

Fact Sheet 1: The taxonomy of cats

Scientists classify animals to study them and understand how they are related to each other. This classification is called taxonomy. Taxonomy is based on a hierarchy, and each level is given a different name, like 'order' or 'family'. There is an example of this hierarchy below, with cats classified at each level. At the top of the hierarchy, cats are related to all other animals. As you move down the hierarchy, the groups become more specific and the animals mentioned are more closely related.



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Level of Hierarchy	Description	How domestic cats are classified at each level
Kingdom	All animals are part of a kingdom called ' Animalia '. Animals are multi-celled organisms that have nervous systems.	Animalia (animals)
Phylum	The kingdom Animalia is divided into numerous phyla (the singular of phyla is phylum). Different groups of animals are in different phyla, with phyla for sponges, crustaceans, flatworms and chordates (and more). Chordates are animals with notochords . Our backbones are a type of notochord. In fact, all animals with backbones (sometimes called vertebrates) are chordates. But other animals have notochords too, so they are chordates, even sea squirts.	Chordata (chordates)
Class	Chordates are divided into several classes . Sea squirts are in one class, and there are other classes for things like bony fish, amphibians, reptiles, birds and mammals (and more). Mammals are warm blooded, feed their young with milk, and most have hair. The class for mammals is called ' Mammalia '.	Mammalia (mammals)
Order	There are different kinds of mammals and they are classified in different orders , including orders for rodents, bats, elephants, primates and carnivores . The word carnivore comes from a Latin word meaning "to devour flesh." Indeed, carnivores have teeth, claws, and binocular vision that are all well developed for catching and eating other animals. However, while most carnivores eat mostly meat, some are omnivorous (eating both meat and plants), and the giant panda is almost exclusively herbivorous (eating mostly plant material).	Carnivora (carnivores)
Family	The carnivore order is divided into a number of families . There are families for bears, dogs, foxes, hyenas and cats (and more). The cat family is called Felidae . It includes the 'big cats' such as lions, tigers, cougars and cheetahs. It also includes smaller cats like lynx, servals and wildcats. Cats are carnivorous, needing meat and high proportions of protein to survive. They typically have flexible bodies with muscular limbs, a tail, soft toe pads and protractible claws.	Felidae (felids)
Genus	The Felidae family is split into several genera (the singular of genera is genus). The big cats are in different genera to smaller wildcats and domestic cats. The Felis genus includes small felines who generally feed on rodents, birds, and other small animals.	<i>Felis</i> (felines)
Species	A species is a group of animals within a genus that can interbreed and produce viable (fertile) offspring. When scientists write a species name, they include the genus name as well. The genus name is capitalised and both names are written in italics. Thus, a domestic cat is <i>Felis catus</i> .	<i>Felis catus</i>

Fact Sheet 2: Cat biology



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Although cats often seem lethargic, sleeping for around 14 hours a day, their bodies are designed for speed and agility, helping them to be excellent hunters:

- **Backbone** – A flexible backbone is one of the secrets to cats' speed. Cats have more vertebrae than humans and these are attached to powerful muscles allowing the backbone to flex, extend or twist by as much as 180 degrees, helping them land on their feet.
- **Shoulder blades** – Unlike humans, cats' shoulder blades run down the side of their chest and pivot halfway, allowing their shoulders to travel in a wider arc and lengthening their gait.
- **Legs** – Cats' front legs move slightly inward as they walk so that both the left and right paws land on almost the same line, helping them to walk on narrow platforms such as fence rails.
- **Feet** – Cats walk on their toes, with their 'foot' making up the lower part of their leg. This minimises surface area on the ground, reducing friction and resistance on the ground, increasing speed. Their paw pads are designed for silent hunting - supple so they don't displace objects on the ground, with tufts of fur between the paw pads to muffle sound.
- **Claws** – Cats' front claws are retracted until they are needed, and they are sharpened through scratching. Their back claws wear away when they walk as they are not protected.
- **Eyes** – Cats' eyes are well developed for hunting during either the day or the night. Their pupils rapidly constrict and dilate in response to light. Cats' eyes shine at night due to the reflection from a 'mirror' in the cat's retina that allows them to utilise all available light in their surroundings.
- **Ears** – Cats' ears have over 20 muscles and can rotate 180 degrees.
- **Skin** – Cats' skin is very sensitive to touch and is 'loose', especially around the neck, where it is also thicker. This loose skin may help the cat to survive if caught, by giving it a chance to slip out of its capturer's grasp.

Lifecycle of a cat

Cats can reach sexual maturity and breed as early as four months of age. Their average gestation period is between 64 and 67 days and they typically produce three to five kittens. Female cats can have two to three litters per year. Over ten years, a single female cat could have as many as 150 offspring.

Pet cats usually live for around 10 to 15 years. However there is great variation in how long cats live. One pet cat has been recorded to live for 38 years! That cat, called "Creme Puff", was the oldest cat ever recorded, according to the Guinness World Records (2010 edition).

Un-owned and semi-owned cats do not live as long as owned cats (see **Factsheet 4** for definitions of owned, semi-owned and un-owned cats). There is great variation in how long un-owned cats live. Some research suggests that they might only survive for two to three years (on average) as they are more susceptible to disease, injury, predators, and starvation. The lifespan of semi-owned cats is likely to be somewhere in-between the lifespans of owned and un-owned cats.



Fact Sheet 3: A short history of domestic cats



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Domestic animals are bred by people to increase how useful they are for work, food, or as pets. It is thought that most domestic animals, like horses, cattle and dogs, were specifically selected for domestication, but cats became domesticated by coincidence as they lived in increasing proximity to people. It is likely that wildcats (*Felis silvestris*) started interacting with humans as we developed agriculture around 10,000 years ago – they were attracted to being near humans and their grain – that was where the mice were! As wildcats have become domesticated they have become smaller and domestic cats are now usually considered to be a separate species (*Felis catus*). However, there is some contention as domestic cats can still interbreed with wildcats and produce fertile offspring. Therefore, some scientists classify them as a sub-species of the wildcat (i.e. *Felis silvestris catus*).

4000 BC – There are records of wildcats in Egyptian towns.

2000 BC – Egyptians welcomed cats into their homes as they kept snakes away. Egyptians began to worship cats as sacred animals, and banned people from taking them to other countries. The Egyptian Goddess of joy fertility, and motherhood – Bastet – was often portrayed as a cat. Egyptian families would mourn the death of their cats, with wealthy people providing elaborate funerals and mummifying cats.

1000-500 BC – Domesticated cats were secretly transported across south-east Asia and India.

500 AD – Cats were introduced to the whole of Europe, including Britain, as the Roman Empire grew.

950AD – In Wales, the value of a cat was legally defined and depended on its age. If someone was convicted of killing someone else's cat, the offender had to give the cat's owner either a sheep with a lamb, or the amount of corn that would cover the cat when its corpse was suspended by the tail (nose touching the ground). In 12th Century Saxony this calculation was not necessary – cats were valued at sixty bushels of corn!

1400s – After being worshiped by Egyptians for thousands of years, in the 1400s cats were associated with evil and witchcraft. Witch hunters in the Middle Ages believed that cats were agents of the Devil and that the shine in cats' eyes was from the fires of hell. Cats were treated badly and killed during this time.

1600s – It is likely that some cats were introduced to Australia around this time. They may have been introduced by Indonesian fishermen or when Dutch traders became shipwrecked off Western Australia.

1700s – American settlers took large numbers of cats from Europe to control rat plagues.

1788 – Arrival of cats in Australia as pets of European settlers.

1850 – As cats eyes respond to light, some have believed that their eyes could serve as clocks. A French missionary priest in China in the 19th century reported that when he asked some village children for the time, they pried open cats' eyelids and replied that it was not yet noon!

1900s – As cities grew with new warehouses, railway depots, and post offices, so did the number of rats and mice. Managers of such premises would acquire cats to live and work on the premises. The British Post Office Cats were one such example, a respected group of cats who received a weekly payment for their care.

1914-1918 – Cats served in World War One, being used in submarines to detect foul air, in the trenches to sniff out poisonous gas, and on war ships to control rats. Cats have sensitive hearing and can differentiate between very similar sounds. Ship cats would roam on land when their ships were in port, and could recognise their ship's boarding whistle, returning to the ship when it was time to leave port. However, during World War One, ship whistles were silenced, so cats had no way of knowing when their ship was leaving, resulting in cats being marooned in many ports. There is a story of a cat stranded in Panama for months, refusing to board a ship until her vessel returned.



Fact Sheet 4: Owned, semi-owned and un-owned cats

Ownership status

The cats that we keep as pets are known as “domestic” cats because the species (*Felis catus*) has been domesticated. If they are un-owned (stray or feral) they are still called domestic cats, even though they are not living in a domestic situation. **Domestic cats can be:**



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- **Owned** –They are owned and cared for by someone (i.e. they are pets). Domestic cats are one of most popular pets worldwide and they can play an important and much-cherished role in the lives of their owners. Cats provide great enjoyment, companionship and a connection to the natural world.
- **Semi-owned** –Cats that are intentionally provided with food, medical treatment or shelter, but are not considered to be owned by anyone. People sometimes enjoy having a semi-owned cat visiting them regularly. However, semi-owned cats can lead to increases in the un-owned cat population. Semi-owned cats are sometimes called **stray** cats (as are un-owned cats).
- **Un-owned** –Cats that no one owns or provides care for. Un-owned cats are also called **feral** or **stray** cats. In Australia there are no native cats, so cats that live without human care are all un-owned cats.

While well-managed cats provide many benefits, some owned cats are not well managed. These cats can be a nuisance to neighbours and may have a negative impact on native wildlife. Owned cats that are not well managed, semi-owned cats and un-owned cats are all at risk of starvation, disease, injury or abuse.

Cats in Australia

Cats can cause problems in Australia. As there are no native cats here, native Australian animals have few strategies to avoid predation by cats. Therefore, the arrival of cats has contributed to some serious declines in the populations of small native mammals and birds. The impact of cats on native wildlife is considered to be one of the most significant conservation issues in Australia. Cats may also cause a public nuisance as they fight, yowl, spray urine or defecate in people’s gardens. However, while all cats can cause these issues, cats that are well cared-for and do not roam are unlikely to cause any problems. Owners of well cared-for pets can enjoy the beauty of their cats and the companionship they provide.

What about the wildcats?

In parts of the world where **wildcats** are present (e.g. *Felis silvestris* in Europe, Africa and Asia), free-ranging domestic cats can be a problem. There, the domestic cats can inter-breed with the wildcats. This inter-breeding is a problem because it changes the wildcat population. If it happens too much, there will be no true wildcats left – they will become extinct. Similar issues exist for other wild animals. Australian examples are the inter-breeding between dingoes and domestic dogs, and the inter-breeding between introduced Mallard ducks and native Pacific-black ducks.

