

Earth Revealed - Evolution Through Time

name Key

1. How long has algae existed on earth? 1.8 Billion years
2. The oldest fossils found on earth are Single-celled organisms and are about 3 - 3½ billion years old.
3. How do fossils form?
Burial by sediment - organic material decays → mold
Mineral replacement, Casts
Tracks, burrows, nests
4. Why are marine fossils relatively common?
Many organisms, covered rapidly with sediment. Bones + shells are
5. What are stromatolites? How did they affect the earth's early atmosphere? Common fossils.
Algal mats, Oxygen
6. What is an important difference between prokaryotes and eukaryotes?
Prokaryotes - reproduce by division of cells. ("cloning") → sexual reproduction
→ allows for evolutionary change
7. Around 600 million years ago, the Precambrian ended. What marked the beginning of the Paleozoic Era?
Numerous fossils "Cambrian Explosion"
Life had hard shells, etc. & was well-preserved as fossils
8. During the first 50 million years of the Paleozoic Era, what types of organisms evolved?
All major groups, including the vertebrates
Brachiopods, trilobites, corals, Fish
9. When did the ozone layer develop?
Mid - Paleozoic
10. Why did the levels of carbon dioxide decrease during the Paleozoic?
CO₂ used in life forms - "lime oozes" → limestone
11. When was Pangaea in existence? What were the effects of this "supercontinent" on the earth's ecosystem? End of Paleozoic
Blocked ocean circulation, mtn. ranges changed climate
12. What percentage of species were affected by the "mass extinction" at the end of the Paleozoic? 90%
13. What were some of the important Mesozoic life forms?
Corals, reptiles, Flowering plants, deciduous trees, mammals
14. The dinosaurs were on earth for 140 million years.

15. The first dinosaur fossils were excavated in the early 19th century.

16. About 65 million years ago, the dinosaurs became extinct. What might have caused this?

They may have been warm-blooded + would have had high rates of metabolism, so they needed a lot of food.
Volcanic eruptions, asteroid → disrupted the climate

17. The Cenozoic Era was a time of intense tectonic changes on earth. What effect did plate tectonics have on the evolution of species in Australia?

mammals evolved differently

platypus, spiny anteater, Kangaroo

18. The LaBrea Tar Pits (near Los Angeles) contain the fossilized remains of plants and animals from what period of time? late Cenozoic. What are some of the species which have been recovered from the Tar Pits?

36-38,000 → 10,000 years ago

plants, pollen, mammoths, bison, cats, sloths, deer

20. Describe the environment of the Los Angeles basin of 40,000 years ago.

Sagebrush plain

21. What were some of the evolutionary changes noted in horse fossils?

Early Cenozoic - dog-sized - 4 toes - woodlands
grasslands - hooves - grew larger, could run swiftly

22. What was Darwin's theory of evolution?

Animal species change to adapt to their habitat.

("Survival of the Fittest") - gradualistic idea -- slow change

23. What is "punctuated equilibrium"?

Sudden changes in species -- no "transitional" forms

"rapid evolution" -- adapt or die out!

24. What might have caused the extinction of the large Ice Age mammals?

8000 years ago
human hunting

25. Where can human fossils be found? very rare

Africa

26. What impact do modern humans have on the earth?

Cause the extinction of plant + animal species