

Name: _____

AP Biology
[REDACTED]

Chapter 27 Active Reading Guide **The Rise of Animal Diversity**

Section 1

1. Sponges are in the phylum Porifera. This group is thought to be monophyletic, but scientists are still debating the issue. They are the simplest animals and lack true tissues. Explain how water flows through the body of a sponge, and describe how it obtains food.
2. What is the feeding method of a sponge?
3. Most sponges are hermaphrodites. What does this mean?
4. What are nematocysts, and how do they help a cnidarian obtain its food?
5. What is the nervous system of a cnidarian? Do they have a brain?

Section 2 & 3

6. Many times you have heard that taxonomy is in flux. Your text shows two different phylogenetic trees based on analysis of different criteria. Use the phylogenetic trees to answer these questions.

Animals in which phylum or phyla . . .

- a. lack symmetry and true tissues? _____
- b. show radial symmetry and are diploblastic? _____
- c. have three tissue layers, but lack a body cavity? _____

- d. show bilateral symmetry and have a pseudocoelom? _____
- e. have a true coelom and are protostomes? _____
- f. have a true coelom and are deuterostomes? _____
- g. are your closest relatives? _____

7. What do the root words that name this group mean?

ecdyso-: _____ -zoan: _____

8. The ecdysozoans are a huge group, but members have some common features. What is the body covering? What molecule is it made of?

9. What does the phylum name Arthropoda mean?

10. Gnatho- means "jaw," and -stome means "mouth." This group includes the sharks, fishes, amphibians, reptiles (including birds), and mammals. From what structure is it believed that jaws evolved?

11. What animals are in the clade Chondrichthyes?

12. What does the name Chondrichthyes mean? What material makes up their skeleton?

13. Why do sharks have to swim continuously?

14. The “fishes” with a bone skeleton are aquatic Osteichthyes. How do they breathe?
15. What does tetrapod mean?

Section 4

16. For the class Insecta, how many legs do all members have? _____
17. Crustaceans are primarily aquatic and have many pairs of appendages. How many appendages does a lobster have?
18. What specialized respiratory structures do many crustaceans have? _____
19. The only way an arthropod can grow is to shed its chitinous exoskeleton. What is this shedding process called?
20. What animals are in the class Amphibia? _____
21. What does the class name Amphibia mean?
22. Fertilization in amphibians is _____. The eggs lack a shell, and mortality is very high.
23. What factors tie amphibians to a life near water?
24. What is an amniotic egg? How has it enabled animals to occupy a wider range of terrestrial habitats than amphibians can?
25. What groups have an amniotic egg? _____

26. What animals are in the reptile clade? _____

27. Make a list of five characteristics of most reptiles.

1. 4.

2. 5.

3.

28. What is the body covering of a reptile? _____
How does this enable it to live a more terrestrial life?

29. What is internal fertilization? How does this enable reptiles to reproduce on land?

30. Fishes, amphibians, and reptiles are ectothermic. What does this mean?

31. Birds are in the reptile clade. Which extinct group included their closest relatives?

32. Here is a short list of some reptiles. For each group on the list, give some important features that make them unique.

snakes:

lizards:

turtles:

alligators and crocodiles:

birds: