

The Six Kingdoms:

Classification of Living Things Information

Bacteria Kingdom is divided into two kingdoms: Eubacteria and Archaeobacteria

Both Eubacteria and Archaeobacteria:

- Unicellular organisms meaning single-celled, having only “one” cell.
- All of the cells lack a true nucleus, meaning they are a prokaryotic cell.
- Bacteria mostly absorb their food.
- Another word for bacteria is Monera.
- Bacteria Kingdom can be divided into two separate kingdoms: Eubacteria and Archaeobacteria
- They are both prokaryotic: means they do not have a true nucleus.
- Some can make their own food: autotrophs. Some cannot make their own food: heterotrophs.
- **Eubacteria:** These are most of the bacteria out there. They are unicellular. They cannot survive in extreme conditions. Types of Eubacteria is E.Coli. They use the Sun’s energy to make food. Others get food from eating living and nonliving materials. One type of bacteria helps clean oil spills. It uses the oil as a source of food and breaks it down into other materials that are easier to remove from the water. ☺
- **Archaeobacteria:** This means “ancient bacteria” because they have lived on Earth a LONG time...longer than any other organism. They live under VERY harsh conditions of heat and cold conditions. Some live where there is NO oxygen, too!

Protist Kingdom

- Some are multicellular (many celled), but most are unicellular (single celled).
- They are eukaryotic, which means they have a true nucleus.
- Some can make their own food: autotrophs. For instance, the plant-like protists.
- Some cannot make their own food: heterotrophs. For instance, the animal-like protists.
- Some have characteristics of animals, or plants, or even fungi.
- **Animal like protists are called protozoa.** These cannot make their own food, but they can move: by either slipping and sliding or with a whip-like tail or cilia (tiny fine hairs).
 - **Amoebas:** move like by slipping and sliding like jelly (they are kind of like a blob)
 - **Paramecium:** move with cilia (tiny hairs all around their body)
 - Protozoa move wherever there is water, inside moist soil, or inside an organism.

- Algae is a plant-like protist. They make their own food and get energy from the Sun. They also produce oxygen.
- Some protists are microscopic, but others can grow VERY large. Some ocean seaweed can grow as tall as trees, but are still protists.
- Fungus-like protists are slime mold....slime molds that ooze over piles of fallen leaves..it is a protist NOT a fungus.

Fungi Kingdom

- Unicellular (meaning single celled) or they can be multicellular (meaning many celled)
- The cells have a true nucleus: eukaryotic
- They cannot create their own food, so they are heterotrophs. They absorb their food and break down other organisms. (Being able to break down other organisms make fungi a decomposer.)
- Fungi grow fast, but cannot move from one place to place. They reproduce through spores. Spores can travel in wind and water.
- Some Fungi is beneficial (meaning good for us). For example: yeast is used to make bread, penicillin is used as antibiotic to fight germs, mushrooms on salads or pizza.
- Some Fungi is harmful though like poisonous mushrooms.

Plant Kingdom

- All plants are multi-cellular, which means they are many celled.
- They can make their own food, so they are autotrophs.
- They have a true nucleus, so they are eukaryotic cells.
- Almost all plants make their own food through a process called photosynthesis. The process of photosynthesis: Sun's energy + chlorophyll + carbon dioxide + water = oxygen and glucose (sugar). This sugar is food for the plant and the oxygen is released into the air for us. ☺
- Plants are classified into two categories: nonvascular and vascular.
- **Nonvascular plants** are plants that do NOT have tube-like vessels to transport water. These types of plants absorb water much like a sponge soaks up water. Water is passed from cell to cell. So, they MUST live close to a water source. They do NOT grow tall.
 - Examples: moss and liverworts
- **Vascular plants** are plants that have tube-like structures for transporting water and nutrients to the plant. The water is transported from the roots, so this means that the plant does not need to live near a body of water. The vascular system provides a strong

support so these types of plants can grow very tall. They can be found in dry or wet climates.

- **Examples of vascular plants**: most common is the fern, conifer, cycad, Ginko, any angiosperm or gymnosperm
- **Angiosperms** are vascular plants that produce seeds from flowers. Can also produce fruits. Examples are corn, tulips, apples
- **Gymnosperms**: They are vascular plants. They produce seeds, but do not produce flowers or fruit.

Animal Kingdom

- Multi-cellular: many celled. These cells form tissues and organs.
- They cannot produce their own food, so they are heterotrophs.
- They have a true nucleus, so they have eukaryotic cells.
- Require oxygen
- Eat food, but they cannot make their own food
- Can move from place to place
- Reproduce sexually
- Animals are divided into two separate Phylum: Vertebrates (with a backbone) and Invertebrates (without a backbone).
- Cold-blooded Vertebrates
 - Fish:
 - Amphibians:
 - Reptiles:
- Warm-blooded Vertebrates
 - Birds:
 - Mammals:
- Invertebrates:
 - Cnidarians:
 - Sponges:
 - Worms:
 - Arthropods:
 - Exoskeleton: outer skeleton