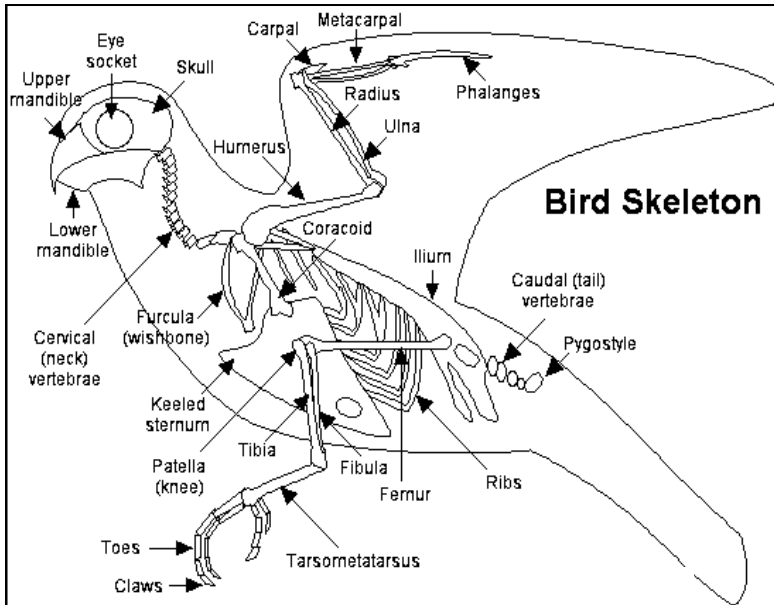


BIRD BONES



Birds have a lightweight skeleton. Most of the bones of flying birds are thin and hollow; some have internal struts or trusses (cross walls) that make them very strong. (Some flightless birds, like penguins, have solid bones.) The keel-shaped sternum (breastbone) is where the powerful flight muscles attach to the body.

Birds have a smaller total number of bones than mammals or reptiles. This is because many of their bones have fused together (like the middle to lower vertebrae), making the skeleton more rigid. Birds also have more neck (cervical) vertebrae than many other animals; most have 13 to 25 of these very flexible neck vertebrae (this helps them groom their feathers). Birds are the only vertebrate animals to have a fused collarbone (the furcula or wishbone) or a keeled breastbone.

For centuries biologists have known that bird bones are hollow, and even most school children know that bird skeletons are lightweight to offset the high energy cost of flying. Nevertheless, many people are surprised to learn that bird skeletons do not actually weigh any less than the skeletons of similarly sized mammals. In other words, the skeleton of a 60g (2oz) bird weighs just as much as the skeleton of a 60g rodent.