

Mammalian Orders

Need to know

Orders listed with description

Monotremata: egg laying mammals
Marsupials: pouched mammals
Insectivora: mouse-like, feeding on ants, grubs, beetles etc.
Rodentia: largest order of placental mammals
Lagomorpha: long ears and gnawing mammals
Chiroptera: flying mammals
Edentata: mammals with no or small teeth
Proboscidea: mammals with trunks
Artiodactyla: hoofed mammals with an even number of toes
Perissodactyla: hoofed mammals with odd number of toes
Carnivora: meat eaters
Pinnipedia: aquatic, feeding on fish leaves water to rest
Cetacea: aquatic mammals with blow holes
Sirenia: aquatic, slow moving, feeding on plants
Primates: intelligent, well-developed hands

Orders listed with examples of the species included

Monotremata: duckbill platypus, echidna
Marsupials: opossum, koala, kangaroo
Insectivora: moles, shrews and hedgehogs
Rodentia: rats, beavers, porcupines and squirrels
Lagomorpha: rabbits and hares
Chiroptera: bats
Edentata: anteaters, sloths and armadillos
Proboscidea: African and Indian Elephants
Artiodactyla: pigs, deer, cattle, sheep and camels
Perissodactyla: horses, tapirs and rhinoceroses
Carnivora: bears, dogs, cats, skunks
Pinnipedia: walruses, seals and sea lions
Cetacea: whales, dolphins and porpoises
Sirenia: manatees and dugongs
Primates: humans, apes, monkeys and marmosets

Insect Orders

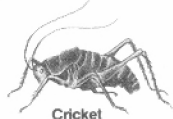
Need to Knows

The following insect orders are required for you to know. You must know the order and the examples found in these orders (I suggest that you make flash cards up and start becoming familiar w/ these right away!):

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| 1. Diptera – Flies, mosquitos and gnats | 8. Hymenoptera – ants, bees and wasps |
| 2. Dermaptera – earwigs | 9. Ephemeroptera - mayflies |
| 3. Coleoptera – beetles | 10. Odonata - dragonflies |
| 4. Hemiptera – stink bugs, true bugs | 11. Neuroptera – ant lions, lacewings |
| 5. Orthoptera – crickets, grasshoppers | 12. Isoptera – termites and white ants |
| 6. Lepidoptera – butterflies and Moths | 13. Siphonaptera - Fleas |
| 7. Homoptera – Leafhoppers and aphids | 14. Thysanura - Silverfish |

Key to Identification of Common Insect Orders

1. Does the organism have six legs?	Yes	Go to number 2.	
	No	Either this organism is not an insect or it is a larval form, (like a caterpillar) which cannot be identified with this key.	
2. Does the insect have wings? (NOTE: Typical membranous wings may be hidden under an outer, thick, hard pair of wings.)	Yes	Go to number 3.	
	No	Go to number 14.	 Unicorn beetle (wings open)
3. Does the insect have two pairs of wings? (NOTE: One pair of covering structures counts as a pair of wings.)	Yes	Go to number 4.	
	No	order <i>Diptera</i> (flies, mosquitoes, gnats)	 Bluebottle fly  Mosquito
4. Are both pairs of wings made of the same substance and are they about the same thickness?	Yes	Go to number 8.	
	No	Go to number 5.	
5. Are the outer wings hard, and do they meet in a straight line in the center of the insect's back?	Yes	Go to number 6.	
	No	Go to number 7.	
6. Does the insect have obvious pincerlike structures extending from its abdomen?	Yes	order <i>Dermaptera</i> (earwigs)	 Earwig
	No	order <i>Coleoptera</i> (beetles)	 Unicorn beetle
7. Does the outer pair of wings have a leathery section next to the body and membranous tips that overlap when the insect is at rest?	Yes	order <i>Hemiptera</i> (chinch bugs, stink bugs)	 Chinch bug
	No	order <i>Orthoptera</i> (praying mantises, grasshoppers, cockroaches, crickets, walking sticks)	 Cockroach

8. Are the insect's wings covered with scales that rub off easily?	Yes	order <i>Lepidoptera</i> (moths, butterflies)		
	No	Go to number 9.	Moth	Butterfly
9. Do the insect's wings slope down from its body when it is at rest?	Yes	order <i>Homoptera</i> (cicadas, treehoppers, aphids)		
	No	Go to number 10.	Cicada	Leafhopper
10. Do the insect's wings have very few vertical crossveins?	Yes	order <i>Hymenoptera</i> (bees, wasps, also ants. Males and females have wings early in life. Members of this order may have wings that look like one pair instead of two pairs because they are hooked together by rows of tiny hooks.)		
	No	Go to number 11.	Ant (early in life)	Hornet
11. Are there two or three long threadlike tails extending from the insect's abdomen?	Yes	order <i>Ephemeroptera</i> (mayflies)		Mayfly
	No	Go to number 12.		
12. Are the insect's antennae short and not obvious?	Yes	order <i>Odonata</i> (dragonflies)		Dragonfly
	No	Go to number 13.		
13. Do the insect's wings have distinctly lined veins?	Yes	order <i>Neuroptera</i> (ant lions, lacewings, dobson flies)		Dobson fly
	No	order <i>Isoptera</i> (termites)		
14. Is the insect narrow-waisted (pinched in between the thorax and abdomen)?	Yes	order <i>Hymenoptera</i> (ants, bees, wasps)		Honeybee
	No	Go to number 15.		
15. Does the insect have two short tails extending from its abdomen?	Yes	order <i>Isoptera</i> (termites, white ants in some stages)		Termite
	No	Go to number 16.		
16. Is the insect small with a soft, plump body and a small head?	Yes	order <i>Homoptera</i> (aphids, scale insects, leafhoppers)		
	No	Go to number 17.	Aphid	San Jose scale
17. Is the insect tiny with a narrow body flattened on the sides, and is it able to jump with its hind legs?	Yes	order <i>Siphonaptera</i> (fleas)		Flea
	No	Go to number 18.		
18. Does the insect have a very delicate body with long, jointed threadlike tails and antennae?	Yes	order <i>Thysanura</i> (silverfish, bristletails)		Silverfish
	No	order <i>Orthoptera</i> (certain grasshoppers, crickets, and cockroaches in adult and/or nymph stages)		
			Grasshopper	Cricket