

Birds & Their Adaptations



An Alabama Wildlife Federation Outdoor Classroom Field Journal Activity

To use this interactive PowerPoint with your students:

1. Click on “**Enable Editing.**”
2. Click the “**Slide Show**” tab at the top of the screen.
3. Then choose “**From Beginning**” from the menu.

What are the characteristics or traits that make an organism a bird?

Are birds cold-blooded or warm-blooded?

✓ Warm-blooded (or endothermic)

How many arms and legs do birds have?

✓ Two wings (instead of arms) & two legs

What kind of covering do birds have? Skin? Scales?

✓ Feathers on their body & scales on their feet and legs

How do birds give birth? Live birth like humans?

✓ Lay eggs

What type of mouth do they have? Is it like ours?

✓ Beak or bill as a "mouth" with no teeth - the gizzard (stomach) grinds the food



Did you know?

There are approximately 10,500 different bird species in the world.

How do biologists (scientists who study living organisms) group birds into different categories?

To distinguish one species from another, scientists use a **taxonomy** or classification system with levels that range from broad to very specific.

For example:

- **Kingdom** - All Animals (Animalia in Latin)
- **Phylum** - All Vertebrates (have a backbone) - (Chordata)
- **Class** - All Birds (Aves)
- **Order** - All Perching Birds (Passeriformes)
- **Family** - All Wrens (Troglodytidae)
- **Genus** - *Thryothorus*
- **Species** - *ludovicianus*



Latin Name: *Thryothorus ludovicianus*

Common Name: Carolina Wren

Do all birds look exactly alike? How do birds look different from each other?



Beaks come in many shapes and sizes depending on what the species eats.



Birds' feet come in many shapes and sizes depending on what the bird eats and where it lives.

No!
Different
bird species
do NOT look
alike!



Their legs can be different colors or lengths depending on its habitat.



The color of a bird's feathers depends on the species, and whether the bird is male or female.

Why do birds look different from each other?



Scientists believe that over millions of years birds' bodies and behaviors have changed and adapted to help them grow, reproduce and survive in a variety of habitats.

These physical and behavioral changes are called **ADAPTATIONS**.

Adaptation #1

Coloration

How does the color of birds' feathers help them survive?



In many species the color of the male's feathers are brighter than the female's to help them attract a mate.

Also, the female's muted colors help her blend in with her surroundings to provide camouflage to hide from predators while she sits on the nest.



The male Eastern wild turkey has iridescent plumage (feathers) that become brighter in the sunlight to attract the females.

Adaptation #2

Feet

How do birds' feet look different from each other? How do these differences help them survive?



Many species of waterfowl have webbing between their toes which helps them move through water such as this duck.



Birds of prey such as hawks have three toes forward and one back with very large talons (claws) used to grasp prey.

Most birds have three to four toes, and the placement of the toes depends on the species of bird.



Hairy woodpeckers have two toes in front and two behind which helps them grasp the bark of a tree.

Adaptation #3

Beaks

Are all birds' beaks the same?



Hummingbirds have long beaks and tubular (called a proboscis) tongues for reaching deep into a flower to reach the nectar within.

The tufted titmouse has a short thin beak for eating insects, seeds and berries.



Woodpeckers like this pileated woodpecker use their beak to break apart dead trees as they look for insects.

No! Bird's mouths have evolved into beaks (also called bills) that do not have teeth, and differ from one bird species to another based on what they eat.



Birds of prey such as hawks use their beak to help tear prey apart for food.

Adaptation #4

Legs

How do birds' legs look different from each other? How do these differences help them survive?



Wading birds have very long legs that allow them to enter deep water while remaining above the water to hunt



Birds of prey must have very strong legs that take the impact of their hunting hits as well as allow them to carry heavy prey items



Flightless birds do not need to be lightweight; they have large, strong legs for running



"Nearly legless" birds (swifts) have very short legs so they cling to vertical surfaces rather than perch



Here's a fun
fact!!

Birds' knees do NOT actually bend backwards!

Their knees are actually farther up the leg, usually obscured by feathers.

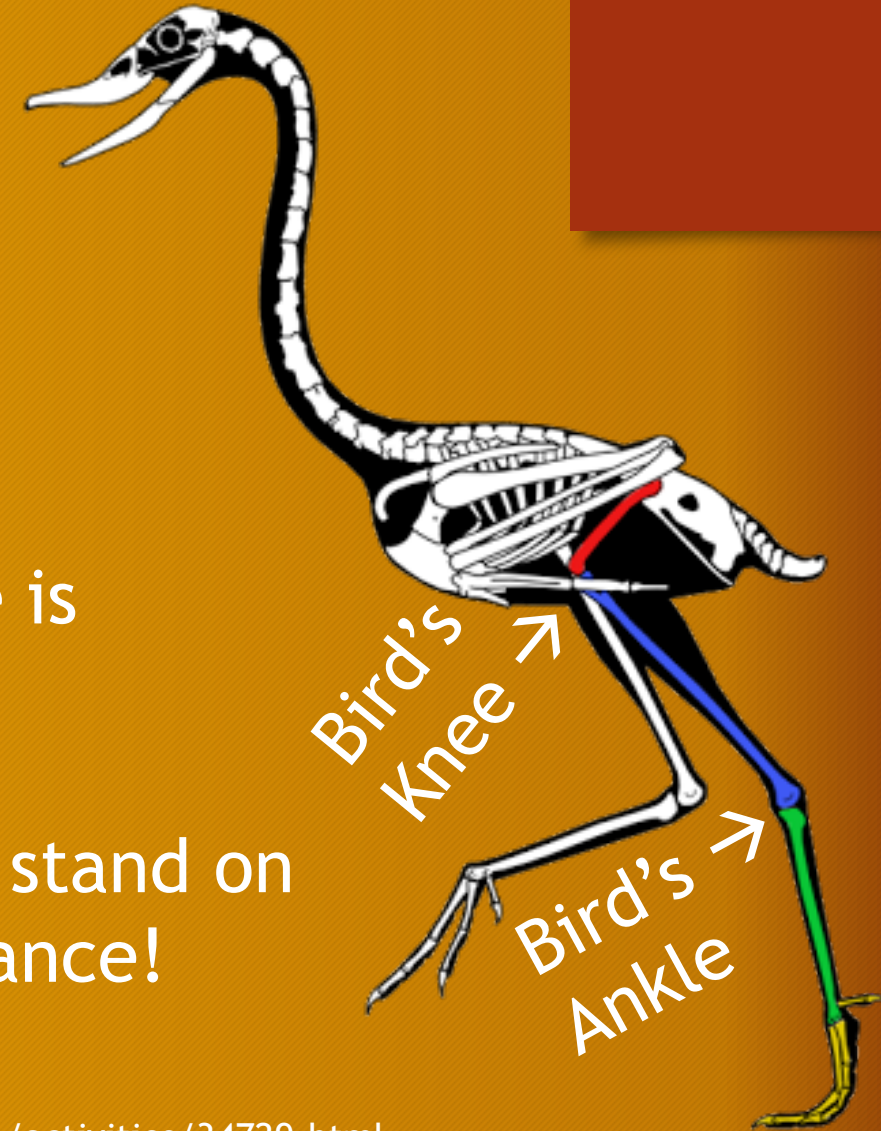
What we see think is their knee is actually their ankle.

This means some birds actually stand on their tiptoes! It helps them balance!



Our Knee →

Our Ankle →



What types of bird species could we find living in our outdoor classroom?

There are many species of birds that can be spotted around your school's outdoor classroom. Here are 12 of the most common species that you may see.

American Goldfinch



Coloration:

- males are bright yellow with black forehead; black wings with white markings; white patches above and beneath the tail
- females are duller yellow beneath and olive above
- In winter they are drab, unstreaked brown, with blackish wings and two pale wingbars

Beak:

- large; conical; for eating seeds

Habitat:

- Weedy fields, open floodplains, and other overgrown areas; also common in suburbs, parks, and backyards.

Favorite Feeder Food:

- thistle (Nyjer) and sunflower seeds

American Robin



Coloration:

- males are gray-brown with warm orange underparts and dark heads; in flight, a white patch on the lower belly and under the tail can be conspicuous; white eye ring
- Females have paler heads that contrast less with the gray back; white eye ring

Beak:

- Long, thin, and pointed; tweezer-like for eating worms on the ground most of the year - for eating fruit in fall

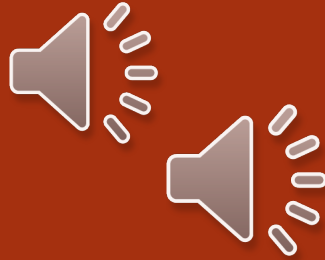
Habitat:

- lawns, fields, and city parks; wild places like woodlands, forests, mountains up to near treeline; during winter they move to moist woods where berry-producing trees and shrubs are common.

Favorite Feeder Food:

- Mealworms or fresh fruit

Blue Jay



Coloration:

- White or light gray underneath; various shades of blue, black, and white above; males and females are nearly identical

Beak:

- large; chisel-like; for cracking open nuts

Habitat:

- found in all kinds of forests but especially near oak trees; they're more abundant near forest edges than in deep forest; they're common in urban and suburban areas, especially where oaks or bird feeders are found

Favorite Feeder Food:

- peanuts; sunflower seeds, cracked corn, mealworms, and suet

Carolina Chickadee



Coloration:

- Black cap and bib separated by stark white cheeks; back, wings, and tail are soft gray; males and females are nearly identical

Beak:

- Short and thick; for eating seeds, berries, and other plant matter (mostly in winter) as well as insects and spiders

Habitat:

- found in deciduous and mixed forests, open woods, parks, willow thickets, cottonwood groves, and disturbed areas

Favorite Feeder Food:

- sunflower seeds, peanuts, suet, peanut butter, and mealworms



Carolina Wren



Coloration:

- unpatterned reddish-brown above and warm buffy-orange below; long white eyebrow stripe; white chin and throat; male and female are nearly identical

Beak:

- Long; great for probing and plucking insects from crevices

Habitat:

- vegetated habitats such as brushy thickets, lowland cypress swamps, bottomland woods, and ravines choked with hemlock and rhododendron; shrubby, wooded residential areas, overgrown farmland, dilapidated buildings, and brushy suburban yards

Favorite Feeder Food:

- suet and peanuts

Eastern Bluebird



Coloration:

- males - deep blue above & rusty/ brick-red on the throat & breast
- females - grayish above with bluish wings and tail and a subdued orange-brown breast;
- blue in birds always depends on the light, and males often look plain gray-brown from a distance

Beak:

- Short, slender; great for catching insects on the ground; eat berries in fall and winter

Habitat:

- open country around trees, but with little understory and sparse ground cover; most common along pastures, agricultural fields, suburban parks, backyards, and golf courses.

Favorite Feeder Food:

- Mealworms, suet dough, fruit, and sunflower bits.

House Finch



Coloration:

- males - rosy red around the face and upper breast, with streaky brown back, belly and tail; in flight, the red rump is conspicuous;
- females are plain grayish-brown with thick, blurry streaks and an indistinctly marked face

Beak:

- large; conical; for eating seeds, buds, and fruit

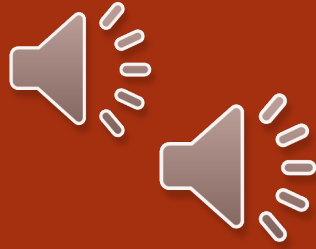
Habitat:

- buildings, lawns, small conifers, and urban centers; In rural areas, you can also find House Finches around barns and stables.

Favorite Feeder Food:

- sunflower seeds, nyjer (thistle) seeds

Northern Cardinal



Coloration:

- males - brilliant red all over with a reddish bill and black face immediately around the bill
- females - pale brown overall with warm reddish tinges in the wings, tail, and crest; they have the same black face and red-orange bill

Beak:

- large; conical; for eating seeds and fruit

Habitat:

- dense shrubby areas such as forest edges, overgrown fields, hedgerows, backyards, marshy thickets, mesquite, regrowing forest, and ornamental landscaping; nest in dense foliage

Favorite Feeder Food:

- Safflower seeds, black oil sunflower seeds, and white milo crushed peanuts, cracked corn, and berries

Northern Mockingbird

Coloration:

- overall gray-brown, paler on the breast & belly, with two white wingbars on each wing; white patch in each wing is often visible on perched birds, & in flight these become large white flashes; white outer tail feathers are flashy in flight; males & females look nearly identical

Beak:

- Long, slightly curved beak for eating bugs, fruit, and nectar

Habitat:

- found in areas with open ground and; parkland, cultivated land, suburban areas

Favorite Feeder Food:

- peanuts, suet, raisins and dried currants, as well as apple slices and rose hip



Red-bellied Woodpecker



Coloration:

- Often appears pale overall, even the boldly black-and-white striped back; males have red nape and crown
- females have red nape and no crown; white patches near the wingtips as this bird flies

Beak:

- Long, sturdy, chisel-like; for drilling into bark of trees

Habitat:

- most of the forests, woodlands, and wooded suburbs of the eastern United States; common in river bottoms and wetlands, in the south of its range

Favorite Feeder Food:

- suet (in winter), peanuts, sunflower seeds. They've even been spotted drinking nectar from hummingbird feeders..

Ruby-throated Hummingbird



Coloration:

- bright emerald or golden-green on the back and crown, with gray-white underparts
- males have a brilliant iridescent red throat (looks dark when not in good light)

Beak:

- Long, thin; dainty; for probing long, tubular flowers

Habitat:

- deciduous woodlands ; old fields, forest edges, meadows, orchards, stream borders, and backyards; on their tropical wintering grounds - dry forests, citrus groves, hedgerows, and scrub.

Favorite Feeder Food:

- sugar water (1:4)

Tufted Titmouse



Coloration:

- Soft silvery gray above & white below, with a rusty or peach-colored wash down the flanks; black patch just above the bill; males & females nearly identical

Beak:

- Pointed, sharp; for eating mainly insects (including caterpillars, beetles, ants and wasps, stink bugs, and treehoppers, as well as spiders and snails); also eat seeds, nuts, and berries, including acorns and beech nuts.

Habitat:

- deciduous woods or mixed evergreen-deciduous woods, typically in areas with a dense canopy and many tree species; also common in orchards, parks, and suburban areas.

Favorite Feeder Food:

- sunflower seeds, suet, peanuts, and other seeds

Bird Resources

- [Cornell Lab of Ornithology](#)
- [Journey North](#)
- Outdoor Alabama [Watchable Wildlife](#)
- *Birds of Alabama* Stan Tekeila
- *National Audubon Society Field Guide to the Southeast*
- *Birding Apps:*
 - Merlin Bird ID by Cornell Lab (free)
 - eBird by Cornell Lab (free)

