ANIMAL HANDS

EXPLORING HOMOLOGOUS STRUCTURES

Name: _____

Date: _____

Period: _____

Introduction

Many animals share similar body structures. For instance, your nose, a pig's snout, and an elephant's trunk can all be called noses. Though these noses have different functions and appearances, all have a similar location and structure. Such similar features are called homologous structures.

homologous = "agreeing" in Greek

A structure's form (or shape) is often related to its function. A hand used for swimming (a fin) is shaped differently than one used for supporting an animal's weight as it walks. Likewise, a hand used for flying (a wing) is shaped differently than one used to manipulate objects and use tools.

Activity

1. Use the following table to make observations or answer the questions about each of the images:

Image #	1	2	3	4	5
Individual Fingers? (yes/no)					
Nails or claws?					
Shape of flesh covering?					
Bones thick in relation to length? (yes/no)					
How many fingers?					
All fingers same length? (yes/no)					
How many joints per finger?					

Image #	6	7	8	9	10
Individual Fingers? (yes/no)					
Nails or claws?					
Shape of flesh covering?					
Bones thick in relation to length? (yes/no)					
How many fingers?					
All fingers same length? (yes/no)					

How many joints per finger?					

2. Next, use what you found out about the structure to think about the probable function of each "hand." Choose one of the following for each x-ray image:

**Flying **Grasping/manipulating
**Swimming **Walking/running

Image #	Probable Function
1	
2	
3	
4	
5	

Image #	Probable Function
6	
7	
8	
9	
10	

3. Use what you have observed about the x-rays and implied about the hand function to decide which x-ray belongs to each type of animal. You may want to use additional resources to find out more about some of the animals and their lifestyles before making your decisions. A list of hints is also provided for more information.

Image #	Animal
1	
2	
3	
4	
5	
6	
7	
8	

9	
10	

Questions- Answer each question in <u>complete sentences.</u>

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1. Which animals had similar physical features but used their features to function in different ways? Describe them.

2. What similarities did you observe among the animals' x-rays? (i.e.: Did any of the animals have similar physical structures?)

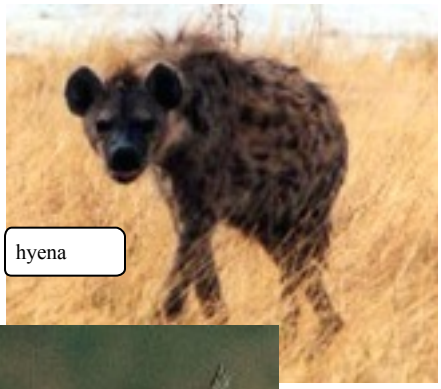
3. How do some of the animals' skeletal structures compare to their actual physical appearance?

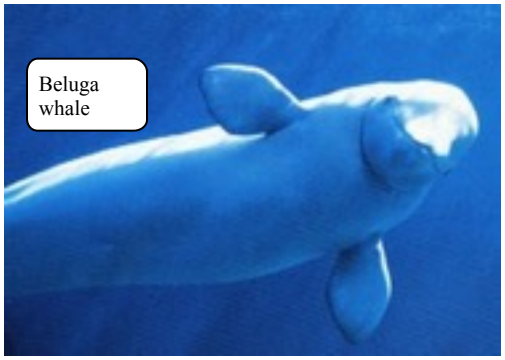
4. Which animals' skeletal structures were surprising to you? Why?

Animal Choices:


zebra


human


hyena


Beluga whale


owl


lion


Macaque monkey


Sea lion


Panda


Sun bear