

Name _____

Course/Section _____

Date _____

Professor/TA _____



Activity 34.1 What can we learn about the evolution of the chordates by examining modern chordates?

Fill in the chart on the next two pages to organize the major characteristics of key groups of chordates.

Characteristics of phylum chordata									
	Subphylum Urochordata	Subphylum Cephalochordata	Subphylum Vertebrata						
			Agnatha	Chondrichthyes	Osteichthyes	Amphibia	Mammalia	Reptilia	Aves
Character-istics									
Examples of organisms									
Type of skeleton									
Vertebral column?									
Jaw?									
Paired limbs? Structure? Limb position?									
Body covering?									

Characteristics of phylum chordata									
Character-istics	Subphylum Urochordata	Subphylum Cephalochordata	Subphylum Vertebrata						
			Agnatha	Chondrichthyes	Osteichthyes	Amphibia	Mammalia	Reptilia	Aves
Respiratory structure?									
Circulatory system? Heart structure?									
Type of reproduction									
Other									

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Using the information in the table, answer the questions.

1. a. According to *Biology*, 7th edition, what three characteristics are common to all chordates?

b. Why don't we find all three of these chordate characteristics in our own bodies?

2. The chart organizes the chordates based on grade or shared body plan features. If you compare the characteristics of one group with the next, what key differences separate the groups from each other?

3. What unique combination of characteristics defines each group as separate from the others?

4. a. Looking across each of the rows in the chart, what major trends do you see in the evolution of the different organs and organ systems?

b. Does this analysis provide evidence for or against the statement: "Evolution adds onto or modifies what already exists"? Explain.

5 a. What major changes in structure and function are seen in terrestrial groups as compared with aquatic groups?

b. Can these changes be related to differences in natural selection on land versus in an aquatic environment? Explain.