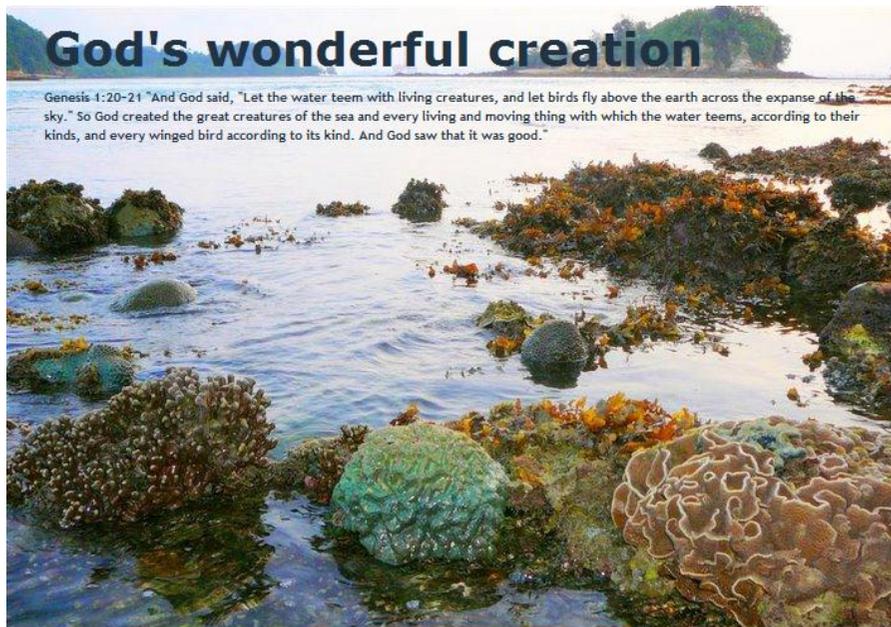


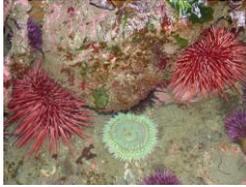
Phylum Echinodermata

Chapter 13 Part 3 of 3



Phylum: Echinodermata

- “Spiny Skinned” Animals
- Sea Stars, Sea Urchins, Sea Cucumbers & Sand Dollars



Phylum: Echinodermata

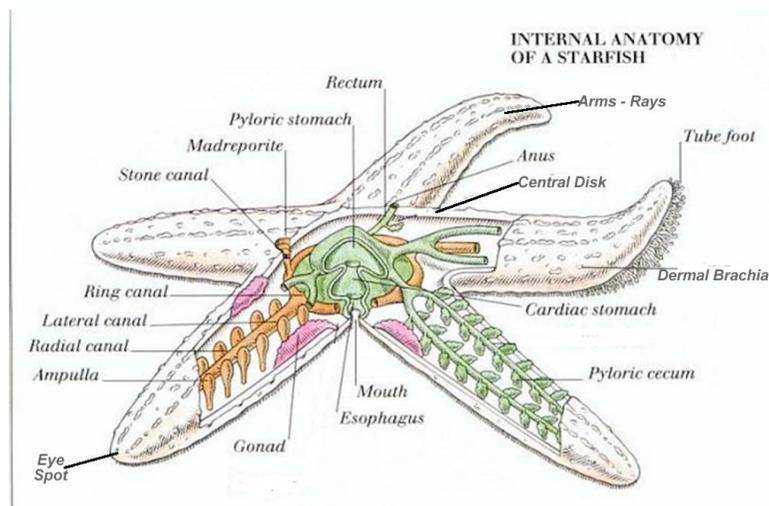
- Characteristics
 - Invertebrate- Aquatic – most are marine
 - Pentaradial Symmetrical –
 - usually in multiples of 5
 - Most with spiny hard **endoskeleton**
 - Internal Water Vascular System –
 - control the tube feet
 - Sessile – they crawl on the bottom
 - Ability to regenerate

Classification

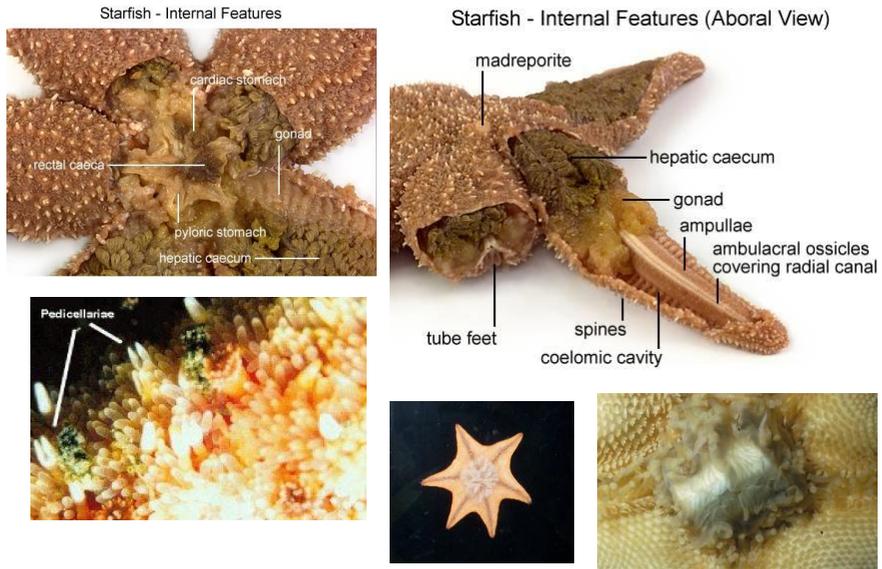
- Phylum Echinodermata is broken into several classes 3 of which we will learn as representative samples of the phylum:
 - Class **Asteroidea** – Starfish
 - Class **Echinoidea** – Sea Urchins & Sand Dollars
 - Class **Holothuroidea** – Sea Cucumbers



Starfish Anatomy

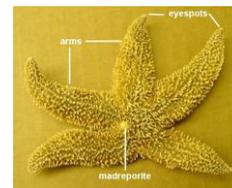
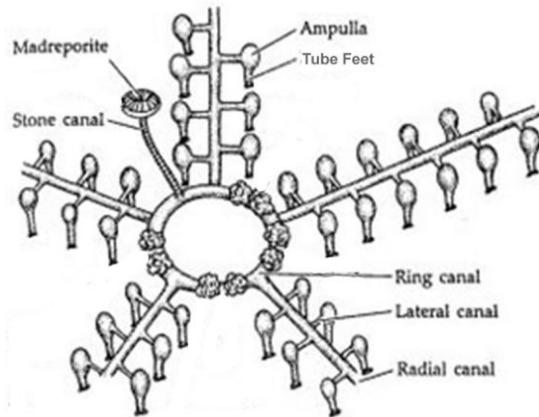


Starfish Anatomy

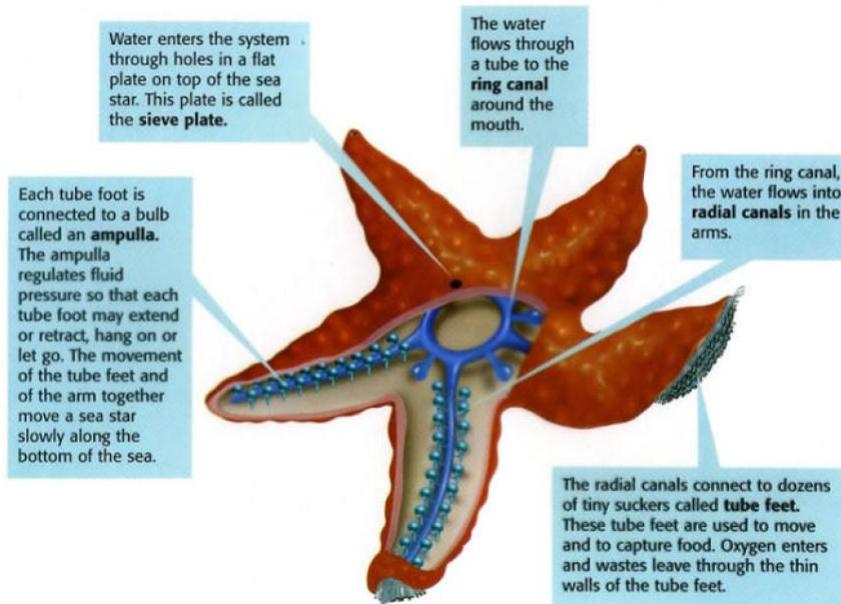


Water Vascular System

- Hundreds of tube feet are individually controlled by the Water Vascular System.
- **Need to know** the flow of water into & through the system:
- Madreporite → Stone canal → Ring Canal → Radial Canal → Lateral Canal → Ampullae → Tube Feet



Water Vascular System



I think that's it...
no more for now!!