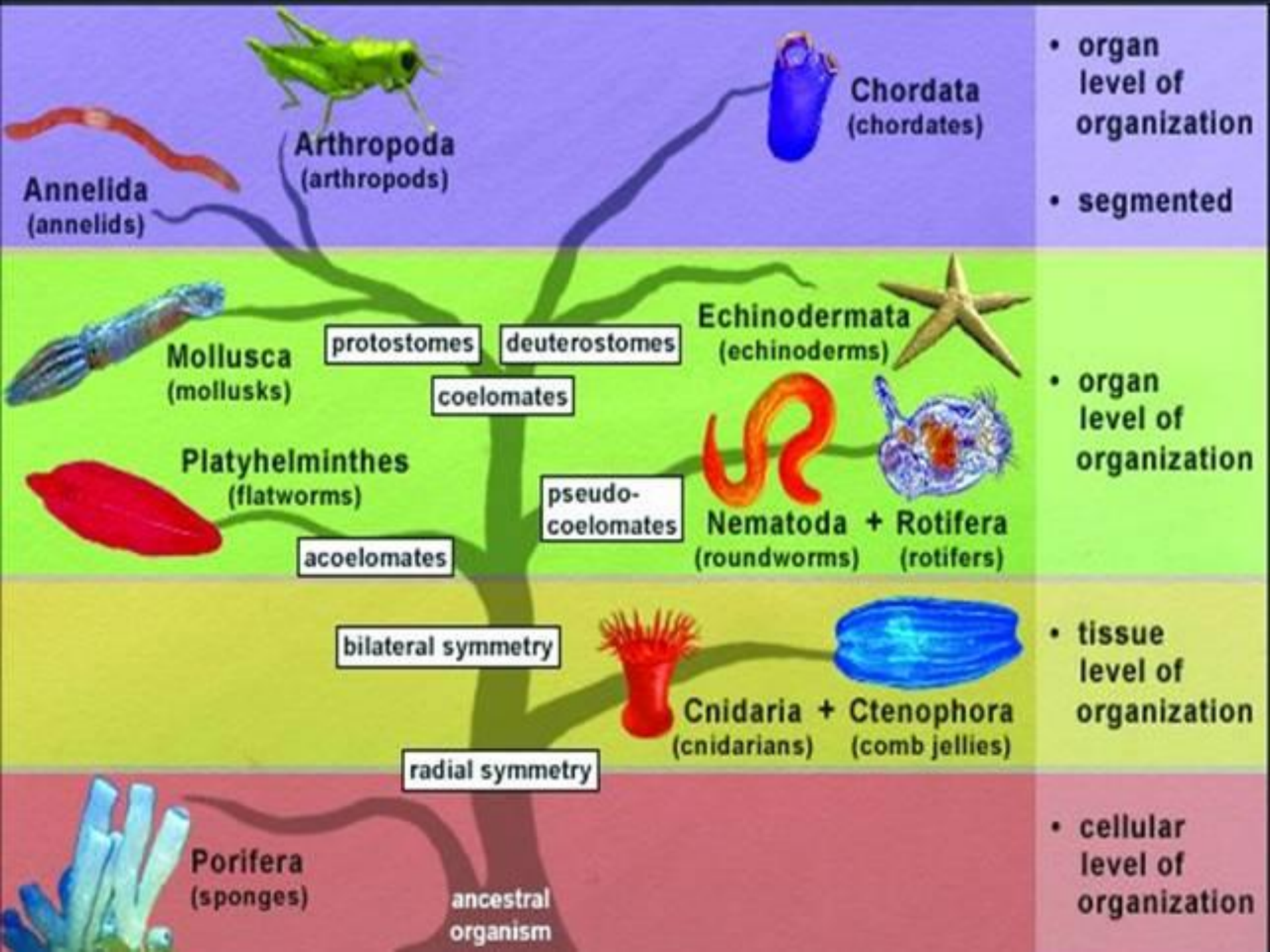


# ***The Wonderful World of Animal Phyla***



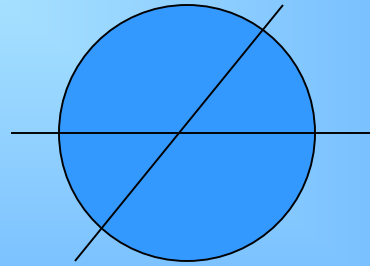
# Kingdom Animalia

- Eukaryotic
  - Multicellular
  - Heterotrophs
  - Lack Cell Walls
- 
- Must do: Feed, Respiration, Circulation, Excretion, Response, Movement, and Reproduction

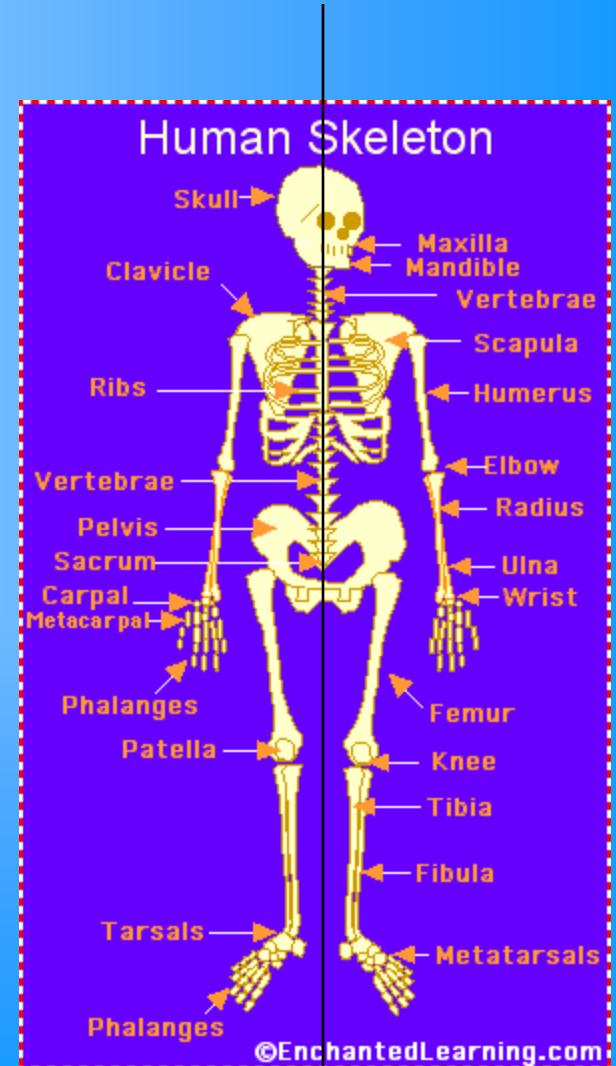
# Symmetry

- Asymmetrical- no shape

- Radial- same in half when cut any angle



- Bilateral- having a distinct right and left side



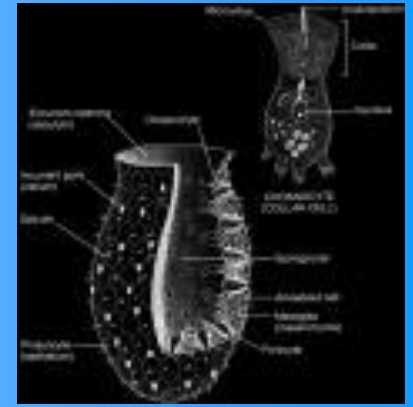
# Invertebrates

- 95% of Animals
- No Backbone





# Pomifera



Sponge



- The simplest animals and they do not have tissue.
- **Symmetry: Asymmetrical**
- Filter feeders they pick up nutrients from the water.
- Do not move, they are always **sessile (anchored to a surface)**, except during the larvae state.
- Reproduce **asexually** - budding, fragmentation & regeneration  
Sexually (external fertilization)
- Hermaphrodites - Male and Female  
Reproductive structures

Jellyfish  
man o' wars  
hydra

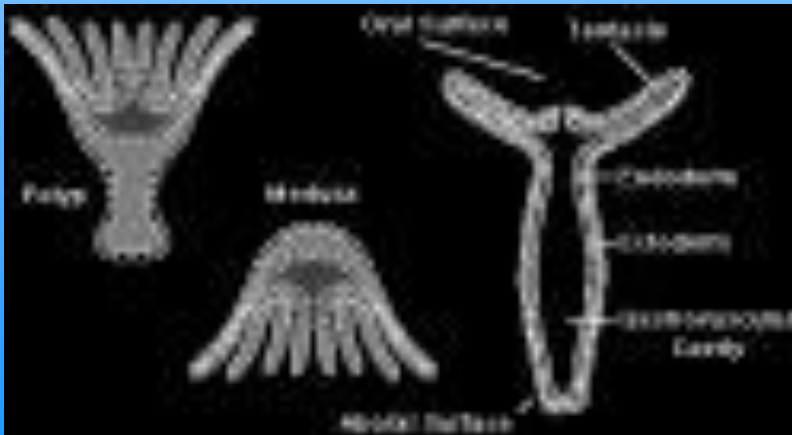
# Cnidaria



- Radially symmetrical
- Characterized by: stinging cells in their tentacles
- 2 layers; endoderm-inside layer & ectoderm- outside layer
- 1 body opening for food and waste/ Obtain food using their tentacles. Carnivores.

Move by floating in the water or muscle contractions (undulating).

Reproduce both asexual (budding) and external sexual (hermaphrodites)



flat  
bodies

# Platyhelminthes

- Bilateral symmetry
- 3 layers: endoderm, ectoderm, and mesoderm-middle layer
- Move by contracting and relaxing their muscles.
- Reproduction: asexual (regeneration) and sexual (hermaphrodites)
- Acoelomate; 1 body opening for food and waste/  
parasitic and carnivores



Ex) Flukes tapeworms





Round  
Worms

# Nematoda

- Bilaterally symmetric
- 3 tissue layers
- Pseudocoelomate: mouth & anus separate (2 Body Openings). Move using a thrashing movement.
- Reproduce sexually-separate sexes

Ex)  
Pinworms  
hookworms  
Roundworms  
(All parasitic)

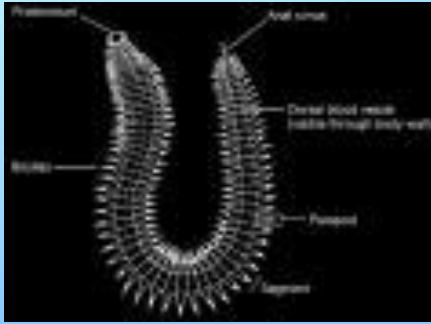


FYI: There may be as many as 90,000 nematodes in one apple!

# Annelida

Segments  
Worms

Ex)  
Earthworms  
Leeches  
sandworms



- Bilateral symmetry
- First Group to have a Coelomate: mouth, esophagus, and anus. Parasitic; eat decomposing or organic material. (Closed System)
- Moves by contracting and relaxing muscles.
- Reproduce sexually- separate sexes

# Mollusca



Ex) Squid, clams, oysters, and scallops

- Bilateral symmetry
- Hard shell (Internal or External) or No Shell
- Most Developed Head ex) Squid or Octopus
- Glide using ventral foot (called radula)



Sexual reproduction- release sperm and eggs into water (external fertilization)

# Arthropoda

"Jointed Walking Legs"



- Bilateral symmetry
- Walk using segmented joints-
- **Exoskeleton** (external skeleton) for support made of chitin
- Must molt exoskeleton to grow
- Body has 3 segments - Head, Thorax, and Abdomen
- Reproduce sexually- internal fertilization

Ex) Spiders,  
insects,  
lobsters,  
crabs,  
crayfish

## Largest Phylum



# More Arthropods





# Echinodermata



spiny skin

- Bilateral during development, radial as adults
- All Marine
- **Endoskeleton** (Internal skeleton)
- Water Vascular System with Tube feet used for movement.
- Sexual reproduction- external
- Asexual- regeneration



Ex) Sea urchin, sand dollars, sea stars, brittle stars



The



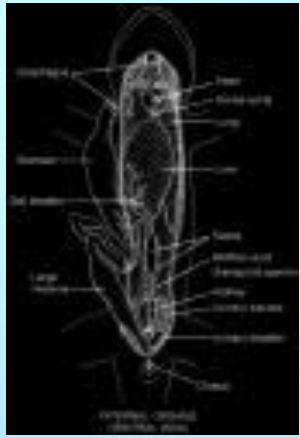
Chordates

# Chordata

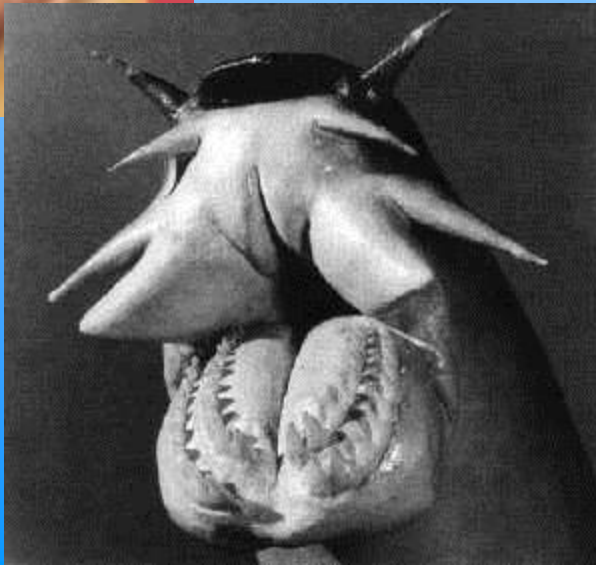
- Notocord - Dorsal Rod of Cartilage
- Dorsal Nerve Cord
- Gill Slits
- Tail at some point in development

## Subphylum Vertebrata

- Backbone - Vertebrae - Body Segments
- Highly Evolved Nervous System



# Jawless Fish (Agnatha)



- Lampreys, hagfish
- Slimy skin
- Ectotherm- external temp. regulation
- Unpaired fins

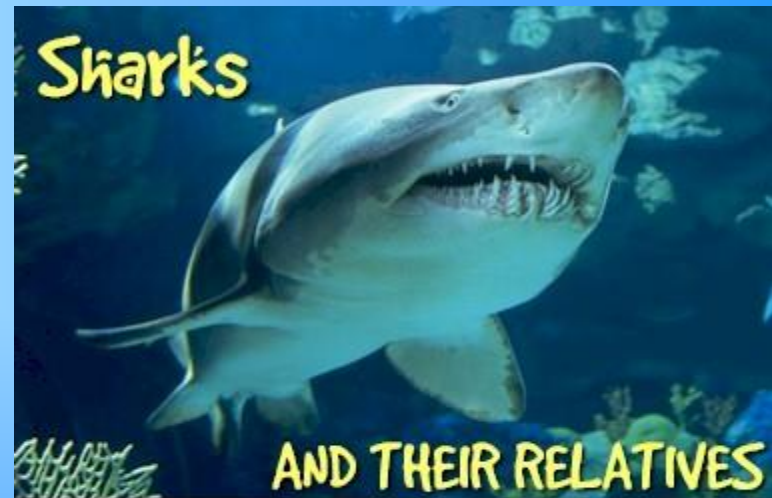
Gills

External fertilization

Jawless fish are characterized by the fact that they have no jaw.

# Cartilaginous Fish (Chondrichthyes)

- **Sharks, skates, rays**
- Scales
- Ectotherm
- 2 pairs of fins
- Gills
- Internal fertilization  
(give birth to live young)
- Their bone structure is actually **cartilage**.





# Bony Fish(Osteichthyes)



- Perch, bass, trout
- Scales and slimy skin
- Ectotherm
- 2 pairs of fins
- Gills
- Skeleton made of **bone**
- External fertilization
- Have a swim bladder, that keeps them from sinking while they swim

# Amphibians

- Frogs, toads, salamanders
- Live a double life (Live on land but reproduce in **water**)
- Slimy skin, scale-less.
- Ectotherms
- 2 pairs of legs, no claws
- Gills and then lungs
- External fertilization -  
**Lay Eggs**



[mongabay.com](http://mongabay.com)

[www.naturfoto.cz](http://www.naturfoto.cz)

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# Reptiles



- Turtle, lizard, snake, alligator
- Dry, scaly skin
- Ectotherm
- 2 pairs of legs, claws
- Lungs
- Internal fertilization (mother lays eggs)



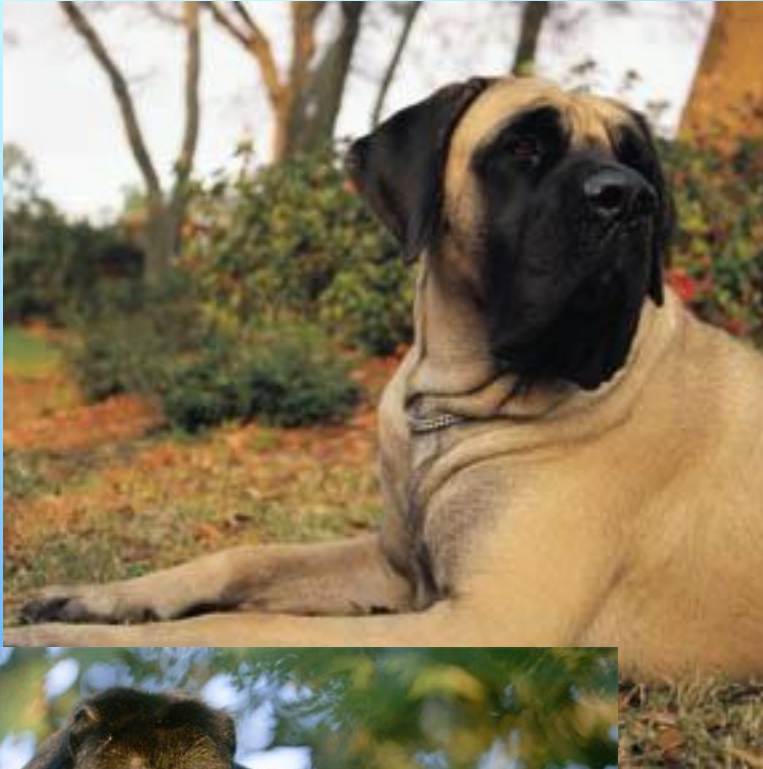


# Birds (Aves)

- Robin, eagle, pelican
- Feathers, scales on legs
- Endotherm- body temperature maintained by homeostasis
- 1 pair of wings, 1 pair of legs with claws
- Lungs
- Internal fertilization (mother lays eggs)
- Hollow bones
- Amniotic Eggs
- Feathers Believed to be modified scales



# Mammals



- Bear, whale, kangaroo, Humans
- Hair/fur
- Endotherms
- 2 pairs of legs, claws in most forms
- Lungs
- Internal fertilization
- Mammary glands
- Complex nervous system