Birds

Most obvious things that distinguishes birds from other animals are their

feathers

Feathers

Modified scales developed from follicles in the skin

Birds molt and release their feathers, but not usually all at once

Two Functions

- Lift for flight
- Conserve body heat

Contour Feathers- cover the bird's body and give adult bird's shape

Flight feathers found on wings and tail

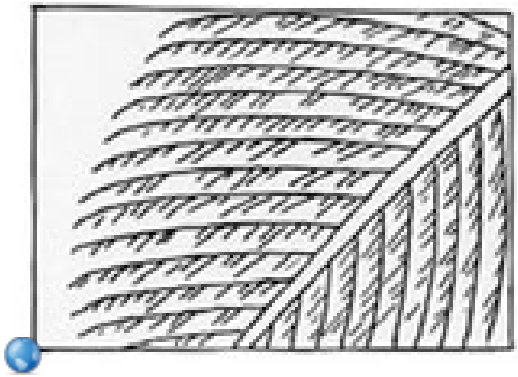
Down Feathers cover young birds and are found under adult contour feathers.

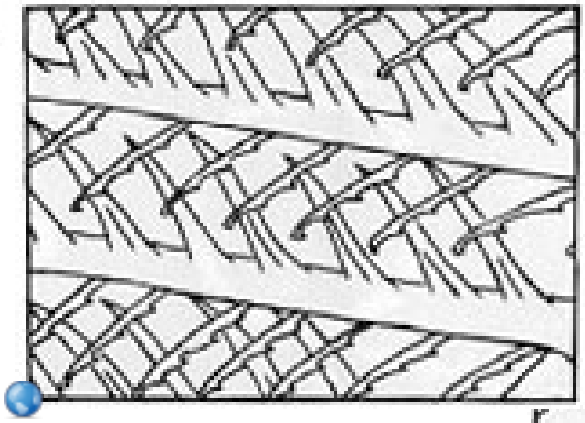
Soft, fluffy, good insulation

Contour feather has branches called barbs

Each barb has barbules with hooks

The hooks creates a continuous shape in the feather while keeping it flexible.





http://www.nhm.org/birds/guide/pg007.html

Preening- bird pulls its feather through its beak re-hooking the hooks

Also spreads oil (from the preen gland) over its feathers.

The oil is for cleaning and water proofing.

Feathers may also camouflage the animal and selection of a mate

Strong lightweight skeleton

Bones are thin and hollow

Endothermic Metabolism

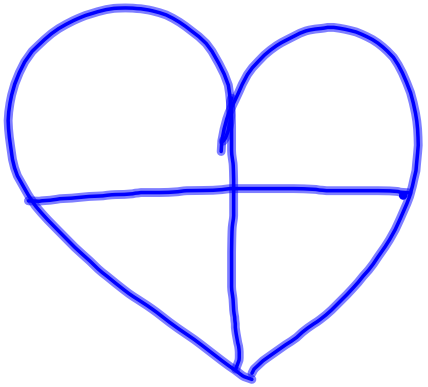
They create heat through metabolism.

Maintain a body temperature of 40 to 42 degrees Celsius (104 to 108 F)

The high temperature is due to the increased metabolism used for flight

Completely divided ventricle

Four chambered heart



Oxygen rich and oxygen poor blood are completely seperate

Highly efficient lungs

Lungs have a larger surface area than the lungs of amphibians.

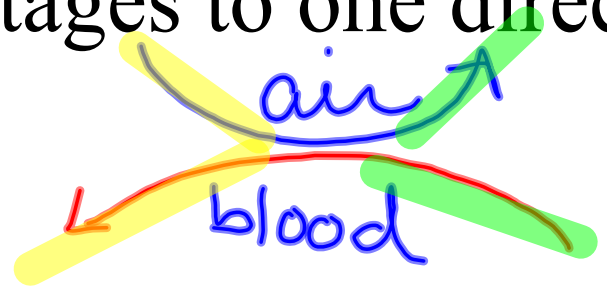
There is a limit to how much surface area can help of the lungs also need to be modified.

The air also passes over the surface in one

direction

There are two advantages to one direction

airflow



1. the lungs are exposed to fully

oxygenated air

2. The flow of blood in the lungs runs in a

opposite direction than the air flow

Birds are adapted for Different Ways of Life

1 / 60% 27 / 40%

There are 28 orders of birds, but 60% belong to the Passeriformes

There are 5,276 species in this orde

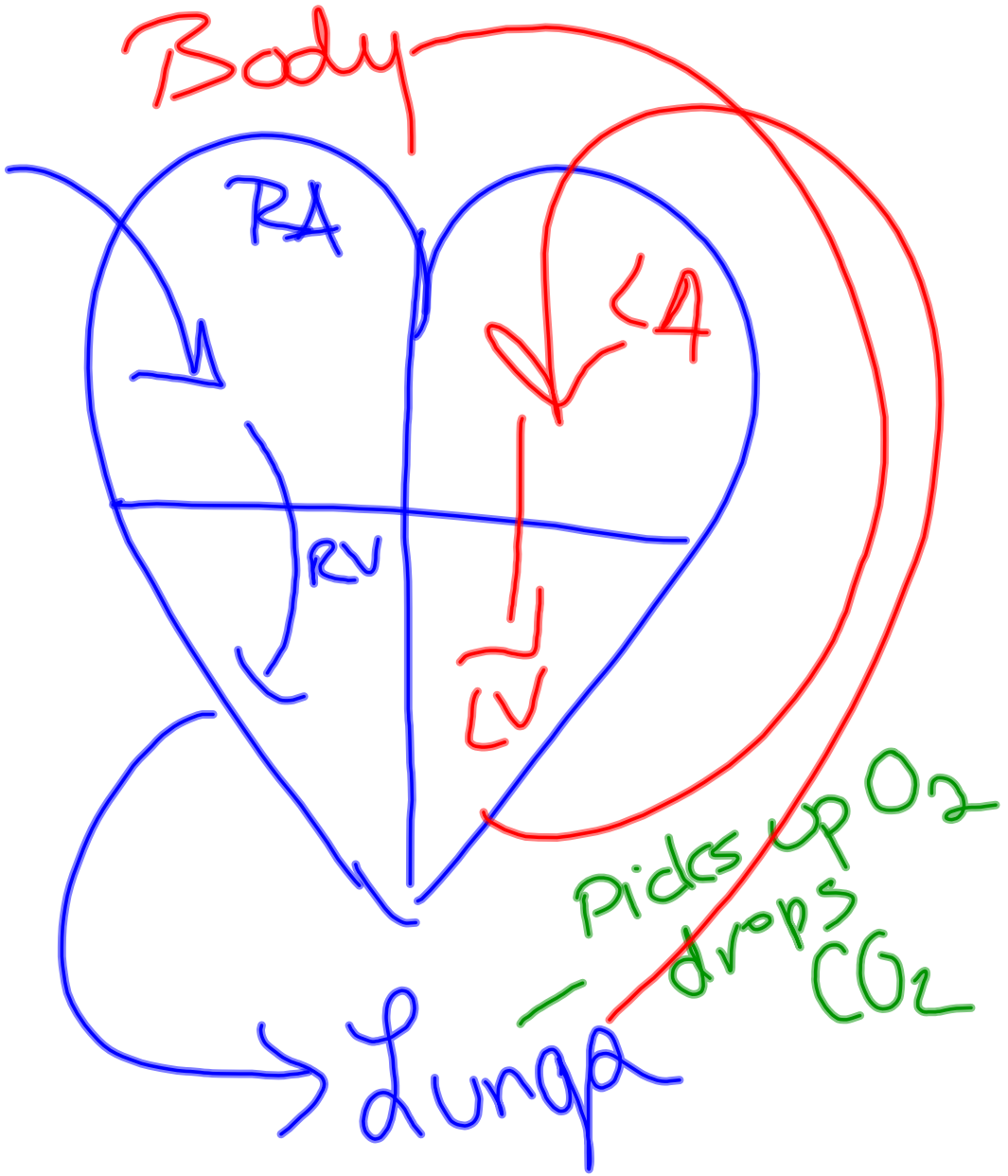
Birds are adapted by their beaks, legs, and feet

Carnivorous birds have talons and sharp beak

Ducks have webbed feet and flat beaks for water

Finches have a short, thick beak for crushing seeds and Curved toes to cling to branches

Penguin wings and feet are modified for Swimming


Body
RA
LA
RV
LV
Lungs
Picks up O_2
drops CO_2