

Warm-Up

Evidence for Evolution



Lesson Question

How do similarities between different species support the theory of evolution?



Lesson Goals

Explore how similarities between different species support the theory of evolution.

Determine how comparative

anatomy

supports the

theory of evolution.

Compare

patterns

of

embryological development in different organisms.



Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

embryo	a fertilized egg that is attached to the uterine wall
homologous structure	a similar body part found in two different species that provides evidence of a common ancestor
comparative anatomy	the branch of science that looks at and compares the structures of different organisms
vestigial structure	a structure that has evolved to no longer be used by an organism
analogous structure	a structure found in two different species that has the same function but evolved differently
embryology	the study of the development of an embryo

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**Fossils and Evolution**

- The fossil **record** provides information on the history of life on Earth.
- By knowing the age and location of a fossil, scientists can show:
 - how **organisms** have changed.
 - which organisms lived during the same time period.
 - which organisms have a common **ancestor**.

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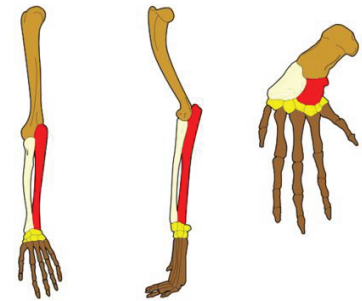
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Comparative Anatomy

- **Comparative anatomy** is the branch of **science** that looks at the structures of different organisms and compares them.
- Organisms that are closely related to each other have many **structures** in common.

Homologous Structures

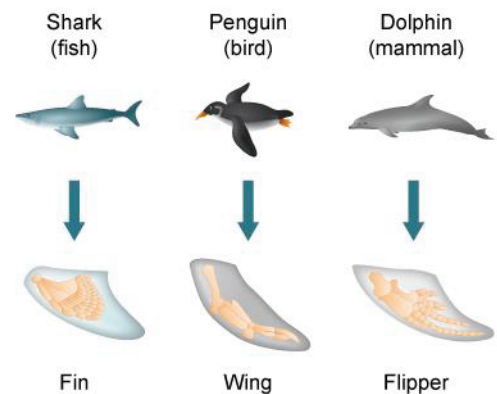
- A **homologous structure** is a similar body part found in two different **species** that provides evidence of a common **ancestor**.
- **Homologous structures** may have a different function.



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Analogous Structures

- An **analogous structure** is a structure found in two different species that has the same function but **evolved** differently.
- **Analogous structures** show how organisms adapted to similar environments.



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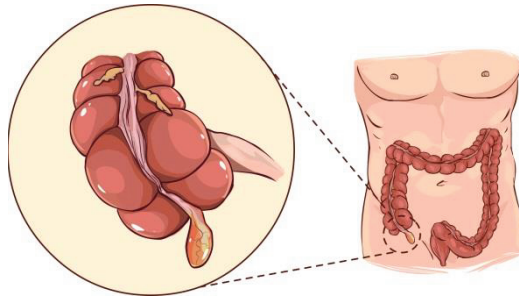
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Vestigial Structure

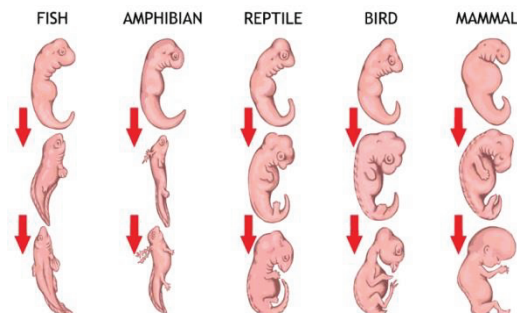
- A **vestigial structure** is a structure that has evolved to no longer be used by an **organism**.
- **Vestigial structures** were once fully functional in an ancestor.
 - The **appendix** is thought to have once been used to aid in digestion of plant material or other **food**.



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Embryology

- **Embryology** is the study of the **development** of an embryo.
- Embryos of different organisms look very **similar**, which shows that the organisms share a common ancestor.



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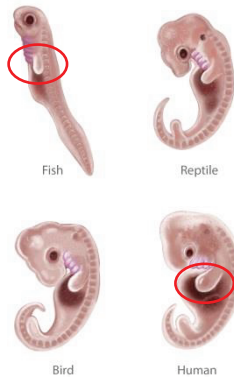
Embryology

Certain traits appear in early embryos, but may **disappear** before the organism is fully developed.

- Gill slits

- **Tail**

Circle the gill slits in the fish and human embryos.



Summary

Evidence for Evolution



Lesson Question

How do similarities between different species support the theory of evolution?



Answer

(Sample answer) Similarities between different species support the theory of evolution by showing how organisms share a common ancestor by using embryology, which is the study of the development of an embryo.

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Review: Key Concepts

- **Comparative** anatomy looks at homologous structures, analogous structures, and vestigial structures.
- **Homologous** structures provide evidence of a common ancestor.
- **Analogous** structures show how organisms evolved similar structures as they adapted to similar environments.
- **Vestigial** structures were once fully functional in an ancestor, but have evolved to no longer be used by the organism.

Summary

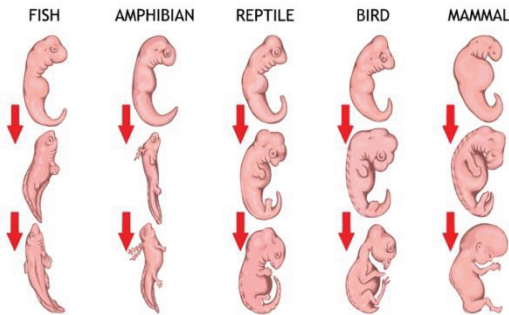
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Review: Key Concepts

- **Embryology** helps scientists determine which organisms are related.
- **Embryos** of different organisms look very similar, which shows that the organisms share a common ancestor.



Use this space to write any questions or thoughts about this lesson.