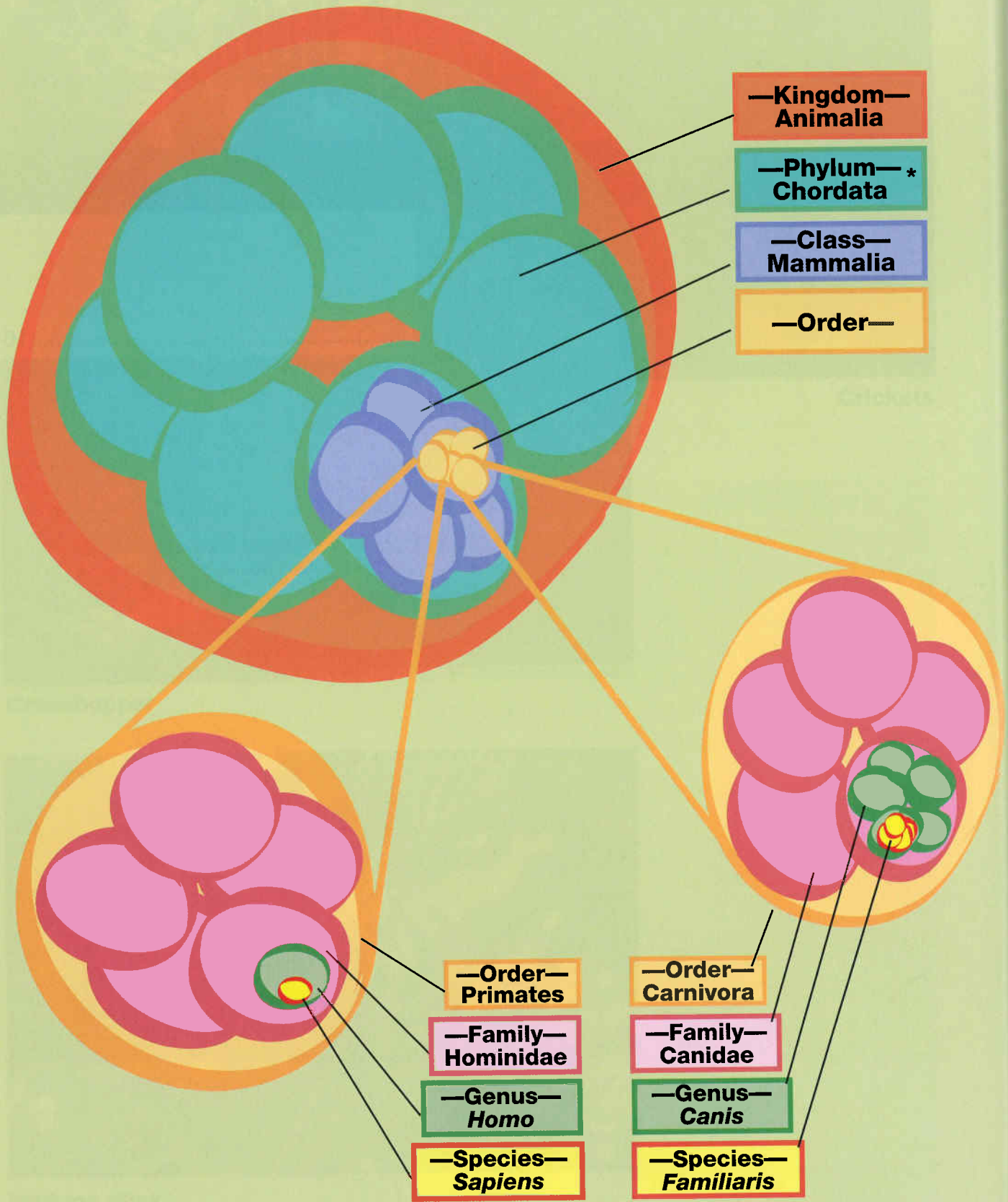


# TAXONOMIC DESCRIPTION OF LIFE



\* A phylum is called a division in the plant and fungus kingdoms.

# Taxonomy

How do scientists organize living organisms? We now know that life is divided into five **kingdoms** based on similarities among the members of each kingdom. The plants all have cell walls and photosynthesize. Animals are multicellular and eat food, and so on. The kingdoms are the grand starting points for organizing life. The five kingdoms are plants, animals, fungi, protists, and monera.

Now what? Each kingdom has thousands of members. The animal kingdom alone has millions of members. There must be ways to further organize them. We know that birds all have feathers and two legs, insects have a hard outer shell and six legs, snakes have no legs, and so on. With a little patience we can sort the animals into some major groups. And then the major groups of animals can be divided further based on some other features. Some birds swim in the water and others don't. Some insects have hard wing covers and others have scales on their wings. Some snakes are poisonous and others are not.

The division of science concerned with the organization of life is **taxonomy**. Taxonomists are continually adding new organisms into the organization as they are discovered and described, and from time to time they rethink the basic organization all together.

The diagram on the facing page shows the current organization of the animal kingdom. The largest circle represents animals. All the known animals are inside the animal-kingdom circle. The aqua circles hold all the animals that share some characteristic. These first subdivisions of the animals are called **phyla** (singular, phylum). One phylum, arthropoda, has all the animals with

external skeletons, like crabs, crawdads, and insects. Another phylum has all the flat worms, and another has all the clams and snails. Phylum chordata has all the animals with backbones. We are in phylum chordata, along with the fish, birds, reptiles, amphibians, and the other mammals.

The major subdivisions of a phylum are called **classes**. One class in phylum chordata is mammalia. Mammalia includes all the warm-blooded animals that give live birth (as opposed to laying eggs) and suckle their young. You can probably name dozens of mammals, including animals as diverse as mice, squirrels, apes, raccoons, elephants, seals, tigers, whales, hamsters, and chimps. Humans and dogs are in the same class with all the other mammals.

Mammals are divided into **orders**. This is where humans and dogs split off. Dogs are in order carnivora, along with cats, foxes, weasels, and lots more. Humans are in order primates, along with the monkeys, baboons, lemurs, apes, and chimps. The carnivores and primates are further divided into **families**. All the doglike animals (dogs, wolves, jackals, foxes) are in family canidae, and all the humanlike animals are in family hominidae.

Finally, all the animals that are very similar are collected into the smallest group, the **genus**. Each individual kind of animal in the genus is given a **species** name. Humans are in the genus *Homo*, and have the species name *sapiens*. Animals are known scientifically by their genus and species name. Therefore, you and I are *Homo sapiens*. The genus name is always capitalized, the species name is lowercase, and they are both italicized.