Phylum Mollusca
Second Largest Animal Phylum
Slugs, snails, oysters, clam, scallops, octopus, and squid

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First group to have a true coelom

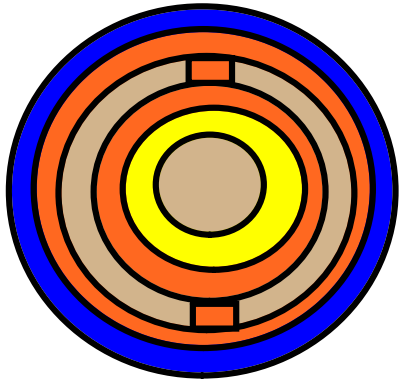
Trochophore- larval stage shared by mollusks and annelida

There are 7 classes of Mollusca

Key Characteristics

1. Body Cavity - a true coelom

although it can be small in some animals like only surrounding the heart



2. Symmetry- most have bilateral symmetry

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3. Three-part Body Plan

a. Visceral Mass- a central section that contains the mollusk's organs

b. Mantle- a layer of heavy fold tissue that forms the outer layer of the body

c. Foot - muscular region used for locomotion

4. Organ System- have organ systems for excretion, ~~circulation~~, respiration, digestion, and reproduction

5. Shell- an exoskeleton protecting the soft body

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6. Radula- all except bivalves have these, a rasping tongue like organ, has thousands of pointed back ground in rows the teeth scrape

Organ Systems

Only coelomates without segmented bodies, one-way digestive system

Excretion- use their coemlomates as a collecting place for body fluids

Beating cilia pulls the fluid into tiny tube structures (nephridia).

The Nephrida recover useful molecules and the rest leaves through a pore in the mantle

Circulation- three chambered heart and open circulatory system

Octopus and Squid have a closed circulatory system

Respiration-Most use gills, terrestrial snails have a primitive lung like membrane

Reproduction- Most have distinct males and females, some snails and slugs are hermaphrodites, some oysters and sea slugs can change from one sex to another and back again

Class Gastropods

- Snails and Slugs
- Size microscopic- 1 meter
- Some have shells some do not

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Many are herbivore that scrape with their radula

Some slugs are predator, some attack other mollusks by making a hole in the shell and suck out the tissue

Class Bivalves

Most are marine but some are freshwater

Oysters, mussels, and clams

All bivalves have a 2 part hinged shell

Abductor muscles- two thick muscles that connect the valves

Do not have a distinct head or radula

A small nerve ganglion like brain

Have sensory cells that respond to light and touch

Most reproduce by releasing sperm or egg into the water

Filter feeding animals

Siphons- hollow tube used for sucking in and out water

Oyster makes pearls- sand is covered by a thin sheet of nachre

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Class Cephalopods

Squids, cuttlefish, nautiludes

A large head with tentacles attached

The tentacles have either suction cups or hooks for seizing prey

The most intelligent of all invertebrates

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Complex nervous system and a well-developed brains

Capable exhibiting complex behavior

Octopuses can be trained to distinguished between classes of shapes like square and cross

Some species have color vision

The eyes of some giant squid can be 40 cm long.

Squid and octopuses can release a dark cloud to hide the direction of their escape

They are Predators