



SECTION 17.1 THE LINNAEAN SYSTEM OF CLASSIFICATION
Reinforcement

KEY CONCEPT Organisms can be classified based on physical similarities.

Taxonomy is the science of naming and classifying organisms. Until the 1750s, scientists named organisms however they wanted. However, in 1753, Swedish botanist Carolus Linnaeus introduced a system of taxonomy that standardized the way that organisms are named and classified.

Linnaeus' method of naming organisms, called **binomial nomenclature**, is still used today. In this system, each species is given a scientific name using Latin words. These names are always written in italics or underlined. A scientific name has two parts:

- The genus is the first part of the name. A **genus** includes one or more physically similar species that are thought to be closely related. The genus name is always capitalized.
- The species descriptor is the second part of the name. A species descriptor often refers to a certain trait of the species. A species descriptor is always written after the genus name, and it is always lowercase.

Linnaeus' system of classification groups organisms into seven levels based on physical similarities. Each level is called a **taxon** (plural, taxa). The seven taxa form a multilevel scale in which each taxon is included in a larger, more general taxon. From the most general to the most specific, these taxa are kingdom, phylum, class, order, family, genus, and species.

Because Linnaeus created his classification system before organisms could be studied at the molecular level, it is based on physical similarities alone. However, physical similarities are not always the result of species being closely related. Unrelated species can also evolve similar traits through convergent evolution. Therefore, the Linnaean system of classification has limitations. Today, scientists also use molecular and genetic similarities to classify organisms.

1. How are organisms named in Linnaean taxonomy?

2. How are organisms classified in Linnaean taxonomy?

3. What is a major limitation of Linnaean taxonomy?
