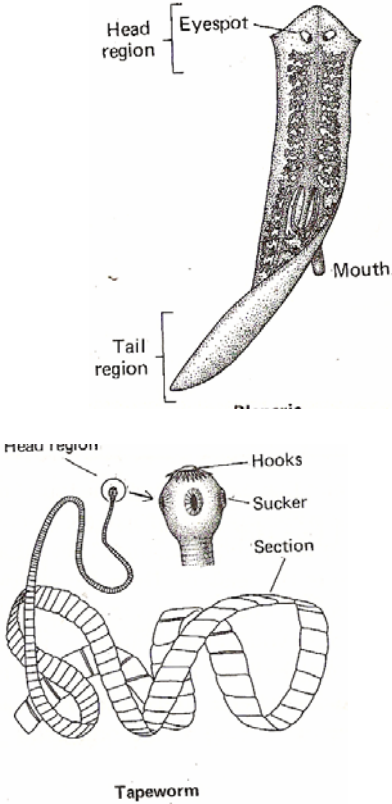
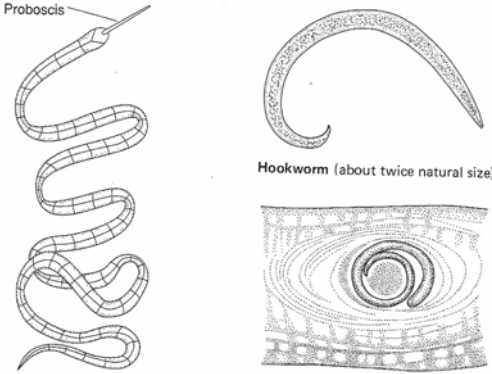
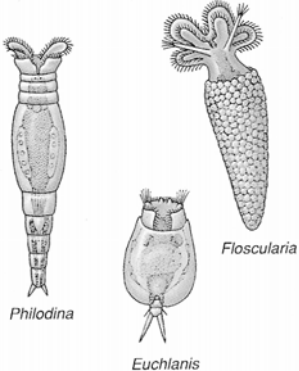
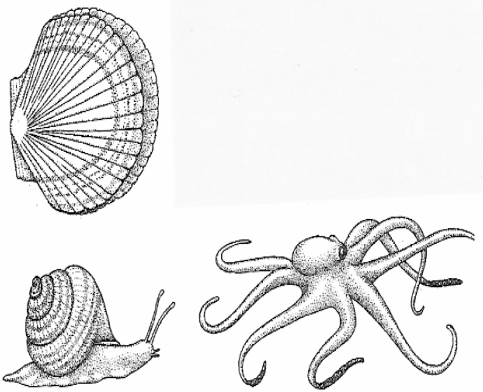
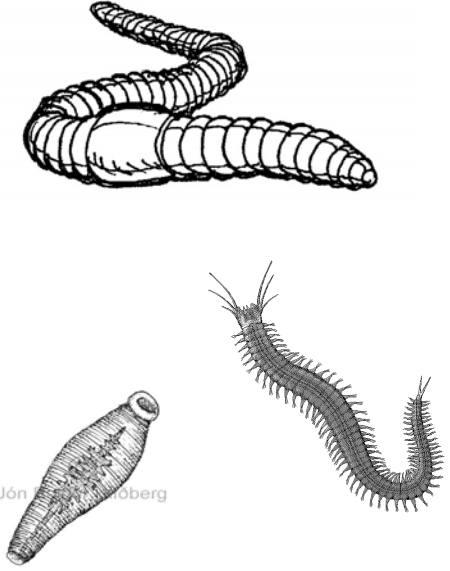


Kingdom Animalia

ANIMAL PHYLA & GENERAL CHARACTERISTICS

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Porifera</p>	<p>“Sponges” Filter feeders Flagellated cells → choanocytes.</p> <ul style="list-style-type: none"> • Water exits thru osculum. • pass the food to amoebocytes • b/w the two cell layers of the sponge wall, digest & distribute nutrients. <p>Spicules → skeletal needles made from either CaCO_3 or SiO_2 Cells not organized into tissues = parazoa</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Cnidaria</p>	<p>Hydrozoans, jellyfish, sea anemones, and corals. two body forms</p> <ul style="list-style-type: none"> • Medusa = a floating, umbrella-shaped body with dangling tentacles typical of jellyfish. • Polyp = a sessile, cylinder-shaped body with rising tentacles typical of sea anemones. <p>Cnidoblasts – stinging cells Alternating life forms Medusa ↔ Polyp</p>	

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Platyhelminthes</p>	<p>3 kinds of Acoelomate flatworms:</p> <p>Free-living flatworms (planarians)</p> <ul style="list-style-type: none"> • Carnivores or scavengers, live in marine or freshwater. • saclike gut <p>Flukes</p> <ul style="list-style-type: none"> • Internal or external animal parasites that suck tissue fluids or blood. <p>Tapeworms</p> <ul style="list-style-type: none"> • Internal parasites that often live in the digestive tract of vertebrates. • Proglottids - develop secondarily for reproduction and function (<i>not considered a true segmented animal</i>) • Do not have a digestive tract → absorb the predigested food around them. 	 <p>The top diagram shows a planarian flatworm with a head region containing an eyespot and a mouth at the tail end. The bottom diagram shows a tapeworm with a head region containing hooks and a sucker, and a section of its segmented body (proglottids).</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Nematoda</p>	<p>Roundworms.</p> <ul style="list-style-type: none"> • pseudocoelomate bodies with a complete digestive tract. <p>Free-living soil dwellers that help decompose and recycle nutrients.</p> <p>One species of roundworms, ingested from incompletely cooked meat, causes trichinosis in humans.</p>	 <p>The top left diagram shows a long, thin nematode with a proboscis at one end. The top right diagram shows a hookworm. The bottom diagram is a cross-section of a nematode showing its internal anatomy.</p>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Rotifera</p>	<ul style="list-style-type: none"> • Microscopic & multicellular • specialized organs enclosed in a pseudocoelom, • Complete digestive tract • Filter-feeders, drawing water and food into the mouth by the beating action of cilia. 	 <p>The diagram shows three rotifers: Philodina, Eucharis, and Floscularia. Philodina is a pear-shaped rotifer with a long tail. Eucharis is a pear-shaped rotifer with a large head. Floscularia is a pear-shaped rotifer with a long, feathery head.</p>

<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Mollusca</p>	<p>Snails, bivalves, octopuses, and squids. Coelomate bodies & complete digestive tract Most have shells <u>Bivalves</u> (clams and mussels)- shell that has two parts <u>Squids</u> - shell is reduced and internal, <u>Octopuses</u> - shell is absent entirely.</p> <p>Octopuses have a highly developed nervous system with a large and complex brain.</p>	
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Annelida</p>	<p>Segmented worms Leeches</p> <ul style="list-style-type: none"> • predators of small animals or blood-sucking parasites • two suckers at opposite ends of their bodies • used for attachment and movement <p>Polychaete</p> <ul style="list-style-type: none"> • mostly marine • variety of lifestyles, including tube building, crawling, burrowing, and swimming 	

Arthropoda

Spiders, insects, crustaceans

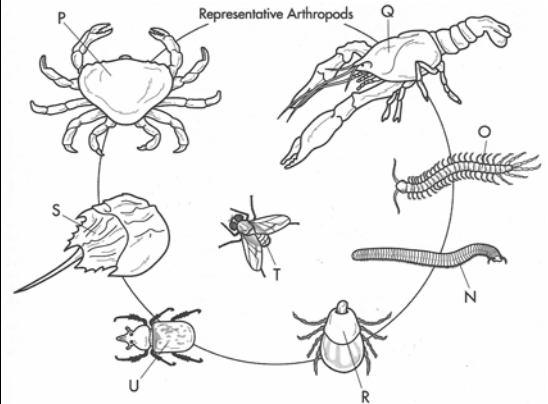
- jointed appendages
- well-developed nervous system
- specialization of body segments
- exoskeleton made of chitin

2 life cycles

- nymphs → small versions of the adults → adult size

Metamorphosis

- larvae → pupa (cocoon) → adults



Echinodermata

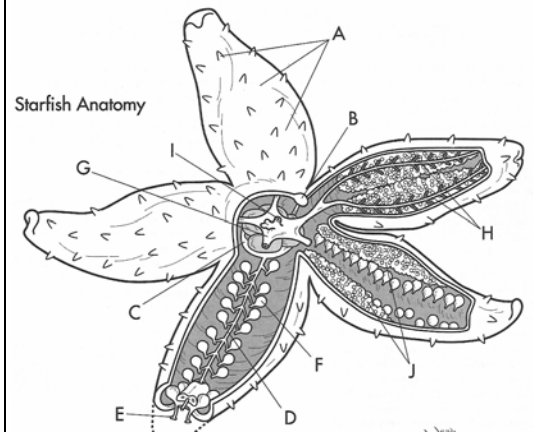
Sea stars, sea urchins, and sand dollars.

- coelomate deuterostomes
- complete digestive tract

larvae → bilateral symmetry

adults → radial symmetry, some features are bilateral

Ancestors believed to have been bilateral



Chordata

Temporary Features (embryonic)

- **notochord** provides a dorsal, flexible rod that functions as a support.

** the notochord is replaced by bone during development.*

- A **dorsal hollow nerve cord** forms the basis of the nervous system.

** the nerve cord becomes the brain and spinal cord.*

- **Pharyngeal gill slits** provide channels across the pharynx (a muscular structure at the beginning of the digestive tract) to the outside of the body.

** the slits become gills for oxygen exchange or filter feeding, while in others, the slits disappear during embryonic development.*

- A **muscular tail** extends beyond the digestive tract.

** the tail is lost during embryonic development.*

Invertebrate chordates, which include the lancelets and the tunicates

Vertebrate chordates, which include sharks, fish, amphibians, reptiles, birds, and mammals.

Vertebrate chordates are characterized by a series of bones, the **vertebrae** that enclose the spinal cord.

