

Kingdom Animalia
Identification Lab

1) What "class" of mollusk is this? Explain. During development, what type of cleavage does a mollusk undergo?	
2) What is the polymer that makes up the exoskeleton of this creature? What other phylum uses this polymer to make up the cell wall?	
3) This organism may have evolved from other land-dwelling reptiles. What evidence of evolution would you look for? Briefly explain how natural selection acted to promote this design.	
4) What type of symmetry does this organism have? Why would this type of symmetry be found in more highly "intelligent" animals?	
5) What kind of symmetry does this organism display as a larva? As an adult? What evidence of bilateral symmetry does it still have in its current state? Why is this classified as an echinoderm?	
6) Explain how the coelom formed in this organism and the fate of the blastopore. Is this, therefore, a deuterostome or protostome?	
7) What phylum does this animal belong in? What form is this currently? What specialized cells are unique to this organism, which helps it feed?	
8) You are looking at the remains of a marine sponge. How would you classify its tissue complexity and symmetry? What skeletal system does it have? Explain how this organism might feed.	
9) Why is this creature classified as an arthropod? Is this a coelomate or acoelomate? How would the digestive system of this phylum compare to that of an acoelomate?	
10) A hydra is in the same phylum as a jellyfish. What would its nervous system be like? What "form" is this organism in?	

<p>11) If we were to remove one cell from the blastula during cleavage of this creature, what would happen? Explain the process of cleavage in the development of this organism.</p>	
<p>12) What type of circulatory system does this creature have? How is this type of circulatory system different from that of a mammal?</p>	
<p>13) Does this organism display "segmentation" and/or "cephalization"? Based on your answers, <u>infer</u> and <u>explain</u> what would happen if you cut out a group of cells from the adult organism and transplanted it somewhere else.</p>	
<p>14) Does this organism display "segmentation" and/or "cephalization"? Based on your answers, what would you notice if you took a biopsy of cells from one region and compared it to a group of cells taken from this animal in another region?</p>	
<p>15) Explain the respiratory system of this organism. How is it different from that of a mammal?</p>	
<p>17) How does this organism get oxygen for cellular respiration and release carbon dioxide waste? How is its nervous system different from that of a platyhelminthes (flatworm)?</p>	
<p>18) Explain the type of excretory system this organism has. What germ layer do you think their excretory system evolved from and why?</p>	
<p>19) This creature is often confused with annelids. How would you show that this creature is not an annelid by checking its external anatomy? Is this, therefore, classified as an ecdysozoan or a lophotrochozoan? List at least 2 ways in which annelids and arthropods are more similar than different.</p>	
<p>20) During the development of this organism, explain what the germ layers may have developed into. (Be phylum specific in your answer).</p>	

<p>21) What evolutionary features/adaptations allow this class to live farther away from water?</p>	
<p>22) Give an example of another organism that lives in a marine environment that is grouped in the same class. Why would they be classified together?</p>	
<p>23) If you didn't know this was an arthropod, what class would you think it might belong in? Why?</p>	
<p>24) Is this a deuterostome or protostome? Coelomate or acoelomate? What can you infer about their digestive tract based on this information?</p>	
<p>25) What class of fish would this be? (common name is okay). What is the advantage and disadvantage of this type of skeleton? In the evolution of other chordates, what feature led to the evolution of the vertebra?</p>	
<p>26) What two features classify this as a mollusk? If one cell was removed during cleavage, how would that effect the development of the organism? Explain coelom and blastopore development of mollusks.</p>	
<p>27) Explain how the germ layers are organized in this organism. Infer how this design explains the type of excretory system that it has. What type of nervous system does it have?</p>	
<p>28 – 32) Classify these five jars. Divide them up into subsequent groups</p>	<p><u>Parazoans</u></p> <pre> graph LR Eumatozoan --> Radial Eumatozoan --> Bilateral Bilateral --> Protostome Bilateral --> Deuterostome Protostome --> Lophotrochozoa Protostome --> Ecdysozoa </pre>

33 – 38) All of these are arthropods. Are they chordates or invertebrates? Which two evolutionary features of the chordate would not likely be found in these arthropods and why? Which two chordate evolutionary features are most likely to be found and why?