

## How Living Things Fly

- Characteristics of flying birds
  - Wings to produce lift
  - Powerful flight muscles to generate forward motion
  - Aerodynamic body reduces drag
  - Very light bones with air sacs reduces weight
- Gliding and Parachuting
- ~~Other flying animals~~



### Bird's Wings

- airfoil shape that provide lift
- powerful flight muscles to generate forward motion

### Bird's Feathers

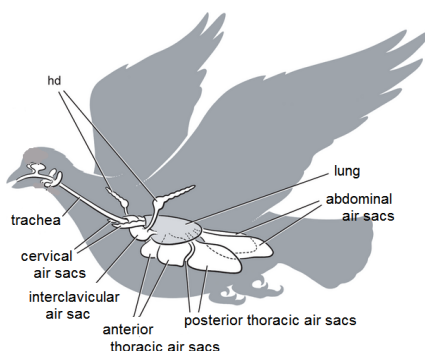
- Wing feathers help with gliding (thrust-producing primary feathers at the tip of the wing and lift-providing secondary feathers closer to the body.)
- tail feathers help with slowing down

### Bird's Lungs

- small lungs
- 9 airs sacs
- allows for long flight without getting tired

### Bird's Bones

- Honey combed (Hallow with air sacs)
- This reduces weight



## Powerful flight muscles to generate thrust

- When a bird flaps its wings, it sends air down and behind to produce thrust
- To accomplish this, a bird must twist its wings to create the right angle
- Birds accomplish this with very strong flying muscles

