

Eons on this page are not to scale.

## Hadean Eon

The earth formed 4.6 billion years ago. During this period, the earth cooled and water appeared.

The Hadean Eon lasted 600 million years. If this scale showed it at actual size, it would be nearly 7 pages long.

4.6 billion years ago

## Archean Eon

The Archean Eon began with the first signs of life. Fossils from this time are so small, scientists must use microscopes to see them.

The Archean Eon lasted 1.5 billion years. If this scale showed it at actual size, it would be nearly 17 pages long.

4 billion years ago

## Proterozoic Eon

During the Proterozoic Eon, oxygen built up in the atmosphere. The earth may also have experienced some “snowball earth” periods.

The Proterozoic Eon lasted 1.96 billion years. If this scale showed it at actual size, it would be over 21 pages long.

2.5 billion years ago

540 million years ago

1 inch = 10 million years

## Paleozoic Era

### Cambrian Period

Life spread into many species very quickly, an event that scientists call the Cambrian Explosion.

Land formed into the continent Gondwana, but no life lived on land yet.

### Ordovician Period

The first corals appeared, and more species of animals developed shells. The earth experienced an ice age.

### Silurian Period

540 million years ago

485 million years ago

485 million years ago

445 million years ago

445 years

|   |                       |   |  |  |                       |                       |
|---|-----------------------|---|--|--|-----------------------|-----------------------|
|   |                       |   |  |  |                       |                       |
| Triassic Period   |                       |   |  |  | Carboniferous Period  |                       |
| Fish developed jawbones, which they passed on to their descendants. | Devonian Period       | Scientists call the Devonian Period the “Age of Fishes.” Fish developed fins and began to dominate the seas. Most of the fish that did not have jawbones went extinct. Some fish crept onto land, where the first forests were growing. |  |  | Mississippi River     |                       |
| Plants sprouted on land.  |                       |   |  |  |                       |                       |
| million ago   | 419 million years ago | 419 million years ago   |  |  | 359 million years ago | 359 million years ago |

1 inch = 10 million years

## Carboniferous Period

### Mississippian Subperiod

Scientists in the United States divide the Carboniferous Period into two subperiods. During both subperiods, rainforests were buried and fossilized into coal.

Amphibians appeared.

### Pennsylvanian Subperiod

Gondwana moved toward the south pole and glaciers formed on the land. The air was high in oxygen, leading to giant insects.

The first reptiles appeared. Amphibians laid eggs in the water, but reptiles laid eggs on land.

## Permian Period

All land masses merged into one continent, Pangaea. Mammal-like reptiles, such as Dimetrodon, dominated this continent.

At the end of the Permian Period, a major catastrophe killed 95% of all life on earth. Scientists do not yet understand what caused this disaster.

n

323 million years ago

323 million years ago

299 million years ago

299 million years ago

252 million years

|           |   |        |      |  |   |                       |
|-----------|---|--------|------|--|---|-----------------------|
|           |   |        |      |  |   |                       |
|           | Mesozoic Era—Age of Reptiles  |        |      |  |   |                       |
|           | Triassic Period   |        |      |  |   |                       |
|           | Early   | Middle | Late |  | Early   | Middle                |
| llion ago | 252 million years ago   |        |      |  | 201 million years ago   | 201 million years ago |
|           |   |        |      |  |   |                       |
|           | <p>Life slowly recovered from the Permian extinction. The first dinosaurs appeared, but most were small. Non-dinosaur reptiles dominated the land.</p> <p>The Triassic Period ended with an extinction event in the oceans.</p> |        |      |  | <p>Reptiles like plesiosaurs and ichthyosaurs flourished in the oceans. Dinosaurs began to dominate the land.</p> |                       |

|   |   |       |  |  |  |  |   |  |
|---|---|-------|--|--|--|--|---|--|
| 1 inch =  | 10 million  | years |  |  |  |  |   |  |
| Cretaceous Period   |   |       |  |  |  |  |   |  |
| Late  | Early   |       |  |  |  |  | Late  |  |
| Pangaea split into two continents. Crocodiles and birds first appeared, and dinosaurs continued to grow larger. | New dinosaurs appeared, such as spinosaurs.<br>Ichthyosaurs went extinct.<br>The first flowering plants appeared. |       |  |  |  |  | The continents continued to spread. Pliosaurs went extinct, replaced by mosasaurs and sharks. Dinosaurs dominated the land. |  |
| 145 million years ago   | 145 million years ago   |       |  |  |  |  | The Cretaceous Period ended abruptly when a meteor struck the earth, killing 75% of all life.                               |  |

| Cenozoic Era—Age of Mammals |   |  |  |   |   |  |                           |
|-----------------------------|---|--|--|---|---|--|---------------------------|
|                             | Paleogene Period  |  |  | Neogene Period  |   | Quaternary Period  |                           |
|                             | Paleocene Epoch   | Eocene Epoch   | Oligocene Epoch  | Miocene Epoch   | Pliocene Epoch  | Pleistocene Epoch  | Holocene Epoch            |
|                             | Mammals and very large birds take the place of dinosaurs. | This epoch started out as one of the hottest periods earth experienced. Forests covered most land.<br><br>The Eocene Epoch ended with rapid cooling and ice caps forming at the earth's poles. | The first grasslands appeared. Mammals spread rapidly. | Mammals changed in response to grass overtaking other plant life. Some mammals became very large. | Continents neared their present locations. First hominids appeared. | Modern humans appeared. Many large mammals went extinct. | Glaciers began to recede. |
| 66 million years ago        | 66 million years ago                                      |  | 23 million years ago                                   | 23 mil years ago  | 2.6 mil years ago   | 2.6 mil years ago to present                             |                           |



We live in the Holocene Epoch of the Quaternary Period of the Cenozoic Era.  
 The Holocene Epoch began 10,000 years ago.  
 Written history began 6,000 years ago.

Copyright Waco Mammoth Site, December 2014.