

The evolution of flight in Birds

Terms List

Aerodynamic—well-suited for flight.

Aerodynamics—the study of the forces acting on objects moving through air.

Airfoil—a surface, such as a wing, designed to produce lift.

Archaeopteryx—a fossil bird from the late Jurassic having reptilian features such as teeth, as well as avian features such as feathers.

Asymmetrical—not symmetrical; one side different than the other.

Biomechanics—examining the structure and function of living organisms as one would a machine—how things work together.

Bipedalism—describing an animal that typically walks on two legs.

Brooding—sitting as a bird over a nest.

Cladogram—a branching diagram indicating evolutionary relationships.

Clavicle—the collarbone.

Contour feathers—strong feathers with rachis providing a streamlined effect. Often colored for identification purposes.

Deinonychus—an active, agile theropod dinosaur.

Dichotomy—a division into two parts or choices.

Downy feathers—loose, fibrous feathers with no central support. Used for insulation.

Drag—air resistance, a force that opposes forward movement.

Furcula—the fused clavicles in theropods. Also called a wishbone.

Histology—the study of the microscopic structure of tissues.

Hypothesis—a statement suggesting an explanation for an observation.

Inference—a logical assumption based upon the evidence at hand.

Lift—one of two forces (along with thrust) generated to overcome weight and drag. Caused by the difference in pressure above and below a surface such as a wing.

Lineage—any continuous line of descent; those organisms connected by heredity from ancestor to descendent.

Maniraptorans—a group of dinosaurs characterized by very long arms, hands that are longer than their feet and an unusual wrist bone.

Oviraptor—a misnamed theropod! The name means “egg snatcher” but this dinosaur was actually tending to its own eggs, not feeding on those of another.

Powered flight—flight requiring a source of power to attain speed, as opposed to gliding.

Pterosaur—an extinct flying reptile.

Rachis—a strengthening support running up the center of some types of feathers.

Relative length—one length compared to another.

Saurischians—a group of dinosaurs with long, flexible necks, a large curved claw on the thumb and a second finger that is longer than the others. The group includes *Coelophysis*, *Velociraptor*, *Archaeopteryx*, and living birds among others.

Sedimentology—the study of the deposition of sediments.

Semilunate bone—a half-moon shaped bone in the wrist of birds that allows increased motion.

Semiplume feathers—insulating feathers with a strengthening support, called a rachis.

Sternum—a flat bone in the chest region, attached to the clavicles. Also known as the breastbone.

Thermoregulation—maintaining body temperature at a constant level through heat production, heat transport, etc.

Theropods—a group of bipedal, carnivorous dinosaurs that have a reduced number of fingers, an enlarged pelvis, a flexible lower jaw, and a head that has a wide range of motion around the neck joint.

Thrust—one of two forces (along with lift) generated to overcome weight and drag.