


**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**Introduction**

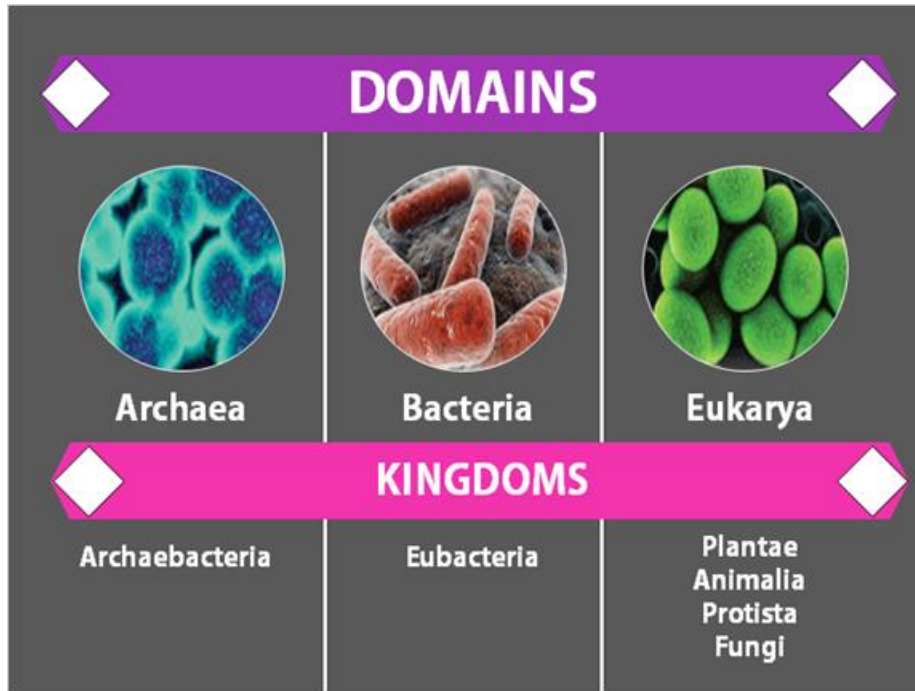


The slide features a purple header with the title "Classification by Domain and Kingdom" in white text. Below the header, three circular images are arranged horizontally: the first shows blue-stained cells, the second shows orange rod-shaped bacteria, and the third shows green oval-shaped microorganisms. In the bottom left corner is the WHRO Education logo, and in the bottom right corner is the text "Click **NEXT** to begin."

Click **NEXT** to begin.

**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**Instructions**

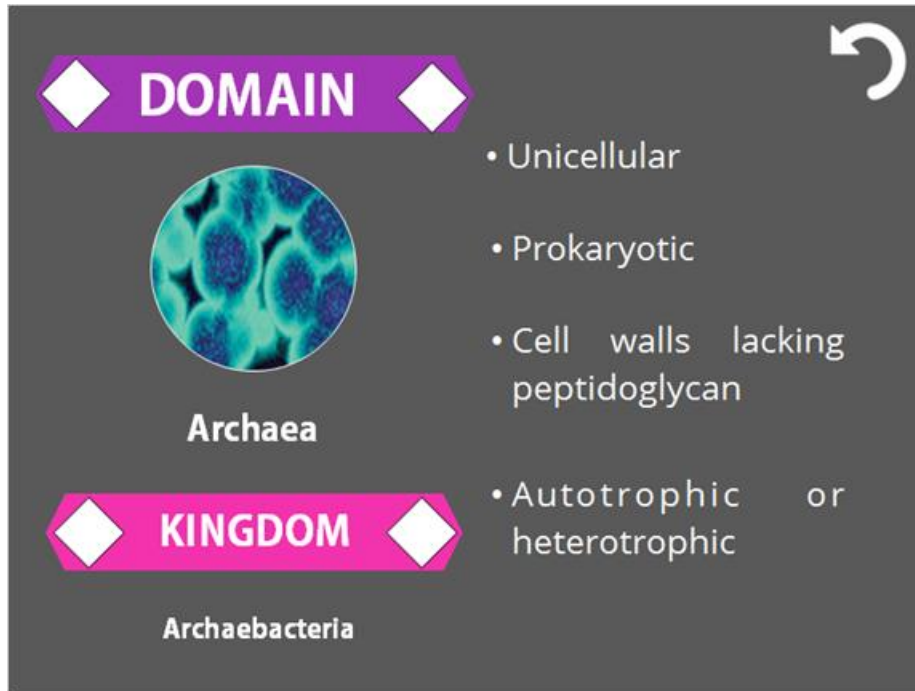


The modern system of classification has the broadest category known as a domain. In this system, there are three domains: Archaea, Bacteria, and Eukarya. These domains are further classified into kingdoms. The Archaea domain includes Archaeobacteria kingdom. The Bacteria domain includes the Eubacteria kingdom. The Eukarya domain includes the Plantae, Animalia, Protista, and Fungi kingdoms.

Click each image to learn more about the domains.

**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

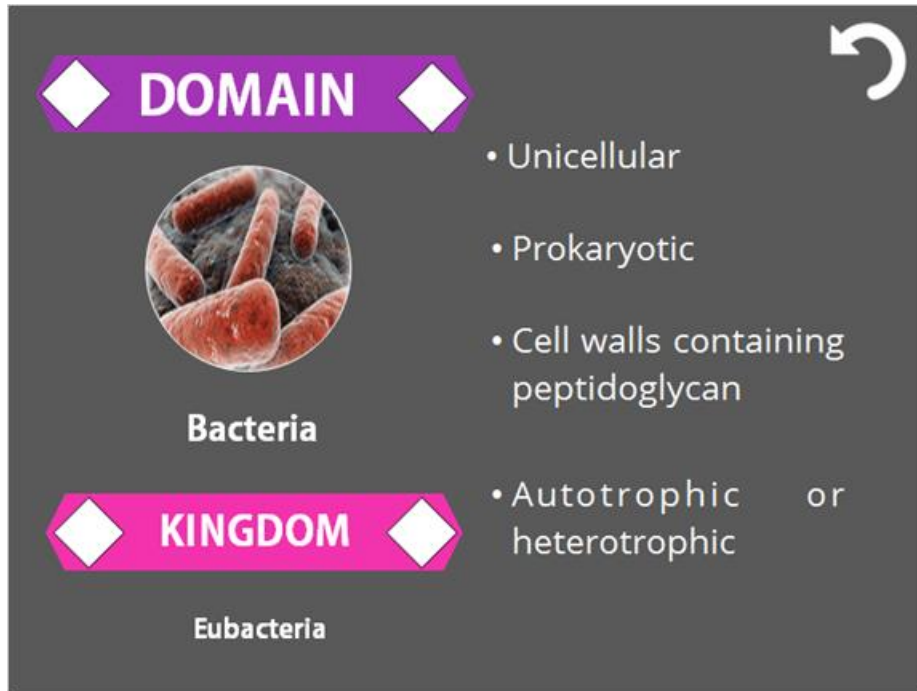
**The Archaea Domain**




Archaeobacteria belong to the Archaea domain. Archaeobacteria are unicellular and prokaryotic. They have cell walls that lack peptidoglycan. You can find colonies of archaeobacteria where no other life can survive, such as hot springs or very salty water. Some archaeobacteria can even survive without oxygen. Archaeobacteria can be autotrophic or heterotrophic.

**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**The Bacteria Domain**



**DOMAIN**



**Bacteria**

- Unicellular
- Prokaryotic
- Cell walls containing peptidoglycan

**KINGDOM**

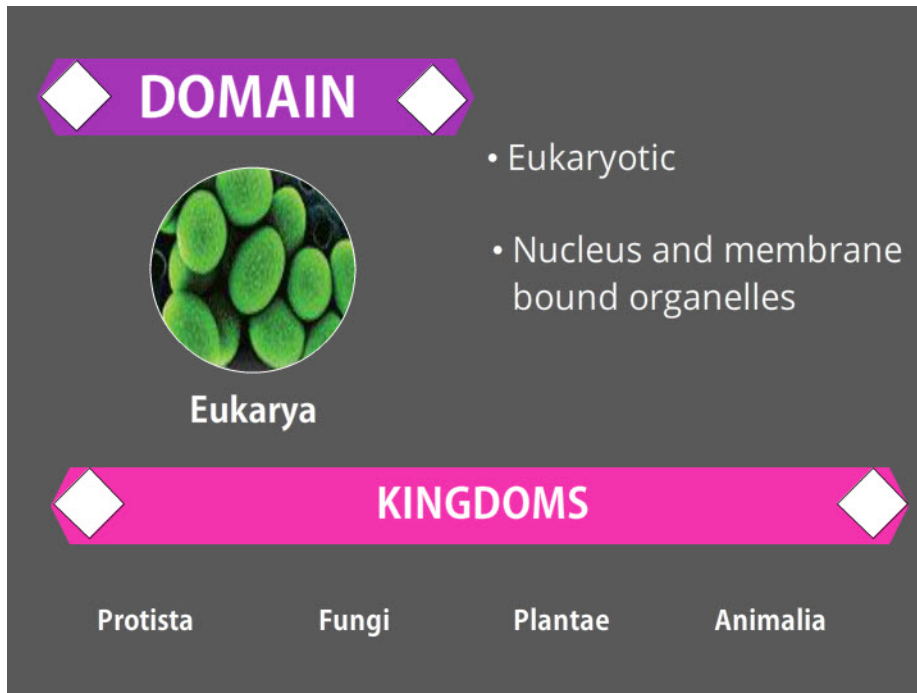
**Eubacteria**

- Autotrophic or heterotrophic

Eubacteria belong to the Bacteria Domain. Eubacteria are unicellular and prokaryotic. They have cells walls that contain peptidoglycan. Eubacteria are more common in human environments. You rely on members of this domain to keep you alive, and some eubacteria, like *Streptococcus* or *E. coli* can also make you sick. Eubacteria can be autotrophic or heterotrophic.

**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**The Eukarya Domain**

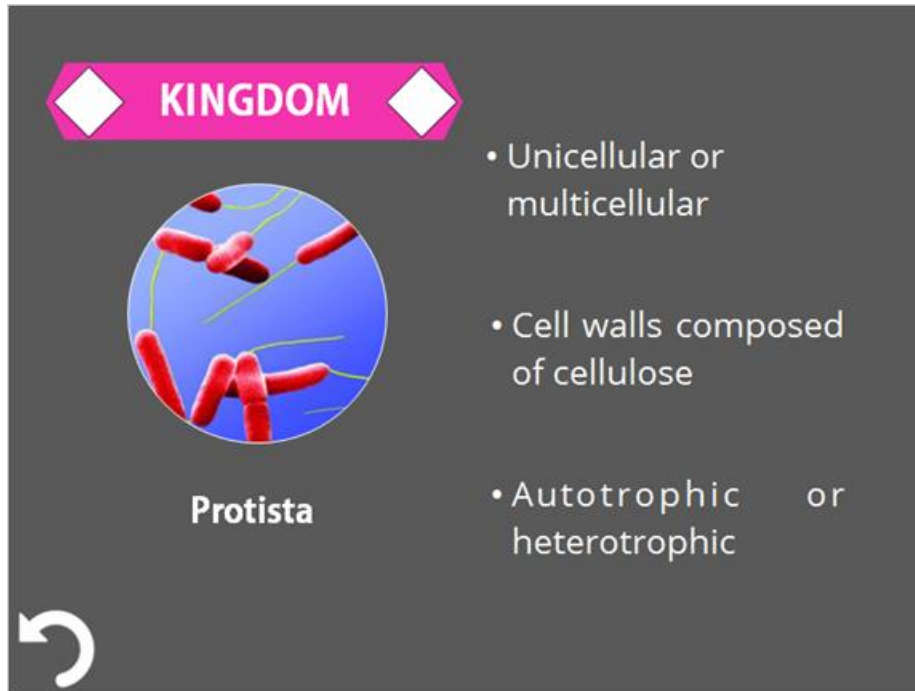


All organisms in the Eukarya Domain are made up of eukaryotic cells. Eukaryotic cells contain a nucleus and membrane bound organelles. The Eukarya Domain includes the following kingdoms: Protista, Fungi, Plantae, and Animalia.


Select each kingdom to investigate them in more detail.

**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**The Protista Kingdom**



**KINGDOM**



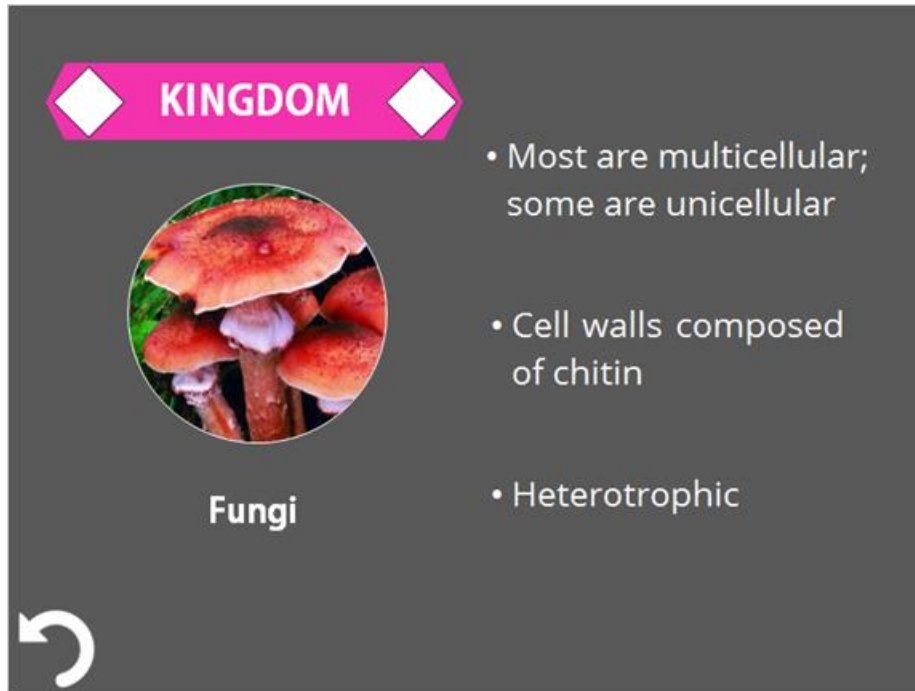
**Protista**

- Unicellular or multicellular
- Cell walls composed of cellulose
- Autotrophic or heterotrophic


The Protista Kingdom has a great diversity of organisms. Any eukaryote that does not fit into another kingdom is classified as a protist. Some protists are unicellular and some are multicellular. They have cell walls composed of cellulose. Some protists may be mistaken for plants, animals, or even fungi because they may share many characteristics with the other eukaryotic kingdoms. Protists can be either autotrophs or heterotrophs.

**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**The Fungi Kingdom**



**KINGDOM**



**Fungi**

- Most are multicellular; some are unicellular
- Cell walls composed of chitin
- Heterotrophic

Have you ever noticed a mushroom growing in your yard? How about mildew in the shower? If so, you have come face to face with members of the Fungi kingdom. Most fungi are multicellular with cell walls made of chitin. Some types of fungi, like yeast, are unicellular. All members of the Fungi kingdom are heterotrophic, meaning they feed on other substances to provide the energy they need for life.

**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**The Plantae Kingdom**

**KINGDOM**

- Multicellular
- Cell walls composed of cellulose
- Autotrophic

**Plantae**


The Plantae kingdom includes all of the plants on Earth. All plants are multicellular with cell walls made of cellulose. Some plants use cones for reproduction while others use seeds protected by a fruit or flower. All plants are autotrophic.



**Module 9: Classification – The Basics**  
**Topic 4 Content: Classification by Domain and Kingdom**

**The Animalia Kingdom**

**KINGDOM**



**Animalia**

- Multicellular
- Lack cell walls
- Motility
- Heterotrophic

The Animalia kingdom includes all of the animals on Earth. All animals are multicellular, and their cells lack cell walls. All animals can move at some point in their lives, even if it is just in their larval stage, like the marine sponge. The Animalia kingdom is very diverse; animals live in almost every part of the planet. All animals are heterotrophic.