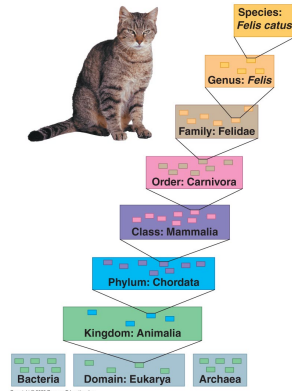


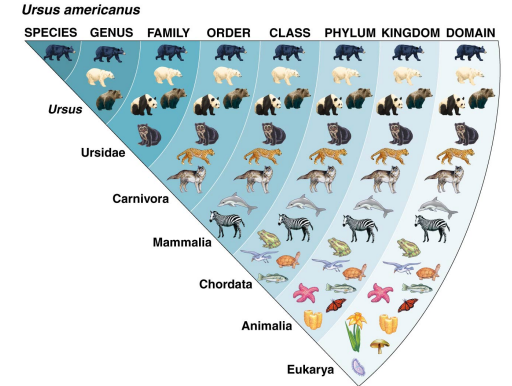
Biology – Chapter 18 Classification

Honors Biology – Chapter 15a Phylogeny and the Tree of Life

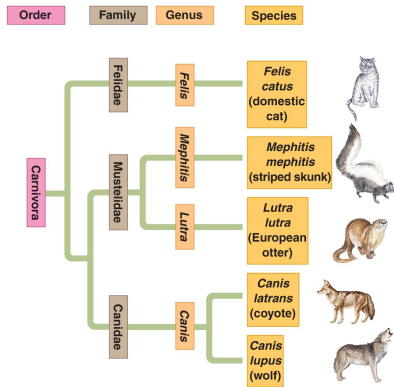
Ridgefield Memorial High School



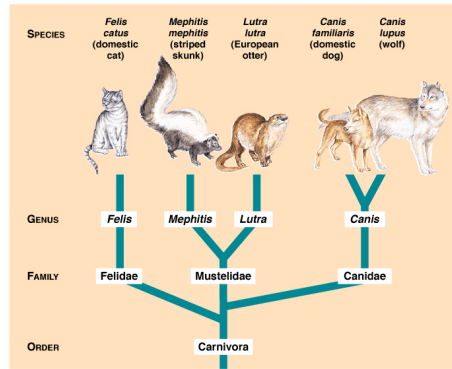
Dumb King Phillip Came Over For Good Spaghetti.



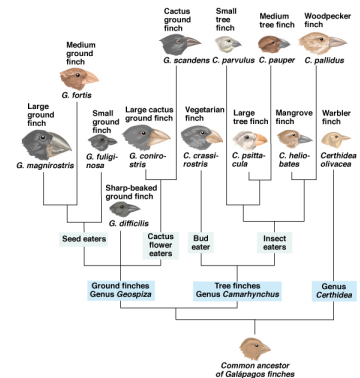
Dumb King Phillip Came Over For Good Spaghetti.



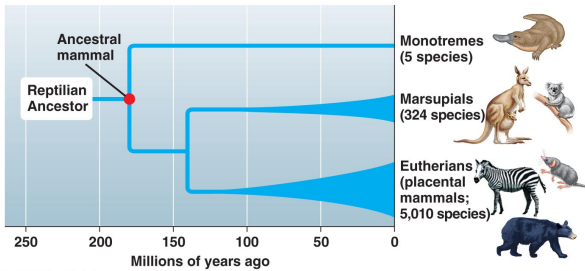
This phylogenetic tree shows some of the levels of taxonomy (classification).



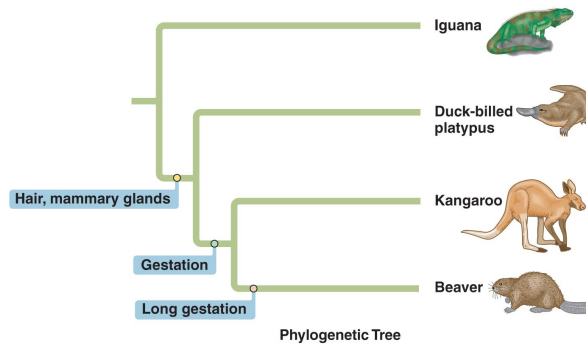
This is another way of showing the same phylogenetic tree.



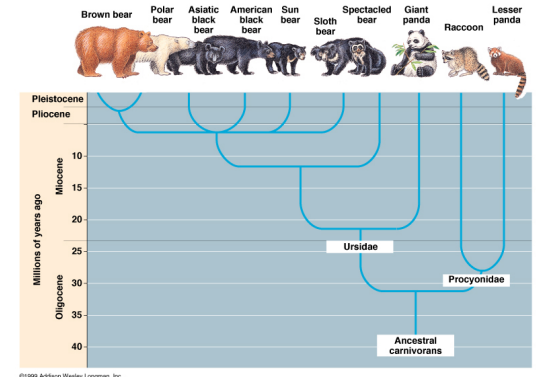
This is a phylogenetic tree of Darwin's finches. The common ancestor of the Galápagos finches lived in South America.



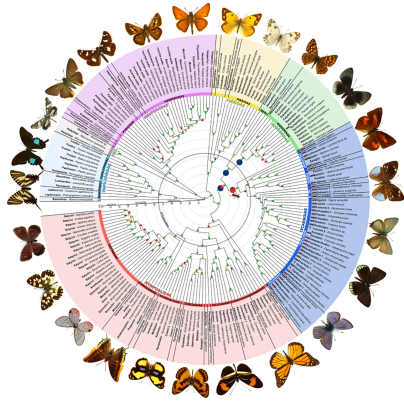
This phylogenetic tree shows how 3 groups of mammals all evolved from reptiles. Some phylogenetic trees show time on either the X or Y axis, but it is not necessary.



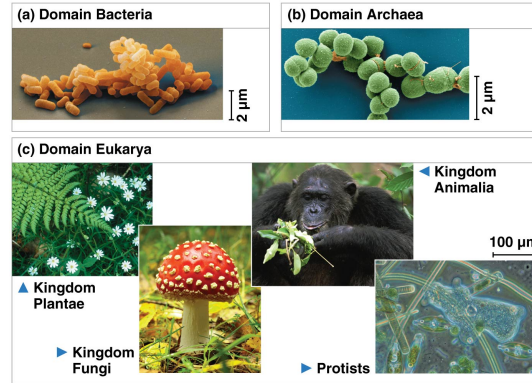
This phylogenetic tree was constructed based on similar characteristics. More specific phylogenetic trees are typically made by comparing molecular sequences (DNA or protein).



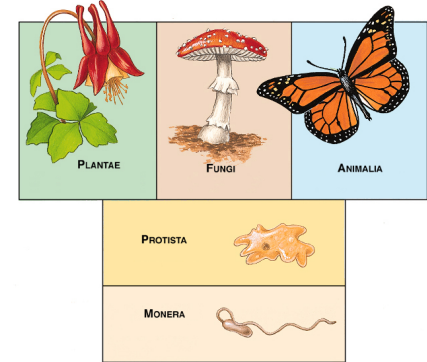
This phylogenetic tree shows the divergence of 2 families of carnivorans.



Even a phylogenetic tree for butterflies can be quite complicated!



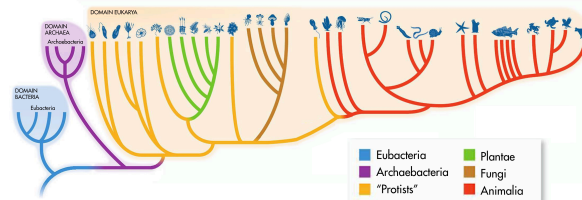
The three domains are Bacteria, Archaea, and Eukarya. Note that modern biologists classify Protists into multiple kingdoms.



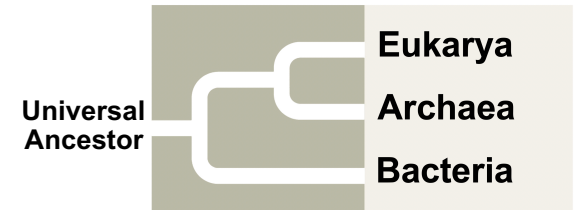
This chart shows the 5 kingdoms. Fungi, Plantae, and Animalia all evolved from Protista. Protista evolved from Monera (a term that is no longer used).

Kingdoms of Life, 1700s – 1990s						
First Introduced	Names of Kingdoms					
1700s	Plantae					Animalia
Late 1800s	Protista			Plantae		Animalia
1950s	Monera	Protista	Fungi	Plantae	Animalia	
1990s	Eubacteria	Archaeobacteria	Protista	Fungi	Plantae	Animalia

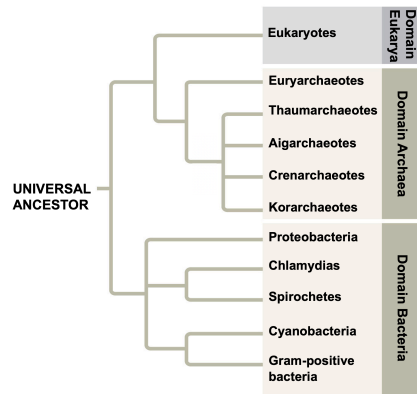
Taxonomy is constantly changing as scientists learn more information about species. What level of taxonomy, developed in the 1990s, is missing from this chart?



This phylogenetic tree shows the relationship between the 3 domains.



This is the simplest way to examine the 3 domains...



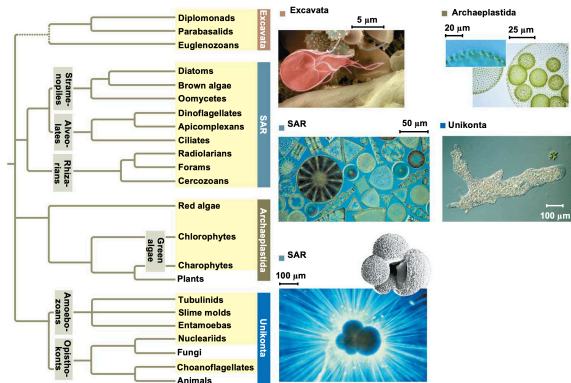
...while this shows a little bit more information for Domains Archaea and Bacteria.



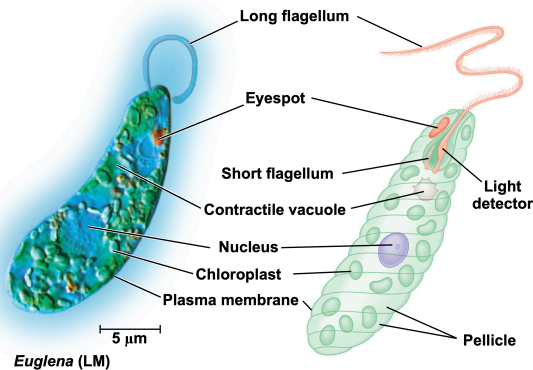
Extreme halophiles are Archaeobacteria that live in very salty areas.



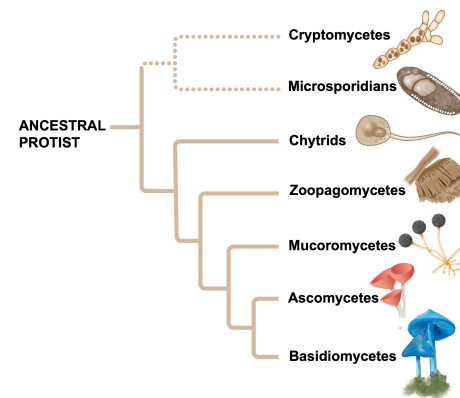
Extreme thermophiles are Archaeobacteria that live in very hot areas.



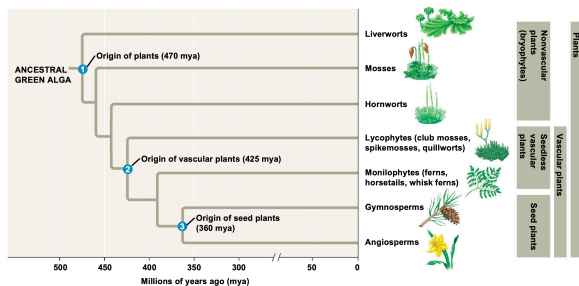
Protists have such great diversity that it is difficult to classify them.



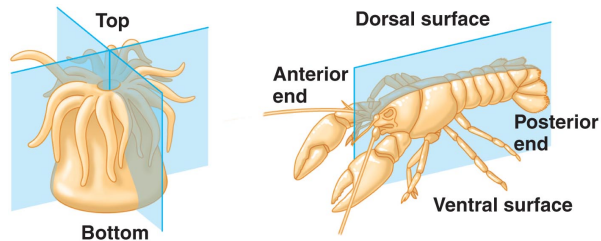
This is a diagram of a protist that has characteristics of both animals and plants.



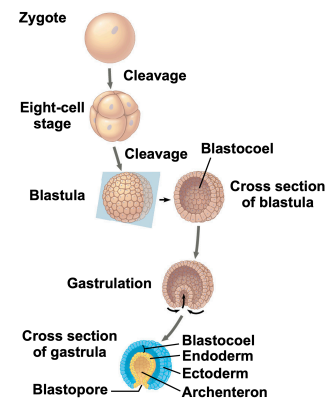
There is a lot of diversity in Kingdom Fungi.



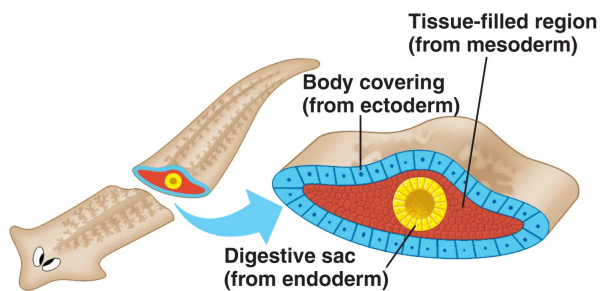
There is a lot of diversity in Kingdom Plantae.



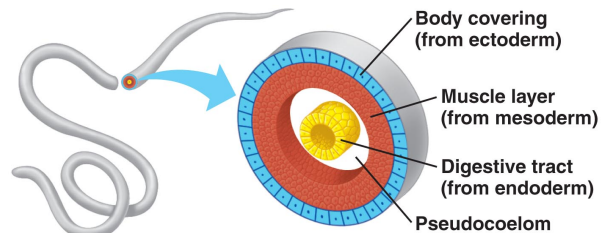
Most animals have bilateral symmetry (right), but some have radial symmetry (left) or none at all.



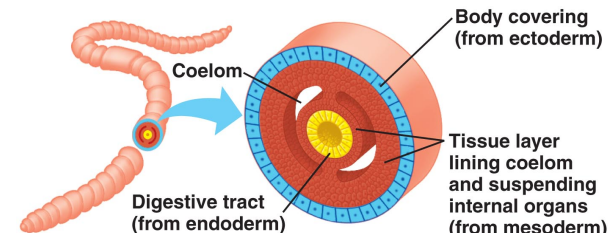
This is a summary of events that occur very early in the development of an animal.



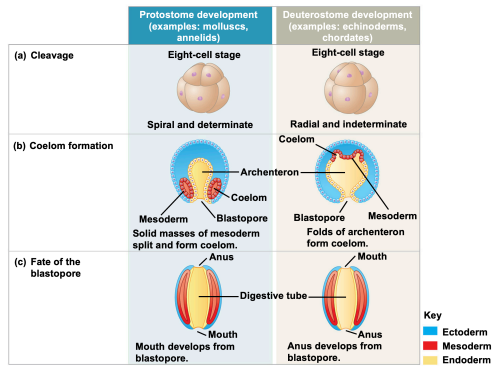
This flatworm does not have a body cavity called a coelom ("seelum").



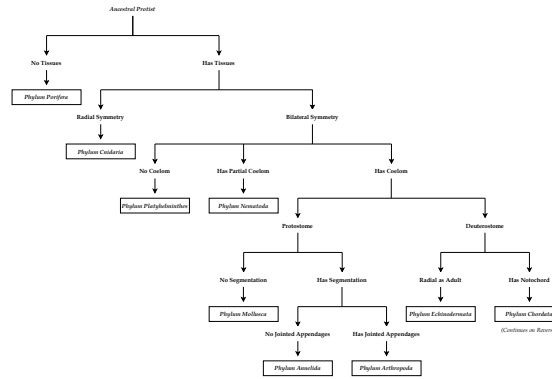
This roundworm has a partial body cavity called a pseudocoelom.



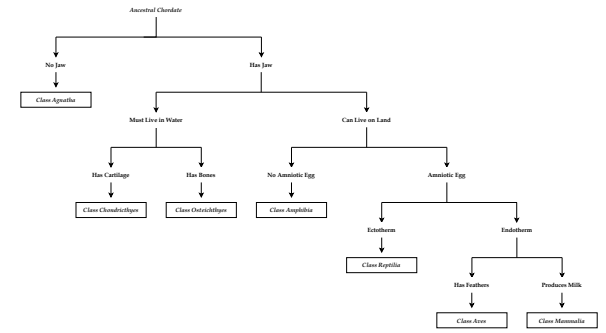
This segmented worm (and all higher-evolved animals) has a body cavity called a coelom.



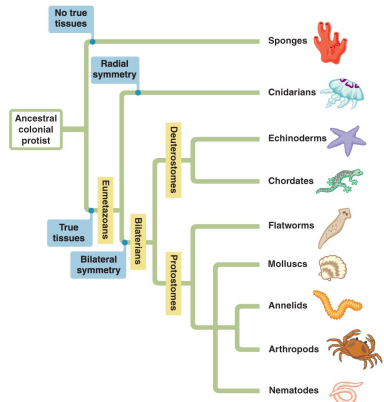
A major event in the evolution of Kingdom Animalia occurred when protostomes diverged from deuterostomes.



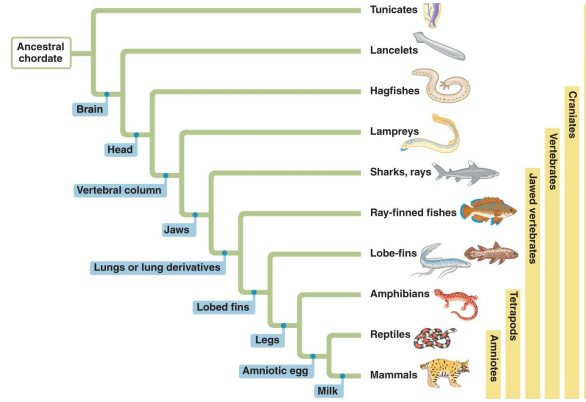
This simple phylogenetic tree summarizes the evolutionary history of invertebrates.



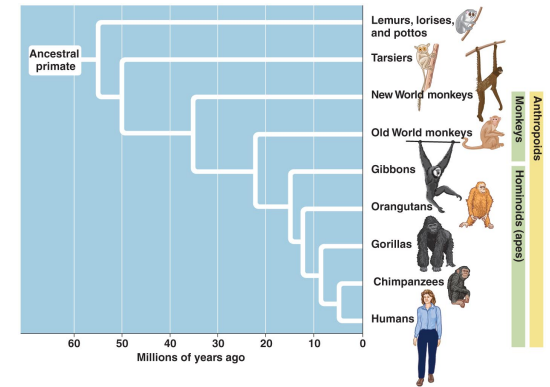
This simple phylogenetic tree summarizes the evolutionary history of chordates.



This is a phylogenetic tree showing the evolutionary history of invertebrates.



This is a phylogenetic tree showing the evolutionary history of chordates.



This is a phylogenetic tree showing the evolutionary history of primates.