

Name: _____ PER. _____ DATE: _____

ANATOMICAL EVIDENCE OF EVOLUTION

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In our studies of the anatomy and development of animals we have discovered that many living creatures that look quite different on the surface have similarities underneath their skin that suggests that they are related to each other. This is evidence that living creatures have evolved, or gradually changed over time.

In this lab, you will learn about homologous and analogous structures and their value as evidence for evolution.

INSTRUCTIONS

HOMOLOGOUS STRUCTURES

There are many examples of body structures that are formed in similar ways during embryonic development and that share similar patterns of bone structure, even though they take on different forms and perform somewhat different functions. These structures are called homologous structures. Homo- means same, and -logous means information, so homologous means "same information". Homologous structures mean that the animals share a relatively recent common ancestor.

1. Carefully examine the drawings of forelimb skeletons shown in Figure 1 on the next page.

Look for similarities in the bones amongst the various animals.

- Color in the human arm first. Color the bones of the arm humerus **Blue**
- Color the Ulna and the Radius **Green**.
- Color the bones of the hand (the carpal, metacarpals, and phalanges) **Yellow**.
- Color the corresponding bones in each of the other animals the same color as the human bones.

2. Describe the function of each set of bones below:

ANIMAL	FUNCTION
Human	
Whale	
Cat	
Bat	
Bird	
Crocodile	

Questions:

1. Are the functions of the limbs of each animal the same or different? _____
2. Are the bones of the limbs arranged in a similar or a very different way in each animal?

3. How does the similarity in bone structure suggest a common ancestry amongst these animals?

Figure 1.

