The University of Iowa
MUSEUM OF NATURAL HISTORY

IOWA HALL
a family guide
Welcome!

to Iowa Hall, which recreates Iowa’s natural history with exhibits of geology, native cultures, and ecology. The exhibits will guide you on a walk through time, beginning five billion years ago.

In Iowa Hall’s geologic sequence you will see Iowa from the time of volcanoes up through the Ice Age. The anthropology sequence will show you how early groups of people lived and changed over time. In the ecology sequence you will see Iowa as it looked to the first settlers.

This guide can help you take a meaningful and exciting tour through these three areas. It gives you a special opportunity to interact with your children and the exhibits. Some questions in this guide have no right or wrong answer. If you are puzzled by a question use the exhibits as well as the illustrations in this guide to help you find the answer.

Begin your family’s tour at the Marquette-Jollet diorama, where eastern woodland meets western prairie and Indians watch Europeans viewing Iowa for the first time.

The artists and scientists who designed these exhibits researched each one. For the Marquette-Jollet diorama they visited the site for three consecutive years on the anniversary of the explorers’ arrival.

Crowds gathered in 1904 to watch James Shearer carve the limestone surrounding Macbride Hall’s roof. The figures represent the major animal groups found in the Museum.

Iowa Hall is but one part of The University of Iowa Museum of Natural History, which was the first university museum established west of the Mississippi River. It is the second oldest of all museums west of the Mississippi and it owns more than a million specimens.

It took one man an entire year to make the Devonian Reef diorama.

Iowa Hall contains 17,000 hand-made and hand-painted leaves.

You are here.

The mosaic of the UI Great Seal, in Iowa Hall’s entry, was uncovered during the renovation after being hidden by linoleum for 30 years.

You will have a chance to see one of the oldest musical instruments found in North America. It is a flute made of bird bone. See if you can find it in the Archaic exhibit when you get to the Native Cultures sequence.

Did you know that Iowa once had its own corn palace in Sioux City, just as Mitchell, South Dakota, has now?

When you arrive at the Native Cultures sequence, look for the corn plant in the Woodland Period exhibit. It is made of molded plastic. The model used to make the mold was grown from the same variety of seed as the Indians used when they first planted corn in Iowa.

The giant sloth in the Ice Age diorama is covered with the hair from 1,500 cow tails.

After you’ve gone....

Visit Bird Hall and Mammal Hall upstairs, and the exhibits downstairs. Have you been to any places in Iowa that look like the ones shown in the Museum? List them. Visit a museum in another town.
Color this picture of the Marquette-Joliet diorama.
Marquette-Joliet

The Marquette-Joliet diorama takes you back in time to the moment when two French explorers, Father Jacques Marquette and fur trader Louis Joliet, first reached the Upper Mississippi and saw the towering Iowa bluffs to the west. That historic arrival was on the morning of June 17, 1673, and is the first record of Europeans this far west. The Ioway Indians had received trade goods such as glass beads, but only from contact with Indians to the east. They had probably never seen a European.

The view depicted in this diorama can still be seen today from a location in Pikes Peak State Park in Clayton County, Iowa. The 500-foot bluffs, the highest along the Mississippi River, face east and overlook the spot where the Wisconsin River flows into the Mississippi.

The plants and animals shown in the diorama are common to this area where forest meets prairie. They probably were on the bluff, alongside the Indians, the day Marquette and Joliet arrived.

Look above you. The leaves you see are oak. Two kinds of oak are Red and White. The pioneers used this method to tell them apart.

The red oak uses pointed arrows as weapons; the red oak has pointed lobes.

The white oak uses rounded bullets as weapons; the white oak has rounded lobes.

Look again at the leaves above you. What kind of oak forest are you standing in?

Find these animals in the diorama.
- Nuthatch
- Crow
- Chipmunk
- Butterfly

What are the Indians wearing that tells you they have traded for European goods?

After you've gone....

Visit Pikes Peak State Park to see the same view as the one shown here.

Can you see what the Indians are watching?
Draw the animal missing from this picture of the Devonian Coral Reef. Color the picture.
Devonian Coral Reef

The next stop on your historical trip takes you through geologic time to Iowa's beginnings. As you enter the rock canyon, reproduced from a wall of 500-million-year-old sandstone, notice the geologic timeline on your left. Each period of the earth's history is described by a characteristic important to that period. For example, the Devonian Period is called the Age of Fish because during this time fish became the dominant life form on Earth. As you proceed, notice that the exhibits for each time period display the plant or animal fossils representative of that period.

The Devonian Coral Reef diorama recreates a scene 380 million years ago when most of Iowa was covered by a shallow sea. The diorama represents an area near present-day Coralville, named for the fossil corals found there. Those corals were once living animals similar to the ones in the diorama.

The large heavily armored fish seen here is the Dunkleosteus (dun-kel-os-te-us). The carnivorous Dunkleosteus ate other fish. Instead of bones, a cartilage skeleton supported the 12-foot body, which was protected outside by hard plates. Although the primitive Dunkleosteus is now extinct, other kinds of animals alive during this time still exist.

Look at the cross section of the sea floor. Can you find the remains of animals like those above? As the animals die they settle into the lime mud and accumulate. With time and pressure the layers become fossil-filled limestone rock.

What kinds of animals in the reef might be alive today?

After you have looked at the animals in the reef, see if you can find their fossils in the Devonian exhibit to your left.

After you've gone:

See how many different fossils you can find in the building stone around campus and in your town. Find fossils in gravel that you may have in your driveway or elsewhere in your neighborhood.

What way is the current flowing? Remember, crinoids face into the current to feed.
Feel the trunks of the trees around you. Can you find fossils that look like these trunks in the exhibit?

Some insects that lived during the Pennsylvania Period were very large. The largest ones in this diorama are cockroaches.

How many cockroaches can you find? What other insects do you see in this exhibit?

Peninsylvanian Coal Swamp

The Pennsylvania Coal Swamp diorama takes you to a time 300 million years ago when Iowa had a tropical climate. The drifting continents moved Iowa close to the equator where the climate was ideal for producing large amounts of vegetation. Plants grew quickly, then died and accumulated as peat before they could decay. Later the peat was covered by other deposits such as mud or sand, which caused tremendous pressure. Eventually this compression turned the peat into coal.

The Pennsylvania Period was named for the large quantity of coal that was formed during that time in what is now the state of Pennsylvania. Coal also was formed in much of southern and central Iowa during that period. Coal is now one of Iowa’s important natural resources. Look closely at the Coal Swamp diorama to see the kinds of plants and animals that lived in Iowa during the Pennsylvania Period.

Amphibians and reptiles were abundant during the Pennsylvania Period. Find one of each in the diorama.

If coal is a rock, why can we burn it and get energy out of it? (Coal comes from wood that has never been burned, so the energy has never been released from it.)

The exhibit to the left of the diorama describes jointed-stem plants, scale trees, and ferns. Find these plants in the diorama.

Look into the swamp at the live and dead plants, and at the mud, moss, and water. Can you name places in the United States today that look like this? (Florida Everglades and Louisiana bayous)

After you’ve gone....

Find a piece of coal. Hold it in your hand and imagine it as part of a live tree in a Pennsylvanian Age coal swamp. Visit a coal mine.

Imagine walking into this swamp. What would it feel like under your feet? How would it smell? What would the air be like?
Connect the dots to make a picture of the Pennsylvanian Coal Swamp.
Connect the dots to see who lived during the Ice Age.
Match the tools used by Iowa's native cultures with the materials the people used to make those tools.
Ice Age Sloth

Your walk through time brings you to the Pleistocene: a time of great climatic changes. Periodically, glaciers came from the north and covered much of Iowa, resulting in a climate more cool and moist than today's. When the glaciers retreated the climate became warmer and drier than it is today.

Many different large animals lived in Iowa during this time. Mammoth, musk ox, reindeer, and giant sloths were a few of the mammals well adapted to Ice Age climates.

About 9,000 years ago the glaciers in Iowa melted back. As the climate became warmer and drier, forest gave way to prairie. The animals of the cool forests either vanished, migrated elsewhere, or remained in Iowa. The Ice Age exhibit shows you which animals became extinct, which were emigrant, and which are extant.

Giant sloths like the one you see in this diorama lived in Iowa during the Pleistocene. They were slow-moving vegetarians who used their long claws more for food gathering than for defense. Their thick fur helped them survive the glacial climate. As the glaciers receded, the sloths' habitat disappeared and a new predator, Paleo-Indian, entered North America. The giant sloth, unable to adapt to the prairie or migrate to a cooler climate, became extinct.

Scientists know that giant sloths lived in Iowa because they have found fossilized remains. Find three sloth fossils in the exhibit behind you.

The giant sloth was one of many large animals of the Ice Age. Another was the mammoth, which is related to the present-day elephant. Find the mammoth tusk in the exhibit. It is about half the length of the original tusk. Imagine how large the mammoth was to hold up such an immense tusk!

Find the two beaver skulls in the Ice Age mammals exhibit. Notice how different in size they are. Which is the prehistoric beaver?

After you've gone....

Find a wooded area with plants like those in the sloth diorama. Imagine a sloth moving through the woods looking for food.
Native Cultures

As you move closer to the present time you will see artifacts left by Iowa's Indian cultures. Archaeologists study these artifacts. Like detectives, they use the objects as clues to discover more about people. As you travel through the Native Cultures sequence, use your detective skills to learn more about the interesting Iowans of long ago.

Iowa's earliest people resembled the Paleo-Indian in the first diorama. They lived simple nomadic lives, made their tools from bone and rock, and carried their few possessions with them.

Over time they developed new tools for hunting and food processing. They became less nomadic and began to cultivate crops, and store food and seeds. They traded surplus food with other tribes and later, Europeans. Corn, native to Mexico, was brought along the trade routes to Iowa. It grew well here and became an important part of the Indian diet.

The Great Oasis exhibit, at the midpoint of the archaeological series, gives you a bird's-eye view of one of Iowa's native cultures. The diorama recreates a view of the western Iowa prairie near the loess (luss) hills. The oasis provided game for food, ample water to drink, and trees and grass for building shelter. Look closely to see the Indians carrying out eight different activities.

There are many pottery bowls of different shapes, sizes, and design here. Look for them in each exhibit beginning with the Woodland and ending with the Ioway. How do you think the bowls were used?

Mill Creek Indians made many things from bone. What animals' bones are represented in the exhibit? What were they used for?

What did the Indians find to make them want to settle in the Great Oasis?

Find the Great Oasis Indian drying squash. Look for where the corn was planted. Look for other food on exhibit in this sequence, starting with the Archaic exhibit and ending with the Ioway.
Mesquakie Lodge

Your walk through time illustrates how Native American cultures in Iowa changed over 10,000 years: from the Paleo-Indian, hunter of sloth and bison, to the Mesquakie, with ornate beadwork and complex social customs.

In the 1600s the Mesquakie Indians lived in the Green Bay area of Wisconsin. After fighting French fur traders there, the tribe moved south in the late 1700s in search of freedom to hunt and plant crops. Treaties, including one after the Black Hawk War, took Mesquakie land. The tribe was sent to a reservation in Kansas.

Despite many difficulties, some Indians hid from the soldiers and remained in Iowa. In 1856 the Iowa legislature, in a meeting in the capitol building in Iowa City, passed a law allowing the Mesquakies to buy land and live in Iowa. They bought land near Tama. The tribe still owns this land, called a settlement, and lives there by its own customs and traditions.

Look at the exhibit to find the children’s toys that Mesquakie parents made with great care and love.

Before European traders came and brought glass beads, Mesquakie women used porcupine quills to decorate clothes. Find something decorated with quills.

Kings and queens wear crowns as symbols of their power. Important Indians wore necklaces of bear claws and otter fur. Find a nearby picture of Indians wearing bear claw necklaces.

Look in the exhibit to find the bags woven with basswood strips. Now look in the diorama near the Mesquakie woman’s feet. What color will those strips be when she dips them in her sumac berry dye?

Ideas for geometric patterns in beadwork came from Sioux Indians to the west; floral patterns came from settlers to the east. Find samples of each in the exhibit.

After you've gone....

Attend the Mesquakie pow wow, held in late summer every year at their settlement near Tama. Decorate a piece of cloth by sewing beads or buttons on it.
Color the picture of the Mesquakies at their lodge.
Draw arrows from each animal to the different foods it eats.
Draw the living things you saw in the magnified photo of soil.
Ecology of Iowa

The Ecology series gives you a place to pause before your trip through time returns you to the present. As you approach the forest, marsh, and prairie, imagine you are one of the first settlers arriving in Iowa 150 years ago. Each habitat had much to offer: the forest, shade and wood for shelter; the marsh, abundant game; and the prairie, fertile soil. Many kinds of plants and animals helped keep these habitats in balance. No wonder the pioneers called Iowa "beautiful land."

Now only small patches of the prairie, wetlands, and forest that once covered Iowa remain, along with the plants and animals that live there. We have made big changes in a relatively short time.

Ecology comes from the Greek word Oikos, meaning household. It is the study of the relationship of plants and animals to their surroundings. The Ecology series shows you how some plants and animals of Iowa interact to keep the forest, marsh, and prairie alive.

One home, a nest, is being guarded by the female red-winged blackbird. Find it. What is the male red-winged blackbird doing? Do you think any forest birds would try to nest in the marsh?

An owl perched on a tree in the forest and ate a meal. It coughed up pellets made of fur, bones, and feathers. Find the pellets. What kind of bones do you see?

Find three birds. What do you think the bird on the ground eats? The one perched above the rock? The one high in the tree?

Can you see the muskrat home made of cattails? Guess where the muskrat might be.

The great blue heron is looking for a meal. Can you find a frog for it to eat?

Find the bees and butterflies feeding on nectar from flowers.

The word prairie comes from the French word for meadow. Pioneers had no other word to describe the rolling, grassy hills they found covered with flowers.

Can you find an animal with eight legs?

Why is the prairie covered with grasses instead of trees? (Prairie grasses grew back from their roots after fires, but trees did not.)

Do you see smoke from the prairie fire? How might the fire have started? (Lightning, campfire)

Find the skull. Which of these animals do you think it belonged to?

Flowers must bloom and form seeds in early spring before tree leaves block the sunlight. How many different spring flowers can you find?
Iowa Soil

Your walk through time has taken you through five billion years of Iowa's history. The last stop brings you to the present, where you can see what tremendous changes people have made in just 150 years.

Prehistoric seas and swamps built Iowa's foundation, then the action of glaciers, wind, and water formed the soil and shaped the land as we know it today. Prairie plants took root, grew quickly, and died each year. This cycle continued, making the soil increasingly deep and rich. When the settlers arrived Iowa was blanketed with 16 inches of some of the best topsoil in the world.

Half of our topsoil has been lost, and the eight remaining inches could be gone in 36 years if conservation measures are not practiced. Soil is Iowa's "black gold" and the basis of its wealth. The soil exhibit gives you an underground look at our soil and its inhabitants.

Look at the Tragedy exhibit. What change has occurred in Iowa over the past 150 years that has caused the loss of topsoil?

How much soil do we lose for each bushel of corn we grow?

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After you've gone....
Look for examples of soil erosion. Look for examples of conservation. Put soil under a microscope and look for living things. Look for corn as an ingredient in food products you buy.

Look at the landforms exhibit. What is the landform in your part of the state? Is your area hilly or flat?

How do insects help the soil?

What happens to insects under the soil when chemicals are spread on its surface?

Find five household items listed in the Triumph exhibit that come from corn grown in Iowa's soil.