Name: _____

Fast Facts #2 – Living Organisms and Classification

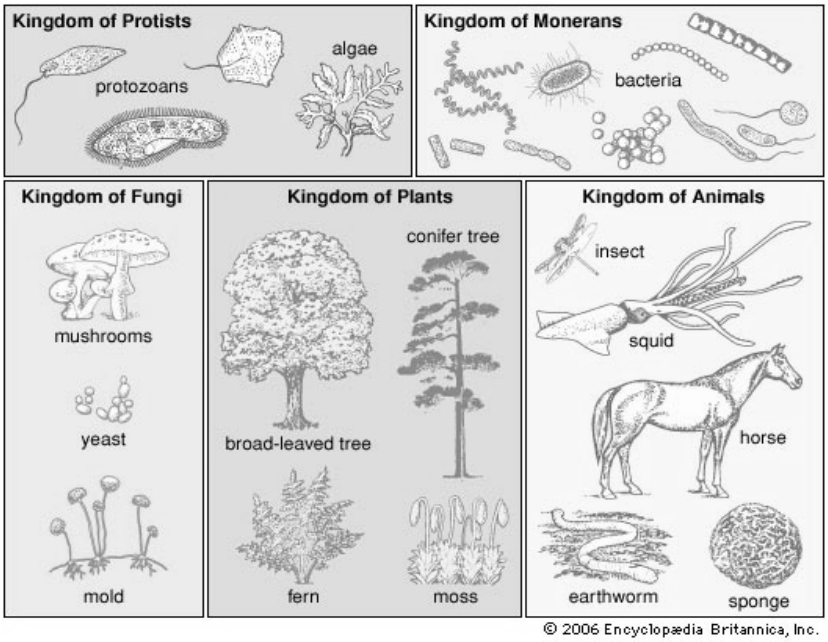
All living organisms need food, shelter, water, and space.

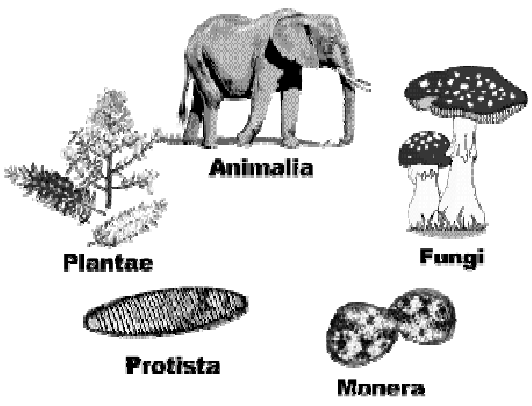
The Four Characteristics of Living Things

1. **They obtain and use resources for energy**
   - **Autotrophs** (for example plants) provide their own food for energy through the process of photosynthesis, while **heterotrophs** (for example animals) must find an external source for food. (they eat)
2. **They respond to stimuli**
   - A **stimulus** is any change in an organism's surroundings that will cause the organism to react.
   - The reaction to the stimulus is called a **response**. It can be an action or behavior performed by the organism.
3. **They reproduce**
   - Organisms have the ability to reproduce, or produce offspring that have similar characteristics as the parents. There are two basic types of reproduction:
     - **Asexual reproduction**: a reproductive process that involves only one parent and produces offspring that is identical to the parent.
     - **Sexual reproduction**: a reproductive process that involves two parents. The egg (female reproductive cell) and sperm (male reproductive cell) from these two parents combine to make an offspring that is different from both parents.
4. **They grow and develop**
   - Growth is the process whereby the organism becomes larger.
   - Development is the process that occurs in the life of the organism that results in the organism becoming more complex structurally.

The Five Kingdoms of Living Things

Kingdom	Description	Obtain Food	Examples
Plant	many cells	**autotrophs** - photosynthesis	trees, flowers, moss, tomatoes, dandelions
Animal	many cells	**heterotrophs**- eat other organisms	dog, flea, people, rabbit, birds, worms, fish, lizards
Fungi	single cell or many cells	feed on living or dead organisms	mushrooms, molds, mildew, yeast
Protist	microscopic		amoeba, paramecium
Monera	microscopic		bacteria





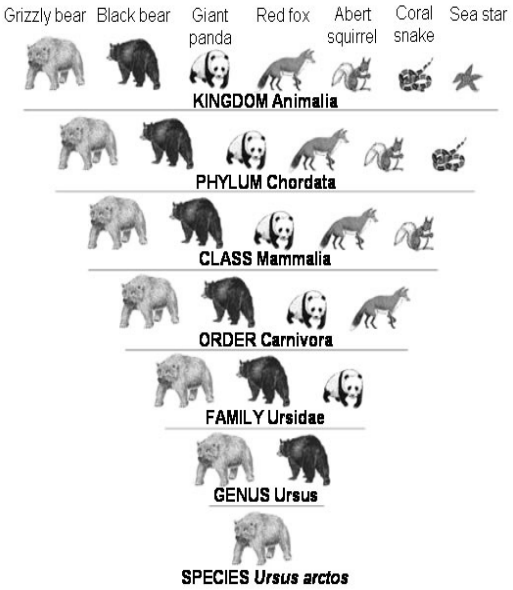
To <u>study</u> all of the organisms on Earth, biologists have devised ways of naming and classifying them according to their similarities in structures.

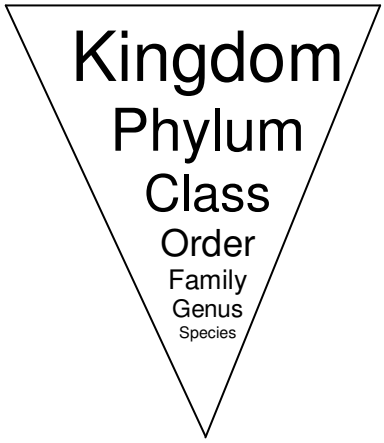
- The study of how scientists classify organisms is known as **taxonomy**.
- The levels of classification, from broadest to most specific, include:
  kingdom, phylum, class, order, family, genus, and species.
- The more classification levels an organism shares with another, the more characteristics they have in common.

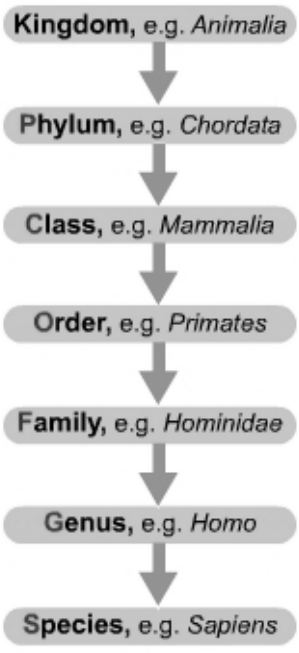
Kingdom	• Organisms are placed into kingdoms based on their **ability to make food** and **the number of cells in their body**.
Phylum (plural phyla)	• In the Plant Kingdom, phyla are sometimes referred to as divisions. • Plants are normally divided into two groups: vascular and nonvascular. • In the Animal Kingdom, there are 35 different phyla. These phyla can be divided into two groups: vertebrates and invertebrates.
Class, Order, Family	• These levels become even more specific and will include fewer organisms that have more in common with each other as they move down the levels.
Genus (plural Genera)	• Contains closely related organisms. • The genus is used as the **first word in an organism's scientific name**.
Species	• Consists of all the organisms of the same type which are able to breed and produce young of the same kind. • The species is used as the **second word in an organism's scientific name**

<u>Levels of Classification</u> – **kingdom, phylum, class, order, family, genus, species**
(<u>K</u>ing <u>P</u>hillip <u>c</u>ame <u>o</u>ver <u>f</u>or <u>g</u>ood <u>s</u>paghetti.)

Kingdom – the **broadest** level
Species – the **smallest** group, all the animals are the same type, can breed and produce young of the same kind







Scientific Name

- The scientific name of an organism is made up of its **genus and species.**
- It is written in italics (Genus species) with the **genus capitalized.**
- For example, Canis lupus is the scientific name for the wolf and Pinus taeda is the scientific name for a loblolly pine.