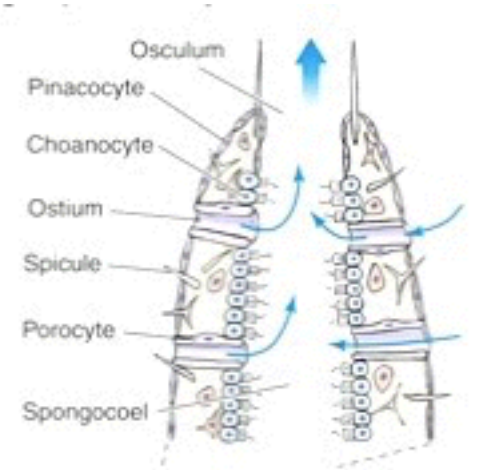
lecture 23 - revision

what is an animal
- heterotrophic multicellular eukaryote without cell walls
- specific tissue, sexual reproduction and usually develop via cleavage, blastula and gastrulation, leading directly to adult or indirectly via metamorphosis

classification
- kingdom phylum class order family genus species
- king phillip came over for good soup

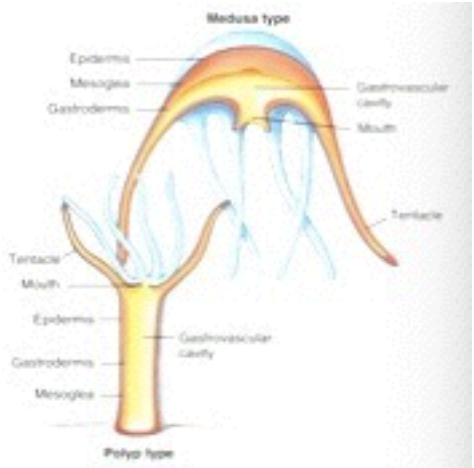
1. metazoan
- multicellular with differentiation of cells
- blastule stage in development
- porifera and parazoa



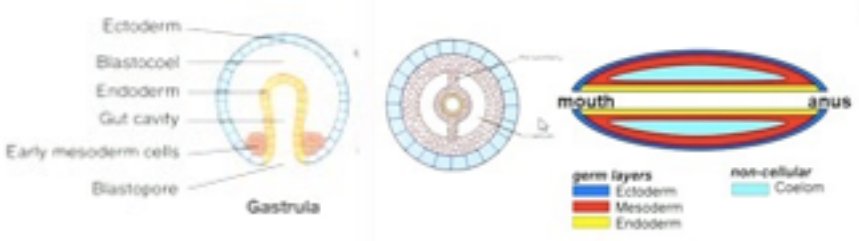
porifera
- cell aggregation - different cell types
- embedded in mesohyl - protein matrix
- some skeletal structure - spicules and spongin
- no gastrulation
  - no mouth or digestive cavity
- filter feeders - intracellular digestion

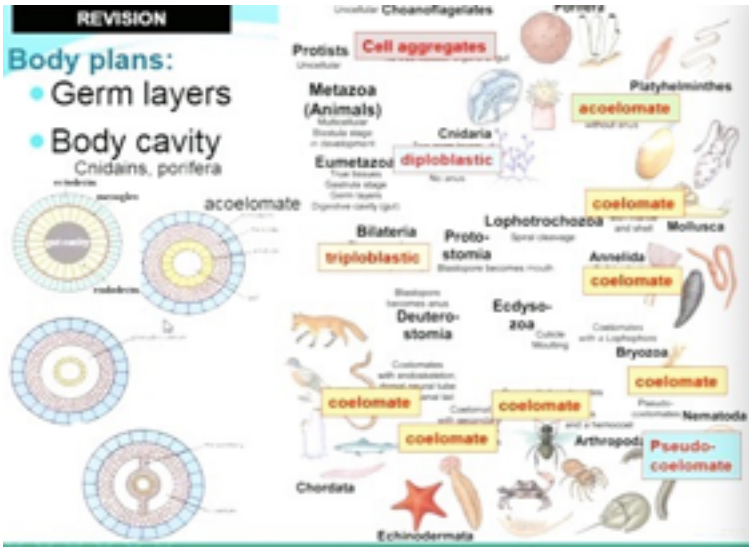
2. eumetazoans
- gastrula stage with two germ layers
- digestive cavity (gut)
- true tissues - tissue level

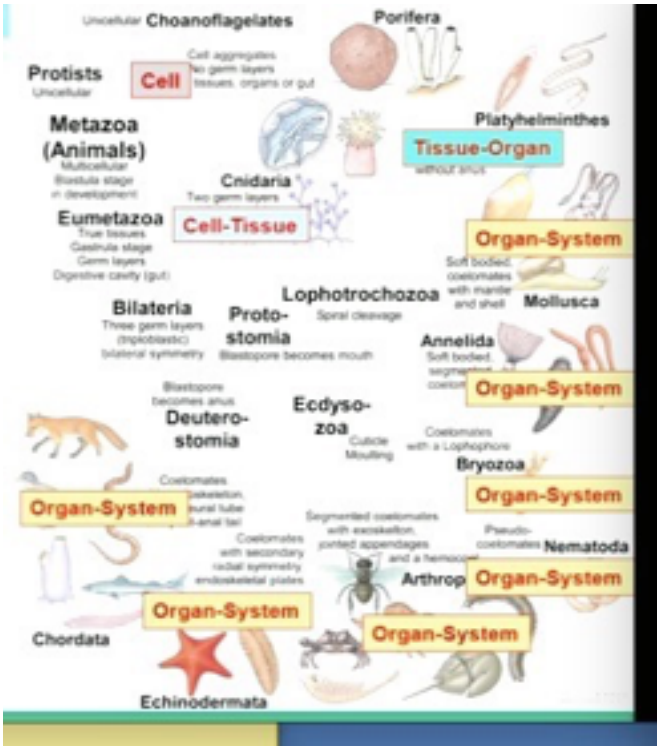
cnidarians
- diploblastic with simple tissues
- gastrulation
  - moth and gastrovascular cavity
- radially symmetrical
- move sing nerve net for sensing and muscle cells - undirected movement
- cnidocytes
- alternation of generations (polyp and medusa)



3. bilateria
- bilaterally symmetrical
- third germ layers (triploblastic)
- basic body plan = tube within a tube
  - two openings - mouth and anus
- coelom or no coelom?
- different body plans
  - acoeolomate
  - pseydomate
  - coelomate
    - schizo - coelom developed from pockets of mesoderm as part of blastocoel
    - entero - coelom developed from mesoderm further up inside developing embryo
  - coelom development happens during gastrulation





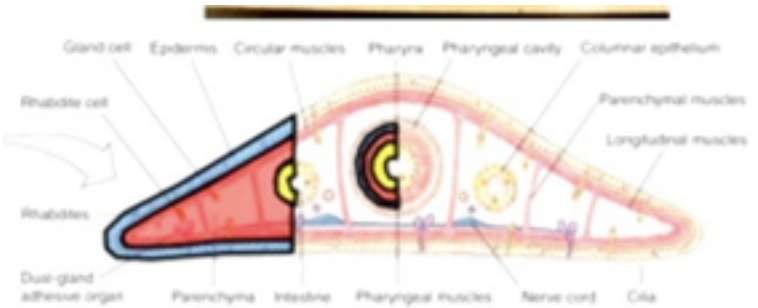


4. protostome/deuterostome

- original gut opening (blastopore) develops into mouth (protostome) or anus (deuterostome)
- cleavage, cell fate (protostome = determinate, deuterostome = indeterminate), mesoderm, coelom (proto = close to blastopore, deter = further inside), mouth/anus differences

5. protostome -> lophotrochozoans and ecdystozoans

- ecdysozoan - cuticle with moulting to grow
- lophotrochozoan - trochophore larvae and spiral cleavage



platyhelminthes

- lophotrochozoan
- tissue organ organismsation
- dorsoventrally flattened
- two major groups
  - free living
  - parasitic
- blind gut - branching stomach

mollusks

- lophotrochozoans
- bilateral triploblastic
- digestive cavity mouth and anus
- open circulatory system
  - open with haemocoel
  - closed in cephalopods
- mantle cavity
- shell ctenidia radula

annelids

- lophotrochozoan
- segmented
- developed coelom
- closed circulatory system
- each segment has repetition and every thing contained in each segment