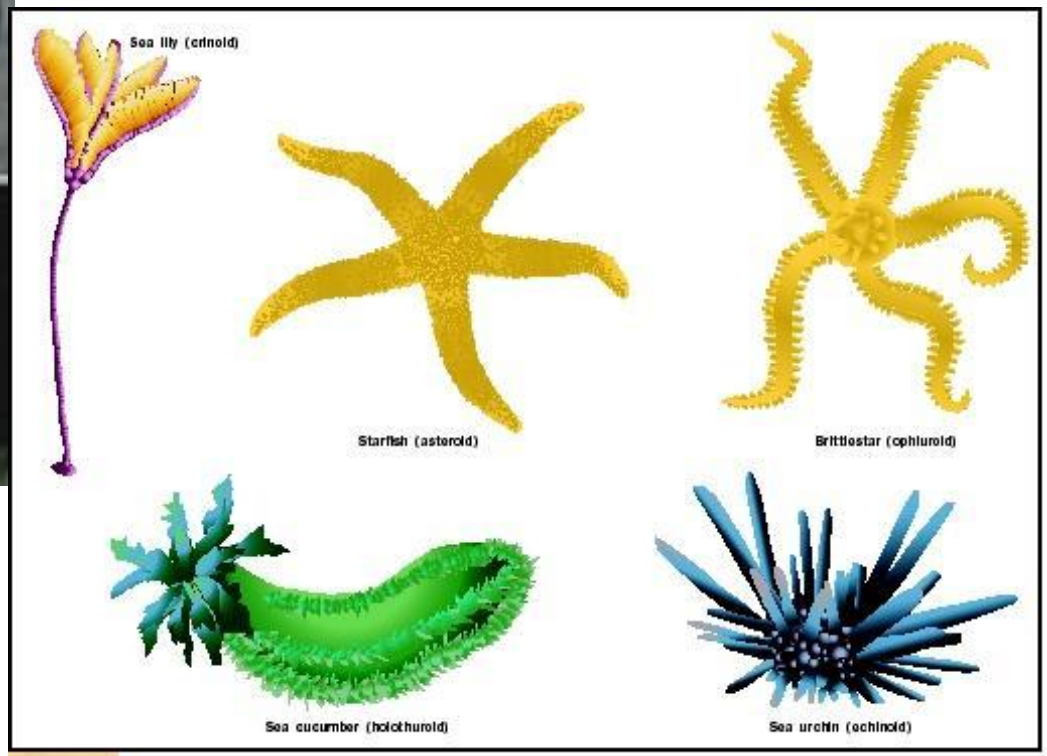
Phylum Echinodermata

Ex. Sea stars, sea cucumbers, feather stars, sea urchins, sand dollars



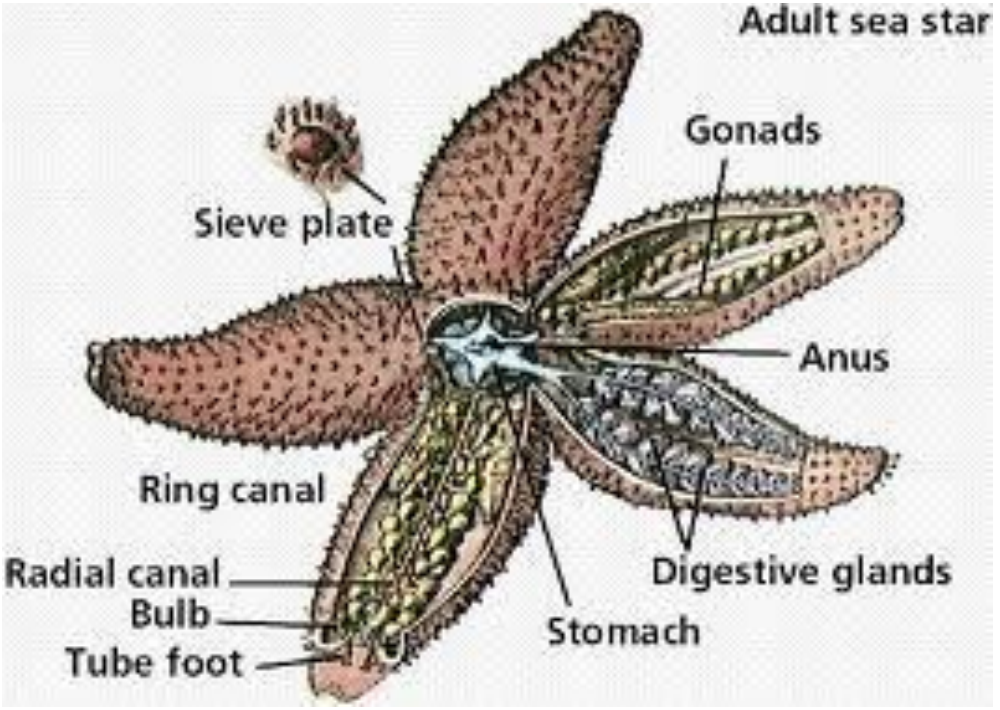
Characteristics Phylum Echinodermata:

- Body type: pentamerous radial (5 parts)
- Ecological roles:
  - Food source
  - Predator – control populations
  - Recycle nutrients
  - Chemicals-anticancer, antiviral
- Body organization:

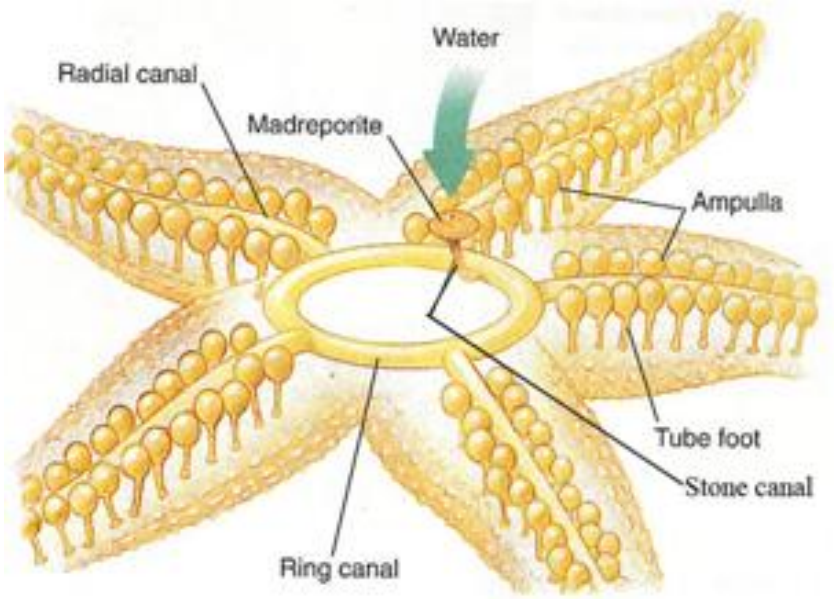
  3 layers: endoderm, mesoderm, ectoderm
- Body cavity: coelom

Characteristic continued:

- Digestive system:
  - **Complete** – mouth & anus
- Reproduction:
  - *Sexual:* - dioecious
  - *Asexual:* regeneration – if lost an arm or guts



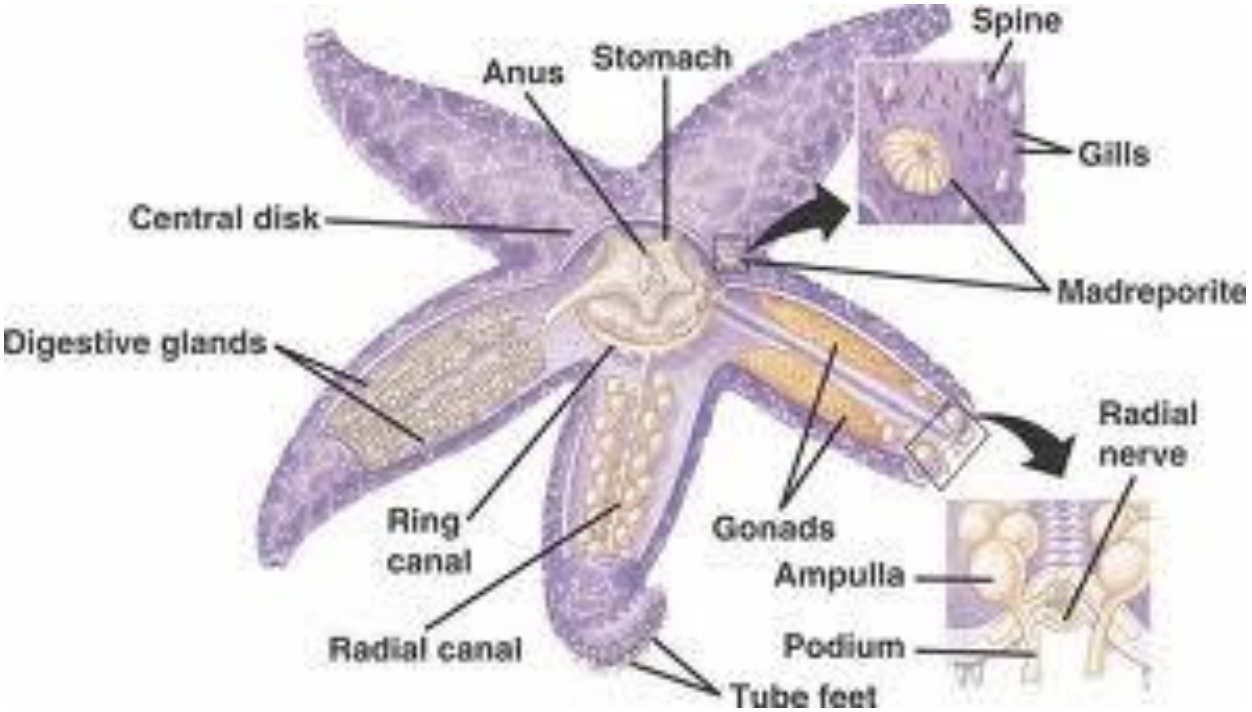
Characteristics continued:



- Circulation: **closed**
- Nervous system:
  - nerve cords
  - ***No*** brain
  - Tube feet sensory
- Respiration: tube feet & skin gills - diffusion
- Excretion: diffusion, tube feet
- Habitat: water - ocean

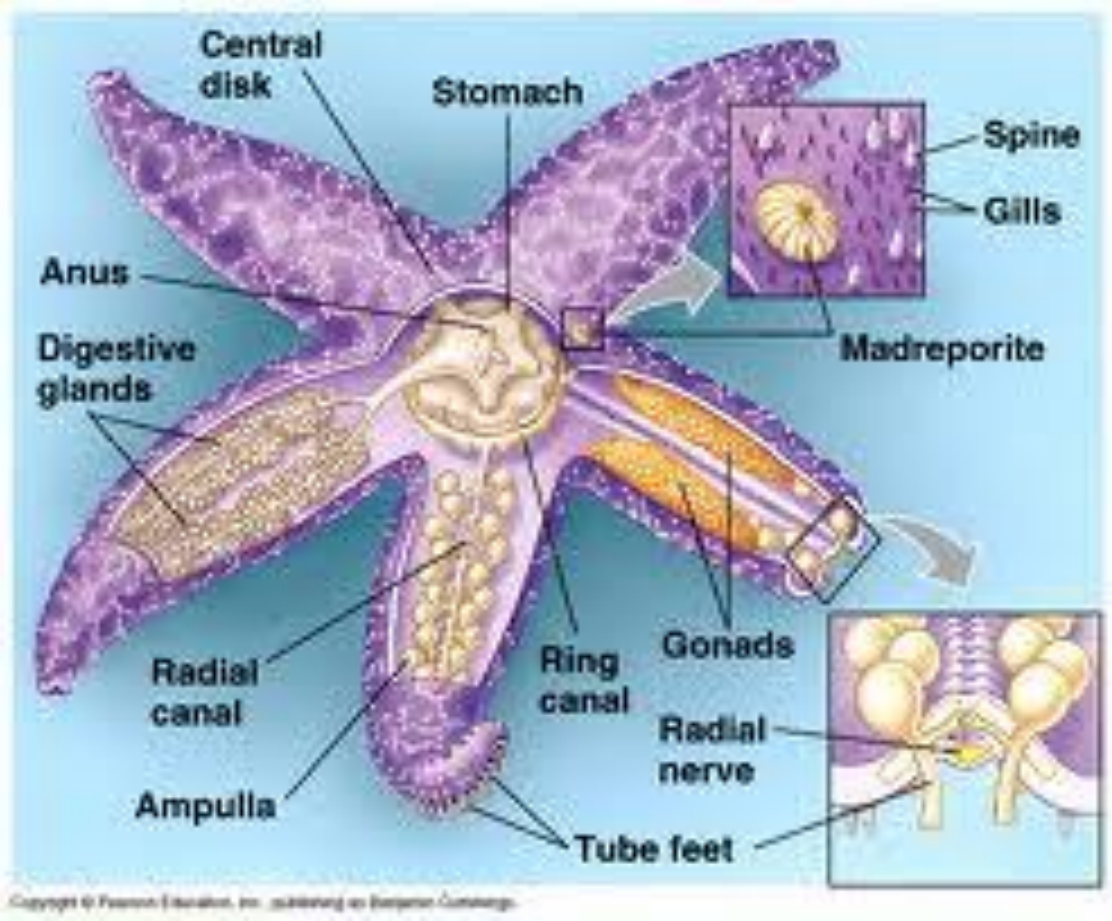
Characteristics continued:

- Has a ***water vascular system*** for movement, & structure (internal skeleton = endoskeleton)



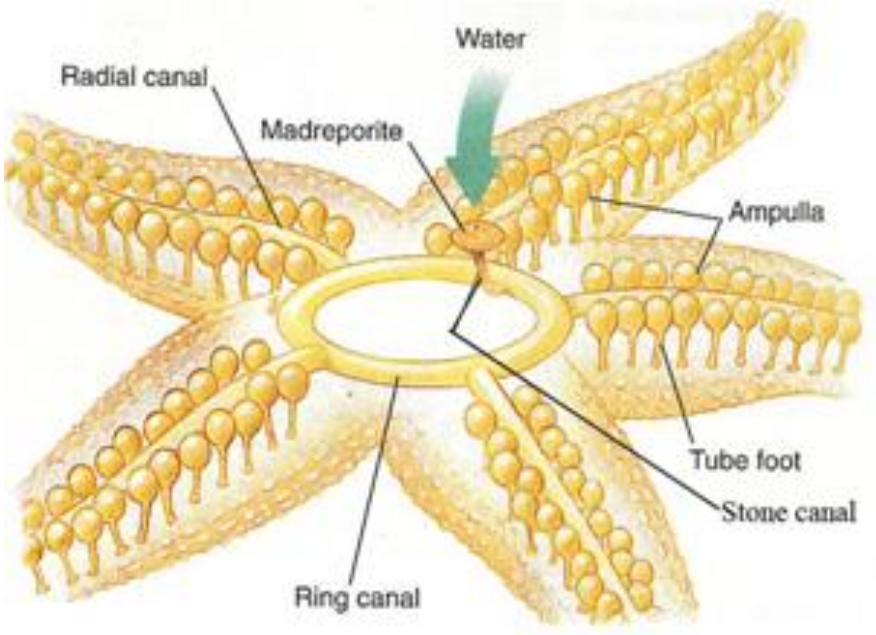
Water vascular system

- network of canals which sea water circulates through = hydrostatic skeleton
  - The water vascular system is unique to Echinoderms



WATER VASCULAR SYSTEM OF A SEA STAR:

- Madreporite/ sieve plate: water enters vascular system
- Ring canal: surrounds mouth & leads to radial canals
- Radial canals: 5 of them – one down each arm
- Ampulla: muscular sac that controls tube feet by forcing water into it.
- Tube feet: create suction to adhere to substrate
  - Movement, feeding ,excretion, respiration, sensory organ



Sea cucumber