

Taxonomy Quiz

Like all living things, birds have been placed by scientists into a hierarchy, which expresses their relationships to one another. All birds are in the class Aves. This class is subdivided into a small number of orders (20 in North America). Each order is further divided into one or more families. The most closely related birds in a family belong to a particular genus. Finally, there is the species. Subdivisions at any level are possible, resulting in suborders, subfamilies, subspecies (often called races), and the like. Consider the Cooper's Hawk:

Order = Falconiformes

Family = Accipitridae (includes kites, hawks, eagles, etc., but not falcons)

Genus = *Accipiter*

Species = *cooperii* (its scientific name is *Accipiter cooperii* & should always be italicized)

The more taxa (order, family, genus, etc.; singular: taxon) two species share, the more closely related they are believed to be from an evolutionary standpoint. Taxonomic order is ornithologists' attempt to list the most primitive (least evolved since antiquity) birds first, with the more evolved ones later. As more and more scientific evidence is obtained, it is inevitable that changes in taxonomic relationships are discovered. Birders are usually concerned only with changes at the species level, and usually cheer when species are split and boo when they're lumped, but from time to time even more profound changes at higher levels are deemed necessary. Some of these changes are illustrated in the questions below.

Birders usually don't learn the names of the various taxa, contenting themselves with the English names established by the AOU (American Ornithologists Union). However, most good birders are aware of which birds share a particular taxon. The following quiz tests your knowledge of these relationships.

Which bird in each group is most distantly related to all the rest? Examples:

___ A. (1) Cliff Swallow, (2) Common Raven, (3) Steller's Jay, (4) Yellow-billed Magpie

The correct answer is (1). It is in a different family (Hirundinidae) from the other three (Corvidae). All are in the same order (Passeriformes). Even if you didn't know the names of the families, you still could answer the question, couldn't you?

___ B. (1) Mallard, (2) Canvasback, (3) American Coot, (4) Bufflehead.

The correct answer is (3). It is in a different order and, of course, family (Gruiformes, Rallidae—rails) from the other three (Anseriformes, which includes ducks, geese and swans—also in the same family, Anatidae.)

___ 01. (1) Hammond's Flycatcher, (2) Willow Flycatcher, (3) Ash-throated Flycatcher, (4) Dusky Flycatcher

___ 02. (1) Great Egret, (2) White-faced Ibis, (3) Wood Stork, (4) Sandhill Crane

___ 03. (1) Indigo Bunting, (2) Painted Bunting, (3) Lark Bunting, (4) Lazuli Bunting

___ 04. (1) Belted Kingfisher, (2) Northern Flicker, (3) Downy Woodpecker, (4) Red-breasted Sapsucker

___ 05. (1) Ruby-crowned Kinglet, (2) Bushtit, (3) Wrentit, (4) Hermit Thrush

___ 06. (1) American Kestrel, (2) Turkey Vulture, (3) Cooper's Hawk, (4) Red-tailed Hawk

___ 07. (1) Western Sandpiper, (2) Killdeer, (3) Black Turnstone, (4) Long-billed Curlew

___ 08. (1) Acorn Woodpecker, (2) Downy Woodpecker, (3) Nuttall's Woodpecker, (4) White-headed Woodpecker

___ 09. (1) Bufflehead, (2) King Eider, (3) Red-breasted Merganser, (4) Mallard

___ 10. (1) Marbled Godwit, (2) Western Grebe, (3) Eared Grebe, (4) Common Loon

___ 11. (1) Loggerhead Shrike, (2) Warbling Vireo, (3) American Crow, (4) Orange-crowned Warbler

___ 12. (1) Townsend's Warbler, (2) Orange-crowned Warbler, (3) Hermit Warbler, (4) Yellow-rumped Warbler

___ 13. (1) Western Meadowlark, (2) Hooded Oriole, (3) Brown-headed Cowbird, (4) Horned Lark

___ 14. (1) Sooty Shearwater, (2) Double-crested Cormorant, (3) Masked Booby, (4) Brown Pelican

___ 15. (1) Black Phoebe, (2) White-throated Swift, (3) California Gnatcatcher, (4) Tree Swallow

Scoring: 1 - 5 correct (beginner)

6 - 10 correct (intermediate)

11-15 correct (advanced)

Taxonomy Quiz (Answers)

The all-capitals word which starts each answer is the highest taxonomic level at which there is a difference.

- 3 01. (1) Hammond's Flycatcher, (2) Willow Flycatcher, (3) Ash-throated Flycatcher, (4) Dusky Flycatcher
GENUS. Ash-throated Flycatcher is in the genus *Myarchus*. The others are in the genus *Empidonax*.
- 4 02. (1) Great Egret, (2) White-faced Ibis, (3) Wood Stork, (4) Sandhill Crane
ORDER. Cranes are in the order Gruiformes. (Rails are in the same order, but a different family.) The others are in the order Ciconiiformes, but different families.
- 3 03. (1) Indigo Bunting, (2) Painted Bunting, (3) Lark Bunting, (4) Lazuli Bunting
FAMILY. Lark Bunting is in the family Emberizidae (sparrows). The rest are in the family Cardinalidae. (For a few years recently, these were considered subfamilies, and Emberizinae and Cardinalinae, respectively. The AOU reversed itself, as it occasionally does.)
- 1 04. (1) Belted Kingfisher, (2) Northern Flicker, (3) Downy Woodpecker, (4) Red-breasted Sapsucker
ORDER. Belted Kingfisher is in the order Alcedinidae (kingfishers). The rest are in the order Picidae (woodpeckers).
- 2 05. (1) Ruby-crowned Kinglet, (2) Bushtit, (3) Wrenit, (4) Hermit Thrush
FAMILY. The Bushtit is alone in its family Aegithalidae. The rest are in the family Muscicapidae.
- 2 06. (1) American Kestrel, (2) Turkey Vulture, (3) Cooper's Hawk, (4) Red-tailed Hawk
ORDER. Based on old taxonomy, this question would not have a single correct answer. New thinking has caused the American vultures (family Cathartidae) to be moved from the order Falconiformes to the order Ciconiiformes (same order as storks, but different family). The rest remain in Falconiformes, the American Kestrel in the family Falconidae and the other two in the family Accipitridae. (Some ornithologists question this change, so don't be surprised if the vultures are moved back where they were one of these years.)
- 2 07. (1) Western Sandpiper, (2) Killdeer, (3) Black Turnstone, (4) Long-billed Curlew
FAMILY. The Killdeer is in the family Charadriidae (plovers), and the rest are in the family Scolopacidae (sandpipers)
- 1 08. (1) Acorn Woodpecker, (2) Downy Woodpecker, (3) Nuttall's Woodpecker, (4) White-headed Woodpecker
GENUS. The Acorn Woodpecker is in the genus *Melanerpes*. The rest are in the genus *Picoides*.
- 4 09. (1) Bufflehead, (2) King Eider, (3) Red-breasted Merganser, (4) Mallard
TRIBE. The Mallard is a dabbling Duck. The rest are divers. Most birders know that and would probably get the question right. Waterfowl taxonomy is quite complicated. All North American ducks, geese, and swans are in the family Anatidae, which has four subfamilies in North America (more elsewhere). The whistling-ducks are in one, the swans and geese are in another, the introduced Egyptian Goose is in a third, and all the rest including all on the list of choices—are in the large subfamily Anatinae, which has four tribes (the term used for sub-subfamilies. The Mallard is in the tribe Anatini, and the other three are in the tribe Mergini, but different genera (plural of genus).
- 1 10. (1) Marbled Godwit, (2) Western Grebe, (3) Eared Grebe, (4) Common Loon
ORDER SEQUENCE. The orders containing the loons and grebes are right next to one another in AOU order. The one containing the Marbled Godwit is found farther away, indicating a more distant relationship.
- 4 11. (1) Loggerhead Shrike, (2) Warbling Vireo, (3) American Crow, (4) Orange-crowned Warbler
FAMILY SEQUENCE. The correct answer is based on another recent major sequencing change by the AOU. Formerly the shrikes and the vireos came just before the warblers in AOU order. They have been moved to right before the Corvidae. So the warbler is the most distantly related bird.
- 2 12. (1) Townsend's Warbler, (2) Orange-crowned Warbler, (3) Hermit Warbler, (4) Yellow-rumped Warbler
GENUS. The Orange-crowned Warbler is in the genus *Vermivora*, The rest are in the genus *Dendroica*.
- 4 13. (1) Western Meadowlark, (2) Hooded Oriole, (3) Brown-headed Cowbird, (4) Horned Lark
FAMILY. The Horned Lark is the only native American member of the family Alaudidae. (The introduced Sky Lark is also in this family.) The rest are in the family Icteridae (blackbirds, orioles, etc.)
- 1 14. (1) Sooty Shearwater, (2) Double-crested Cormorant, (3) Masked Booby, (4) Brown Pelican
ORDER. The shearwaters are in the order Procellariiformes (tubenoses). The others are in the order Pelecaniformes, but in different families.
- 2 15. (1) Black Phoebe, (2) White-throated Swift, (3) California Gnatcatcher, (4) Tree Swallow
ORDER. The swifts are in the order Apodiformes. (The hummingbirds are in the same order, but a different family.) The rest are in the order Passeriformes, but in different families.