

FEATHERS

1. All birds, and only birds, have feathers, although a few species of dinosaurs had them.
2. Feathers are essential to flight; they provide insulation, sunblock, and waterproofing, and can be important in providing camouflage, social dominance, and reproductive success.
3. A bird's plumage usually weighs more than its skeleton.
4. Adult birds molt—replace their feathers—at least once a year. For most songbirds, molting takes five to twelve weeks, shedding only a few feathers at a time. For hawks, a full molt can take several years.
5. After breeding season, most male duck species in North America replace all their flight feathers at once and are flightless for two to four weeks.
6. Birds that winter in cold areas can have 50 percent more feathers in the winter than they do in the summer.
7. Hummingbirds have roughly 1,000 feathers; swans have 25,000.
8. Penguins have more feathers than most birds: about 100 per square inch.
9. Woodpeckers have two stiff tail feathers they use as a prop to stabilize their head banging on tree trunks.
10. Late during the egg-laying process, most birds that incubate lose feathers from their abdomen to provide skin-to-egg warmth during incubation. Feathers are good insulation, after all, and those eggs need body heat! The bald spot is called a "brood patch," and lots of blood vessels there are very close to the surface. In species in which both parents incubate, such as white-eyed vireo, both male and female develop a brood patch, but if only one parent incubates, such as with most songbird species, only the female develops one. When the nestlings fledge, feathers regrow on the brood patch.
11. Owls can fly silently because the forward edge of the first feather on each wing is serrated, rather than smooth. This affects the flow of air over the wing and disrupts the vortex noise created by non-owl wingbeats.
12. The shape of the feathers on many owls' faces into a disk helps them locate prey even in complete darkness. The concave shape channels sounds into the ears.
13. The color of most colorful feathers is caused by pigments, which are chemical compounds. Blue feathers, however, are not the result of pigment, but minute structural particles in the feather that scatter short wavelengths, making the feathers appear blue.
14. A flight feather contains a central vein (rachis), ending a quill; barbs extend off the rachis and branch into barbules, which end in tiny interlocking hooks, called barbicels.

15. Down feathers close to the bird's body have no interlocking barbules, making them soft, fluffy, and extra insulating.