

Biological Evolution and Classification

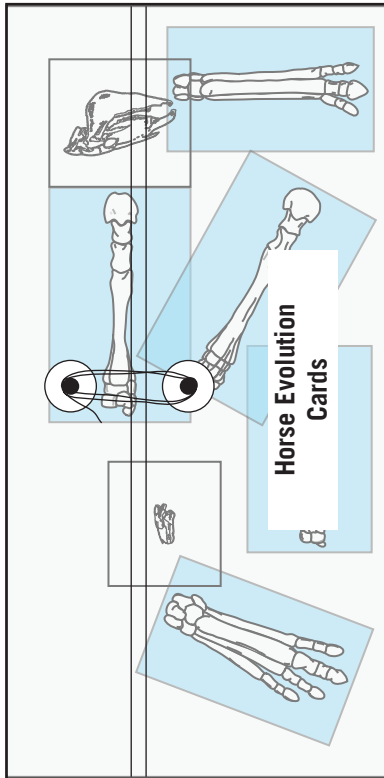
SCIENTIFIC EVIDENCE OF COMMON ANCESTRY

Blackline Masters






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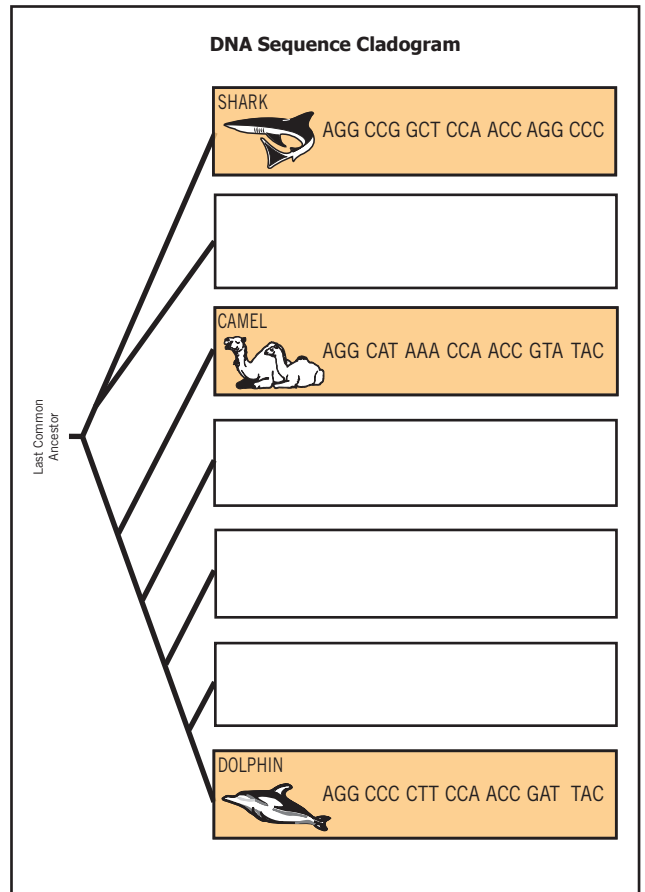
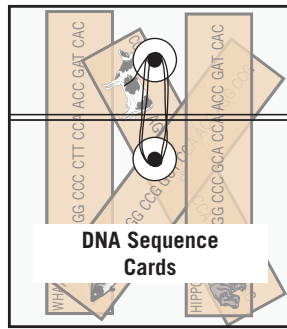
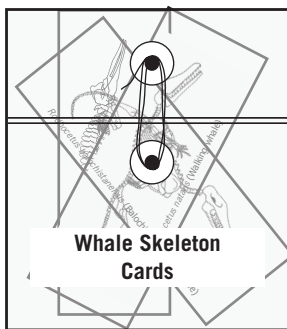
- Station Information sheet
- Whale Skeleton Cards
- DNA Sequence Cards
- DNA Sequence Cladogram
- Horse Evolution Cards
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Station Information:
Scientific Evidence of Common Ancestry

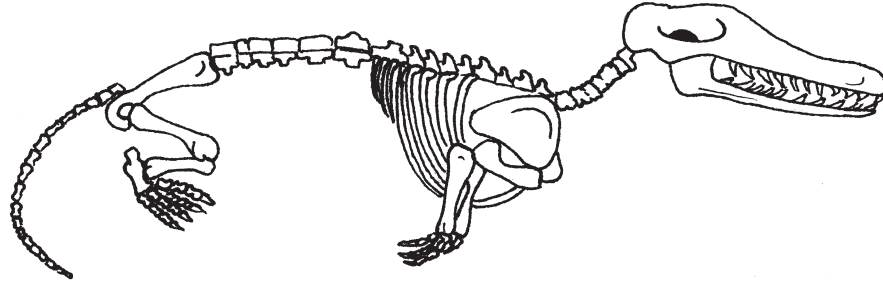


Horse Evolution Sheet

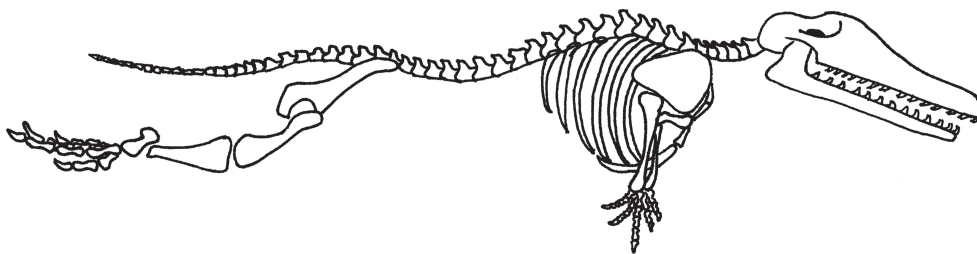
 Eohippus	 Oligohippus	 Merychippus	 Pliohippus	 Equus
Horse leg	Horse leg	Horse leg	Horse leg	Horse leg
Horse skull	Horse skull	Horse skull	Horse skull	Horse skull



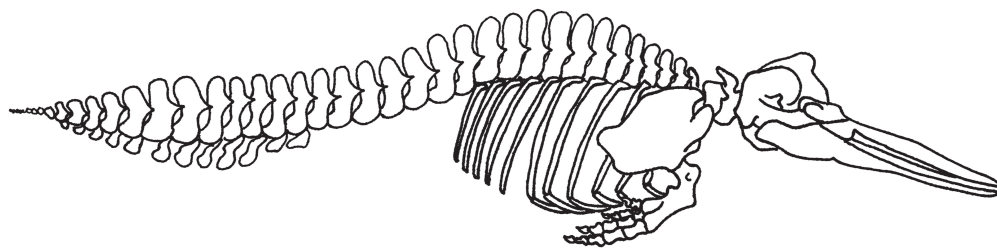
Whale Skeleton Cards



Rodhocetus balochistanensis (Balochistan walking whale)



Ambulocetus natans (Walking whale)



Orcinus orca (Killer whale)

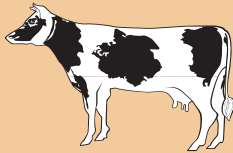
DNA Sequence Cards

PERCH



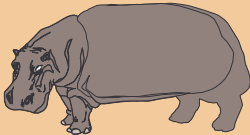
AGG CCG GCT CCA ACC AGG CCG

COW



AGG CCC AAA CCA ACC ATG CAC

HIPPOPOTAMUS



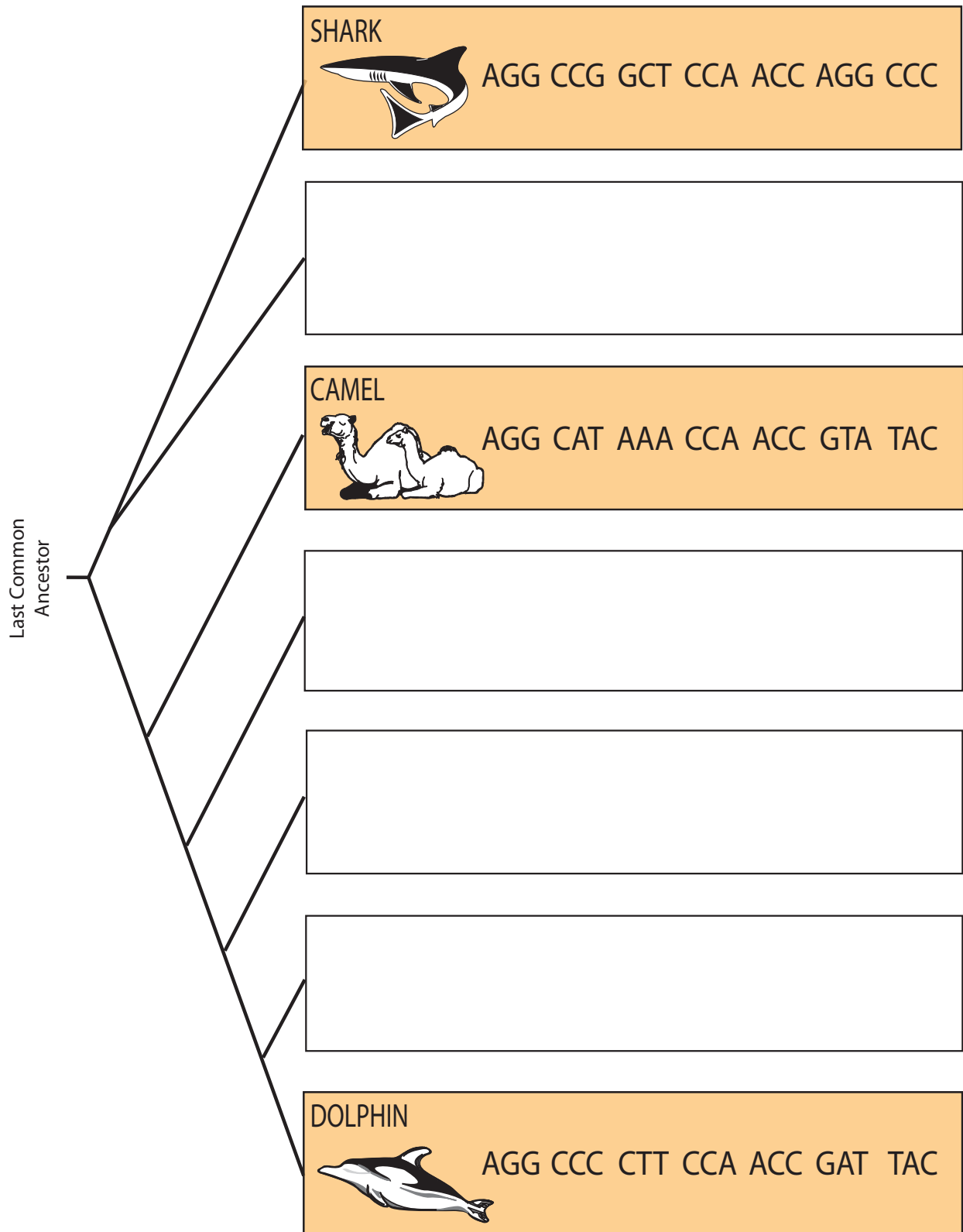
AGG CCC GCA CCA ACC GAT CAC

WHALE

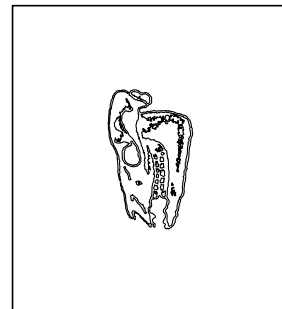
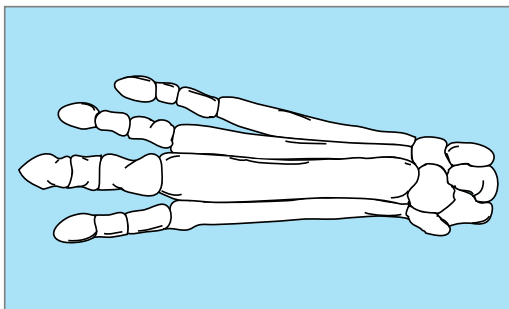
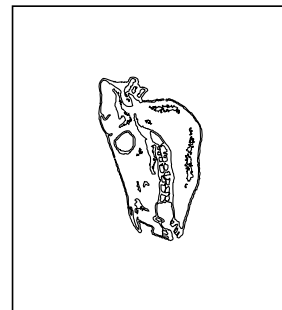
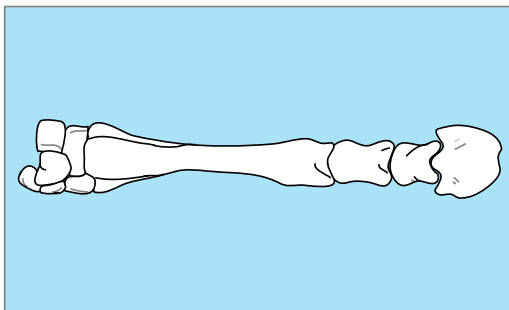
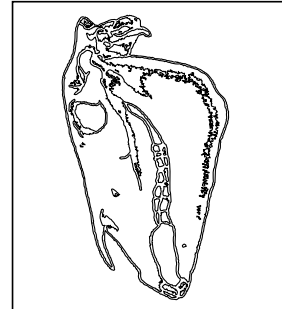
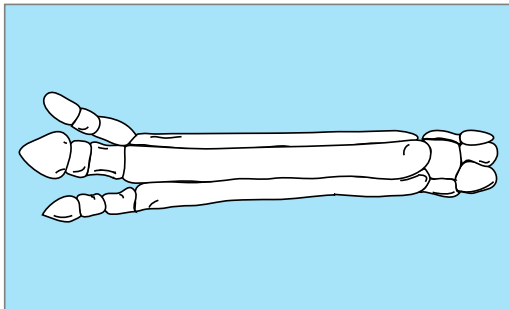
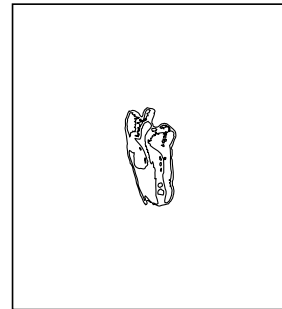
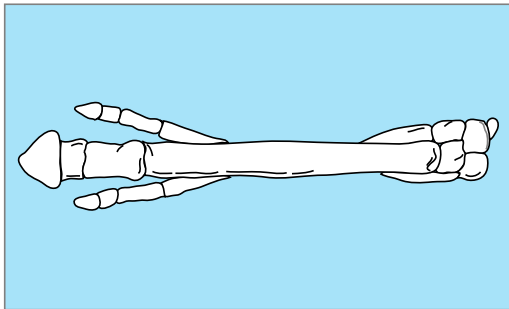
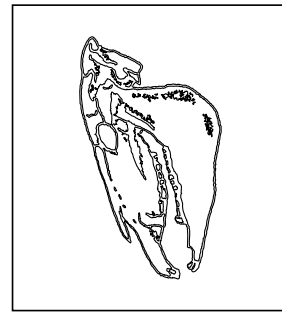
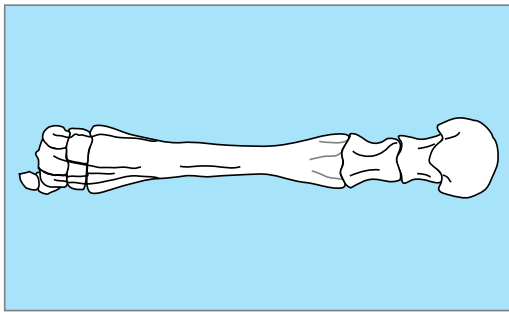


AGG CCC CTT CCA ACC GAT CAC


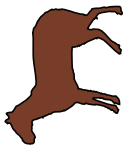


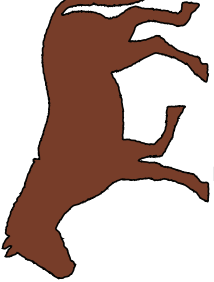
DNA Sequence Cladogram



Horse Evolution Cards



Horse Evolution

 <p>Eohippus</p>	<p>Horse leg</p>	<p>Horse skull</p>
 <p>Oligohippus</p>	<p>Horse leg</p>	<p>Horse skull</p>
 <p>Merychippus</p>	<p>Horse leg</p>	<p>Horse skull</p>
 <p>Pliohippus</p>	<p>Horse leg</p>	<p>Horse skull</p>
 <p>Equus</p>	<p>Horse leg</p>	<p>Horse skull</p>

Biological Evolution and Classification

SCIENTIFIC EVIDENCE OF COMMON ANCESTRY

Student Pages**Purpose**

The purpose of this activity is to reinforce your understanding of the theory of evolution and some of the scientific evidence that supports this theory, including fossil records of organisms and similarities among characteristics of organisms.

Before You Begin

Check to see that all the items are present and organized according to the Station Information sheet. If you notice a problem, notify your teacher immediately.

Materials

- Whale Skeleton Cards (1 set per station)
- DNA Sequence Cards (1 set per station)
- DNA Sequence Cladogram (1 per student plus 1 for the station)
- Horse Evolution Cards (1 set per station)
- Horse Evolution sheet (1 per station)

Activities and Questions***Essential Question***

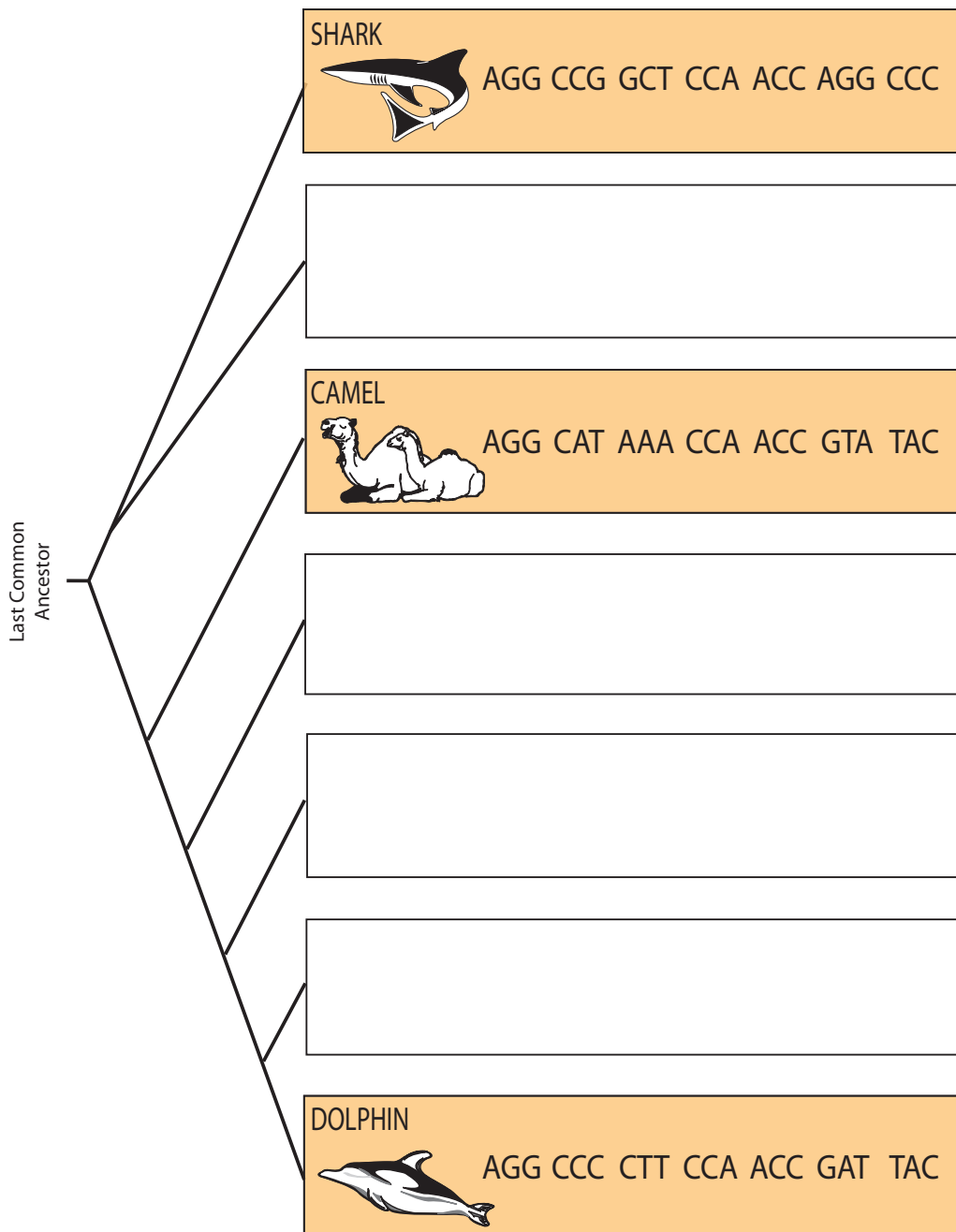
What information can be gained by examining the fossil remains of the ancestors of modern organisms?

Discuss the essential question with your teammate(s) and record your answer.

- Find the DNA Sequence Cards and the DNA Sequence Cladogram. Notice that the DNA sequences for the shark, camel, and dolphin already appear on the cladogram.

Examine the DNA sequences of the animals on the DNA Sequence Cards and compare them to the DNA sequences of the shark, camel, and dolphin. The more closely the DNA sequences match, the more closely related the organisms are to each other. Based on the results of your comparison, place the cards for the fish, cow, hippopotamus, and whale in the correct places on the cladogram.

Record your placements on the cladogram.



I Need to Remember . . .

Complete this part **after** class discussion of this station.

I need to remember...

A large, empty rectangular box with a black border, intended for students to write their responses to the prompt 'I need to remember...'. The box is currently blank.

Glossary

Analogous structures

Analogous structures are structures found in different species that are anatomically similar due to adaptations to environmental factors.

Anatomical

Anatomical refers to the structure and organization of an organism.

Cladogram

A cladogram is a tree-like diagram showing evolutionary relationships among organisms.

Evolution

Evolution is the change in the traits of organisms or populations of organisms from generation to generation.

Fossil

A fossil is a mineralized remain or preserved impression of an organism that lived in a past geological time.

Homologous structures

Homologous structures are structures found in different species that are anatomically similar due to common ancestry.