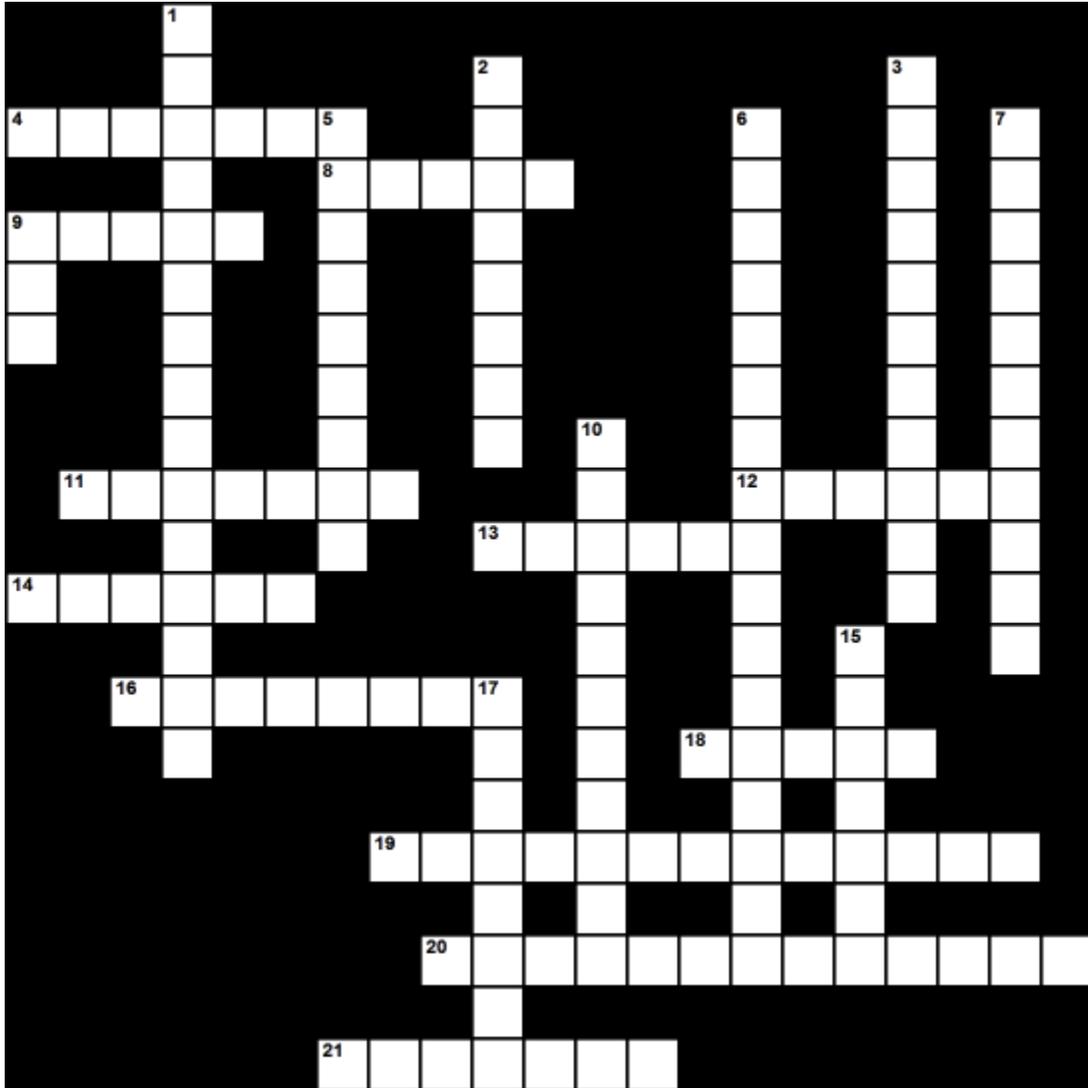


Crossword Puzzle for Early Primate Evolution



Across

4. An ancient Egyptian historian who counted the durations of all dynasties of pharaohs and gods that reigned down to his time (3rd century B.C.). This allowed him to conclude that the earth is about 38,000 years old (from our time).

8. An English geologist who in 1867 estimated the age of life on Earth to be about 240 million years based on his assumption of the amount of time for the successive changes in animal species found as fossils in sedimentary rock layers.

9. An English canal and mine engineer who in 1799 expanded on James Hutton's idea of geologic time by dividing sedimentary rock layers into 6 main divisions based, in part, on the fossil evidence of life that they contained. These main divisions, or eras, that he proposed became the basic framework for the geologic time scale of the earth that we still use today.

11. The general term for a seasonally dry tropical or subtropical grassy plains with scattered trees. These environments are usually the habitat of large herbivores and their predators.

12. The geologic epoch that occurred about 55.8-33.9 million years ago. It was during this epoch that early forms of most of the placental mammal orders that are present today first appeared. Among them were primate species that somewhat resemble modern prosimians such as lemurs, lorises, and possibly tarsiers. This was the epoch of maximum prosimian adaptive radiation.

13. An early 17th century Archbishop of Armagh, Ireland who accepted the Judeo-Christian Old Testament as being literally true and subsequently determined the age of the Earth by counting biblical generations. With this method, he calculated that the Earth began in 4004 B.C. on October 23 (about 6,000 years ago).

14. A British astronomer and mathematician who proposed in 1691 that if the original oceans were fresh water, one could calculate the minimum age of the earth by dividing the total amount of salt now present in the oceans by the amount added each

Down

1. The 1200 mile long depression or valley system running northeast to southwest in East Africa. This valley system with lakes and grasslands developed in a volcanically active fault zone at the juncture of two large tectonic plates.

2. An American chemist who in 1907 estimated the age of the earth to be at least 2 billion years based on the decay of uranium-238 to lead-206 in rocks.

3. The Earth's outer rock shell consisting of about a dozen enormous rigid tectonic plates and many smaller ones that are more or less constantly moving relative to each other at a rate of a few centimeters a year.

5. The geological epoch that occurred about 33.9-23 million years ago. It was in this epoch that the first monkeys evolved from prosimians. By the beginning of this epoch, North America and Europe drifted apart and became distinct continents. The Great Rift Valley system of East Africa also was formed. The Himalayan chain of mountains and the Tibetan Plateau beyond rose high as the Indian tectonic plate continued to crash into Asia. This epoch follows the Eocene Epoch.

6. The relatively rapid expansion and diversification of an evolving group of organisms as they adapt to new ecological niches. This is the process by which one species evolves into two or more species. This occurs as a result of different populations becoming reproductively isolated from each other, usually by adapting to different environments.

7. The term for a four-footed form of locomotion. This is characteristic of most mammals. Humans are exceptions, being bipeds.

9. The number of known major global

year from the world's rivers and streams.

16. The geologic era during which mammals first appeared and large reptiles dominated the planet. This was the age of dinosaurs. It occurred about 251-65.5 million years ago.

18. Latin term used to refer to the animals in an environment. A comparable term for plants is flora.

19. The general term for the first primate-like mammals that were evolving by the beginning of the Cenozoic Era. They were roughly similar to squirrels and tree shrews in size and appearance. The existing, very fragmentary fossil evidence suggests that they were adapted to an arboreal way of life in warm, moist climates.

20. The term for the hole at the base of a skull through which the spinal cord passes. It literally means a "large hole or opening" in Latin.

21. The geological epoch that occurred about 23-5.3 million years ago. It was during this epoch that apes evolved from monkeys. Fossil monkeys and prosimians are comparatively rare from most this epoch, but apes are common. By 14 million years ago, the group of apes that included the ancestors of humans were apparently in the process of adapting to life on the edges of the expanding savannas in Southern Europe.

extinction events that have occurred on earth. (Don't count the one that may be occurring now.)

10. The biological order of mammals that was named for their adaptation to eating insects. They were among the earliest of the placental mammals to evolve. They first appeared before the end of the Mesozoic Era.

15. The super-continent that was created when all of the continents came together and fused early in the time of the dinosaurs. It began forming about 285 million years ago. It was complete by about 210 million years ago and began drifting apart again 10 million years later. The name of this super-continent literally means "all of the Earth" in Greek.

17. The geologic era following the extinction of the last dinosaurs. During this era, more advanced mammals (placental mammals) rapidly evolved and became the dominant large animals. It was only in this last geologic era that primates evolved.

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