

Quick Guide to Classification of the Animal Kingdom

NOTES:

- This is not an exhaustive list of animals! Hopefully, all the major groups and well-known animal types are listed. You are welcome to add your favorite lesser-known animals to the list.
- You can use these as single pages, or you may want to cut and tape them into one very long chart to hang on a wall (so you can see the entire kingdom at once).
- Notice that the classification categories (phyla, class, order, family) are not only typed in the same font, but also line up vertically (all have the same amount of indent). In other words, if you hold a ruler vertically under the word “Class,” all the classes will be right along the edge of the ruler.
- Knowing Greek and Latin root words can help you decode what these complicated-looking names mean. Often they mean something very simple, like “big nose.”
- If you need help with pronunciation, consult a dictionary. The dictionary will have the word spelled out phonetically and will tell you which syllable gets the accent.
- **Please be aware that categories can change. As scientists learn more, they sometimes decide to re-classify groups of animals. I’ve already had to update this chart a few times, and it might be out of date again by the time you download it. Scientists are constantly adding new sub-orders, super-orders, sub-families, infra-classes, etc. Looking at DNA has not made classification any easier. Instead, it’s complicated the situation because DNA isn’t always similar within groups the way we expect it to be. The underlying assumption that all animals came from common ancestors is currently the driving force behind how DNA evidence is interpreted and how orders, families and genres are being re-classified. I’m not endorsing this method of interpretation, just making you aware of what is going on.**

PLAY SOME GAMES:

Try playing a “20 Questions” game where one player thinks of an animal and the others try to guess what it is using only “yes or no” questions. You can use the categories to help narrow down the possibilities very quickly. Also, I have some classification games in my free download that use picture cards.

MUSIC:

I have written three science songs that teach classification: “The Classification Song,” “The Marine Invertebrates Song,” “The -Optera Song of Insects,” and “The Arthropods Song.” You can hear them if you go to my website and click on MUSIC.



Here are a few of the most common Latin/Greek word roots. This is not an exhaustive list, just some of the more common roots you'll see in zoology.

a	without
amphi/ambi	both
arthro	joint
bi	two
brachi	arm
cephalo	head
cervid	deer
cervix	neck
chilo/chello	lip
chiro	hand
chondro/chondra	cartilage
cnida	stinging nettle (a plant) (the "c" is silent; say "ni-da")
coelen	hollow
cteno	comb (the "c" is silent; say "ten-o")
coleo	sheath or scabbard (the covering for a sword)
derm/derma	skin
di/diplo	two
dicty	net (like a fishing net)
echino	spiny
equus	horse
gastro	stomach
hippo	horse
hydro/hydra	water
hymen	membrane
hyper	over
hypo	under
iso	equal or same
lepido	scale or scaly
macro	large
micro	small
moll	soft
morph	shape
myo	muscle
ortho	straight
osteo	bone
odont	tooth
oto	ear
pinna	wing, flap, or feather
platy	flat or broad
pleuro	side or rib
pod/ped	foot
ptera	wing
siluri	a kind of fish
syn	with
tachy	swift
tetra	four
tri	three
ura	tail

K I N G D O M

PHYLUM

SUB-PHYLUM

Class

Order

Family

NOTE: If you would like to know the full classification (from kingdom down to species) for a certain animal, you can find this information listed on the Wikipedia article about that animal (on the Internet).

K I N G D O M A N I M A L I A

ROTIFERS microscopic creatures such as philodina and rotaria

NEMATODES roundworms (includes hookworms, pinworms and vinegar eels)

ANNELIDS segmented worms such as the common earthworm

PLATYHELMINTHES flatworms such as the planaria and the fluke

PORIFERA sponges

CNIDARIA (also called **COELENTERATES**) jellyfish, hydra, sea anemones, corals

CTENOPHORES comb jelly

ECHINODERMS starfish, sand dollars, sea urchins, sea lilies, sea cucumbers

MOLLUSKS

Cephalopods: (means "head foot") octopus, squid, nautilus

Gastropods: (means "stomach foot") slug, snail, abalone, limpet, and others with one shell

Pelecypods: (means "hatchet foot") (also called "bi-valves") clam, oyster, mussel

ARTHROPODS

Insects

Coleoptera: beetles and weevils

Dermaptera: earwig

Dictyoptera: cockroach and mantis

Diptera: flies

Hemiptera: "true bugs" such as shield bug

Hymenoptera: ant, bee, hornet and wasp

Isoptera: termite

Lepidoptera: butterflies and moths

Odonata: dragonfly and damselfly

Orthoptera: grasshopper and cricket

Siphonaptera: flea

Arachnids: spiders, ticks, scorpions, harvestmen ("granddaddy long legs")

Crustacea: crab, lobster, water flea, daphnia, copepod

Chilopoda: centipedes

Diplopoda: millipedes

CHORDATA

SUB-PHYLA

CEPHALOCHORDATA the amphioxus (a strange form of sea life)

TUNICATES "sea squirts"

VERTEBRATES (see next page)

PHYLUM
SUB-PHYLUM
Class

Order

Family

VERTEBRATES

Placoderms (extinct fish)

Agnatha

Lamprey

Hagfish

Chondrichthyes (cartilaginous fishes)

Pleurotremata: sharks

Hypotremata: rays, sawfish

Osteichthyes (bony fishes)

Anguilliformes: conger eel, moray eel

Atheriniformes: flying fishes

Cypriniformes: goldfish, carp, piranha, minnow, electric eel

Cyprinodontiformes: black molly

Gadiformes: cod, whiting

Gasterosteiformes: seahorse, stickleback, leafy seadragon, pipefish

Perciformes: grouper, bass, mackerel, parrot fish, goby, angel fish, perch, wrasse, remora, snapper, surgeonfish, bass, barracuda, cichlid

Percomorpha (now a "clade" instead of an "Order")

Pomacentridae: clownfish and damselfish

Pleuronectiformes: sole, halibut, turbot (flat fishes)

Salmoniformes: trout, salmon, viperfish

Scorpaeniformes: scorpionfish

Siluriformes: catfish

Synbranchiformes: swamp eel

Tetraodontiformes: blowfish, triggerfish, porcupine fish

Amphibia

Urodeles

Salamandridae: salamanders and newts

Anurans

Ranidae: bull frog, green frog

Dendrobatidae: poison dart frog

Bufo: common toad

Pipidae: Surinam toad

Hylidae: European tree frog

Discoglossidae: firebelly frog

Reptilia

Squamata (lizards and snakes)

Sub-order "Sauria" (lizards)

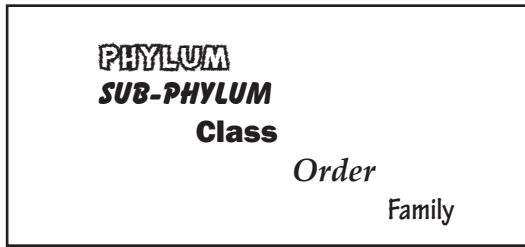
Geckonidae: gecko

Chamaeleonidae: chameleon

Iguanidae: iguana, lizards, anole

Helodermatidae: gila monster

Varanidae: monitor



VERTEBRATES (continued)

Reptilia (continued)

Sub-order "Ophidia" (snakes)

Colubridae: grass snake, rat snake, king snake, tree snake

Viperidae: viper, adder, asp

Crotalidae: rattlesnake moccasin, bushmaster

Boidae: boa, anaconda, python

Elapidae: spitting cobra, mamba, coral snake

Hydrophidae: sea snake

Chelonia (turtles)

Cheloniidae: sea turtle

Testudinidae: tortoise

Emydidae: painted turtle

Chelydridae: snapping turtle, box turtle

Trionychidae: soft-shelled turtle

Crocodylia (crocodiles and alligators)

Alligatoridae: alligator, cayman

Crocodylidae: crocodile

Aves (birds)

Accipitriformes: hawk, falcon, vulture, eagle (diurnal birds of prey)

Anseriformes: duck, swan, goose

Apodiformes: hummingbirds

Apterygiformes: kiwi

Charadriiformes: gull, tern, puffin, sand piper

Ciconiiformes: stork, heron, bittern, ibis, spoonbill

Columbiformes: pigeon, dove

Coraciiformes: hornbill, kookabura

Galliformes: chicken, turkey, pheasant, quail

Passeriformes: "perching birds" such as the blackbird, myna bird, and most common song birds we see every day

Pelicaniformes: pelican, gannet, cormorant

Phoenicopteriformes: flamingo

Piciformes: toucan, woodpecker

Procellariiformes: petrel, albatross

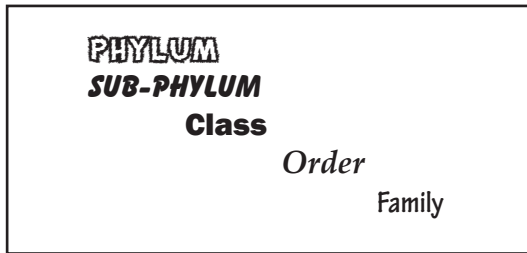
Psittaciformes: "hookbills" such as the parrot, cockatiel and cockatoo

Rheiformes: rhea

Sphenisciformes: penguin

Strigiformes: owls

Struthioniformes: ostrich



Mammalia

Monotremes: (egg-laying mammals) platypus, echidna

Marsupials: (have a pouch)

Phalangeidae: koala, dormouse, cuscus, brush-tail opossum

Peramelidae: bandicoot

Macropodidae: kangaroo, pademelon

Didelphidae: woolly opossum

Dasyuridae: dasyure, marsupial mouse

Artiodactyls: (hoofed mammals with even number of toes)

Antilocapridae: pronghorn

Bovidae: antelope, gazelle, gnu, goat, chamois, sheep, ibex, bison, yak, eland, zebu, oryx, dik-dik, kudu, duiker, impala, domestic cow

Camelidae: camel, llama, alpaca

Cervidae: muntjac, deer, moose, elk, caribou

Giraffidae: giraffe, okapi

Hippopotamidae: hippopotamus

Moschidae: musk deer

Suidae: forest hog, warthog, wild boar, domestic pig

Tayassuidae: peccary

Tragulidae: chevrotain

Carnivores (meat-eaters)

Ailuropodidae: panda

Canidae: dog, fox, wolf

Felidae: all cats

Hyenidae: hyena, aardwolf

Mustelidae: weasel, badger, ferret, otter, mink, skunk, polecat

Procyonidae: coati, kinkajou, raccoon, lesser panda

Ursidae: bears

Vivereridae: mongoose, civet, genet, suricate, linsang

Cetacea ("see-TAY-sha") ("ceta" means "whale")

Delphinidae: orca ("killer whale"), dolphin

Physeteridae: sperm whale (toothed whales)

Balaenopteridae: baleen whales

Chiroptera ("hand-wings")

Megachiroptera: large bats such as flying fox, vampire bat, fruit bat

Microchiroptera: small, insect-eating bats such as brown bat

Cingulata: armadillos

Chlamyphoridae: pink fairy armadillos

Dasyopodidae: all other armadillos

PHYLUM
SUB-PHYLUM
Class
<i>Order</i>
Family

Dermoptera: flying lemur (not related to the true lemurs)

Eulipotyphla

Talpidae: moles, talpids, desmans

Erinaceidae: hedgehogs and moonrats

Soricidae: true shrews

Hyracoidea: hyrax

Insectivores: (insect-eating mammals)

Soricidae: pygmy shrew

Chrysochloridae: golden mole

Erinaceidae: hedgehog

Solenodontidae: otter shrew

Solenodontidae: solendon

Lagomorphs

Leporidae: rabbit

Macroscelidae: elephant shrew

Perissodactyls (hoofed mammals with an odd number of toes)

Equidae: horse, donkey, zebra,

Tapiridae: tapir

Rhinocerotidae: rhinoceros

Philodota: pangolin

Pilosa

Sub-order Folivora: sloths

Sub-order Vermilingua: anteaters

Myrmecophagidae: giant anteater

Tachyglossidae: spiny anteater

Pinnipeds ("wing-foots")

Otariidae: sea lion, fur seal

Phocidae: seal

Odobentidae: walrus

Primates

Ceropithecidae: baboon, macaque, pata, moustached monkey, Rhesus monkey

Cebidae: squirrel monkey, spider monkey, saki, capuchin, howler monkey

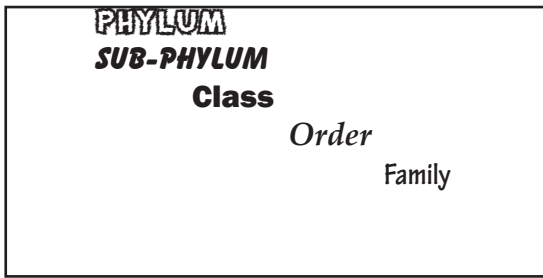
Galagidae: bushbaby

Callithricidae: tamarin, marmoset

Hylobatidae: gibbon

Pongidae: orangutan, gorilla, chimpanzee

Colobidae: proboscis monkey



(Primates, conintued)

Tarsiidae: tarsier

Lorisidae: loris

Tupaiidae: common tree shrew

Super-family: Lemuroidea

Lemuridae: lemurs

Daubentoniidae: aye-aye

Proboscidea (uses nose for feeding)

Elephantidae: elephant (and extinct mammoth)

Rodents

Cricetidae: hamster, gerbil, red-nosed mouse, lemming, vole

Sciuridae: squirrel, flying squirrel, prairie dog, marmot, woodchuck, chipmunk

Chinchillidae: chinchilla

Caviidae: guinea pig, mara (Patagonian hare)

Muridae: mouse, rat

Hydrochoeridae: capybara

Hystriidae: porcupine

Castoridae: beaver

Gliridae: dormouse

Erethizontidae: tree porcupine

Dasyproctidae: agouti

Sirenia

Trichechidae: manatee

Dugongidae: dugong

Tubulidentata

Orycteropidae: aardvark