



Lesson: Fields of Time

Grade level: K-8

Lesson duration: 30 minutes - 1 hour

Background

- Geologists and paleontologists divide the history of the Earth into four eras - the Cenozoic, the Mesozoic, the Paleozoic, and the Precambrian. The Precambrian Era stretches from when the Earth formed (4.6 billion years ago) to 600 million years ago. The first record of the existence of life on Earth comes from fossilized microorganisms found in rocks from about 3.5 billion years ago.

The Paleozoic Era (600 to 225 million years ago) marked the first appearance of complex animals and plants. The Mesozoic Era (225 to 65 million years ago) is when the non-avian dinosaurs flourished. Finally, the Cenozoic Era (64 million years ago to the present) saw the appearance of animals and plants similar to those you see on Earth today.

Each of these eras is divided into periods, which are divided into epochs, which are divided into ages. In order to understand when non-avian dinosaurs lived, we will need some guide posts. We will focus on nine major events in the history of time in this activity.

Objectives:

- Students will learn that *relative time* is the order of major events that have occurred during Earth's natural history.
- Students will learn that *absolute time* assigns numbers to major events that have occurred during Earth's natural history.
- Students will understand that Earth's history has spanned a very long time.
- Students will be able to name the three time periods of the Mesozoic Era - Triassic, Jurassic, and Cretaceous.
- Students will be able to approximate the dates of the Mesozoic Era (240 mya - 65 mya)

- **Students will identify the relative times of certain events in Earth's history**

Materials included:

- **Labeled flags**
- **Fields of Time notes (laminated)**
- **Event images**

Lesson procedure:

- 1. This is an active lesson! Start by having students guess and discuss how long ago different kinds of organisms lived.**
- 2. Gather the class in a location with lots of open space. This would ideally be a soccer or football field, but the playground could work as well.**
- 3. Have one student place the first flag in the ground. Explain that this flag represents the present time (right now!) and that you will be walking back in time during the activity. On the way, you will see when important events happened, like when the non-avian dinosaurs lived. Each step will take you back one million years!**
- 4. As a group, agree how big your steps will be so that everyone moves together.**
- 5. Beginning at the first flag, follow the "Fields of Time" notes, placing a flag in each new spot. When the flag is placed, have a student hold up the event poster for that spot and read the event name.**
- 6. The 8th and 9th flags would end up being about 2 miles from the starting spot. Since this is most likely impractical for the class to do, pick a landmark 2 miles away that could be pointed out to the class.**
- 7. When the activity is over, ask students if this timeline is what they expected. Ask them to make a list of what types of things had to be present during all of the different time periods in order for life to survive (water, plants, etc.).**