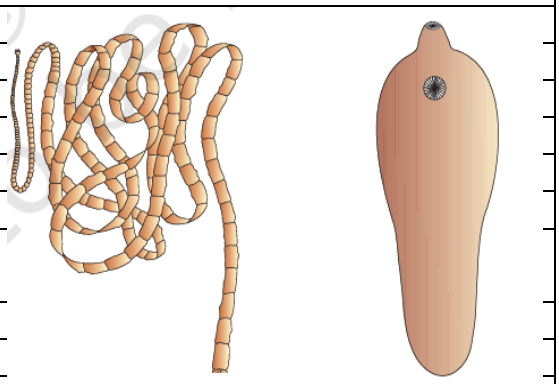
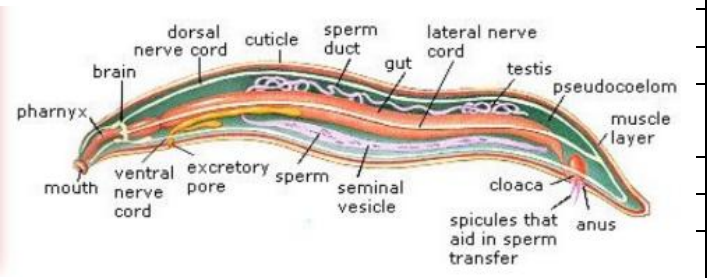
Phylum – **PLATYHELMINTHIS** (Flat worms- dorso-ventrally flattened)	
Habitat	Endoparasites
Organization	Organ level
Germ Layer	Triploblastic
Body Cavity	Acoelomate
Symmetry	Bilaterally symmetrical
Reproduction	Asexual (Fragmentation) & Sexual (Hermaphrodite)
Fertilization	Internal
Development	Indirect
Digestive System	Incomplete Hypostome
Respiratory System	Absent
Circulatory System	Absent
Excretory System	Absent. Flame cells (Protonephridia) help in osmoregulation and excretion.
Nervous System	CNS (Head ganglion, usually attached to longitudinal nerve cords with transverse branches.)
Skeletal System	Absent
Segmentation	Absent (except tapeworm)
Unique Feature	Hooks and suckers (Helps in nutrient absorption) in parasitic forms Some posses regeneration Property-Eg- Planaria
Example	Taenia (Tapeworm), Fasciola (Liver fluke)

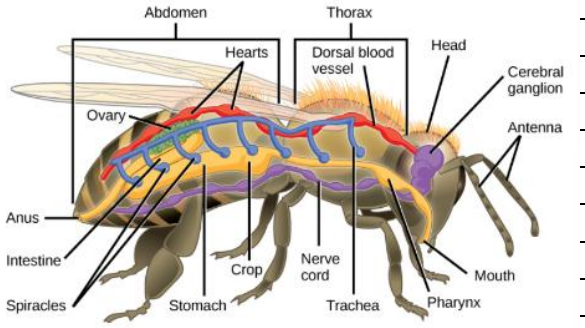


Phylum – **Aschelminths / Nematoda** (Round worms)	
Habitat	Free Living (Aquatic, Terrestrial) or parasitic
Organization	Organ System
Germ Layer	Triploblastic
Body Cavity	Pseudocoelomate
Symmetry	Bilateral
Reproduction	Sexual, Dioecious, show dimorphism (female longer than male)
Fertilization	Internal
Development	Indirect or Direct
Digestive System	Complete with a well developed muscular pharynx. (Protostome)
Respiratory System	Absent
Circulatory System	Absent
Excretory System	Protonephridia-Excretory tube removes wastes from the body through the excretory pore.
Nervous System	Nerve ring encircle oesophagus. Double (Dorsal & ventral) solid nerve cord.
Skeletal System	Absent
Segmentation	Absent
Unique Feature	Circular body, Syncytial (multinucleated) epidermis & Thick cuticle.
Examples	Ascaris (Round worm), Ancylostoma (hook worm), Wuchereria (Filarial worm)

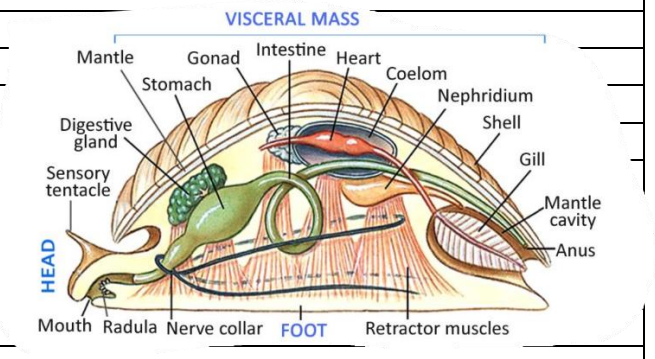


Phylum – **Annelida** (Earthworm)	
Habitat	Aquatic, Generally marine, Some fresh water
Organization	Organ System
Germ Layer	Triploblastic
Body Cavity	coelomate
Symmetry	Bilateral
Reproduction	Sexual. Earthworm & Leeches (Monoecious) Nereis (Dioecious)
Fertilization	Internal
Development	Indirect
Digestive System	Complete (Protostome)
Respiratory System	Cutaneous. Branchial
Circulatory System	Closed Type
Excretory System	Nephridia- osmoregulation and excretion.
Nervous System	Paired Ganglia, lateral nerves, double ventral nerve cord.
Skeletal System	Absent
Segmentation	True Segmentation- show metamerism
Unique Feature	Longitudinal & Circular muscles with some locomotory organs Setae (Earthworm) & Parapodia- lateral appendages (Nereis) helps in locomotion.
Examples	Pheretima, Hirudinaria, Nereis

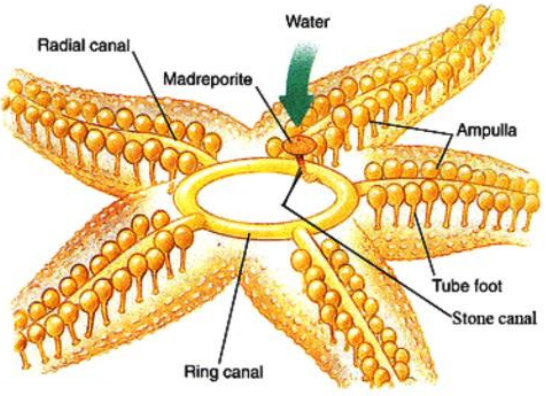
Phylum –**Arthropoda** (Jointed Legs Animal) Largest Phylum (2/3 of all the named species on earth)	
Habitat	Cosmopolitan
Organization	Organ System
Germ Layer	Triploblastic
Body Cavity	Coelomate
Symmetry	Bilateral
Reproduction	Sexual, Mostly Dioecious & Oviparous
Fertilization	Usually Internal
Development	Direct or Indirect
Digestive System	Complete. (Protostome).
Respiratory System	Gills/Book Gills, Trachea/Book lungs
Circulatory System	Open Type
Excretory System	Malpighian tubule
Nervous System	Dorsal brain and a ventral, ganglionated longitudinal nerve cord
Skeletal System	Exoskeleton-Chitinous cuticle
Segmentation	Present
Unique Feature	Jointed Appendages, Body divided into Head, Thorax and abdomen. Sensory organ- Antennae, Compound/simple eye & Statocyst (Balance organ). Pheromones (Sex hormones). Membranous wings.
Examples	Economically important- Apis (Honey bee), Bombyx (Silkworm), Laccifer (Lac insect) Vectors – Anopheles, Culex and Aedes (Mosquitoes) Gregarious pest – Locusta (Locust) Living fossil – Limulus (King crab).



Phylum – **Mollusca** (Second Largest Phylum)	
Habitat	Terrestrial or aquatic
Organization	Organ System
Germ Layer	Triploblastic
Body Cavity	Coelom
Symmetry	Bilateral
Reproduction	Sexual, Dioecious, Oviparous.
Fertilization	Internal or External
Development	Direct or Indirect
Digestive System	Complete. Protostome
Respiratory System	Gills (Aquatic), Pulmonary Sac (Terrestrial)
Circulatory System	Open
Excretory System	Metanephridia
Nervous System	Paired Ganglia and dorso-ventral nerve
Skeletal System	Exoskeleton
Segmentation	Absent
Unique Feature	Body is covered by a calcareous shell & distinct into head, muscular foot and visceral hump. A soft- spongy layer of skin forms a mantle over the visceral hump & the space between them is called the mantle cavity in which feather like gills are present. Sensory tentacles- Head region. **Radula**- File like rasping organ for feeding.
Examples	Pila (Apple snail), Octopus (Devil fish),



Phylum – **Echinodermata** (Spiny body)	
Habitat	Exclusively Marine
Organization	Organ System
Germ Layer	Triploblastic
Body Cavity	Coelomate
Symmetry	Radial & Larva have Bilateral
Reproduction	Dioecious- Sexual
Fertilization	External
Development	Indirect (Ciliated free-swimming larva)
Digestive System	Complete. Mouth- Ventral & Anus-Dorsal.
Respiratory System	Present
Circulatory System	Water Vascular System
Excretory System	Absent
Nervous System	Present. Central Nerve Ring & Radial Nerves
Skeletal System	Endoskeleton of calcareous ossicles
Segmentation	Absent
Unique Feature	**Water vascular system** helps in locomotion, capture & transport of food as well respiration
Examples	Asterias (Star fish), Ophiura (Brittle star).



Water vascular system helps in circulation