



UNIVERSITY OF NEBRASKA
STATE MUSEUM

WELCOME TO MORRILL HALL!

The nearly 80,000 square-mile piece of Earth we call Nebraska contains a wealth of fossils that show how our landscape, seascape, and lifescape have changed through the ages. While at Morrill Hall, you can unearth this natural history, discover our ancient story, and find out why there really is no place like Nebraska!

HOW TO USE THIS QUEST:

This quest is full of extra information to help you more deeply experience the exhibits. One thing we encourage – approach your visit like a scientist.

- Observe (we mean look closely!)
- Question
- Discuss
- Wonder
- Find answers
- And start all over again!

By the way, there's a lot of museum we don't cover in here. If we have left out a favorite area let us know how you take it all in!

E-mail: elephant@unl.edu
Phone: (402) 472-6302

JUST BECAUSE YOU CAN!

TOUCH the oldest fossilized life in the museum!



MAIN FLOOR

On our main floor, you will discover Nebraska's ancient past of sea monsters, rhinos, and elephants! You can also shoot into the future at our Planetarium!

Most important, on this floor you will come to understand this place called Nebraska as it evolved over time. What was Nebraska like during the ancient Paleozoic Era, the Mesozoic Era, and the Cenozoic Era? Go, seek, find!

ANCIENT LIFE GALLERY

PALEOZOIC NEBRASKA, LIFE IN THE SEA!

The Paleozoic Era (541-252 million years ago) was a time of great change. Plants took over the land, vertebrates (animals with backbones) appeared in the sea and then invaded the land, and giant insects flourished thanks to high oxygen levels during parts of the Paleozoic.

- **LOOK** in the window dioramas. What are the dates? What is Nebraska's habitat at each time period?
- **CHOOSE** a creature you like from the blue drawers under the Nautiloid-Ammonoid Evolution wall.
- **DISCOVER** where in the world your creature's fossil has been found?
- **PUT** an X on the map wherever fossils of your creature have been found.
- **BAM! LOOK** in the Permian Sea window. . . what % of all sea species disappeared forever at the end of the Paleozoic Era?

PERMIAN SEA EXTINCTION

is considered one of the greatest extinctions of all time. It is estimated that 96 percent of marine species and 70 to 80 percent of land-dwelling species perished. To this day, no one is certain why so many species and entire ecosystems disappeared. Hypotheses include a meteorite hit, increased volcanic activity, drastic climate changes, or perhaps a series of damaging events.

Geologic Time Scale

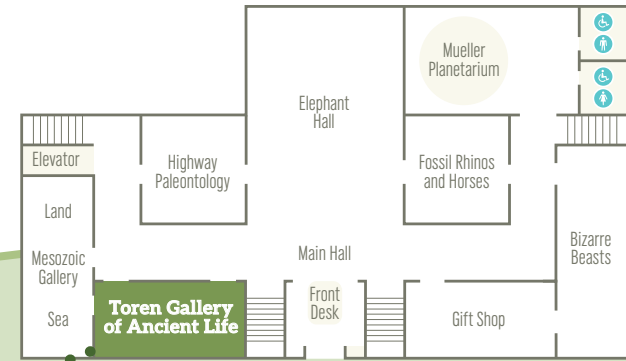
Origin of the Earth
4.5 billion years ago

Precambrian | Duration: 4 billion years

Paleozoic
541-252 million years ago

Mesozoic
252-66 million years ago

Cenozoic
66 million years ago - today



MESOZOIC GALLERY

MESOZOIC NEBRASKA, LAND AND SEA

The Mesozoic Era (252-66 million years ago) is known as the Age of the Reptiles. The temperatures were high and the climates were more tropical in nature. Who liked this climate? Reptiles. Reptiles ruled the earth; flying reptiles, swimming reptiles, and dinosaurs!

Nebraska does not sport many dinosaur fossils. We specialized in other types of reptiles...

LAND: WALKING WITH DINOSAURS

- **LOOK** at the photos to the right.
- **WONDER** - what differences do you see in how the crocodile and the dinosaur stand? Dinosaurs were reptiles that walked on land with their legs straight underneath them.



"I WANT TO DRINK SASSAFRAS TEA IN THE SHADE OF A SYCAMORE TREE LISTENING TO THE SWEET, SWEET SOUND OF THE WIND THROUGH THE COTTONWOOD LEAVES."



- **CREATE** - your own Mesozoic-inspired poem:

In 1666, Danish anatomist Nicholas Steno recognized how fossils come from the bones and teeth of living animals. Not all fossils come this way. Trace fossils are the imprint or mark left by an organism, such as a track, a trail, a burrow, a leaf, etc.!

FIND dino tracks... What story do they tell?

Geologic Time Scale

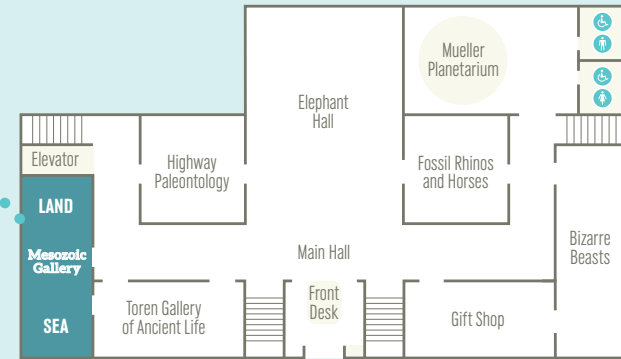
Origin of the Earth
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Mesozoic
252-66 million years ago

Genozoic
66 million years ago - today



SEA: SWIMMING WITH MONSTERS

- **LOOK UP!** Yikes - that's a Mosasaur - one of the biggest, meanest sea reptiles that roamed the earth. Some speculate it may have grown bigger than Mr. T Rex!
- **WONDER** - How did it move? Does he have fins or a paddles?
- **FIND** another paddle in the room. Compare your hand to it.
- **If you have a paddle, you are a R_PT_L_!**
- **FIND** the Pleisiosaur on the floor. We call him "Val." He was discovered only 15 miles away. Did he live on land, air, or in the water? How do you know?
- **WALK** along Val's neck. How many steps does it take to reach his head? If we had it's body it would be about the size of a standard school bus.
- **WONDER** - What do you think happened to its body?

PUT IT ALL TOGETHER:

Looking at our fossil record of this time, Mesozoic Nebraska would have been:

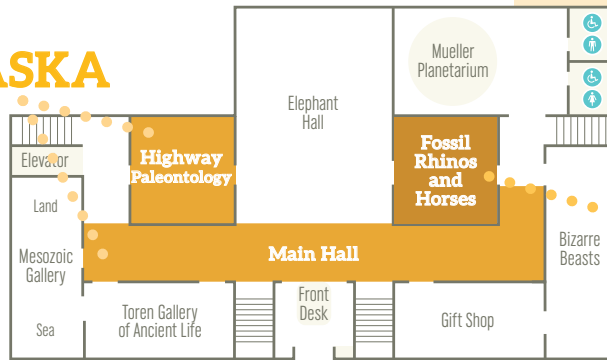
- a mountain that never saw snow
- an in-land sea, as deep as the State Capital is high
- a desert with crawling reptiles

MAIN HALL CENOZOIC NEBRASKA

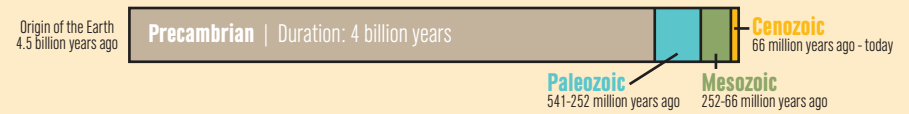
The Cenozoic Era (66 million years ago to today) is called the Age of Mammals. Nebraska-land became high and dry and the mammals thrived. We have the fossils to prove it!

WALKING WITH (REALLY OLD) WILDLIFE

- **FIND** the fossil skeleton of each of the animals below. *Hint: Look for each animals special feature.*
- **WONDER** - what modern animal does each one remind you of?
- **ADD** their name and **CIRCLE** one special feature on the drawing below.



Geologic Time Scale



FOSSIL RHINOS AND HORSES EQUINE EVOLUTION

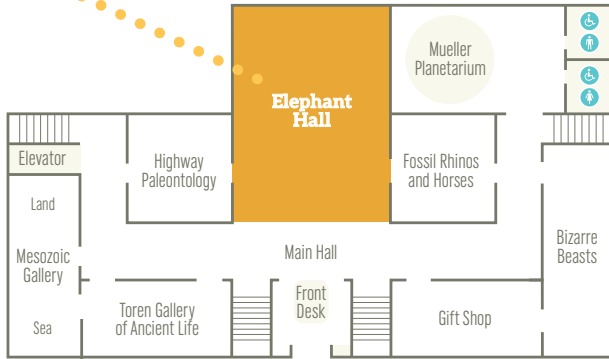
Nebraska's long history of human and horses includes bareback riders, cowboys and rodeo princesses. The geologic story of horses goes back much further. Horses evolved here in North America.

- **FIND** the Eocene Horse model. **FOLLOW** the trail to the Pleistocene Horse fossil.
- **WONDER** - Why do you think they changed?
- **LOOK** at their toes. What kind of habitat/terrain would each horse be walking across?
- **DRAW/WRITE** your answers here:

ELEPHANT HALL CENOZOIC NEBRASKA

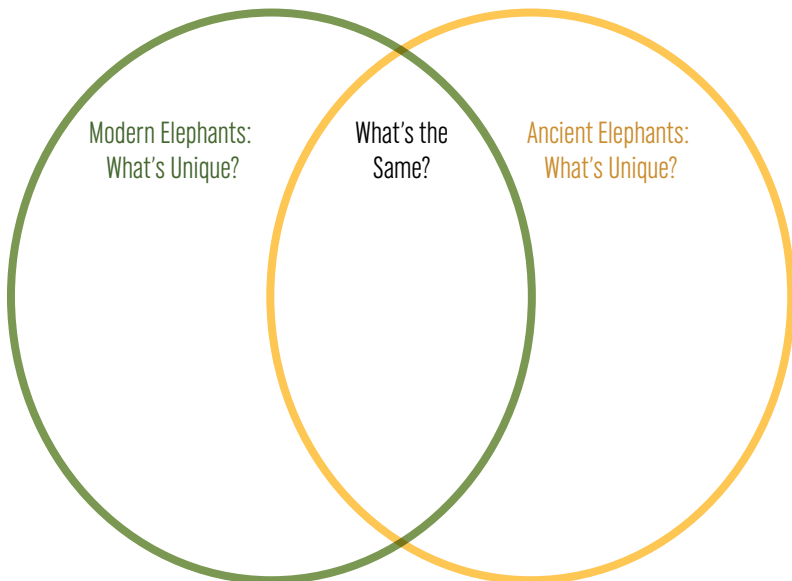
Enter our world famous collection of ancient elephants. Ancient elephants were common in Nebraska. Their fossils are found in 90 of the 93 counties in Nebraska.

Our big mammoth is "Archie" (from *Archidiskodon*). Outside he is covered in bronze. In here, he is the largest mounted mammoth skeleton in the United States, measuring 14 feet high at the shoulder. It's estimated he lived around 30,000 years ago and may have walked right past where you stand now.

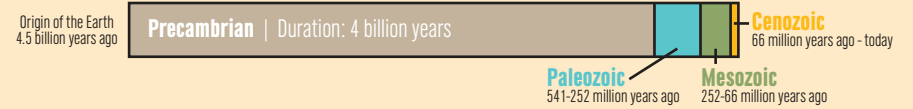


STANDING WITH GIANTS

- **STAND** in the middle of the room
- **LOOK** around. **FIND** an ancient elephant you like and compare it with the modern Asian or African elephant skeletons.
- **OBSERVE** – What is different? What is the same? Use the diagram below to help you figure it out.



Geologic Time Scale



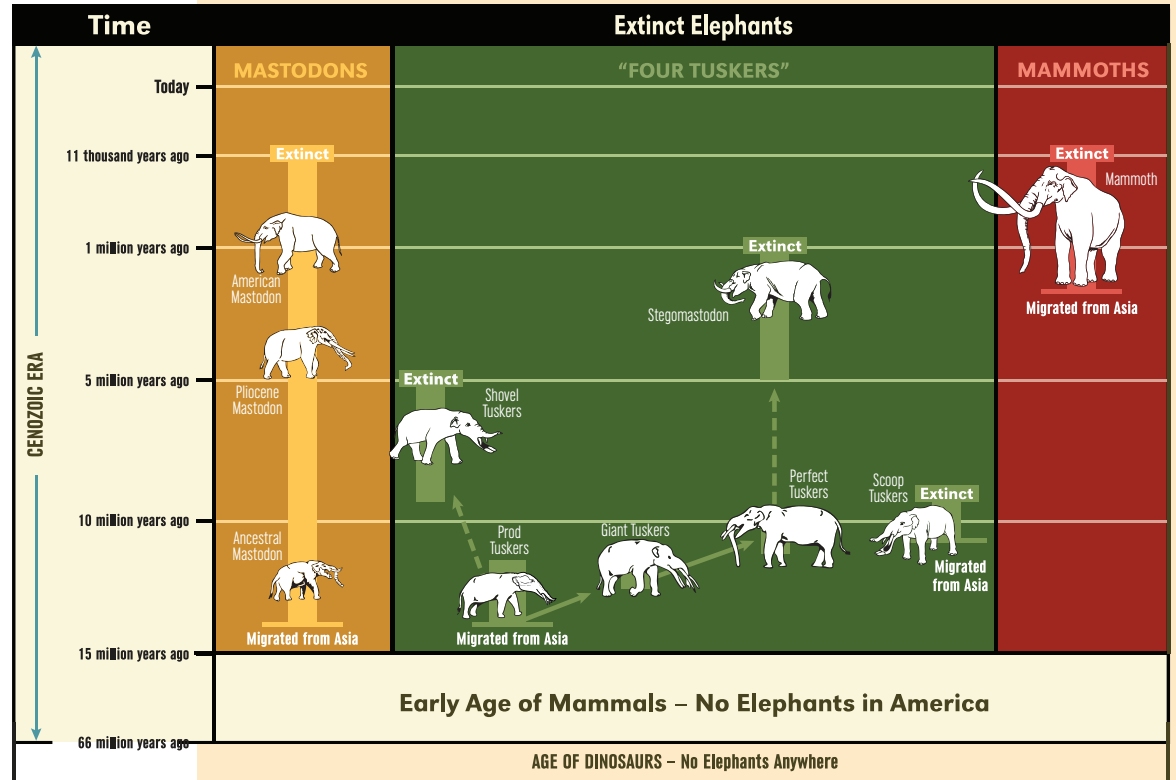
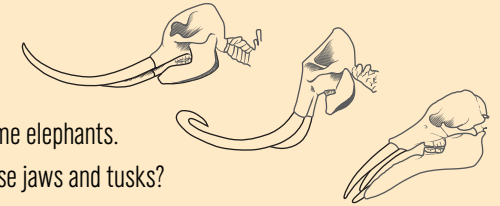
BIG TEETH

- **FIND** the display of six touchable elephant teeth.
- **WONDER** – Why are their teeth so different? What did they eat?
- **DISCOVER** which fossil elephant tooth is most similar to modern elephants.

JAWS AND TUSKS

Shovels, scoops and diggers.

- **FIND** the strange jaws that belonged to some elephants.
- **WONDER** – How would they have used these jaws and tusks?



NEBRASKA ELEPHANT TIMELINE

★ Remember, the oldest is at the bottom.

Uncertain time range -----

- **WONDER** – What happened to the ancient elephants? Why do you think?
- **DISCOVER** – What is the plight of modern day elephants?