

Quick Guide to Classification of the Animal Kingdom

NOTES:

- 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.

PLAY A GAME:

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.

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.” They are on “The Science Jukebox” CD, available through either my website or cdbaby.com/ellenmchenry. (You can download single songs on cdbaby.com/ellenmchenry.) If you download them and need the lyrics, they are printed on the last page of this pdf file.

MY DISCLAIMER: I am not a professional zoologist. All the information for this chart came from books and websites that I consulted. If you find any discrepancies, email me and let me know. Thanks!



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 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 genus and 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, clownfish, remora, snapper, surgeonfish, bass, barracuda, cichlid

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

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

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)

Anseriformes: duck, swan, goose

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

Falconiformes: hawk, falcon, vulture

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

Pelicaniformes: pelican, gannet, cormorant

Piciiformes: toucan, woodpecker

Procellariiformes: petrel, albatross

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

Rheiformes: rhea

Sphenisciformes: penguin

Strigiformes: owls

Struthioniformes: ostrich

PHYLUM
SUB-PHYLUM
Class

Order

Family

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

Peramelidae: antelope, gazelle, gnu, yak, goat, chamois, sheep, ibex, bison, eland, zebu, oryx, dik-dik, kudu, duiker

Camelidae: camel, llama, alpaca

Cervidae: muntjac, deer, moose, elk, caribou

Giraffidae: giraffe, okapi

Hippopotamidae: hippopotamus

Moschidae: musk deer

Suidae: forest hog, warhog, wild boar, 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

Delphinidae: orca ("killer whale"), dolphin

Balaenopteridae: baleen whales

Chiroptera ("hand-wings")

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

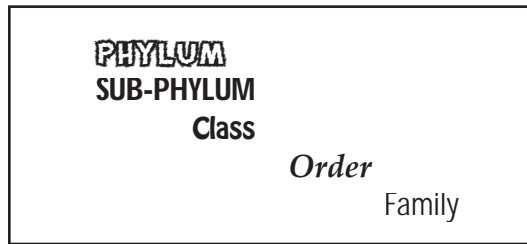
Microchiroptera: small, insect-eating bats such as brown bat

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

Edentata

Myrmecophagidae: giant anteater

Tachyglossidae: spiny anteater



Mammalia (continued)

Hyracoidea: hyrax

Insectivores: (insect-eating mammals)

Soricidae: pygmy shrew

Chrysochloridae: golden mole

Erinaceidae: hedgehog

Solenodontidae: otter shrew

Solenodontidae: solendon

Lagomorphs

Leporidae: rabbit

Perissodactyls (hoofed mammals with an odd number of toes)

Equidae: horse, donkey, zebra,

Tapiridae: tapir

Rhinocerotidae: rhinoceros

Philodota: pangolin

Pinnipeds ("wing-foots")

Otariidae: sea lion, fur seal

Phocidae: seal

Odobentidae: walrus

Primates

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

Lemuridae: lemurs

Daubentoniidae: aye-aye

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

Galagidae: bushbaby

Callithricidae: tamarin, marmoset

Hylobatidae: gibbon

Pongidae: orangutan, gorilla, chimpanzee

Colobidae: proboscis monkey

Tarsiidae: tarsier

Lorisidae: loris

Tupaiidae: common tree shrew

Proboscidea (uses nose for feeding)

Elephantidae: elephant (and extinct mammoth)

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)

PHYLUM
SUB-PHYLUM
Class

Order

Family

Rodents (continued)

Muridae: mouse, rat

Hydrochoeridae: capybara

Hystriidae: porcupine

Castoridae: beaver

Myomorpha: dormouse

Gliridae: hazel dormouse, golden dormouse

Erethizontidae: tree porcupine

Dasyproctidae: agouti

Sirenia

Trichechidae: manatee

Dugongidae: dugong

Tubulidentata

Orycteropidae: aardvark

If you downloaded my songs (cdbaby.com/ellenmchenry) and need the lyrics, there they are:

Classification Song

Kingdom, phylum (clap, clap), class, order (clap, clap). family (clap, clap), genus, species (clap, clap).

REPEAT

Kingdom, phylum, class, order, family, genus, species.

REPEAT

The Marine Invertebrates Song

Way down yonder in the deep, cold ocean, marine invertebrates roam,
So many different kinds of locomotion, but none has a single bone.
Phylum **Porifera** contains the sponges, they filter water through pores;
Now we know they're in the animal kingdom, don't call them plants no more!
Echinoderms are seashore treasures, they've got spiny skins,
Have fun collecting starfish and sand dollars-- don't step on spiny urchins!
The **Cnidarians** are hollow: coral, jellyfish, anemones;
Don't confuse the jellies with the comb-bearers, the **Ctenophores** are comb jellies.
Phylum **Mollusca** has the squishy, soft bodies; suction they use for tread;
The octopus and squid are called the **Cephalopoda**, that means their foot's their head.
Snails and slugs are **Gastropoda**, they have "stomach feet."
Clams and oysters are **Pelecypoda**, they're bivalves with "hatchet feet."
That leaves only phylum **Arthropoda**, they've got jointed feet;
Lobsters, shrimp and crabs are class crustacea, they're a special treat to eat.
And the class **Celecerata** is the horseshoe crab.
Now we're ready to discuss the creatures in any ocean lab.

The Arthropods Song

Oh, let me tell you 'bout the arthropods, they got no bones so their chiton does the job;
Their name **Arthropoda** means "jointed feet;" there's five main classes that I'd like you to meet.
Insecta is the biggest class by far, they're fun to catch you can keep 'em in a jar;
They've got six skinny legs and antennae that bend. a head and a thorax and an abdomen.
Crustacea is a class you'll learn with ease, it's lobsters crabs and tiny water fleas.
Arachnids have eight legs but aren't any fun 'cause they're spiders and ticks and scorpions!
In class **Diplopoda** they have a zillion feet; they're millipedes and as pets they're really neat.
Chilopoda is the class for centipedes. That's the arthropods-- wasn't it a breeze?!

The "-Optera" Song of Insects

Butterflies and moth that soar, in the field right out your door;
Leopard-spotted butterflies are **Lepidoptera**.
Bees and wasps that sting your knees, ant that crawl on peonies.
Hives are filled with honey from the **Hymenoptera**.
Beetles and weevils will cut your yield if you plant a cotton field.
So keep your collards and your cukes from **Coleoptera**.
Grasshopper and crickets, too-- I'll be they can out-jump you!
So get your jumping ropes and jump-- high with **Orthoptera**!
Fleas that bite your dog and cat-- don't go sit where they just sat;
Fleas will siphon blood from you, they're **Siphonaptera**.
Flies and gnats that buzz your nose aren't as bad as mosquitoes;
They'll dip into your picnic food, so swat those **Diptera**!