Station #1 - Porifera

1. Examine the specimens of sponges on the lab table. Which of these are true sponges? Explain your answers.

2. Sponges are said to have an internal special skeleton. Examine the specimen under the stereoscope and the prepared slide under the microscope to help explain the sponge skeleton. What are you observing? Be sure to explain your answer in detail.

3. Sponges lack a true digestive, circulatory, respiratory, and excretory system. How does this organism function without these important systems?

4. Why are sponges classified as animals?

Station #2 - Worms

1. Examine the specimens of worms on the lab table. Place each of these in the following main groups: Platyhelminthes (flatworms), Nematoda (round worms), or Annelida (segmented worms). Explain your answer.

2. Planarians possess a simple nervous system. Observe the prepared slide under the stereoscope of a planarian. Explain what is seen under the scope and how it can relate to the nervous system. Use all of the appropriate terms.
   - Compare this system to that of a cnidarian. (pg. 727)

3. Examine the prepared slide of pork worm larvae (*Trichinella spiralis* - roundworm) under microscope. Locate several larvae by looking for "spiral worms enclosed in a sac". All of the other tissue is muscle. Answer the following questions:
   - Describe the appearance of the pork worm larvae in your own words.
   - Why might it be difficult to find larva embedded in muscle when meat inspectors use visual checking methods in packing houses to screen for pork worm contamination?

4. Examine the earthworm under the stereoscope. Identify the tiny hairs located on the side of the worm. How are these beneficial to this worm? (pg. 748-749)

Station #9 - Cnidarians

1. Cnidarians display two basic body forms during their life. List, illustrate, explain, and provide an example of both.

2. Examine the following examples of organisms in this phylum. Specimen A on the lab table, Specimen B on the lab table and on page 724 (Figure 26.10), Specimen C under the microscope, and Specimen D on the lab table. For each specimen, explain their body form.

3. Several tentacles often surround the mouth of the cnidarians. Observe the function of these tentacles on the computer screen. Explain their function?
   - Explain how your observations from #2 support the fact that cnidarians have both a nervous and muscular system.

4. What is a nematocyst? Explain how these structures help with feeding?

Station #3 - Arthopoda

1. What type of skeleton is characteristic of arthropods? Examine Specimen A on the lab table. What process is being demonstrated? Why does this occur?

2. Examine the preserved crayfish. Answer the following questions:
   - Arthropods are typically divided into three main sections. Draw the crayfish and label these areas. (pg. 763 "Segementation in Arthropods")
   - Gently lift the edge of the body covering where the legs attach to the body. What are the feathery-like structures observed? What environment can this organism be found?
   - How might a crayfish obtain food?

3. Phylum Arthropoda is one of the most diverse phylums. There are several specimens located on the lab table to represent a few members of this group. After observing each, prepare a dichotomous key differentiating each specimen. (Recall the candy grouping activity. It might help to draw out a map separating each organism and then construct the key.)

Station #4 - Molluska

1. List the three major categories of this phylum. (pgs. 745-747 "Diversity of Mollusks") Examine the various specimens located on the lab table and place them in the appropriate category. List the major differences between each group.

2. This phylum is filled with a variety of organisms ranging from a squid to a slug. Explain the similarities that these organisms possess which make it possible for them to be placed in the same phylum. (pgs. 742-747)

3. This phylum has representatives that are both aquatic and terrestrial. Explain the adaptations that have allowed aquatic mollusks to move onto land.

4. Located on the table are several specimens of shells. Using the dichotomous key provided, identify the shells.

Station #5 - Echinodermata

1. List the three major categories of this phylum. (pgs. 791-792 "Diversity of Echinoderms") List the major differences between each group.
   - Examine the specimens located on the lab table and place them in the appropriate category.

2. Examine the specimen of a sea star. What type of symmetry does this organism possess? How is this advantageous for its survival?

3. Members of this phylum have a unique water vascular system. This system helps these organisms move, exchange gases, and capture food to name a few. One major structure that helps this system work or tube feet. Relating these structures to this system, explain how tube feet work. (pgs. 788-789 will help).

4. Examine the sea star with the broken ray. What will happen to this sea star? Explain.

Station #6 - Fish

1. Fish are covered with scales. Answer the following questions:
   - What is the function of scales? (pg. 821)
   - Examine the scale under the stereoscope. What do you observe? Explain your observations?

2. Observe the live specimens of fish located in the tank in the back of the room.
   - Illustrate the fish being sure to label the following structures: dorsal fin, caudal fin, pelvic fin, pectoral fin, lateral line system, and operculum. (pg. 820)
   - Examine their respiration rate by watching the operculum and mouth open and close. This movement of both of these structures makes oxygen consumption possible. Explain how fish breathe in detail. (pg. 818 "Fishes breathe using gills" and Diagram 30.2 and pg. 819)

3. Fish can be divided into three basic groups. What are the common names of these groups? (pg. 817)

4. Examine the specimen of fish on the table. Place each specimen in its appropriate group. Explain your answers.

Station #7 - Amphibians

1. What are the three main groups of amphibians? Differentiate between each group.
   - Examine the specimens on the table. Which group does each belong? Explain your answer. Be sure to look at specimens closely…..make sure that they all are amphibians.

2. In what type of habitat can these organisms be found? Explain why they are confined to these environments?
   - How is their body adapted to live and remain active in a water and land environment? (pg. 830)

3. An adult frog and its larval stage are adapted to different habitats. How are the structures of a frog and a tadpole adapted to their environment? Follow the directions below to answer this question:
   - Using the data table below, observe the first seven traits listed and fill in the appropriate information (pg. 829)

Trait of information	Tadpole	Frog
Limbs present?		
Eyes present?		
Tympanic membrane present?		
Tail present?		
Mouth present?		
Nature of skin (color and texture)		
General size		
Respiratory organ type		
Diet		
Habitat		

4. What is metamorphosis?

Station #8 - Reptiles

1. What are the three main groups of reptiles? Differentiate between each group.

2. Examine specimen A. Answer the following questions:
   - Within each group doe these organisms belong?
   - Reptiles have a variety of sense organs that help them detect danger or potential prey. These include heat-sensitive pits and a specialized tongue that works with the Jacobson's organ. Explain how each structure works and observe these on specimen A. (pg. 845)
   - Examine the snake skin on the table. Compare this skin to that found on amphibians. Explain in detail the differences.

3. Examine specimens B. Answer the following questions:
   - Within which group does this organism belong?
   - Often times during the day, these organisms can be found streched out on rocks basking in the sun. Explain why this is done using the appropriate terminology. (pg. 843 "Reptiles are ecotherms")
   - Examine specimen C and D (found in the corner by the fish tank). What are the correct terms for the two shells? What is the function of these structures? Why is the shell not considered to be an exoskeleton? (pg. 846)

Station #9 - Reptiles

1. On the table are seven pictures of birds with different beaks. Examine the beak in each picture to decide the birds diet.

2. Birds have two kinds of feathers. Contour feathers are used for flight and are found on a birds body, wings, and tail. Down feathers lie under the contour feathers and insulate the body. Follow the directions below in examining both of these feathers. (pg. 853)
   - Examine the contour feather under the stereoscope. Make a sketch of how the feather filaments are hooked together.
   - Using your fingers, rub the feather in the opposite direction. (Against the natural flow of the feather). Examine the feather under the stereoscope. Differentiate this feather with the one observed above. What is the difference?
   - Examine the down feather under the dissecting scope. Draw a diagram of the filaments of the down feather.
   - Examine the prepared slides of both feathers under the microscope. Microscope A contains the contour feathers and Microscope B contains the down feathers.
     - Explain the difference observed between each feather.
     - How does the structure of a contour feather help a bird fly?
     - How does the structure of a down feather keep a bird warm?
3. Birds have the ability to fly. Explain how bone structure facilitates the ability to fly? (pg. 855)

Station #11 - Mammals

1. What are five characteristics that set mammals apart from the other vertebrates? Explain each briefly. (pgs. 867-871)

2. Dolphins live underwater. Bats can fly. What characteristics do these organisms possess that label them a mammal when their placement within fish and birds seem more appropriate?

3. One characteristic unique to mammals is that they have different types of teeth. List the different types of teeth an their role. (pg. 869)

4. In examining the different types of teeth on a skull, the organism can be classified as a *herbivore*, a *carnivore*, or an *omnivore*. What is the difference between the italicized words?

5. Examine the various skulls on the table. In observing the type of teeth present and other obvious features, identify the skull as a herbivore, carnivore, or omnivore. What mammal do you think the skulls are representing?