

Exercise 7

The Classification of Organisms

Learning Objectives

After completing this exercise, you should be able to do the following:

1. Describe a classification system as a reflection of the order present in nature.
2. Describe systematics, or taxonomy, as the study of the kinds of organisms and their evolutionary relationships.
3. Describe a species as a single kind of organism that is given a distinctive name by taxonomists.
4. Describe other levels of classification as reflecting the relatedness among different species.
5. Interpret and describe the usefulness of cladograms in modern taxonomic studies.
6. Construct a cladogram using simple block animals.
7. Assign names to simple block animals using a few basic rules of zoological nomenclature.

Prelaboratory Quiz

Study this week's laboratory exercise and then complete the following quiz to assess your preparation for the laboratory.

1. An inherited trait used in determining taxonomic relationships among a group of animals is a(n)
 - a. characteristic.
 - b. character.
 - c. anamorphy.
 - d. symplesiomorphy.
2. A character that has been derived since a group diverged from a common ancestor is called a(n)
 - a. symplesiomorphy.
 - b. anamorphy.
 - c. synapomorphy.
 - d. anapomorphy.
3. The next level of taxonomy more inclusive than order is
 - a. class.
 - b. family.
 - c. genus.
 - d. phylum.
4. A subset of taxa that shares a certain derived character is called a
 - a. polyphyletic group.
 - b. paraphyletic group.
 - c. species group.
 - d. clade.
5. Which of the following is the correct way of designating a species name?
 - a. *Musca domestica*
 - b. *Musca domestica*
 - c. *domestica*
 - d. *Musca Domestica*
6. True/False If all information about the evolution of a group is known, the group will always be represented as a monophyletic group.