



- Fractions
- Nouns and verbs
- Circumference of a circle
- Prepositions
- World War II
- The "60s"
- Cells
- Mark Twain
- Iliad
- Periodic table
- Paragraph structure
- Genetics
- Square root

## What do McDonald's, Office Supplies, and Organisms have in common?









## Classify McDonald's Stuff



## **Classify Office Supplies**



## Classify Life

## Virus

Viruses are simply strands of DNA (or RNA) with a protein coat. Viruses do not have a cell membrane or other cellstructures. They can't reproduce on their own. They aren't considered to be "living."

http://www.youtube.com/watch?fea ture=player\_embedded&v=Rpj0emE GShQ

### \* 5 Deadliest Diseases 14 minutes

- <u>https://www.youtube.com/watch?v=gf2bObJ</u>
  <u>GFkg</u>
- 66 minute Virus movie:



## Bacteria

Bacteria belong to the Domain Bacteria and the Kingdom Eubacteria. Their cells are tiny and simple, with no nuclei or other membrane-bound organelles.

<u>http://www.youtube.com/watch?v=tqOVYpkZ</u>
 <u>Oqs&feature=player\_detailpage</u>

### **Classification Levels**

Organisms

Domains are the most inclusive taxon; there are only three.

Domains are the most inclusive taxon; there are only three.

 Bacteria are prokaryotic and have peptidoglycan in their cell walls

Domains are the most inclusive taxon; there are only three.

- Bacteria are prokaryotic and have peptidoglycan in their cell walls
- Archaea are prokaryotic and DON'T have peptidoglycan

Domains are the most inclusive taxon; there are only three.

- Bacteria are prokaryotic and have peptidoglycan in their cell walls
- Archaea are prokaryotic and DON'T have peptidoglycan
- Eukarya are eukaryotic.



DOMAIN

DOMAIN

Bacteria

Archaea

Eukarya

DOMAIN

Bacteria

Archaea

Eukarya

KINGDOM



DOMAIN Eukarya

KINGDOM Animalia

PHYLLUM

CLASS

ORDER

FAMILY

GENUS

SPECIES

DOMAIN Eukarya

KINGDOM Animalia

PHYLLUM Chordata

#### DOMAIN Eukarya

KINGDOM Animalia

- PHYLLUM Chordata
- CLASS Mammalia

#### DOMAIN Eukarya

KINGDOM Animalia

- PHYLLUM Chordata
- CLASS Mammalia

#### ORDER Primate

#### DOMAIN Eukarya

KINGDOM Animalia

- PHYLLUM Chordata
- CLASS Mammalia
- ORDER Primate
- FAMILY Hominidae

#### DOMAIN Eukarya

KINGDOM Animalia

- PHYLLUM Chordata
- CLASS Mammalia
- ORDER Primate
- FAMILY Hominidae
- GENUS Homo

	Human
Domain	Eukarya
Kingdom	Animalia
Phyllum	Chordata
Class	Mammalia
Order	Primate
Family	Hominidae
Genus	Homo
Species	Homo sapiens











Domains are the most inclusive taxon; there are only three.

Domains are the most inclusive taxon; there are only three.

 Bacteria are prokaryotic and have peptidoglycan in their cell walls

Domains are the most inclusive taxon; there are only three.

- Bacteria are prokaryotic and have peptidoglycan in their cell walls
- Archaea are prokaryotic and DON'T have peptidoglycan

Domains are the most inclusive taxon; there are only three.

- Bacteria are prokaryotic and have peptidoglycan in their cell walls
- Archaea are prokaryotic and DON'T have peptidoglycan
- Eukarya are eukaryotic.

Four characteristics are used to classify kingdoms.

Four characteristics are used to classify kingdoms.

1. Cell type: prokaryotic or eukaryotic

Four characteristics are used to classify kingdoms.

- 1. Cell type: prokaryotic or eukaryotic
- 2. Cell structure: some have specific chemicals in their cell walls

Four characteristics are used to classify kingdoms.

- 1. Cell type: prokaryotic or eukaryotic
- 2. Cell structure: some have specific chemicals in their cell walls
- 3. Body Type: unicellular or multicellular
Four characteristics are used to classify kingdoms.

- 1. Cell type: prokaryotic or eukaryotic
- 2. Cell structure: some have specific chemicals in their cell walls
- 3. Body Type: unicellular or multicellular
- 4. Nutrition: autotrophic or heterotrophic

**Domain Archaea** 

Kingdom Archaebacteria

- Cell type: prokaryote
- Cell wall: no peptidoglycan
- Body type: unicellular
- Nutrition: autotroph or heterotroph

**Domain Bacteria** 

Kingdom Eubacteria

- Cell type: prokaryote
- Cell wall: peptidoglycan
- Body type: unicellular
- Nutrition: autotroph or heterotroph

Domain Eukarya

Kingdom Protista

- Cell type: eukaryote
- Cell wall: mixed
- Body type: mostly unicellular
- Nutrition: autotroph or heterotroph

#### Protista

 Protists are part of the Eukarya domain. Many of them are single-celled. Some are plant-like (algae) and others are animal like (protozoa).

Protista video

Domain Eukarya

Kingdom Fungi

- Cell type: eukaryote
- Cell wall: chitin
- Body type: mostly multicellular
- Nutrition: heterotroph

Domain Eukarya

**Kingdom Plantae** 

- Cell type: eukaryote
- Cell wall: cellulose
- Body type: multicellular
- Nutrition: mostly autotrophic

Domain Eukarya

**Kingdom Animalia** 

- Cell type: eukaryote
- Cell wall: none
- Body type: multicellular
- Nutrition: heterotroph

























Domain	Kingdom	Cell Type	Cell Wall	Body	Nutrition
Archaea	Archae- bacteria	prokaryote	no peptido- glycan	unicellular	autotroph or heterotroph
Bacteria	Eubacteria	prokaryote	peptido- glycan	unicellular	autotroph or heterotroph
Eukarya	Protista	eukaryote	mixed	mostly unicellular	autotroph or heterotroph
Eukarya	Fungi	eukaryote	chitin	mostly multicellular	heterotroph
Eukarya	Animalia	eukaryote	none	multicellular	heterotroph
Eukarya	Plantae	eukaryote	cellulose	multicellular	autotroph

Insert Page Layout References Mailings Review View Mathematics

1	K.		1		1	1	1	-		Т		1	-				1			3			1			4					5		1	1		1	6		1	1
			1				1			1				1			1			1						1											1			11

Domain	Kingdom	Cell Type	Cell Wall	Body	Nutrition
Archaea	<u>Archae</u> - bacteria	prokaryote	no peptido- glycan	unicellular	autotroph or heterotroph
Bacteria	Eubacteria	prokaryote	peptido- glycan	unicellular	autotroph or heterotroph
Eukarya	Protista	eukaryote	mixed	mostly unicellular	autotroph or heterotroph
Eukarya	Fungi	eukaryote	chitin	mostly multicellular	heterotroph
Eukarya	Animalia	eukaryote	none	multicellular	heterotroph
Eukarya	Plantae	eukaryote	cellulose	multicellular	autotroph

What are the taxonomic levels, in order, starting from the most inclusive?

What are the taxonomic levels, in order, starting from the most inclusive?

- Domain
- Kingdom
- Phylum
- Class
- Order
- Family
- Genus
- Species

#### **Taxonomic Levels for Humans**

#### DOMAIN Eukarya

- KINGDOM Animalia
- PHYLLUM Chordata
- CLASS Mammalia
- ORDER Primate
- FAMILY Hominidae
- GENUS Homo
- SPECIES Homo sapiens

## Web terms

- Kingdom Animalia
- Domain Archaea
- Kingdom
  Archaebacteria
- Domain Bacteria
- Kingdom Eubacteria
  - Algae Bacteria Cyanobacteria Extremophiles

Fern Methanogens Moss Mushrooms

- Domain Eukarya
- Kingdom Fungi
- Organism
- Kingdom Plantae
- Kingdom Protista
- Virus

Protozoa Sponges Worms Yeast

# Terms for Web

- Kindom Animalia
- Domain Archea
- Kindom Archaebacteria
- Domain Bacteria
- Kindom Eubacteria
- Domain Eukarya
- Kingdom Fungi
- Organism
- Kingdom Plantae
- Kingdom Protista
- Virus

## Mini Review

- 1. What kingdom has heterotrophic multicellular organisms?
- 2. Why aren't viruses classified as living?
- 3. How many kingdoms are there?
- 4. What field of science studied the classification and identification of organisms?
- 5. What is a scientific name made of, and how is it written?
- 6. What kingdom(s) have prokaryotes?
- 7. Who proposed the classification system we use?
- 8. What domain, kingdom and phylum do dogs belong?
- 9. What domain, kingdom and phylum do humans belong?

#### Dichotomous Keys

- Dichotomous keys are useful for identifying organisms.
- Starting at the top of the key, you are always given two options (thus the name "<u>di</u>chotomous.")
- Each option will either give you the name of the organism, or take you to another set of two options.

It is vital that you start at the top of the key for each organism!!!

# Classifying Organisms using Dichotomous Keys

Sharks Salamanders



Great white shark










# QUIZ today!

















#### Creatures:

Do Salamander Key Make a Key ID your creatures Observe/Experiment w/creatures

- Have cells containing nuclei
- Don't have backbones
- Are bigger than 5 mm •

#### Common name: Yellow mealworm

- 1a No nucleus
- 1b Has nucleus
- 2a Has peptidoglycan
- 2b No peptidoglycan
- 3a Single cell
- 3b Multicellular
- 4a No cell wall
- 4b Cell wall
- 5a Cell wall w/ chitin
- 5b Cell wall w/ cellulose

go to 2 go to 3 Eubacteria Archaebacteria Protista Go to 4 Animalia Go to 5 Fungi Plantae

## What kingdom and domain?



















Life-Like virus ornam Domain Enkarya Archasa icteria otista Fungi Plantan Animalia Eubacteria 92 where a Kingdoms



Advantages

Disadvantages

Homo sapiens Genus Species