

Why Are There So Many Beak Shapes?

A bird's beak (or bill) is a lightweight, bony elongation of its skull. Like a mammal's jaw, it's basically a two-part structure: the upper mandible and the



lower mandible. Nostrils are located on each side of the upper mandible, near the base. Like all bones in a bird's skeleton, the bones of the bill are filled with air cavities; the strength of the beak comes from the structure and

shape of these cavities. Composed of keratin, like human fingernails and hair, the bill is hard and glossy. The tip and cutting edges of the bill are constantly renewed as they wear away.

Bird beaks are really multi-function tools. Birds use them like hands to weave twigs and grass into nests, to groom themselves and their mates and chicks, to attack competitors, to move eggs in the nest, to defend themselves and their nestlings - even to communicate information. In most birds the bill is black, but it can be almost any color or combinations of color. Did you know that bills change color as birds age or for the mating season? The most important function of a bird's beak is to gather or capture food.

Over generations, beaks have evolved into specialized organs. Birds that crack open seeds or nuts for food have extra reinforcement around the area where the seed is placed to be cracked. Birds that tear their feed (vultures for example) have structural enhancements near the tip of the bill - sometimes the tip is solid bone. Woodpeckers have extra shock-absorbing cartilage between their jaw joints.

You can often deduce the kind of food a bird eats by examining the shape of its bill. Comparing the bill to household tools helps to visualize how it is used.

NUTCRACKER



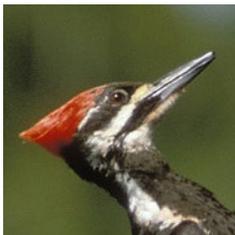
Cardinals & other seed-eaters have short thick conical beaks to help crack seeds and nuts.

SHREDDER



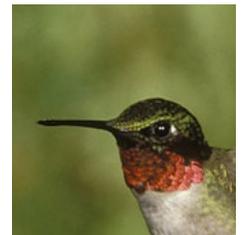
Sharp curved beaks, shaped like shredders, identify birds of prey.

CHISEL



A woodpecker literally bores into wood to find his insect meal.

DRINKING STRAW



Hummingbird bills allow them to sip nectar from flowers.

STRAINER



Special structures on a duck's bill strain the food from the water.

SPEAR



Herons and kingfishers have spear-like bills adapted for fishing.

PICK AXE



A robin drives its beak deeply into the soil to find worms.

SWISS ARMY KNIFE



Crows eat everything, so they have a multipurpose beak.