New York, 1990.

O'Brien, Patrick, Mammoth, Henry Holt & Co., New York, 2002.

Press, Judy, The Kid's Natural History Book: Making Dinos, Fossils, Mammoths & More, Williamson Pub., 2000.

### Prehistoric Fiction

Brett, Jan, The First Dog, Voyager Books, New York, 1988.

Brooke, William J., A Is For AARGH, Harper Collins Juvenile Books, New York, 2000.

Clark, Patricia Nikolina, In The Shadow of the Mammoth, Blue Marling Pub., 2003.

Gerrard, Roy, Mik's Mammoth, Sunburst Pub., 1992.

Martin, Rafe, Will's Mammoth, George Putnam's Sons, New York, 1989.

Zehmer, Margaret, Eye the Hunter – A Story of Ice Age America, Gretna: Pelican Publishing Co., 1995.

## Recommended Reading List

### Some interesting links:

[www.mammothsite.com/geology.html](http://www.mammothsite.com/geology.html)

Geology of Iowa: Iowa's Earth History Shaped by Ice, Wind, Rivers, and Ancient Seas

[www.igsb.uiowa.edu/browse/geoiowa/geoiowa.htm](http://www.igsb.uiowa.edu/browse/geoiowa/geoiowa.htm)

Landscape Features of Iowa

[www.igsb.uiowa.edu/browse/landscap/landscap.htm](http://www.igsb.uiowa.edu/browse/landscap/landscap.htm)

Linked Depressions on the Des Moines Lobe

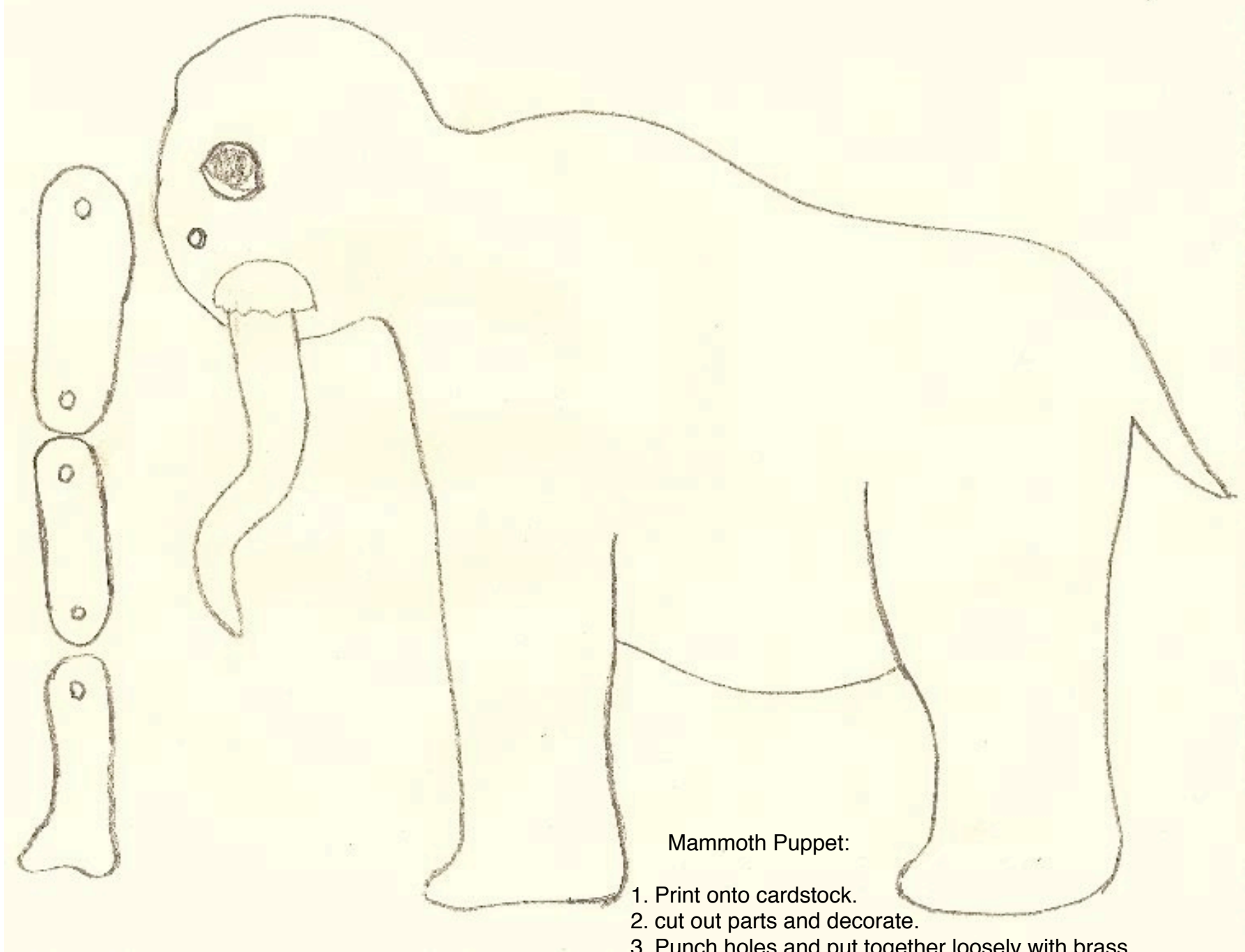
[www.igsb.uiowa.edu/browse/depress/depress.htm](http://www.igsb.uiowa.edu/browse/depress/depress.htm)

Glacier Landmarks Trail: Iowa's Heritage of Ice

[www.igsb.uiowa.edu/browse/glatrail/glatrail.htm](http://www.igsb.uiowa.edu/browse/glatrail/glatrail.htm)

Glacial Boulders in Iowa

[www.igsb.uiowa.edu/browse/boulders/boulders.htm](http://www.igsb.uiowa.edu/browse/boulders/boulders.htm)



**Mammoth Puppet:**

1. Print onto cardstock.
2. cut out parts and decorate.
3. Punch holes and put together loosely with brass paper fasteners.
4. Tape one barbeque skewer onto body and one onto end section of trunk.
5. PLAY!