To know where you can find a thing is the chief part of learning.

- Unknown

**Aristotle** – Greek philosopher who developed the first method of classification for living things.

All organisms were classified as either plant or animal.



**Carolus Linnaeus** – Swedish botanist who developed a new system for naming organisms.

Binomial Nomenclature – everything gets a two-part scientific name.

EX:  *Acer rubrum* Red Maple

 Genus name species name Common name

 (capitalized) (lowercase)

*Acer* is the Genus name; it is Latin for Maple.

*rubrum* is the species name; it is Latin for Red.

Latin is used for scientific names because it is no longer a spoken language so it is not changing. The scientific name is the same no matter where you go.

Scientific name is *italicized* when typed and underlined when handwritten.

 After naming organisms, Linnaeus grouped them by similar features and body structures.

 Organisms that shared important features were placed in the same groups called taxa. (singular = taxon; multiple = taxa)

Taxonomy – the science of naming and grouping organisms.

Classification – the grouping of objects or information based on similarities; more generic – can apply almost anywhere.

Phylogeny – the evolutionary history of an organism

 How does this creature fit into the “tree of life”?

**Levels of Classification**



**There are 3 Domains:**

**Bacteria** – one Kingdom (Eubacteria)

**Archaea** – one Kingdom (Archaebacteria)

**Eukarya** – 4 Kingdoms

(Protista, Fungi, Plantae, Animalia)

**\*There are 6 Kingdoms\***

**Prokaryotes vs. Eukaryotes**

**PROKARYOTES EUKARYOTES**

NO nucleus, NO membrane- Nucleus and membrane-bound bound organelles organelles

Ribosomes present Ribosomes present

DNA is circular DNA is linear

Smaller, simpler Larger, more complex

**Compare Eukaryotic Kingdoms**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cellular Structure** | **Uni/Multi-cellular** | **Food/Energy** | **Reproduction** |
| **Protists** |  |  |  |  |
| **Fungi** |  |  |  |  |
| **Plants** |  |  |  |  |
| **Animals** |  |  |  |  |

**Dichotomous Keys**

Allows identification of different organisms using descriptive information.

Key – a set of descriptions divided into steps.

Dichotomous Key – 2 descriptions at each step.

Follow the steps until the key leads to the name of the organism (shape)

Coral Reef Fish Key – Write the name of the fish underneath each one.