



EDUCATOR'S GUIDE

Lessons of the Ice Age

Note: This guide provides additional information for educators to use before, during or after a visit to Ice Age Imperials. The guide is appropriate for all grade levels and is designed so that you can extract what is relevant to your particular grade—the pages may be copied for use in the classroom.

Introduction

The Ice Age Imperials exhibit features majestic creatures that roamed North America during the last Ice Age. The exhibit is designed to give students tactile experiences with the Ice Age and to reinforce subject matter taught in the classroom.

Most Ice Age megafauna are now extinct. In many cases all that remains are clues to their existence in the form of fossil bones and teeth. For generations, students (even President Thomas Jefferson) have been enthralled by such evidence. Now your students can experience these creatures visually and through interactive experiences: ‘Touch the real fossilized bones and teeth of these long extinct creatures’.

The exhibit includes several wall-mounted display panels that describe the Ice Age and the formation, nature and movement of glaciers, as well as interesting facts about types of ice and ice depth. The panels are designed to stimulate discussion and to provide opportunities for further research.

Overview of Exhibit

Note: Due to size restrictions, not all components may be installed at some venues.

Two central dioramas anchor the Ice Age Imperials exhibit. Each is 16 feet x16 feet and features life-size, authentic-appearing creatures. One focuses on Sabertooth cat, and the other features Mammoth, Woodland Musk Ox and early human hunters. Each has a story supported by detail in the diorama.

A 3-sided display (in some venues it is mounted on an adjacent wall) offers engaging experience with Ice Age bear, Dire Wolf and Giant Beaver.

Two separate displays provide interactive experiences with American Mastodon and Giant Ground Sloth.

Large 3-D puzzles of Mastodon and Sabertooth cat require a team effort to assemble.

An Ice Age fossil 'dig box' reveals surprise remains of extinct creatures that appear elsewhere in the exhibit.

Description of Exhibit Components

I

Sabertooth Cat with Cubs Diorama 3 Display Cases



Shown in a savannah-like setting, many miles from a glacier edge, is the lair of a Sabertooth cat. A mother with two cubs surveys her territory and senses the approach of an intruder. She gives a low growl to warn her cubs, who are curious to see whether this is a danger or an opportunity for their next meal. Mother Sabertooth is actual full size.

Display Case 1 – Presents cast of an actual Sabertooth cat's front leg, complete with claws. Shown for comparison are claws and images of various modern cats.

Display Case 2 – Offers two 'touch' components, a real Sabertooth cat carnassial tooth and a full-scale, museum-quality cast of a Sabertooth skull.

Display Case 3 – Compare and contrast skull casts of several modern and large extinct cats. This display includes the largest cat species ever to walk the earth: American Lion.

II

Mammoth, Woodland Musk Ox and Early Human Hunter Diorama 3 Display Cases



In this detailed and intense diorama, lessons of the Ice Age abound. With the glacier's edge visible in the distant background, a lone bull Woodland Musk Ox has strayed from the herd. Early human hunters have stalked the dangerous beast and are about to strike. But wait . . . the more experienced hunter in the background sees the approach of two Woolly Mammoths! What course of action should the hunters take? They are trapped between dangerous animals. Should they flee? Should they continue to attack the Musk Ox? The Musk Ox is less dangerous than the Mammoth but would feed their clan for only a few days. On the other hand, the huge and dangerous Mammoth would feed their clan for a month or more. Should they risk injury or death for the big reward of the Mammoth with its warm fur and ivory for tools? This diorama presents three lesson topics: 1. Environment near a glacier in spring season during the Ice Age. 2. 'Fight or Flight' decision-making with important consequences. 3. 'Risk vs Reward' decision-making with limited available resources. Note: The diorama includes a partly hidden Ice Age carnivore for students to find.

Display Case 1 – Text panels provide information about Woolly Mammoth. A tusk from a young Woolly Mammoth is displayed, without restoration, much as it would look if just dug from the earth. The Mammoth tusk is about 12,000 years old. Woolly Mammoth hair also is featured. Upon close inspection, students can see that the hair contains small bits of plant material remaining from when the animal lived.

Display Case 2 – This is an open, interactive case in which text panels explain what is occurring in the diorama. Students are encouraged to touch a real tooth from a large adult Mammoth. A length of real ivory tusk from a huge Mammoth also is available for examination and touching.

Display Case 3 – Extinct Woodland Musk Ox, fossils of which are found throughout the extended Great Lakes Region, is discussed on text panels with reference to the fully fleshed, actual-size animal displayed in front of the case. Tools used by early human hunters are displayed with associated text panels, and hunter clothing is discussed.

EDUCATING ABOUT THE ICE AGE

What is the Ice Age?

The *Ice Age*, which actually includes many periods of glacier-building over the last 2 million years, has done much to mold the Great Lakes and Upper Midwest Regions of the United States. As glaciers moved across the earth, they scarred, gouged and contributed to the final topography we see today.

Many of the smaller animals that today populate the North Central United States are close relatives, if not nearly exact copies, of animals that once roamed this area. However, the *megafauna* that lived during the glacier-building periods of the *Pleistocene* epoch have largely disappeared and are known only from the giant bones found and the infrequent cave painting and pictographs left behind by ancient humans in North America and Europe.

Before discussion about the Ice Age can begin, we should look at the Chart of Geological Time below and refresh our understanding of the place in time and history of the Ice Age.

What are the Geological Time Periods?

The geological chart below defines the geological time periods from the *Pre-Cambrian* period to the *Holocene* period.

See Chart On Next Page