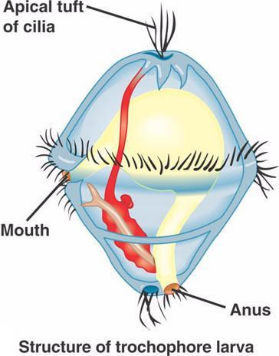
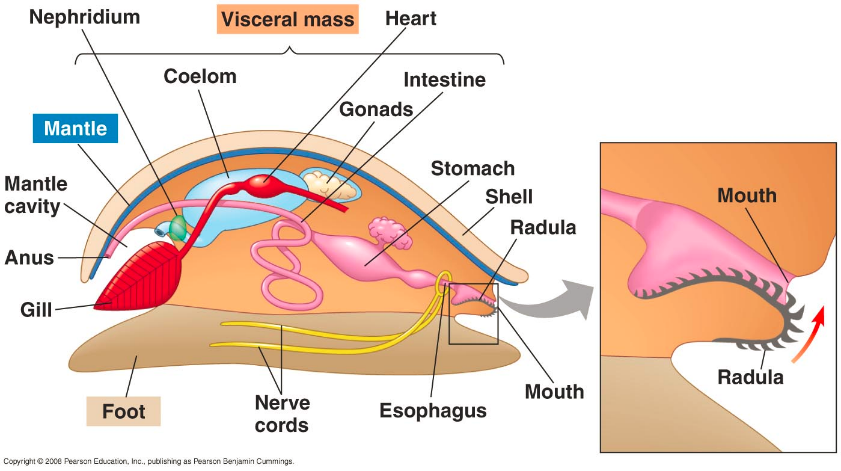
**Phylum Mollusca: The Soft Bodies** Name: Date:



**What is a Mollusk?**

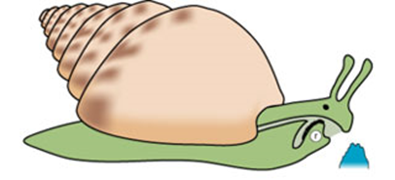
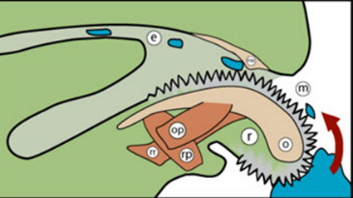
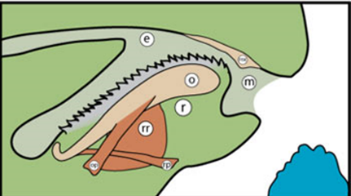
* Name comes from the Latin word ‘molluscus’ which means ‘soft’
* Mollusks typically have an internal or external shell
* Studies show that mollusks share common ancestor of annelids because of their \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Example animals include \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mollusks are the second largest phyla in the Animalia kingdom
* There are three defining characteristics
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Tissue layer called “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” covers the visceral mass

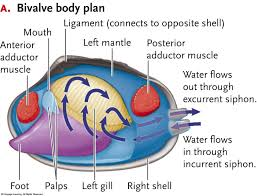
\*\*Many also have a shell although they are lost in some species

**Body Plan**

* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + This ‘foot’ can take many forms, including
    - flat structures for crawling
    - Spade-shaped for burrowing
    - Tentacles for capturing prey
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + A thin layer of tissue that covers most of the mollusks body
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Below the mantle which contains the internal organs
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Is made by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that secrete calcium carbonate
  + Ones that do not have a shell has simply been reduced or lost (ie. Slugs)

**Feeding**

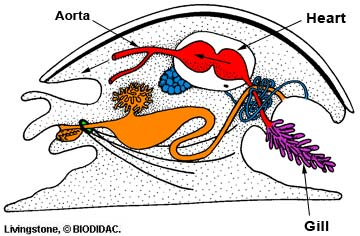
* Because mollusks are so diverse, they feed in a variety of different ways. Some are herbivores, carnivores, filter feeders, detrivores, or parasites
* Some mollusks, like snails and slugs, have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A radula is a tongue shaped structure with \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ attached
  + These radula are used to scrape algae off rocks, drill through shells and tear up and swallow prey’s soft tissue
* Octopi and sea slugs use their sharp jaws to eat prey. Some octopi produce poisons
* Clams, oysters, and scallops filter feed using the water around them
* In clams and other mollusks, water is filtered over the gills for respiration but also for feeding. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_structure allows food particles to get stuck on the mucus of the gills
* There are tiny cilia that then move the food into the mouth.

**Respiration**

* Aquatic mollusks such as snails, clams, and octopi typically \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ inside their mantle cavity
* Slugs on the other hand, use their mantle cavity that has a large surface area lined with blood vessels - must be kept moist for diffusion!

**Circulation**

* Oxygen and nutrients are delivered to all parts the body by a circulatory system
* Their system is either open or closed
* Open - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_through blood vessels into a large \_\_\_\_\_\_\_\_\_\_
* This sinus allows the diffusion of oxygen and carbon dioxide with the gills
* Open circulatory systems work well with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (snails and clams) because they don’t require a lot of oxygen
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ mollusks, like octopi and squid, require more oxygen quickly and therefore have a closed circulatory system



**Excretion**

* Cells of the body release nitrogen-containing waste into the blood to form ammonia
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ act like a kidney and remove ammonia from the blood and release it out of the body

**Response**

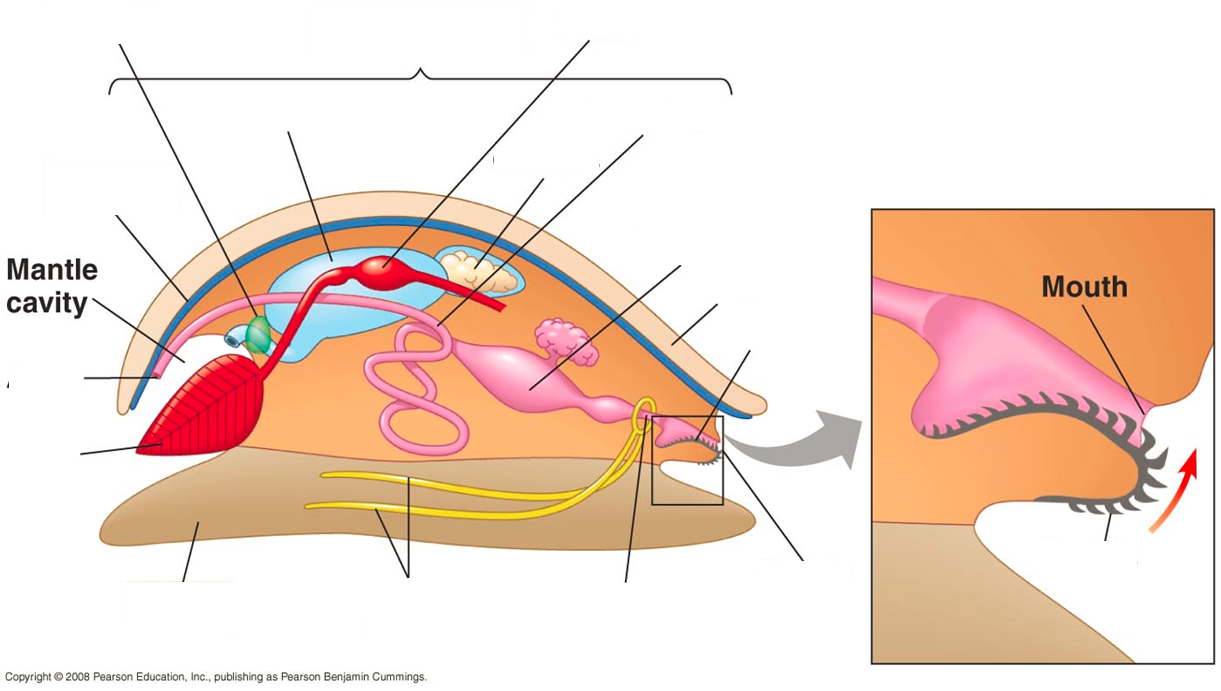
* The complexity varies in the phylum Mollusca
* Clams and other two-shelled mollusks have simple nervous system because they are fairly inactive burrowing in sand and mud
* They have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (chemical receptors & eyespots), few nerve cords and small ganglia
* In contrast, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for longer periods and can be more intelligent than some vertebrates
* ****Octopi can perform complex tasks like opening a jar

**Movement**

* Mucus secreted at the base of the foot for animals like snails
* Octopi use jet propulsion to draw water into their mantle and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Reproduction**

* Snails and two-shelled mollusks reproduce sexually by external fertilization
* Once fertilized, the egg becomes a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* In tentacle mollusks and certain snails, fertilization takes place inside of the female
* Some can be hermaphroditic

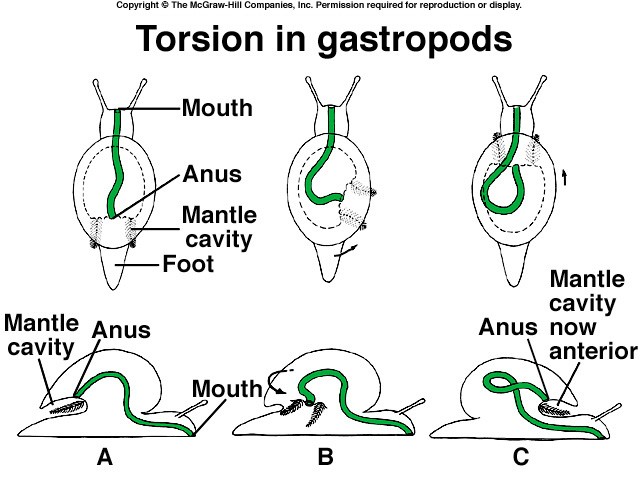


**Groups of Mollusks**

Class\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Gastropoda = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Largest class.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Live in fresh, salt water, and land
* Contains single spiral shell
* Well-developed senses
* ****Includes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ & nudibranchs

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ rotation of digestive system

Class \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* Contain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Use \_\_\_\_\_\_\_\_\_\_\_\_\_\_ for respiration & filter feeding
* Includes: \_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, scallops, mussels

Class\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* These are the most highly evolved invertebrates
* Have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Very \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - largest invertebrate
* Shell greatly reduced
* Includes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, cuttlefish and nautilus

