

Evolution of Multicellular Life

Use the words below to fill in examples of life-forms that existed in each period. Then mark an X at two times when mass extinctions occurred.

early birds	reptiles and giant ferns
early human ancestors	trilobites and worms
first land plants	<i>Tyrannosaurus rex</i>

Era	Period(s)	Life-forms
Cenozoic	Quaternary	
	Tertiary	whales and dolphins
Mesozoic	Cretaceous	
	Jurassic	
	Triassic	first dinosaurs and small mammals
Paleozoic	Permian and Carboniferous	
	Devonian	insects, fishes, first amphibians
	Silurian and Ordovician	
	Cambrian	
Precambrian Time	Vendian	soft-bodied prokaryotes and eukaryotes

Section 17–3 Evolution of Multicellular Life

(pages 429–434)

This section describes how multicellular life evolved from its earliest forms to its present-day diversity.

Precambrian Time (page 429)

1. Is the following sentence true or false? Almost 90 percent of Earth’s history occurred during the Precambrian. _____
2. Circle the letter of each sentence that is true about life in the Precambrian.
 - a. Anaerobic and photosynthetic forms of life appeared.
 - b. Aerobic forms of life evolved, and eukaryotes appeared.
 - c. Multicellular life forms evolved.
 - d. Life existed on the land and in the sea.
3. Why do few fossils exist from the Precambrian? _____

Paleozoic Era (pages 429–431)

4. The first part of the Paleozoic Era is the _____ Period.
5. Is the following sentence true or false? Life was not very diverse during the Cambrian Period. _____
6. Circle the letter of each sentence that is true about the Cambrian Period.
 - a. Organisms with hard parts first appeared.
 - b. Most animal phyla first evolved.
 - c. Many animals lived on the land.
 - d. Brachiopods and trilobites were common.

Match the periods of the Paleozoic Era with the evolutionary events that occurred during them.

_____	Periods	Events
_____	7. Ordovician and Silurian	a. Reptiles evolved from amphibians, and winged insects evolved into many forms.
_____	8. Devonian	b. The first vertebrates evolved, and insects first appeared.
_____	9. Carboniferous and Permian	c. Many groups of fishes were present in the oceans, and the first amphibians evolved.

10. Animals first begin to invade the land during the _____ Period.
11. Where does the Carboniferous Period get its name? _____

12. When many types of living things become extinct at the same time, it is called a(an) _____.
13. Is the following sentence true or false? The mass extinction at the end of the Paleozoic affected only land animals. _____

Mesozoic Era (pages 431–432)

14. Complete the compare-and-contrast table.

PERIODS OF THE MESOZOIC ERA

Period	Evolutionary Event
	First mammals
	First birds
	First flowering plants

15. The Mesozoic Era is called the Age of _____.
16. The first dinosaurs appeared in the _____ Period.
17. Is the following sentence true or false? The mammals of the Triassic Period were very small. _____
18. Is the following sentence true or false? Many paleontologists think that birds are close relatives of dinosaurs. _____
19. The dominant vertebrates throughout the Cretaceous Period were _____.
20. What advantage do flowering plants have over conifers? _____

21. Describe the mass extinction that occurred at the end of the Cretaceous Period.

Cenozoic Era (pages 433–434)

22. Is the following sentence true or false? During the Cenozoic Era, mammals evolved adaptations that allowed them to live on land, in water, and in the air.

23. The Cenozoic Era is called the Age of _____.

24. What were Earth's climates like during the Tertiary Period? _____

25. How did Earth's climate change during the Quaternary Period? _____

26. Is the following sentence true or false? The very earliest ancestors of our species appeared about 100,000 years ago. _____