

Mammal | Definition, Characteristics, Classification, Examples, & Facts

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How are mammals distinct from other animals?

How many species of mammals are there?

What is the biggest mammal?

Did mammals and dinosaurs exist at the same time?

What did mammals evolve from?

Why is the platypus a mammal?

mammal, (class Mammalia), any member of the group of [vertebrate animals](#) in which the young are nourished with [milk](#) from special [mammary glands](#) of the mother. In addition to these [characteristic](#) milk glands, mammals are distinguished by several other unique features. [Hair](#) is a typical mammalian feature, although in many [whales](#) it has disappeared except in the fetal stage. The mammalian lower [jaw](#) is hinged directly to the [skull](#), instead of through a separate [bone](#) (the quadrate) as in all other vertebrates. A chain of three tiny bones transmits sound waves across the middle [ear](#). A muscular [diaphragm](#) separates the [heart](#) and the [lungs](#) from the [abdominal cavity](#). Only the left aortic arch persists. (In [birds](#) the right aortic arch persists; in [reptiles](#), [amphibians](#), and [fishes](#) both arches are retained.) Mature red blood cells ([erythrocytes](#)) in all mammals lack a [nucleus](#); all other vertebrates have nucleated red blood cells.

Except for the [monotremes](#) (an [egg](#)-laying order of mammals [comprising](#) echidnas and the duck-billed [platypus](#)), all mammals are [viviparous](#)—they [bear](#) live young. In the [placental mammals](#) (which have a [placenta](#) to [facilitate nutrient](#) and waste exchange between the mother and the developing fetus), the young are carried within the mother's womb, reaching a relatively advanced stage of development before birth. In the [marsupials](#) (e.g., [kangaroos](#), [opossums](#), and [wallabies](#)), the newborns are incompletely developed at birth and continue to develop outside the womb, attaching themselves to the female's body in the area of her mammary glands. Some marsupials have a pouchlike structure or fold, the [marsupium](#), that shelters the suckling young.

The class Mammalia is worldwide in distribution. It has been said that mammals have a wider distribution and are more adaptable than any other single class of animals, with the exception of certain less-complex forms such as [arachnids](#) and [insects](#). This versatility in exploiting [Earth](#) is attributed in large part to the ability of mammals to regulate their body temperatures and internal [environment](#) both in excessive [heat](#) and aridity and in severe cold.

General features

Diversity



[okapi](#)

Okapi (*Okapia johnstoni*).

The [evolution](#) of the class Mammalia has produced tremendous [diversity](#) in form and habit. Living kinds range in size from a [bat](#) weighing less than a gram and tiny [shrews](#) weighing but a few grams to the largest [animal](#) that has ever lived, the [blue whale](#), which reaches a length of more than 30 metres (100 feet) and a weight of 180 metric tons (nearly 200 short [U.S.] tons). Every major [habitat](#) has been exploited by mammals that swim, fly, run, burrow, glide, or climb.



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[A Is for Animal Quiz](#)

There are more than 5,500 [species](#) of living mammals, arranged in about 125 families and as many as 27–29 orders (familial and ordinal groupings sometimes vary among authorities). The [rodents](#) (order Rodentia) are the most numerous of existing mammals, in both number of species and number of individuals, and are one of the most [diverse](#) of living lineages. In contrast, the order Tubulidentata is represented by a single living species, the [aardvark](#). The Uranotheria ([elephants](#) and their kin) and [Perissodactyla](#) ([horses](#), [rhinoceroses](#), and their kin) are examples of orders in which far greater [diversity](#) occurred in the late [Paleogene](#) and [Neogene periods](#) (about 30 million to about 3 million years ago) than today.

The greatest present-day diversity is seen in continental tropical regions, although members of the class Mammalia live on (or in seas [adjacent](#) to) all major landmasses. Mammals can also be found on many oceanic [islands](#), which are principally, but by no means exclusively, inhabited by [bats](#). Major regional faunas can be identified; these resulted in large part from [evolution](#) in comparative isolation of stocks of early mammals that reached these areas. [South America](#) (the Neotropics), for example, was separated from [North America](#) (the Nearctic) from about 65 million to 2.5 million years ago. Mammalian groups that had reached South America before the break between the continents, or some that “island-hopped” after the break, evolved independently from relatives that remained in North America. Some of the latter became [extinct](#) as the result of competition with more advanced groups, whereas those in South America [flourished](#), some radiating to the extent that they have successfully competed with invaders since the rejoining of the two continents. [Australia](#) provides a parallel case of early isolation and [adaptive radiation](#) of mammals (specifically

the [monotremes](#) and [marsupials](#)), although it differs in that Australia was not later connected to any other landmass. The [placental mammals](#) that reached Australia (rodents and bats) evidently did so by island-hopping long after the adaptive radiation of the mammals isolated early on.



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In contrast, North America and Eurasia (the Palearctic) are separate landmasses but have closely related faunas as the result of having been connected several times during the [Pleistocene Epoch](#) (2.6 million to 11,700 years ago) and earlier across the [Bering Strait](#). Their faunas frequently are thought of as representing not two distinct units but one, related to such a degree that a single name, Holarctic, is applied to it.