TAXONOMY- Science of classifying living things.

Why classify?

How Many Species? A Study Says 8.7 Million, but It’s Tricky
1st Classification System

Aristotle 384-322 BC

Two Groups:

Plants

- Grouped by size
  - herbs
  - shrubs
  - trees

Animals

- Grouped by habitat
  - air
  - land
  - water
Carolus Linnaeus  1707-1778

All organisms should be classified using the same criteria.

Used Homologous Structures to classify.

Still use many of his groupings today.
Classification Hierarchy

Classification Group:

- Domain
- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species

General characteristics in common
Specific characteristics in common
Kingdom: Animalia
Phylum: Chordata (vertebrates)
Class: Mammalia (mammals)
Order: Cetacea
Family: Balaenopteridae
Genus: Megaptera
Species: novaeangliae
SPECIES DEFINITION:

Two organisms are members of the same species if they meet all of the following criteria:

1. **Successful mating in a**

2. **Natural environment (which excludes labs, farms, zoos or anything that humans interfere with that is not “natural”).**

3. **Producing viable (healthy, strong, able to survive to adult stage) offspring which are themselves**

4. **Fertile (that is, capable of producing sperm or eggs and producing offspring of the parents)**
Binomial Nomenclature

* Two word latin naming system that produces the *scientific name* of an organism.

* Taxonomists don't like scientific names. Why?

* Scientific names are created using the Genus group and the Species group.

  Grammar Rules:

  Genus group is capitalized, species group lower case.

  Both words underlined, *italicized*, or **boldified**.

  Homo sapien or *Homo sapien* or **Homo sapien**