**Mollusca Answer Key**

**Question #1**: *Draw and describe the basic body plan of a mollusc. Be sure to note the three common features seen in all molluscs.*

**Answer #1**: The three common features seen in the molluscan body plan are:

1. A muscular foot. This foot functions in locomotion (helps them move around)
2. A visceral mass. This contains most of the internal organs
3. A mantle. This is a fold of tissue that drapes over the internal organs and produces the shell

There are many others features labeled in the image below. Important features to note are:

1. A complete digestive tract from mouth to anus.
2. The radula is a rasping organ that in snails grinds and scrapes algae off of surfaces.
3. ****The gill is in the mantle cavity. This mantle cavity is possible because the mantle extends beyond the visceral mass. This means the mantle will produce shell that extends beyond the main organs of the mollusc. This is beneficial because now the gills have a safe location that is protected by a shell.
4. Molluscs have a true coelom. For more information on coelom’s <http://www.gwu.edu/~darwin/BiSc151/Coelom/Coelom.html>
5. Molluscs have a circulatory system

**Question #2**: *Compare the shells of Gastropods, Bivalves, and Cephalopods. Use examples where possible*

**Answer #2**:

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| --- | --- | --- |
| **Gastropod Shells** (snails and slugs) | **Bivalve Shells**(oysters, clams, mussels, and scallops) | **Cephalopod Shells**(squid and octopus) |
| Most have a single spiral shell they can retreat into. This is true for terrestrial and marine snails.Slugs have lost their mantle and no longer produce a shell. | Characterized by a shell that is divided in two halves that hinge together.The shells can be used in locomotion. This was described in the skittering of a scallop across the ocean floor Most are sedentary suspension feeders that are protected by their shell | Chambered Nautilus is a representative of an old linage of cephalopods that still has a shell. This shell is external.Squid have a shell but it is internal. It looks like a bird beak.Octopuses do not have a shell at all. |

**Question #3**: *What new important body features are seen in the molluscs that were not seen in the previous animal phyla (sponges, cnidarians, flatworms, and nematodes)*

**Answer #3**:

* Molluscs have separate sexes with reproductive organs in the visceral mass
* Molluscs have a ciliated larva called a trochophore
* 1st time a true coelom is seen
* 1st time we see a heart and a circulatory system
* The cephalopods have a large brain and sophisticated sense organs