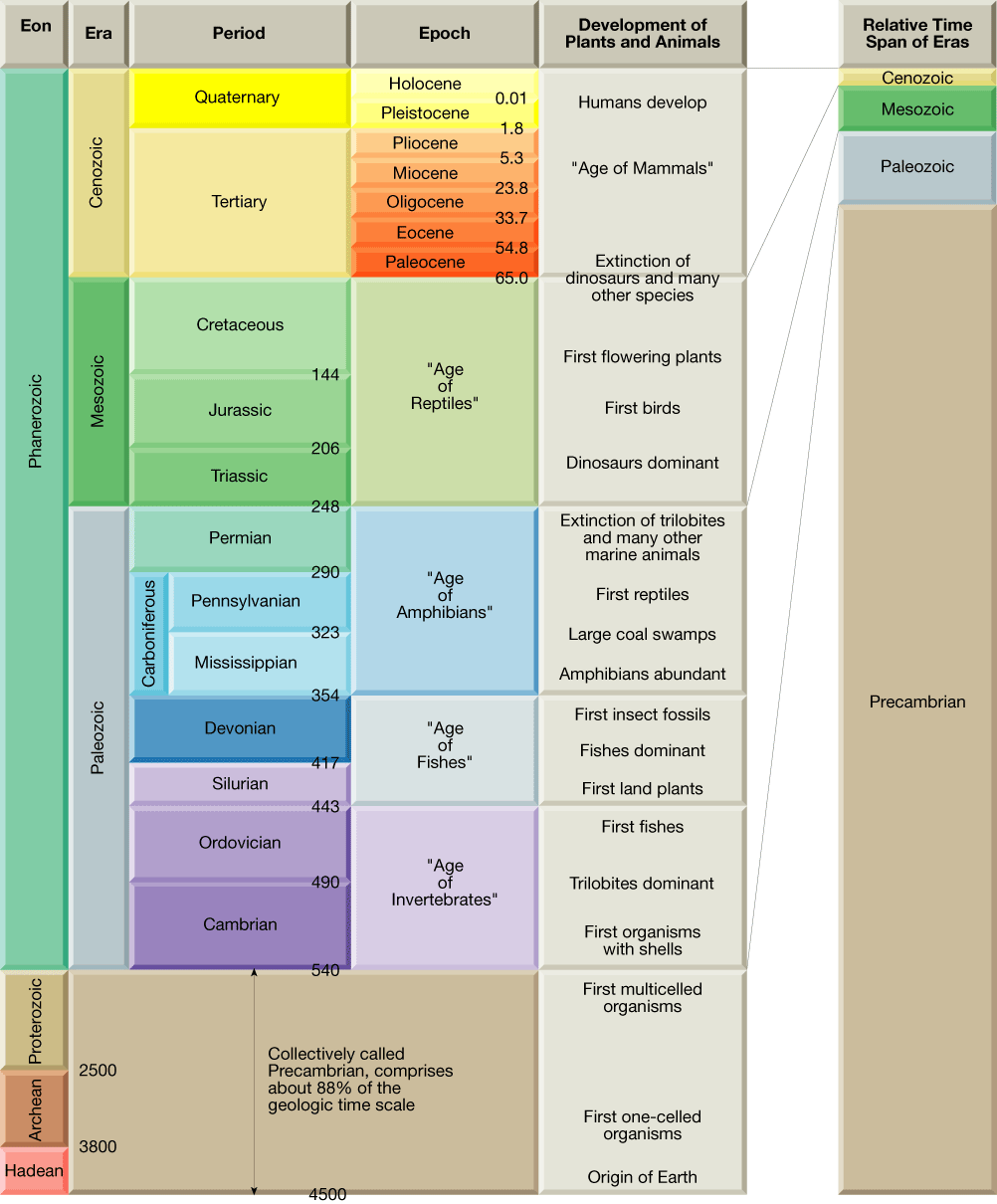
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Guided Notes: Earth’s History

**Precambrian History**

* The Precambrian encompasses immense geological time, from Earth’s distant beginnings 4.56 billion years ago until the start of the Cambrian period, over 4 billion years later.
* Precambrian Rocks
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are large, relatively flat expanses of ancient metamorphic rock within the stable continental interior
  + Much of what we know about Precambrian rocks comes from ores mined from shields



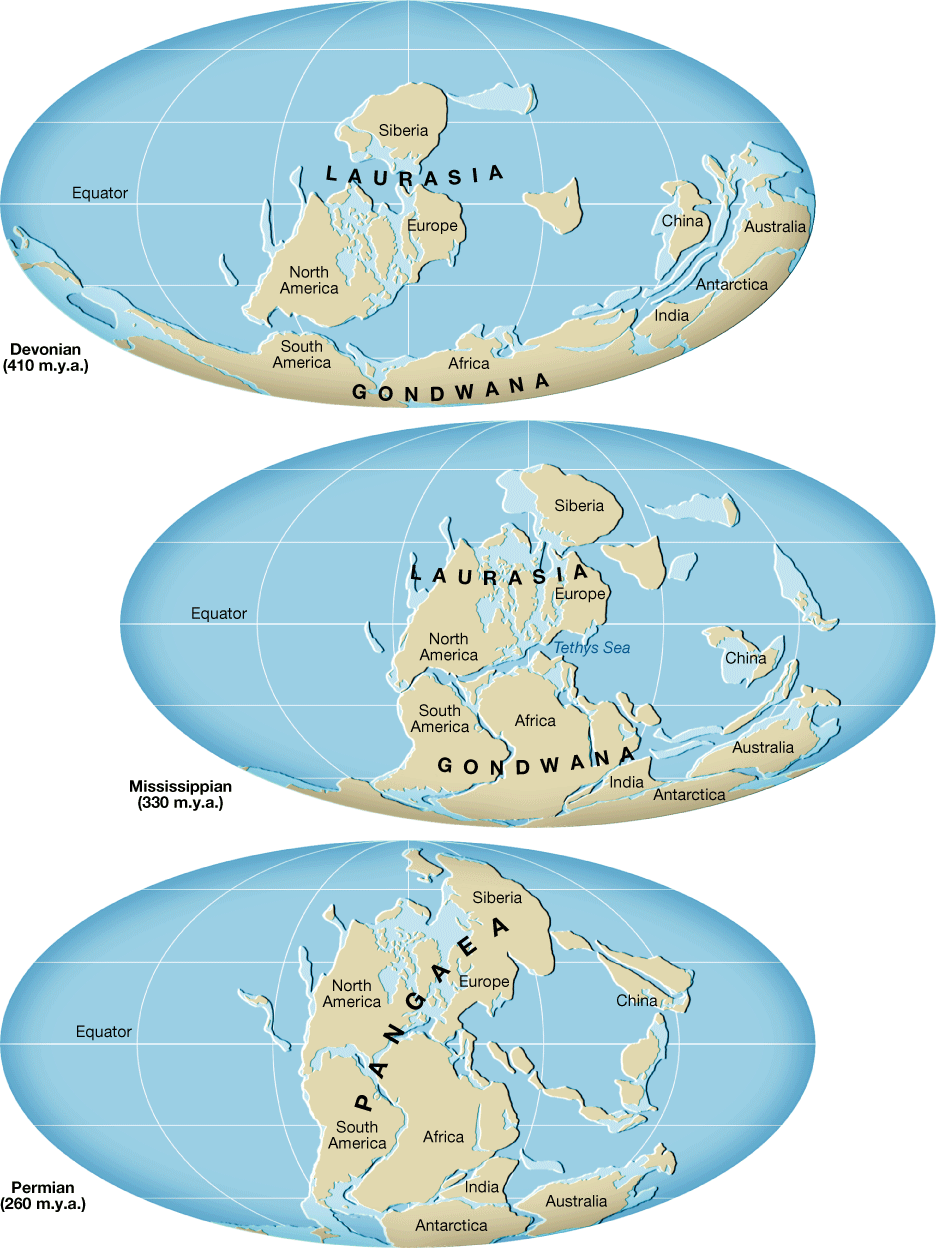
* Earth’s Atmosphere Evolves
  + Earth’s original atmosphere was made up of gases similar to those released in volcanic eruptions today—water vapor, carbon dioxide, nitrogen, and several trace gases, but no **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
  + Later, primary plants evolved that used **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and released oxygen
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** began to accumulate in the atmosphere about 2.5 billion years ago.
* Precambrian Fossils
  + The most common Precambrian fossils are stromatolites
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are distinctively layered mounds or columns of calcium carbonate. They are not the remains of actual organisms but are the material deposited by algae
  + Many of these ancient fossils are preserved in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** —a hard dense chemical sedimentary rock

**Early Paleozoic**

* Following the long Precambrian, the most recent **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** million years of Earth’s history are divided into three eras: Paleozoic, Mesozoic, and Cenozoic.
* During the Cambrian, Ordovician, and Silurian periods, the vast southern continent of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** encompassed five continents (South America, Africa, Australia, Antarctica, and part of Asia).



* Early Paleozoic Life
  + • Life in early Paleozoic time was restricted to the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* Late Paleozoic History
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is the continental mass that formed the northern portion of Pangaea, consisting of present-day North America and Eurasia
  + By the end of the Paleozoic, all the continents had fused into the supercontinent of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_**



**Late Paleozoic**

* Late Paleozoic Life
  + Some **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** million years ago, plants that had adapted to survive at the water’s edge began to move inland, becoming land plants
  + The amphibians rapidly diversified because they had minimal competition from other land dwellers.

**The Great Paleozoic Extinction**

* The world’s climate became very seasonal, probably causing the dramatic **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of many species.
* The late Paleozoic extinction was the greatest of at least **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** mass extinctions to occur over the past 500 million years

**Mesozoic Era**

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** were land-dwelling reptiles that thrived during the Mesozoic era
* Mesozoic History
  + A major event of the Mesozoic era was the breakup of Pangaea.
* Mesozoic Life
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are seed-bearing plants that do not depend on free-standing water for fertilization
  + The gymnosperms quickly became the dominant plants of the Mesozoic era
* The Shelled Egg
  + Unlike amphibians, reptiles have **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** eggs that can be laid on the land.
  + The elimination of a water-dwelling stage (like the tadpole stage in frogs) was an important evolutionary step.
* Reptiles Dominate
  + With the perfection of the shelled egg, reptiles quickly became the dominant land animals
  + At the end of the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** era, many reptile groups became extinct

**Cenozoic North America**

* The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** era is divided into two periods of very unequal duration, the Tertiary period and the Quaternary period
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** interactions during the Cenozoic era caused many events of mountain building, volcanism, and earthquakes in the West

**Cenozoic Life**

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** —animals that bear live young and maintain a steady body temperature— replaced reptiles as the dominant land animals in the Cenozoic era.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** —flowering plants with covered seeds—replaced gymnosperms as the dominant land plants.
* Mammals Replace Reptiles
  + **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** like being warm blooded, developing insulating body hair, and having more efficient heart and lungs allow mammals to lead more active lives than reptiles
* Large Mammals and Extinction
  + In North America, the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, both huge relatives of the elephant, became extinct. In addition, saber-toothed cats, giant beavers, large ground sloths, horses, camels, giant bison, and others died out on the North American continent.
  + The reason for this recent wave of extinctions puzzles scientists