I. Scientific Naming
   
   A. Binomial Nomenclature
      
   1. **binomial nomenclature** = a system for giving each type of organism a unique name which consists of 2 names—its genus name and its species name (usually in Latin).
      
   a. In this system, the genus is the larger group an organism belongs to and the species is the specific organism in that larger group.
   
   2. This system was developed by Carolus Linnaeus, a Swedish doctor and taxonomist, to make it easier for scientists to identify and discuss a specific organism.
      
   a. Before Linnaeus devised this system, taxonomists used all 7 of an organism’s names from the 7 taxonomic groups to identify an organism.
      
   1. Example: Before binomial nomenclature, a human being would have been referred to as Animalia, Chordata, Mammalia, Primate, Hominidae, *Homo sapien*. Using binomial nomenclature, we simply refer to humans as *Homo sapien*.
      
   3. Each organism gets its own two-part name—no 2 different types of organisms will have the same scientific name.
   
   B. Reasons Taxonomists Use Scientific Names Instead of Common Names
      
   1. **common name** = the name commonly used in a region of a country or the world for a certain type of organism; an organism’s “everyday” name.
      
   a. Most people would not say, “Here comes the *Canis familiaris*.” They would use the common name and say, “Here comes the dog.”
      
   2. Scientific names help avoid confusion because each name is unique to a specific organism.
      
   a. There are 2 ways that common names can be confusing:
      
   1. One organism can have several common names depending on where you are (ex. the same large cat is called a mountain lion, a cougar, a puma, and a panther).
      
   2. Sometimes the same name is used for different organisms (ex. the name “robin” is used in the United States, England, and Australia but the species of bird it refers to is different in each country).
      
   3. Organisms with similar phylogenies can be easily classified together.
      
   a. Organisms that share the same genus name will be very closely related to each other.
      
   4. The words used in the scientific name give descriptive information about the organism.
      
   a. The Latin words chosen for the name usually describe something special about the organism (see “The Names Have Meaning” below).
      
   5. By using scientific names, taxonomists can organize the organisms and more efficiently find information about them.
   
   C. The Names Have Meaning
      
   1. The Latin names assigned to each organism in its scientific name are used to describe some special feature or trait about the organism.
      
   a. The words may describe its color, its size, where it was discovered or lives, etc.
      
   b. Many times it is difficult to figure out what the words mean, but sometimes the meaning is clear.
      
   2. Examples of descriptive scientific names:
      
   a. house cat— *Felis domesticus* (a cat that has been domesticated to live with us)
      
   b. red maple tree— *Acer rubrum* (*rubrum* = red)
      
   c. jack rabbit— *Lepus californicus* (a rabbit that live in California)
      
   d. sequoia tree— *Sequoia gigantea* (a tree that is giant)
      
   e. roadrunner— *Runnus realifastius* (just kidding on this one!!!)
D. Rules for Writing Scientific Names

1. The first word in the binomial name of an organism is the genus name and the second word is the species name.
   a. You can try to understand this using your name. Your family name is like the genus (this is the “bigger group” you belong to) and your first name is like the species name (indicating the specific individual in that bigger group—YOU).
   1. Example: If your name is Susan Jones, then as a scientific name it would be written *Jones susan* or *Jones susan*

2. The first letter of the genus name is always capitalized and the first letter of the species name is always lowercase.

3. If the binomial name is handwritten, it must be underlined.
   If it is typed or printed, it is placed in *italics*.
   a. Example: Rhinoceros— *Dideros bicornis* or *Dideros bicornis*

   b. My name written as a scientific name would be

E. Scientific Names You Need to Know

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
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</thead>
<tbody>
<tr>
<td>Human being</td>
<td></td>
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<tr>
<td>House cat</td>
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<tr>
<td>Dog</td>
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<td>Wolf</td>
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<td>Tiger</td>
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<td>Panther</td>
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