

NOTES: Geologic Time Scale

Topic 5 (History of the Earth)

Earth Scientists

_____ – A scientist who studies the Earth's crust as well as the processes and history that shaped it.

_____ – a scientist that studies fossil remains found on the Earth's surface in order to study primitive life form such as: plants, animals, fungi, and bacteria

Stratigraphy

A branch of geology dealing with the arrangement of

_____ rock layers or strata

Geologists assume the _____ rock layers are on _____ of the _____ ones, unless some type of disturbance occurs.

Called the _____

Relative Age

The strata of sedimentary rocks is important in determining their

_____ age.

Relative age determines the "relative" order of past events but not the

Like saying you're relatively younger than your grandfather

Relative Age

Strata is sometimes _____.

Here we see a fault (E) and an igneous intrusion (D)

See if you can determine the order of the strata in this diagram.

Determining relative age in the field is sometimes very _____ because of these _____.

Fossils

Preserved _____ or _____ of animals, plants, and other organisms from the remote past.

_____ – History of life as documented by all fossils, preserved in sedimentary rock strata

Provides a _____ of past events in Earth's geological history

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Index Fossils

Special fossils called "index fossils" indicate to geologists the _____ in geological time.

This is another _____ to determine the _____ of rocks.

Characteristics of Index Fossils

1. _____
2. _____
3. _____
4. _____

Fossil Record and Rock Strata

Index fossils are used to _____ the age of the rock strata.

If two different rock strata in different areas on Earth contain the same index fossils, then the strata are probably the same _____

Absolute Age

Most accurate form of dating, also call _____ dating.

Uses the _____ of radioactive elements to find the _____ age of a rock or fossil

This relies on the property of _____, which is the _____ an element takes to decay.

Geologic Time Scale

All of Earth's geological history represented on a _____ time chart

Based on _____ and the _____

Broken into different time chunks, the largest being the Eon, then _____, _____, and Epoch.

_____ stands for millions of years. This diagram is not to scale.

Geologic Time Scale

Look how much of the Earth's geologic history falls into Hadean, Archean, and Proterozoic (together called _____) - _____%

If this were a clock, humans show up _____.

Notice some of the important events which happened over _____

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Precambrian

Broken into _____ parts Hadean, Archean, and Proterozoic

Marks the beginning of Earth approximately _____

Oldest rock fragment on Earth contains a mineral, zircon, that is 4.4 m.y.(found in _____)

Very primitive life forms: one-celled animals, bacteria, _____

Paleozoic Era (_____)

Marks the formation of the super continent, _____

Life developed _____

Marine plants and invertebrates

Fish and ferns

_____ at the end of Paleozoic

Mesozoic Era (_____)

Increased _____ life forms including:

Small mammals

Birds

Conifers and _____

Rocks in the Petrified Forest in _____ were deposited during this time.

Another _____ at end of Mesozoic.

Cenozoic Era (_____)

Currently in this Era

Development of:

Large _____

Periods of _____ played a role in the formation of the geological features visible on Earth today.

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Living Organisms

Fossils of previous _____ are used to further divide Earth's geologic history.

Life on Earth has _____ or _____ quite a lot in 4.6 b.y.

We live in the _____ which is further broken down into _____

In which Epoch do we live? _____

Geologic Time Scale

During the Earth's 4.6 billion years, it has suffered _____ major mass extinctions.

An extinction is the end of a _____, usually a species.

Dinosaur Extinction

Most recent extinction is called the Cretaceous-Tertiary extinction event happened _____ ago.

_____ and _____ changes are thought to have _____ the dinosaurs.

A _____ was probably the final blow.