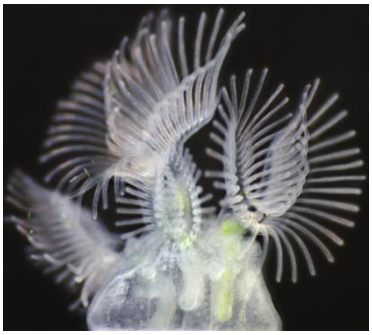
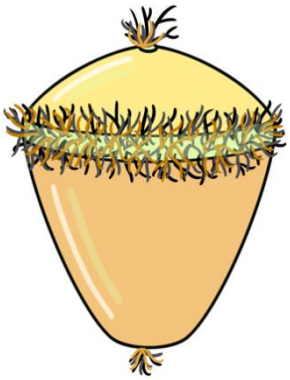
CONCEPT: LOPHOTROCHOZOANS

- ***Lophotrochozoans*** – bilateral, protostomes, many of which are coelomates with hydrostatic skeletons
    - □ Trochophores – larvae with a ring of cilia around its body, used for swimming and feeding
    - □ Alimentary canal – digestive tube with two openings, mouth and anus
- Lophophorates – animals with lophophore, specialized structure used for suspension feeding
    - □ Lophophore – ciliated tentacles surrounding the mouth
    - □ ***Ectoprocts*** – coral reef-building animals that look like moss, some have exoskeletons
    - □ ***Brachiopods*** – marine animals that look similar to bivalves

EXAMPLE:





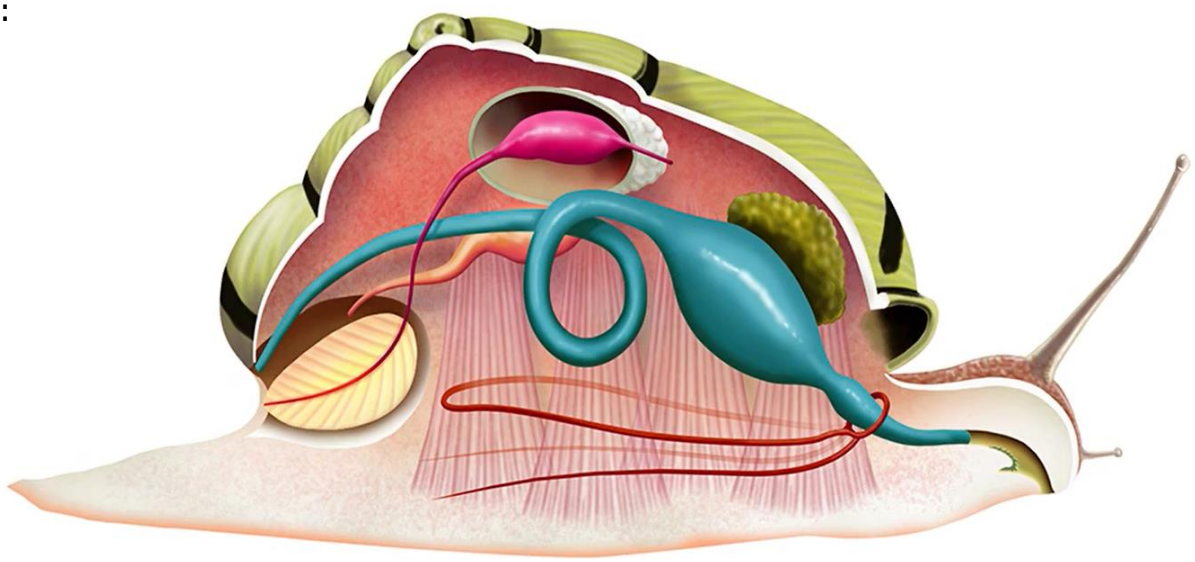
- ***Flatworms*** (***platyhelminthes***) – acoelomate triploblasts with rudimentary digestive systems, like planarians
    - □ Lack gas exchange organs, gas exchange and elimination of nitrogenous wastes occurs across body surface
    - □ Perform sexual and asexual reproduction, sometimes requiring hosts to reproduce
- ***Rotifers*** – bilaterally symmetric, microscopic, pseudocoelomate animals, named for the ring of cilia around their mouths
    - □ ***Parthenogenesis*** – asexual reproduction in which females produce unfertilized eggs that give rise to females

EXAMPLE:

CONCEPT: MOLLUSKS

- ***Mollusks*** – coelomates that have distinct body plan of three components:
    - □ ***Foot*** – large muscle usually used for movement
    - □ ***Visceral mass*** – internal organs and external gills
        - Hemocoel – body cavity in which fluids bathe organs directly (open circulatory system)
        - ***Radula*** – feeding structure in most mollusks at anterior end of visceral mass, functions like a rasp
    - □ ***Mantle*** – covering for the visceral mass, often forms harden calcium carbonate shell
        - Mantle cavity – present in some species, creates water-filled chamber containing gills and anus

EXAMPLE:



- ***Chitons*** – oval shaped organisms with shell composed of 8 dorsal plates
- ***Gastropods*** – slugs and snails, both marine and terrestrial, some have shells, others do not
    - □ Many species reproduce through sexual reproduction, some perform parthenogenesis

EXAMPLE:

CONCEPT: MOLLUSKS AND ANNELIDS

- ***Bivalves*** – all aquatic species, contain their body within 2 shells held together by powerful muscles
  - □ Lack a radula, most are suspension feeders, and trap food in their gills

EXAMPLE:

- ***Cephalopods*** – marine predators that have a foot that evolved into muscular tentacles and a siphon
  - □ Siphon – muscular tube that ejects water, allows for jet propulsion
  - □ Only mollusks that have closed circulatory systems, also have complex brains and sensory organs

EXAMPLE:

- ***Annelids*** – coelomates, most are segmented worms, live in aquatic environments, and damp soil
  - □ Polychaeta – segments contain parapodia that have chetae, bristles made of chitin that help the worm move
  - □ Clitellata – earthworms and leeches, hermaphrodites can reproduce sexually, some species reproduce asexually

EXAMPLE: