

Miscellaneous Fossils Lab

1. List the phylum, class, family or order, and genus (if possible) for each of the specimens 1-12.
2. What are the distinctive distinguishing features of graptolites?
3. What are the graptolite fossils made of?
4. Where did the graptolites live and why are they valuable index fossils and for what time period?
5. What was the graptolite mode of life?
6. What are the major types of vertebrates and when did they first appear in the fossil record? (fig. 11.1)
7. Describe how the early fish were different from modern fish.
8. What are the differences between sharks and modern bony fish and when did they appear in the fossil record?
9. What were the ancestors of the amphibians and how did they differ from those before and after?
10. What is the key innovation of the first reptiles and what was the advantage?
11. What are the three main clades of reptiles, when did they originate, what were the radiations, and what are common examples?
12. What is the evolutionary relationships of synapsids, including some of the branches (Fig. 11.7)?
13. When did the reptiles begin to evolve into mammals, what was the name, and what were the advantages?
14. What happened to the mammals after the dinosaurs became extinct, when did this happen, and what were the first bizarre animals?
15. What was happening in the Eocene and how did this affect plant and animal evolution?

16. When was the major land plant diversification and what types of plants appeared?
17. What were the first land plants like?
18. When did the ferns appear, what were they called, and give an example?
19. When did the first horsetails appear, what were they called, and give an example?
20. When did the conifers appear, what were they called, and give an example?
21. Describe the cycads, give their name, and when they were abundant and when extinct?
22. When did the flowering plants first appear, what are they called, what were they like?
23. What were the 5 key steps in plant evolution and describe them?
24. What were the critical terrestrial adaptations in plants and describe them?
25. Describe the Carboniferous coal forests and describe the main fossilized plants.
26. What are the four main reproductive advantages of seeds over spores?
27. When did the conifers undergo a major radiation and what were they like?
28. What 5 evolutionary developments contributed to the success of angiosperms?