Taxonomy

To classifying organisms, scientists use a hierarchical system.

Linnaeus divided plants and animals into two kingdoms and grouped them based upon observable characteristics.

• He studied and classified over 7,000 species using his system.

Linnaeus created seven levels of classification.

• For animals, the levels of classification are:
  - kingdom,
  - phylum,
  - class,
  - order,
  - family,
  - genus, and
  - species.

Can you come up with a mnemonic device to remember the 7 levels of classification?

Here’s one:

• King Phillip Came Over For Good Spaghetti

Here’s a Rap Video from Crenshaw High to teach Linnaeus’ classification.
  - http://www.youtube.com/watch?v=6jAG0ibTMuU

Although organisms are classified based upon their shared characteristics, organisms that belong to the same kingdom are not necessarily very similar.

• Still, as levels get smaller, organisms share more and more characteristics and thus, are more similar.
• Organisms in the same order, for example, share more characteristics than organisms in the same class.
In fact, organisms belonging to the same species are very similar and can produce offspring together.

Let’s look at an example of how a house cat fits into Linnaeus’s taxonomic classification.

A cat, like all animals, is classified in the kingdom Animalia.

A cat is in the phylum Chordata, which means it has a hollow nerve cord. It also has a backbone like most animals in this phylum.

A cat is in the class Mammalia and shares the characteristic of nursing their young.

Having special teeth for tearing meat further describes cats and puts them in the order Carnivora.
Because cats have retractable claws, cats are also classified in the family Felidae.

Cats in the genus *Felis* have even more specific characteristics. They cannot roar; they can only purr.

The species, *Felis domesticus*, the house cat, shares many traits with other cats, but additionally, it has unique DNA.

How does a species get its scientific name?

- The first person to describe a new species gives it a scientific name.
- If the species belongs to an established genus, then the first part of the name is not new.
- If the organism cannot be placed into an existing genus, a new genus name must be given.

There are many different sources for the species name such as appearance, behavior, habitat, location where it was found, or the name of the person who discovered it.

- When an organism is identified at the species level, scientists describe it using the species’ scientific name.

A scientific name consists of two parts: its genus and its species.

- Genus names are usually nouns.
- Species names are usually adjectives.
A scientific name is incomplete without both the genus and species names, and all known living things have this two-part scientific name.

- Scientific names are usually in Latin or Greek.
- The scientific name for cat, *Felis domesticus*, is Latin.
- *Felis* is Latin for "cat" and *domesticus* is Latin for "domesticated."

The scientific name is usually printed in italics, with the genus capitalized.

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Scientific Name
Felis domesticus
Genus Species

Felis = Cat, in Latin
Domesticus = domesticated, in Latin
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Because there are many different languages in the world, different common names could cause confusion among scientists from around the world.

- For example, a house cat is called a *gato* in Mexico.
- Therefore, all scientists refer to each species by its scientific name.

Do you know your scientific name?

It's *Homo sapiens*!

Human Classification