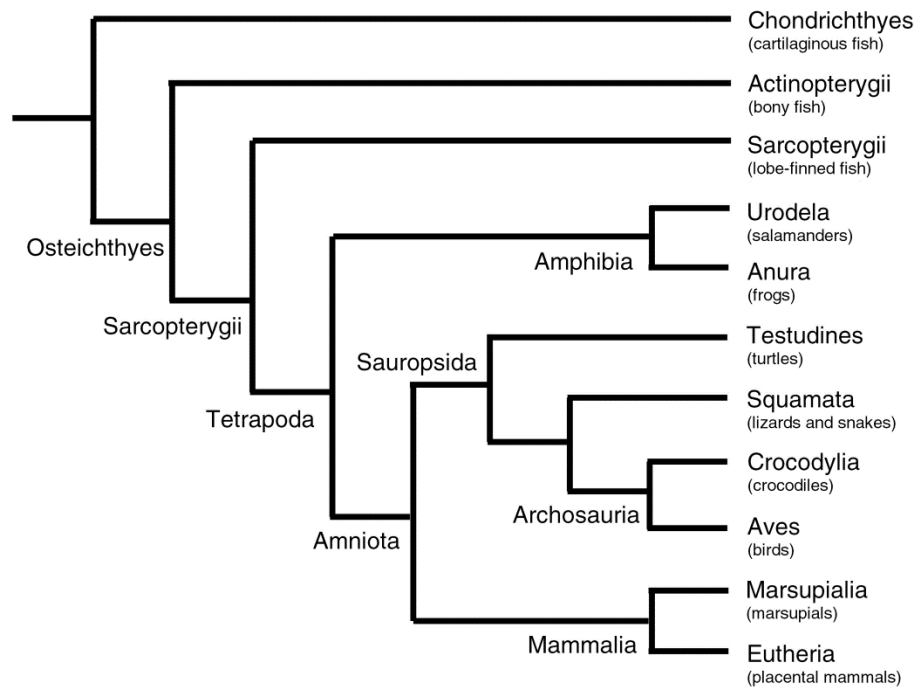


Lab 19. Phylogenetic Trees and the Classification of Fossils: How Should Biologists Classify the Seymouria?

1. What is a phylogenetic tree? What is a clade?

2. This diagram shows the evolutionary relationships among several major groups of organisms. Using your knowledge of clades, identify the pairs of organisms that are *most* closely related and the pair that is *least* closely related. How many clades are there in this diagram?



3. In science, observations and inferences are the same thing.
 - a. I agree with this statement.
 - b. I disagree with this statement.

Explain your answer, using an example from your investigation about phylogenetic trees and the classification of fossils.

4. Scientific knowledge changes and develops over time.

- a. I agree with this statement.
- b. I disagree with this statement.

Explain your answer, using an example from your investigation about phylogenetic trees and the classification of fossils.

5. Scientists often look for patterns during their investigations. Explain why patterns are important to look for, using an example from your investigation about phylogenetic trees and the classification of fossils.

6. The relationship between the structure and function of organisms' features is an important area of study in science. Discuss why it is important for scientists to understand this relationship, using an example from your investigation about phylogenetic trees and the classification of fossils.