**Active Learning Exercise 3.2**

to accompany

*Vertebrate Life*, Tenth Edition

Pough • Janis

**Interpreting Phylogenies**

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**Source:** Textbook Figure 3.4 (see below)

**Level of Difficulty:** Easy

**Relevant Terminology:** extant, sister group, eons,periods

**Introduction**

Throughout this textbook you will see phylogenies like Figure 3.4 “Phylogenetic Relationships of Early Vertebrates.” These lay out the evolutionary history and relationships of the vertebrates as they are currently understood. There is a wealth of information in these figures but you have to know how to read them in order to understand it. This exercise will help you interpret the data in the phylogenic tree.

**Activity**

1. Which geologic eon is mainly represented here?

2. How old is the most recent conodont fossil? Which period was it from?

3. How does this figure illustrate that the spiny sharks (Acanthodii) probably became extinct in the Permian?

4. Which groups belong to Chondrichthyes?

5. Why is there a question mark early on along the myxiniformes line? What does that mean?

6. Explain what we know about the history of Anapsida. (What do the different colored lines tell you, going back to the Myopterygii node?)

7. Which groups are extant?

8. Why do you think the Devonian period is known as the “age of fishes?”

9. Name a pair of sister groups.

10. Which single group would you say has the most complete fossil record?

