Bird Adaptations

What do more than 10,000 species of birds have in common?

In order to stay alive, birds must be skilled at finding food, move quickly to escape danger, and endure extreme temperatures. As a result, they have several unique **adaptations**, or traits, that help them survive in their environment. Found on every continent and at sea, birds have adapted to diverse habitats around the world more than any other group of animals.
Birds have two types of adaptations:

- **Physical adaptations** are part of a bird's body.
- **Behavioral adaptations** are actions a bird does to survive in its environment.

Bird Bodies and Behaviors

You can learn a lot about birds just by looking at key physical features.

Feathers

Birds are the only animals on Earth that have feathers. Feathers come in a variety of shapes, sizes, and colors, and have different functions. Birds have three main types of feathers:

- Flight feathers, including wings and tail, are smooth and stiff, flexible and lightweight.
- Contour feathers cover the body and have a downy base with stiff, smooth outerparts.
- Down feathers are soft, fluffy feathers close to the skin for insulation.

Can you guess which feather type is which?

Bills

The size and shape of the **bill**, which is made of bone and muscles, determine what a bird eats.

- Raptors like hawks and falcons have sharp, hooked bills for tearing and shredding prey.
- Cardinals and finches have short, coned-shaped bills for cracking seeds.
- Herons and egrets have long, sharp bills for spearing fish, frogs, and other small prey.

Hawks shred, tear, and quickly swallow prey.

Cardinals crack seeds and nuts and use their tongues to swallow.

Herons spear and grab fish, frogs, and other small animals and swallow them whole.

Many species eat a variety of foods depending on what is available, while others have specialized diets. Birds can be categorized by their diets in two ways.

Generalists will grab whatever food is available as environmental conditions change; they do not rely on one type of food.

American Robins are generalists. Their straight, pointed bill enables them to eat seeds, berries, worms, and insects.

Ruby-throated Hummingbirds are specialists. Their long, slender bills are adapted to collect nectar from tube-shaped flowers.

Specialists have adaptations that make them experts at collecting or hunting a certain type of food. Some species are restricted to specific foods, limiting their choices when seasons change.

Feet

Just like bills, bird legs and feet can serve multiple functions—swimming, wading, climbing, perching, and running. Looking at a bird's feet may provide clues to its behavior, diet, and habitat.

- Ducks and anhingas have webbed feet to swim and propel them through water.
- Chickadees and nuthatches have long, flexible toes to perch on branches.
- Owls, ospreys, and hawks have powerful talons to grip their prey.

Osprey

What Makes a Bird, a Bird?

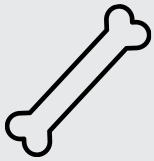
Feathers

- Are unique to birds—no other living animals have them.
- Play important roles in flight, insulation, camouflage, and attracting mates.
- Vary in structure, depending on where they are located on a bird's body.

Wings

- Have layers of feathers.
- Allow birds to fly and swim.
- Enable different types of movement depending on shape (soaring, hovering, etc.).

Hollow Bones



- Provide lightweight but strong structure.
- May be entirely hollow or only partially hollow.
- May have struts (thin pieces of bone) inside for support.

Bill

- Is covered by a keratin coating (like our fingernails), called the beak.
- Is used for collecting or catching food, drinking water, feeding young, preening (grooming), and defense.
- Differs in shape depending on the bird's diet.

Two-Part Stomach

- Takes the place of teeth.
- Breaks down food with acids in the first chamber.
- Grinds and crushes hard food like seeds in the second chamber, the **gizzard**.

Egg-Laying

- Eggs are typically laid in nests, which come in many shapes and sizes.
- Hard-shelled and fragile, bird eggs vary in shape, color, and size, depending on the species.

Acute Vision and Hearing

- These senses are usually much stronger in birds than in humans.
- Birds' ears are small holes on the sides of the head covered by feathers.
- Birds primarily have one of two types of vision.
  - Binocular: when both eyes focus on the same object
  - Monocular: when each eye focuses on a different object at the same time

Warm-Bloodedness

- Enables birds to maintain a relatively constant body temperature in hot or cold weather (like mammals).
- Allows birds to survive in a wide range of climates and habitats.

BIRDS GEORGIA