Animal Classification

OBJECTIVES:

1. Students will understand that classification is the arrangement of objects, ideas, or information into groups, the members of which have one or more characteristics in common.

2. Students will evaluate how classification makes things easier to find, identify, and study.

3. Students will apply scientific classification to groups of plants and animals on the basis of certain characteristics they have in common.

4. Students will identify scientific classification use of Latin and Greek words to give each animal and plant two names (similar to a first and last name) that identify the animal or plant.

PROCEDURE:

1. As an introduction to the activity, discuss classification in general. Ask students what we mean by classification and why we classify things. For example, why do we classify certain objects as tools, others as food, and so on? Establish that classification—the arrangement of objects, ideas, or information into groups—makes things easy to find, identify, talk about, and study.

2. As background information, let students know that, beginning in ancient times, scientists tried to develop a system of classifying animals and plants. The system we use today was developed by the Swedish naturalist Carolus Linnaeus (1707-1778), who separated animals and plants according to certain physical similarities and gave identifying names to each species.

3. Go on to explain that Linnaeus's system classified plants and animals on seven levels, using Latin and Greek words. The example below shows how a brown squirrel is classified:

Kingdom (Animalia, or animal)
Phylum (Chordata, or has a backbone)
Class (Mammalia, or has a backbone and nurses its young)
Order (Carnivora, or has a backbone, nurses its young, and has large teeth for pulling and cutting)
Family (Ursidee, or has a backbone, nurses its young, large teeth for pulling and cutting, and has long, rough fur)
Genus (*Ursus*, or has a backbone, nurses its young, large teeth for pulling and cutting, and has long, rough fur and moves with a slow, lumbering walk)
Species (*Ursus arctos*, or has a backbone, nurses its young, large teeth for pulling and cutting, and has long, rough fur, moves with a slow, lumbering walk, and communicate primarily through smells and sound.)

4. Discuss the example with the class, bringing out the idea that each subsequent level of classification eliminates animals that could be included in the previous level. To make this point, have students give examples of several mammals (the class Mammalia) and then tell which ones are eliminated by the description of bears (the order carnivora); have them name several types of bears and then explain which bears are eliminated by the description of the genus *Ursus* and so on.

5. Tell students that it is not necessary to go through the entire seven-level classification system to identify a plant or animal. Just two names—the genus and species names—are sufficient. Thus, the scientific name for the brown bear is *Ursus arctos*. Because two names are used, the system is known as the *binomial* (two names) *system of nomenclature* (naming). This would be a good time to point out the Genus and species are written in italics and the Genus name is capitalized.

6. Have students do begin researching the classification of their animals

DISCUSSION QUESTIONS:

1. What are some examples of everyday words that name groups or classes of things? Think about subjects you study in school such as grammar, math, and social studies. What problems would arise if words such as noun (a word for a class of words) and fraction (a word for a class of numbers) did not exist?

2. How do we use classification to make our everyday lives easier? For example, how would you use classification to do the following: organize your desk, organize your drawers or closet, plan a meal, decide what clothes to take on a trip?

3. Linnaeus's system of animal classification is based on common physical characteristics. Can you devise a system of animal classification based on some other idea—behavior or habitat, for example? In your new system, what animals would be classed together that are not classed together in Linnaeus's system?

4. We classify people in many ways; for example, by race, religion, physical appearance, ethnic origin, profession, life style, and so on. In which ways can classification of human beings be helpful? In which ways can it be harmful?