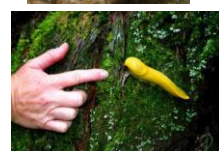
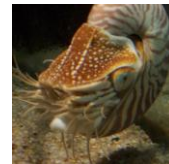


Phylum Mollusca

Chapter 13 Part 1 of 3

General Characteristics

- Unsegmented Soft bodied critters - Bilateral symmetry
- Shell formed by **mantle** secretions
- Body often protected by a valve (shell)
- **Dioecious** (Greek for “two households”) separate sexes
- Aquatic & Terrestrial life styles
- Complete digestive system
- Open Circulatory System (gastropods & Bivalves)
- Closed Circulation in cephalopods

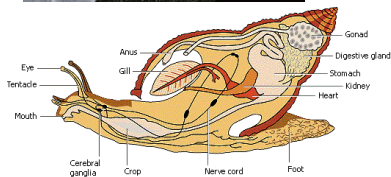


Classification

- Based on presence or absence of a shell (valve), the number of shells and by the type of foot present
- Class **Gastropoda** - "*stomach foot*" one valve: snails, slugs, abalone, nudibranchs.
- Class **Bivalvia** – "*two folding doors*" - clams, scallops, mussels, oysters
- Class **Cephalopoda** - "*Head-foot*" – squid, octopus, cuttlefish, nautilus

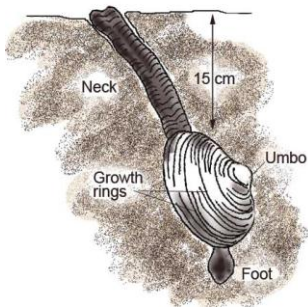
Class Gastropoda

- snails, slugs, abalone, nudibranchs.
- "*stomach foot*"– most have one valve, some w/out
- Feed w/ "cat-tongue-like" radula
- Movement by creeping on a single foot.
- Complete digestion, open circulation
- A tight fitting plate (**operculum**) attached to the foot that can be closed tight to protect the animal, a "trap door"



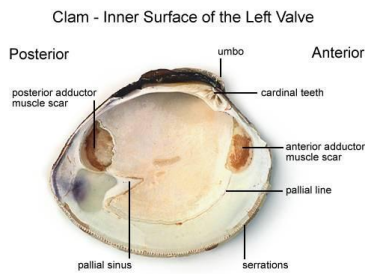
Class Bivalvia

- clams, scallops, mussels, oysters,
- **“two folding doors”** – 2 shells secreted by the mantle
- On some, edges of mantle w/ sensory tentacles & eye spots
- Muscular foot
- Most are filter feeders – no radula
- Complete digestion, open circulation
- We are dissecting clams....

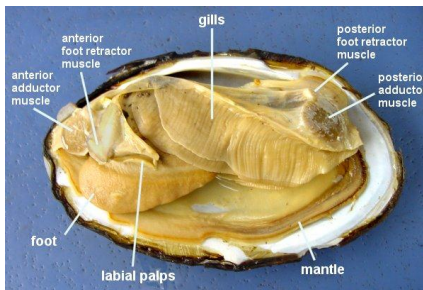
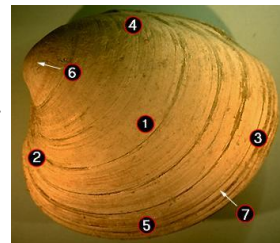


Oyster w/ pearl

Clam Dissected



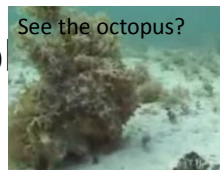
1. Valve
2. Anterior
3. Posterior
4. Dorsal
5. Ventral
6. Umbo



Class Cephalopoda

- Squid, octopus, cuttlefish, nautilus
- “**Head-foot**” – shell extremely modified or even absent
- Most intelligent of all invertebrates.
- Well developed vision (best of all invertebrates)
- All w/ arms & or tentacles
- All are Predators. All are marine
 - **Octopus** – no shell present – foot modified into 8 arms
 - **Squid** – we’ll be dissecting squid, shell modified into flexible internal “pen”
 - **Cuttlefish** – internal hard shell (used by parakeet owners)
 - **Nautilus** – external shell many tentacles

Cep



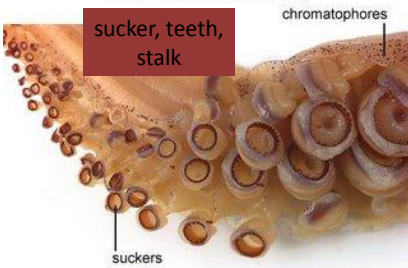
YouTube



Squid Dissection



Squid - Tentacle (Close Up)

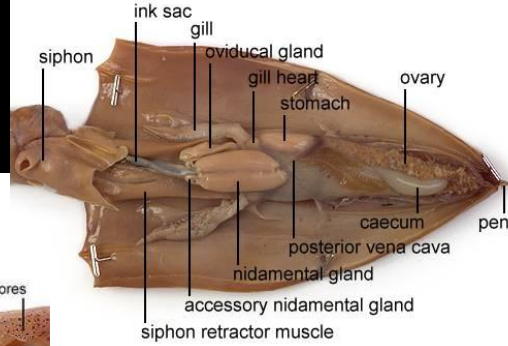


sucker, teeth, stalk

chromatophores

suckers

Squid - Internal Features (Female)



siphon

ink sac

gill

oviducal gland

gill heart

stomach

ovary

caecum

posterior vena cava

nidamental gland

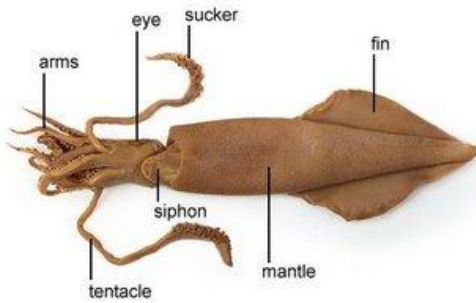
accessory nidamental gland

siphon retractor muscle

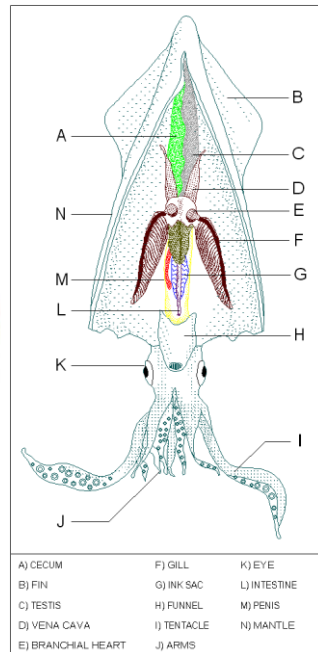
pen

Squid Dissection

Squid - External Features (Ventral View)



Try to identify:
Arms, Tentacle, Eye, Siphon, Fin and Sucker



A) CECUM	F) GILL	K) EYE
B) FIN	G) INK SAC	L) INTESTINE
C) TESTIS	H) FUNNEL	M) PENIS
D) VENA CAVA	I) TENTACLE	N) MANTLE
E) BRANCHIAL HEART	J) ARMS	

All Done w/ the Mollusks