

Multiple Choice

1. D
2. A
3. A
4. C
5. B
6. C
7. D
8. B

True/False

1. Nephridia are used in excretion
2. Softbodied animals that typically have a shell are known as Bivalves
3. Segmented worms belong to phylum Annelida
4. Pearls and shells of mollusks are formed by secretions from the Mantle
5. True
6. Gastropods are characterized by a one-part shell and a broad muscular foot.
7. Bivalves can be sessile as adults (although not all are)
8. True

Word Relationships

1. Bivalve
2. Mantle
3. Nudibranchs
4. Statocysts

5. Closed circulatory system
6. Phylum annelida
7. Foot

Concept Mastery

1. Mollusks have different ways of feeding depending on their habitat. Bivalves are filter feeders so they grab food from the water that comes through their gills. Cephalopods are predatory, so they have a beak and tentacles for capturing prey. Gastropods have a 'radula' for scraping algae off of rocks.
2. Polychaetes are marine worms that have bristly appendages. They live in cracks and crevices in coral reefs. Some live in self-built tubes. Some are dull, and some are brightly colored. Oligochaetes are terrestrial and freshwater (although some may live in the ocean). They eat detritus and dirt, and expel 'castings' from the other end.
3. Clams are adapted for burrowing into mud and sand with their 'foot' which can act as a shovel to dig down. They also can extend their siphon above ground to allow for respiration/water exchange.
4. Mollusks fit into the world as a food source – many people eat shellfish. They are also environmental monitors – by studying the levels of toxins in them (since they are filter feeders), we can keep tabs on how polluted our waters are. The shells and pearls are also used decoratively.

5. Earthworms can be beneficial to a garden because they aerate the soil, allowing more oxygen to reach the roots. They also speed up the return of nitrogen and other nutrients to the soil.

Critical and Creative Thinking:

1. Hermaphrodites are unlikely to self-fertilize because the whole purpose of sexual reproduction is to mix up DNA so that there is more variation (allowing for better adaptation and defense against diseases etc.). If an animal self fertilizes, this is the same as asexual reproduction – the genetic make-up is exactly the same, and there is no variation.
2. The natural habitat of these oligochaetes would be areas with very low oxygen levels – deep in the ocean, or very deep in the soil.
3. The removed glands probably have something to do with hormone production – if the hormone level is high, then the Octopus will brood and stop eating, which causes it to pass away. However, without the glands, the hormone levels decrease, and the Octopus has no desire to brood, eating normally. To test this, compare hormone levels in the blood of brooding octopi and non-brooding octopi.