**Arthropod Peer Instruction Answer Key**

Question #1:

What were the four examples of animals that fall under the category of Chelicerates? Include the information given about each animal.

Answer #1:

**Four examples of animals under the category of Chelicerates**

1. Horseshoe Crabs
2. Scorpions
3. Spiders
4. Mites

**Info given about each of these four animals**

1. **Horseshoe Crabs**—Known as living fossils because they have been around for 300 million years! To put this in perspective, anatomically modern humans (humans that moved and looked like we do today) have only been around for less than 3 million years!
2. **Scorpions**—they are nocturnal hunters. They are one of the first animals to hunt on land (in terms of evolution)
3. **Spiders**—unlike scorpions, they are usually active during the day. They hunt and trap insects/other prey. The silk that they use to spin their webs comes from a specialized gland that is found on their abdomen.
4. **Mites**—these live in our homes. Because they are so tiny (microscopic), there are 1,000’s of them in a few square centimeters. Many people are allergic to them.

Question #2:

What is the difference between a millipede and a centipede and why might someone say that millipedes and centipedes look like annelids?

Answer #2:

**Millipedes**

* Terrestrial (live on land)
* Eat decaying plants
* They have 2 pairs of legs attached to each body segment.

**Centipedes**

* Terrestrial (live on land)
* Carnivores
* They have one pair of poison claws that they use in defense and paralysis
* 1 pair of long legs attached to each body segment.

Someone might say that millipedes and centipedes look like annelids because they are segmented and worm-like. From the outside (superficially) they look similar to earthworms which are annelids. Something that sets them apart from the annelids (superficially) are their jointed legs. Jointed legs are a defining feature of arthropods.

Question #3:

Arthropods are a very successful phylum of animals. What groups of arthropods are most successful in the water (specifically marine)? What were the 7 examples of animals given in this category?

Answer #3:

The Crustaceans are nearly all aquatic.

**Seven examples of crustaceans**

1. Lobster
2. Crayfish
3. Crab
4. Shrimp
5. Barnacles
6. Copepods
7. Krill

Question #4:

1) What are the three main features that make arthropods successful?

* Segmentation
* Hard Exoskeleton
* Jointed appendages

2) How many arthropods are there?

* We have identified 1 million BUT scientists predict that there are actually a billion billion arthropods out there that we have not yet identified!

3) What are the two benefits listed of an exoskeleton?

* It provides protection (it is thickest at the brain)
* Provides a point for the muscles to attach

4) What are the three fused groups of segments?

* Head (sensory, antennae, eyes, jointed mouth parts)
* Thorax (defensive pincers, 4 pairs of legs allows walking)
* Abdomen (has swimming appendages)