Third Planet Overview

Lesson Guide

Grade Level:
4th-8th

Subject Area:
Science
Language Arts

WI Model Academic Standards:
Science:
A.4.1, A.8.1; B.8.1; E.4.1; E.8.2

Language Arts:
C.4.2, C.4.3; C.8.2, C.8.3

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Overview:
Students embark on a journey though the geological history of the Earth from its formation 4.5 billion years ago through Wisconsin's period of glaciation 12,000 years ago. Objects, images and full-scale dioramas present geologic evidence used to create models of change on Earth, and its impact on the composition and diversity of plants and animals. Educators provide opportunities for hands on examination of real rocks, minerals, and fossils, and activities that draw out key concepts from the gallery's exhibits and dioramas.

Background:
The Third Planet Hall uses the theory of plate tectonics as the central theme for the presentation of earth science. A walk through the Third Planet Hall is a walk through "deep time" from the formation of our planet approximately 4.5 billion years ago to the Wisconsin Ice Age when glaciers covered this land only 12,000 years ago. In between, students will explore evidence of the forces of change.

Student Objectives:
1. Observe geologic changes over time in plate tectonics, volcanism, glaciations/climate change, extraterrestrial events and life itself.
2. Examine fossils characteristics that provide evidence of changes in life over time.
3. Examine two different evolutionary ecosystems that once occupied the place where Milwaukee is now—the Silurian Sea and Wisconsin Glaciation.

Assessment:
1. Students will share examples of physical evidence used by scientists to create models of how the Earth has changed over time—including Earth's formation, theory of plate tectonics, and impact theories.
2. Students will make direct correlations between the fossil evidence of life and geologic forces through time.
3. Students can contrast the dominant global/geologic forces that influenced life in what is now present day Milwaukee during periods 420 million years ago and 12,000 years ago.

Program Vocabulary:
Climate Change: periodic modification of Earth's climate brought about as a result of changes in the atmosphere as well as interactions between the atmosphere and various other geologic, chemical, biological, and geographic factors within the Earth system

Colonization : the spread of new species into a habitat

Continental Plate: portion of a tectonic plate not submerged in water

Erosion: a process by which wind, water, or other natural process wears down/removes (erodes) a surface

Extinction: the state or process by which a species, or larger group, becomes extinct

Fossil: physical remains or trace of an organism from a past geologic time

Geology: area of scientific study that deals with the Earth's physical structure and substance, its history, and the processes that act on it

Glaciation: the process, condition, or result of being covered by a glacier or ice sheets

K-T (K-Pg) Extinction: Cretaceous–Paleogene (K–Pg) extinction event, formerly known as the Cretaceous–Tertiary (K–T) extinction, in which three-quarters of the Earth's plant and animal species became extinct a geologically short period of time 66 million years ago

Magma: the hot fluid or semi-fluid material from beneath the Earth's crust from which lava and other igneous rocks form by cooling

Plate tectonics: theory on how the folding and faulting of the Earth's crust influences the geology of the planet

Volcanism: volcanic activity or phenomena

Enrichment Vocabulary:

Biosphere	Catalyst	Energy	Geologic Time
Heat	Igneous Rock	Metamorphic Rock	Mineral
Pangaea	Sedimentary Rock	Subduction	

Procedure:

Meet your Museum educator in front of the elevator on the first floor five minutes before your scheduled program start time.