

The six kingdom classification by Carl whose:

The Six Kingdoms of Life

Archaeobacteria

Eubacteria

Protista

Fungi

Plantae

Animalia

Organisms are placed into these categories based on similarities or common characteristics. Some of the characteristics that are used to determine placement are cell type, nutrient acquisition, and reproduction. The two main cell types are prokaryotic and eukaryotic cells.

Common types of nutrient acquisition include photosynthesis, absorption, and ingestion. Types of reproduction include asexual reproduction and sexual reproduction.

Archaeobacteria

Archaeobacteria are single-celled prokaryotes originally thought to be bacteria. They are in the Archaea domain and have a unique ribosomal RNA type. The cell wall composition of these extreme organisms allows them to live in some very inhospitable places, such as hot springs and hydrothermal vents. Archaea of the methanogen species can also be found in the guts of animals and humans.

Domain: Archaea

Organisms: Methanogens, halophiles, thermophiles, and psychrophiles

Cell Type: Prokaryotic

Metabolism: Depending on species, oxygen, hydrogen, carbon dioxide, sulfur, or sulfide may be needed for metabolism

Nutrition Acquisition: Depending on species, nutrition intake may occur through absorption, non-photosynthetic photophosphorylation, or chemosynthesis

Reproduction: Asexual reproduction by binary fission, budding, or fragmentation

Eubacteria

These organisms are considered to be true bacteria and are classified under the Bacteria domain. Bacteria live in almost every type of environment and are often associated with disease. Most bacteria,

however, do not cause disease. Bacteria are the main microscopic organisms that compose the human microbiota. There are more bacteria in the human gut, for instance, than there are body cells. Bacteria ensure that our bodies function normally. These microbes reproduce at an alarming rate under the right conditions. Most reproduce asexually by binary fission. Bacteria have varied and distinct bacterial cell shapes including round, spiral, and rod shapes.

Domain: Bacteria

Organisms: Bacteria, cyanobacteria (blue-green algae), and actinobacteria

Cell Type: Prokaryotic

Metabolism: Depending on species, oxygen may be toxic, tolerated, or needed for metabolism

Nutrition Acquisition: Depending on species, nutrition intake may occur through absorption, photosynthesis, or chemosynthesis

Reproduction: Asexual

Protista

The protista kingdom includes a very diverse group of organisms. Some have characteristics of animals (protozoa), while others resemble plants (algae) or fungi (slime molds). These eukaryotic organisms have a nucleus that is enclosed within a membrane. Some protists have organelles that are found in animal cells (mitochondria), while others have organelles that are found in plant cells (chloroplasts). Protists that are similar to plants are capable of photosynthesis. Many protists are parasitic pathogens that cause disease in animals and humans. Others exist in commensalistic or mutualistic relationships with their host.

Domain: Eukarya

Organisms: Amoebae, green algae, brown algae, diatoms, euglena, and slime molds

Cell Type: Eukaryotic

Metabolism: Oxygen is needed for metabolism

Nutrition Acquisition: Depending on species, nutrition intake may occur through absorption, photosynthesis, or ingestion

Reproduction: Mostly asexual, but meiosis occurs in some species

Fungi

Fungi include both unicellular (yeast and molds) and multicellular (mushrooms) organisms. Unlike plants, fungi are not capable of photosynthesis. Fungi are important for the recycling of nutrients back into the environment. They decompose organic matter and acquire nutrients through absorption. While some

fungus species contain toxins that are deadly to animals and humans, others have beneficial uses, such as for the production of penicillin and related antibiotics.

Domain: Eukarya

Organisms: Mushrooms, yeast, and molds

Cell Type: Eukaryotic

Metabolism: Oxygen is needed for metabolism

Nutrition Acquisition: Absorption

Reproduction: Sexual or asexual through spore formation

Plantae

are extremely important to all life on earth as they provide oxygen, shelter, clothing, food, and medicine for other living organisms. This diverse group contains vascular and nonvascular plants, flowering and nonflowering plants, as well as seed-bearing and non-seed bearing plants. As is true of most photosynthetic organisms, plants are primary producers and support life for most food chains in the planet's major biomes.

Animalia

This kingdom includes animal organisms. These multicellular eukaryotes depend on plants and other organisms for nutrition. Most animals live in aquatic environments and range in size from tiny tardigrades to the extremely large blue whale. Most animals reproduce by sexual reproduction, which involves fertilization (the union of male and female gametes).

Domain: Eukarya

Organisms: Mammals, amphibians, sponges, insects, worms

Cell Type: Eukaryotic

Metabolism: Oxygen is needed for metabolism

Nutrition Acquisition: Ingestion

Reproduction: Sexual reproduction occurs in most and asexual reproduction in some