

① Birds

What You'll Learn:

Identify the characteristics of birds.

Identify the adaptations birds have for flight.

Explain how birds reproduce and develop.

Bird Characteristics

*Birds are endotherms that have feathers, scales, and lay eggs.



Bird Eggs

*Amniotic egg with hard shell.

*Female usually lays eggs (clutch) in a nest.

*The young are cared for by one or both parents.



Flight Adaptations

*Hollow strong skeleton, wings, feathers, strong flight muscles, and efficient respiratory system.

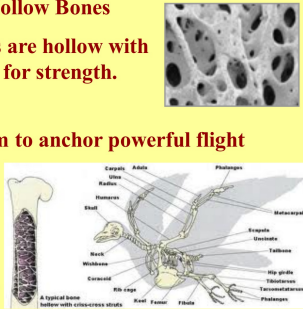


Hollow Bones

*Most bones are hollow with cross braces for strength.

*Large sternum to anchor powerful flight muscles.

*Tail feathers are important in steering and balance.



Feathers

*Contour feathers are used during flight.

*Down feathers are insulators

*Feathers grow the same as your hair.

*Birds preen to stay water resistant



Wings

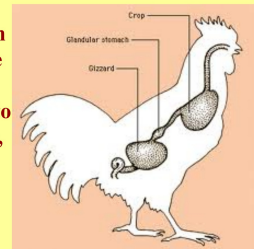
*Most wings are used for flight. The shape provides lift.

*Wings not used for flight are used for balance and swimming.



Digestive System

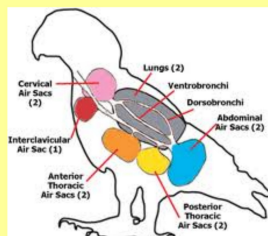
*Unchewed food from the beak moves to the crop (storage), then stomach (digestion), to gizzard (grind/crush), to intestine (absorb nutrients), and waste leaves the body.



Respiratory System

*Birds have two lungs. Each connected to air sacs.

*Air flows in only one direction, and they receive O when they inhale and exhale.



Circulatory System

*Four chambered heart prevents mixing of CO₂ rich blood and O₂ rich blood.

*Their heart is about four times larger and beats much faster than ours.



The Importance of Birds

***Control pests, a source of food, pollinators, feathers are used for decoration, and droppings are used for fertilizer.**