

Evolutionary Relationship

Name _____ Per. _____

1. Fishes have a 2-chambered heart. Amphibians have a 3-chambered heart. Birds and mammals have a 4-chambered heart. Whales are mammals, but they live in the ocean with sharks. Which is more closely related to a whale, a shark or an owl?
_____ Why?

2. What structures do butterflies, bats, and birds have in common? _____
The wing's skeletal structure of bats and birds are very similar. Butterflies have no wing skeleton. Which two groups are more closely related? _____

3. The front legs of a dog have the same skeletal structure as the wings of a bat. But bats and butterflies both have wings and can fly; dogs don't have wings and can't fly. Are bats more closely related to dogs or to butterflies? _____ Explain how you know?

4. Using the answers to #1 and #3, do you think body structure or behavior is a better clue to how closely related two animal species are? _____

5. The digestive system of sheep and cows are very similar, each having multiple stomach chambers. The digestive system of wolves and cougars are very similar, each having one stomach chamber. Are wolves more closely related to sheep or cougars?
_____ Explain the similarities and differences in their digestive systems based on the diet of the four animals.

6. Let's say there are 3 hypothetical animals called A, B, and C. Creature A lives in water; the other two live on land. The water-dwelling creature is huge, five times bigger than either of the land-dwelling creatures, which are both the same size. The hind legs and feet of the large swimming creature, A, and land dweller B both have 24 bones connected in the same pattern. Land creature C has 18 bones in its hind legs. Hypothesize which two creatures are more closely related and why.