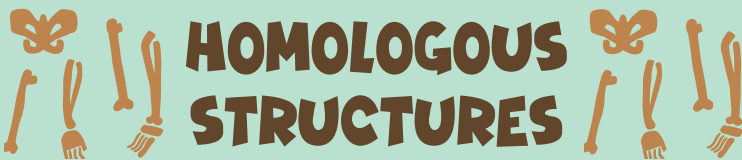


## WHAT IF ...

FISH COULD WALK? BIRDS COULD SWIM? HUMANS COULD FLY?

While this may be funny to imagine, these three organisms actually have features in common. These are known as:



# HOMOLOGOUS STRUCTURES

The prefix "**homo-**" means "**same**," so homology is the study of **similarities** between organisms that have a **common ancestor**.

## WHAT ARE HOMOLOGOUS STRUCTURES?

Homologous structures are similar characteristics between related species that have different functions.

In other words, they have the **same ancestor** but **different functions**. The picture below shows that humans, dogs, birds, and whales have similar/homologous structures.

HUMAN DOG BIRD WHALE

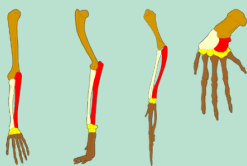
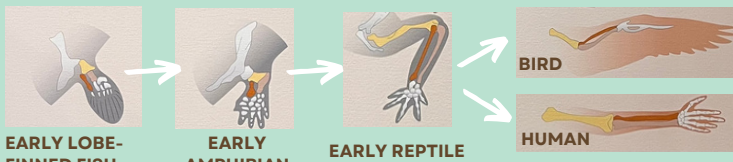


PHOTO CREDIT: WIKIMEDIA COMMONS

This concept is similar to how identical twins are from the same parents and can look really similar but still have different interests!

## LET'S LOOK AT AN EXAMPLE OF THIS CONCEPT ...



EARLY LOBE-FINNED FISH

EARLY AMPHIBIAN

EARLY REPTILE

BIRD

HUMAN

PHOTO CREDIT: UMMNH, EVOLUTION: LIFE THROUGH TIME EXHIBIT - 2ND FLOOR OF UMMNH

This graphic shows how human arm bones and bird wing bones evolved from Eusthenonteron, which is a lobe-finned fish. This means that Eusthenonteron is their **common ancestor**.

## ACTIVITY

FILL IN THE BLANK ...

While the bones in the fish, bird, and human are the same, they have \_\_\_\_\_ functions. This makes the bones \_\_\_\_\_ structures.

Look at the bottom of this infographic for answers!

Using homologous structures, we can work backwards to find out which species are **related** and where they shared common ancestors based on the similarities and differences they hold!

Activity answers: different; homologous

BY: SPURTHI JAYADEVA AND ALI ATTAR