Name Key Date: 5/21/14 Period: _____ ASSIGN

EOG Review: Geology and Evolution

1. The Earth is 4.6 billion years old.
2. List the divisions of the Geologic Time scale from largest to smallest: Eon, Era, Period, Epoch
3. Ice cores can be taken from Antarctica to show climate data from thousands of year ago.
4. An Index Fossil is a fossil of an organism that was common in one time period in multiple areas. These can be used to find the relative age of rock layers and other fossils.
5. Original remains are the actual bodies or body parts of once living things. These can be preserved in ice, amber, or tar.
6. Rock fossils form in sedimentary rock. The four types of rock fossils are trace, mold/cast, Petrified, and carbon film.
7. According to the Law of Superposition, in a layer of rocks, the bottom layer is the oldest and the top layer is the youngest.
8. Igneous rock forms from cooled molten rock. Igneous rock that cuts through layers of rock is always the youngest layer.
9. A period of time when a large number of species became extinct is known as a mass extinction.
10. The dinosaurs died in the Cretaceous extinction and more than 90% of ocean life died in the Permian extinction.
11. The earliest evidence of life comes from the ocean and these organisms were unicellular.
12. Radioactive dating (½ life) can be used to find the absolute age of a fossil.
13. What is unconformity? When a set of rock layers have been disturbed so the oldest layer is no longer on bottom
14. What is uniformitarianism? the idea that the Earth is constantly changing and the forces of change at work today were at work in the past.
15. What did Alfred Wegner propose and why was this important?
[redacted] Continental drift - showed the Earth was changing
16. What are Darwin's two theories? What **evidence** did Darwin use to support his theories?
- Evolution + Natural Selection.
- Evidence - ① Fossil Record ② Biogeography ③ Comparative anatomy ④ Comparative embryol ⑤ Genetic evidence.
17. What are the 4 processes of natural selection? Define each one.
① Overproduction - organisms have more offspring than will survive.
② Variations - [redacted] natural differences in traits.
③ Adaptation - variation that helps an organism survive.
④ Selection - when an adaptation becomes more common in a population.
18. How are new species formed? What is this called?
Speciation - new species come from existing species - small variations add up over time until it a whole new species.
19. What is the difference between mechanical and chemical weathering?
mechanical = physical change, chemical = chemical change = changing what the substance is.
20. How did the formation/breaking apart of Pangaea affect organisms? What about other geological events?
could have caused the Permian extinction. Also, breaking apart of Pangaea would have led to isolation and caused speciation.
21. How do the geological features of the Earth affect the ability of organisms to live in different places?
Different species are best suited to different environments - that's why we have so much biodiversity - diffe species are adapted different environme
22. What are the 4 types of fossils?
① mold/cast ③ Petrified
② trace ④ carbon film
23. List three things that scientists use to figure out what happened in Earth's past and explain how they are used/what they can tell us.
① Fossil Record: what organisms were alive + how they evolved.
② Rock Layers: shows different environments, what species lived when, mass extinctions
③ Ice cores / Tree Rings: show what the environment was like.
24. What are the 3 layers of the Earth? core, mantle, crust
25. Explain the Theory of Plate Tectonics.
Earth's lithosphere (crust + upper mantle) is broken into tectonic plates that move across Earth's surface.
26. What is taxonomy? naming + classifying species
27. How do we name species? binomial nomenclature: Genus species (Genus species)
28. What are the 5 types of evidence for evolution? Explain each one.
Keywords: Darwin, species change through natural selection in response to their environmen
Evidence: ① Fossil record - [redacted] looking at fossils of organisms over time - look for similar organisms + similarities to modern organisms.
② Biogeography - looking at the distribution of fossils + living organisms around the world.
③ Comparative anatomy - looking at bodies of organisms + comparing them to other organi
④ Comparative embryology - comparing embryos (developing babies) of different organi
⑤ Genetic evidence - comparing the genes/DNA of organisms.

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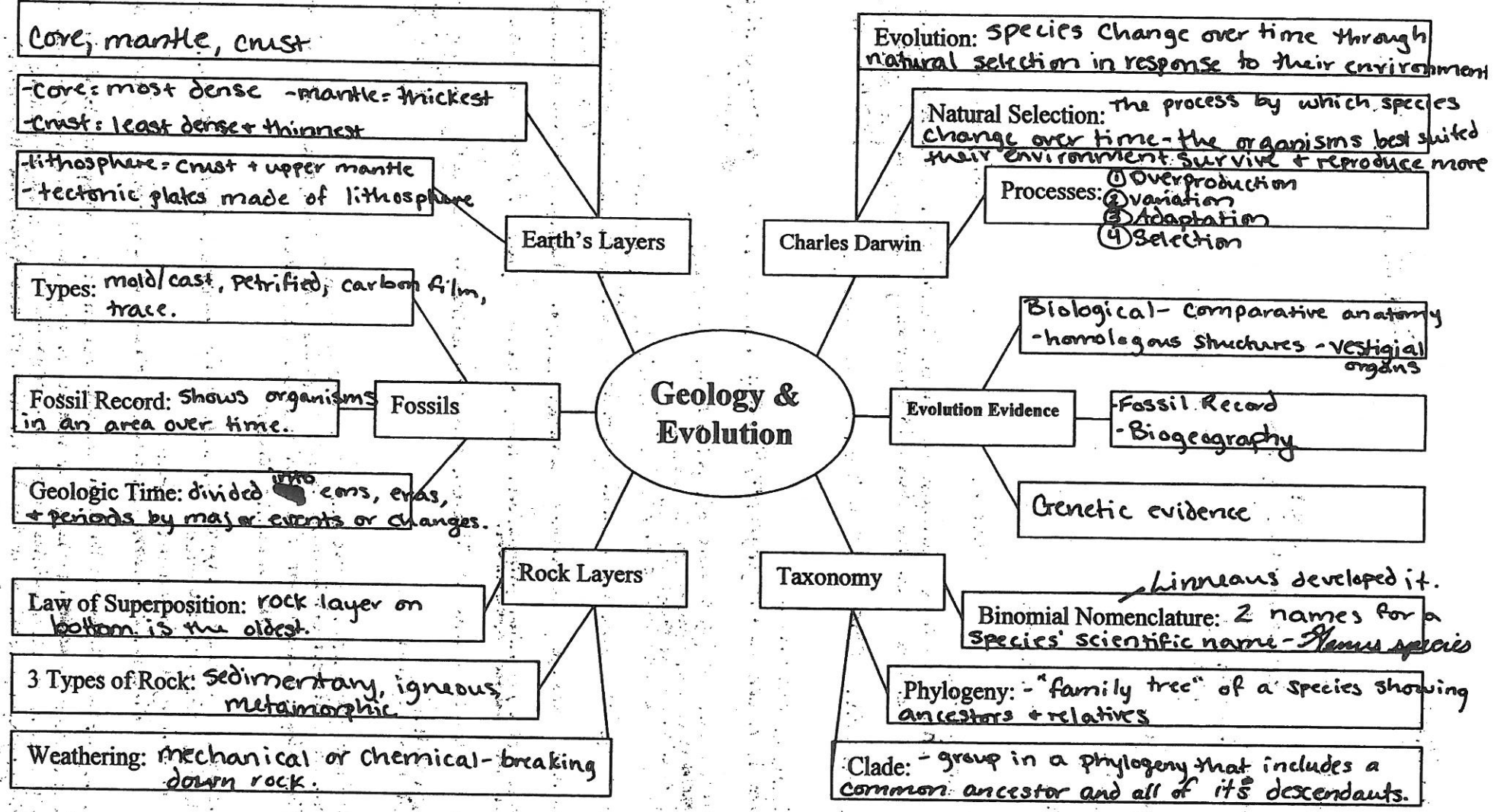

Summarize what is shown in this diagram.

3 12.5% 100% 50% 25% 12.25 6.1

HL x HL years

3 x 5,730 yrs =