

Bio. 3302 Introduction to Evolution
Study Guide
Mesozoic Radiations

Important Terms and Concepts

Angiosperms
Archaeopteryx
Archosaurs
Continental Drift
Cretaceous
Cretaceous Mass Extinction
Cycads
Cynodonts
Deccan Traps
Dinosaur
Gondwanaland
Gymnosperms
Hypsibema missouriense
Ichthyosaurs
Iridium
Jurassic
Laurasia
Mammal-like Reptiles
Mesozoic
Ornithischia
Pangea
Permian Mass Extinction
Plesiosaurs
Pliosaurus
Pterosaurs
Saurischia
Sauropods
Seed Ferns
Synapsids
Therapsids
Theropods
Tyrannosaurus
Triassic Mass Extinction

Discussion Questions

1. Although the continents are well spaced around the globe today, geologists say that in the Late Paleozoic all of the world's continents were assembled into a single supercontinent, Pangaea. What

is the evidence 1) that this continent existed, 2) that it finished forming in the Late Paleozoic, and 3) that it broke up again in the Triassic?

2. Discuss the breakup of Pangea and the influence this had on the distribution of animals and plants in the Mesozoic. What are the two major subcontinents formed by the initial break-up. What organisms were diversifying at this time?
3. How would you describe the general climate and atmospheric conditions in the Mesozoic?
4. Discuss the origin and development of the mammals? When do mammals first evolve? What did the first mammals resemble? Why did they remain small and inconspicuous in the Mesozoic?
5. What is the significance of the amniotic egg? When did it first appear and in what group of animals?
6. Discuss the origin and evolution of the dinosaurs. How are dinosaurs like mammals? How do they differ? Which is the first dinosaur? What are the two major lineages of dinosaurs?
7. Describe the appearance the marine reptiles. Which modern marine animals do ichthyosaurs most closely resemble?
8. What are pterosaurs and why are they significant?
9. When did birds first evolve? From which group of organisms did birds evolve? Are birds really dinosaurs? Why is this controversial?
10. Why is Archaeopteryx considered transitional between reptiles and true birds? What features did it share with each group? How might flight have evolved in birds?
11. What were the major kinds of plants during the Mesozoic? When did the flowering plants appear? What are some advantages of having seeds, of having flowers?
12. What is the evidence that an asteroid was the cause of the Cretaceous mass extinction? Discuss some of the effects of a large asteroid hitting the Earth at this time. What are some other possible causes?
13. What are some of the major groups of organisms that survived the K-T mass extinction? Which ones began to fill the void left by the dinosaurs?
14. What is a mass extinction event? How do they differ from normal background extinction? What is a gradual extinction? What is a sudden extinction?
15. What are the five large mass extinction events in geologic history? Which one was the biggest?
16. What some possible causes of mass extinction events? After all the 5 major extinction events, what generally occurred?