

NOTES FOR EARTH HISTORY CHAPTER 33-35

Discussion of the new theory that all human creatures originated from Africa and traveled through Europe and Asia east through the Bering Straits into North America down Central America into South America. – How would scientists discover this? How would they estimate time?

Discuss that scientists theorize that there has been several mass extinctions where 90% of the Ea's species at that moment in time are simultaneously killed off ie. The dinosaurs. What evidence is required to prove such a theory?

Relative Time- placing events in a sequence but does not actually identify the date. Mrs. R is born between the death of Martin Luther King and the first space shuttle mission.

Absolute Time- identifies a particular date on the record gives an age usually by special dating techniques (radioactive dating) or special event.

Law of superposition- oldest rock layers will always be on the bottom. (as long as there is no overturning)

Unconformity- part of the rock record is missing due to erosional forces removing it. (glacier, wind, mechanical weathering etc) Usually shown as a heavy wavy line between layers. Can also be established by sequential sections missing.

Correlation – match rock layers and fossils to assign relative ages to fossils and layers

Index Fossils-

Stromatolites- ancient seaweed beds, looks like distorted rock due to wavy rock layers but dull and earthy colors

Trilobites- ancient horseshoe crab, very abundant

Eurypterids- NYS fossil. Grew up to 3 feet

Crinoids- animal like coral but bigger, tentacles on a segmented stem

Key Beds/ volcanic ash

Law of horizontality- sedimentary layers are put down straight,

Cross bedding

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Timetable – time periods – see ESRT

Eon – biggest span of time (Archaean, Proterozoic)

Era – 2nd largest division – discuss dark band and how to arrange time layers

Discuss numbered time line external and internal to the table

Period – third division of time important to be familiar w/ names

Epoch – time division – broken down into smaller sections – discuss why the most recent time epochs have so many sections compared to older epochs.

Discuss why breaks between sections were placed due to changes in living creatures ie. Simplest marine creatures → more complex

Discuss *evolution*- change in organisms over time due to natural selection
With changes, organisms should be better to survive.

natural selection- environments adding stress to organisms, the organism that is able to reproduce the most offspring, has the best genetic potential – offspring reproduce to survive

Half Life – see ESRT w/ radioactive dating numbers – C14, U238

Alpha, beta, gamma particles

Decay products

Do problems

Pie diagrams

See pg 613 CT 1-6

Discuss NY State Geologic Bedrock and land scape regions –

Discuss Niagra Falls, Letchworth Park and Grand Canyon in terms of weathering and erosion but also earth history