



Continue

### Crayfish dissection lab sheet

5, 6, 7, 8, 9, 10, 11, 12, Higher Education, Adult Education, HomeschoolPage 2 Cancer Dissection Code: • Describe the appearance of various organs found in cancers. • Name the organs that make up cancer systems. Materials: • safety glasses, gloves, magnifying glass, laboratory apron, plastic zipper bag with zipper preserved crayfish, pen, cutting tray, paper towels, scissors, forceps, needle for cutting and cutting glass. Goal: In this lab you will observe the external structures of crayfish and dissect into it to examine its internal structures and systems. Background: Like all crustaceans, cancer has a fairly hard exoskeleton that covers its body. As shown in the diagram on the next page, his body is divided into two main parts, cephalothorax and abdomen. Cephalothorax consists of a cephalic (or head) region and chest area. The part of the exoskeleton that includes cephalothorax is called carapack. The abdomen is located behind the cephalothorax and consists of six clearly divided segments. Cephalothorax consists of 13 segments. Each segment of both the cephalothorax and the abdomen contains a pair of appendages. The head area (or cephalic) has five pairs of appendages. Antennules are organs of balance, touch and taste. Long antennae are organs for touch, taste and smell. Mandibles or jaws crush food, passing from side to side. Two pairs of jaws hold constant food, to break it and pass it into the mouth. The second pair of jaws also helps to draw water through the gills. Of the eight pairs of appendages on cephalothorax, the first three are maxillipeds, which store food while eating. Chelipeds are large claws that crayfish uses to defend and capture prey. Each of the four remaining segments contains a pair of walking legs. In the abdomen, the first five segments have a pair of floats that form water currents and functions in reproduction. The sixth segment contains a modified pair of uropods. In the middle of the uropods there is a structure called telson, which bears the city. Uropod and telson together form a tail fan. The cancer moves backwards, forcing the water forward with a tail fan. Procedure Part 1: External anatomy of crayfish 1. Wear safety glasses, gloves and a lab coat. 2. Place the cancer on the side in the dissection tray. Use the following scheme to locate the cephalothorax and abdomen. Carapack, the shield of chitin, covers the dorsal surface of cephalothorax. On the carapack should be observed indents, the groove of the cervix, which extends to the middle region and separates the areas of the head and chest. In the chest area, locate the prominent seams or indentations on the cephalothorax, which defines the central area separated from the sides. Pay attention to the individual segments of the abdomen. What is the main difference between cephalothorax and belly? 3. Turn the crayfish side dorsal up and find the rostrum, which is a pointed extension of the carapack at the head of the animal shown in the diagram above. Under rostrum locate two eyes. Note that each eye is at the end of the stem. 4. Locate five pairs of appendages around your head. First locate the antennae in the next front segment. Follow them to observe a much longer pair of antennae. Why see a specimen on the dorsal side for this part of the study? \_\_\_\_\_ 5. Locate the mouth. Then observe the mandibles, or real jaws, behind the antennae. How find the two pairs of jaws, which are the last appendages in the cephalic region. What appendages in the cephalic region are associated with eating food? \_\_\_\_\_ 6. On the chest part of the cephalothorax, observe three pointed maxillipeds. How are maxillipeds related to food? \_\_\_\_\_ 7. Then observe the largest outstanding pair of appendages, chelipeds, or claws. Behind the chelipeds locate four pairs of walking legs, one pair on each segment. 8. Now use your walking legs to determine the sex of the specimen. Find the base segment of each pair of walking legs. The base segment is the place where the leg attaches to the body. Use a magnifying glass to examine the inner surface of the base segment of the third pair of walking legs. If you notice a crescent-shaped slit, you find the pores of the female genitalia. In a man, the holes of the sperm channel are located on the base segment of the fourth pair of walking legs. Use a magnifying glass to observe the opening of genital pores. Is your specimen male or female? \_\_\_\_\_ 9. On the abdomen, observe six different segments. On each of the first five segments observe a pair of floats. 10. On the last segment of the abdomen, observe a pair of pointed appendages modified in a pair of uropods. In the middle of the uropods, locate the triangular telson. 11. Now turn the ventral region of crayfish upwards. Observe the location of each pair of appendages from the abdominal side. From which view, dorsal or ventral, can you see the location of appendages on segments more clearly? \_\_\_\_\_ 12. Remove all common appendages of crayfish and attach them to the table on a sheet of crayfish. If the dissection lasts two days, follow only steps 13 and 14. 13. Now, you will study the internal anatomy of the crayfish. If you need to store the sample for the next laboratory period, cover it with a moistened paper towel. Then place the preparation on a tray in a plastic bag. Close with a ziplock tie. Write your on a pen bag with a felt tip and pass your specimen on to the teacher. 14. Clean the workplace and wash your hands before leaving the lab. Part 2 — Internal anatomy of crayfish 15. Wear a lab coat, gloves and safety goggles. 16. Using one hand to hold the dorsal side of the crayfish in the cutting tray, use scissors to carefully cut the back of the carapack along the cut line of section 1, as shown in the diagram below. Cut along the depth that separate part of the chest of the carapack into three regions. Start cutting on the back edges of the carapack and stretch on both sides in the cephalic region. 17. Use forceps to carefully pick up the carapack. Be careful not to pull the carapack too fast. Such an action would disrupt or break the underlying structure. 18. Place the specimen on the side, with the head facing to the left, as shown in the figure below. Using scissors start cutting at the base of the cutting line 1. Cut along the side of the crayfish, as shown on the cut line 2. Extend the cutting line forward towards the rostrum (at the top of the head). 19. Use forceps to carefully lift the remaining parts of the carapack, exposing the underlying gills and other organs. 20. Use the following scheme to locate and identify the organs of the digestive system. Locate the jaws that pass pieces of food into the mouth. Food moves down the short esophagus to the stomach. Locate the digestive glands, which produce digestive substances and from which the absorption of nutrients occurs. Undigested material passes into the intestine. It should be noted that the intestine is attached to the lobe. Undigested material is eliminated from the city. Rows of chitin teeth line the stomach. Predict their function. \_\_\_\_\_ 21. Use the following diagram to locate and identify the respiratory organs. Locate gills that are feathery structures found under the carapack and attached to chelipeds and walking legs. Constant blood flow to gills releases carbon dioxide and takes oxygen. The feathery nature of gills gives them a very large surface area. Why is this important? \_\_\_\_\_ 22. Use the internal anatomy scheme of crayfish to locate and identify cardiovascular organs. Locate the dorsal tubular heart and several arteries. Cancer has an open circulatory system in which blood flows from arteries into the sinuses, or space, into tissues. Blood flows through the gills before returning to the heart. 23. Use the same diagram to locate and identify the organs of the nervous system. Find the additional nerve gastroenteral tract. Locate the gangly, one of the enlarged ventral nerve ducts. Locate the dorsal brain, which is located just behind the complex eyes. Pay attention to the two large nerves that lead from the brain, around the esophagus, and join nerve duct. Many nerves go away from each scroll. Where do you think these nerves are going? \_\_\_\_\_ 24. Use the same diagram to locate and identify the organs of the excretion system. Blood carries cellular waste to discs like green glands. Locate these organs right in front of the stomach. Green glands excrete waste through the pores at the base of each antennae. What organs in the body perform the same function as green glands? \_\_\_\_\_ 25. Again, use the diagram to locate and identify the organs of the reproductive system. The animal shown in the diagram is male cancer. If the sample is male, locate the testicles. The testicles are a long white organ under the heart and slightly forward. The sperm channels that carry sperm from the testicles is opened in the 6th leg walking. If the sample is female, the biphore ovary should be located. It is in the same relative position as the testicles, but the ovary appears as a large, reddish mass under the heart. Then locate the short wrappers that extend from the center of each side of the ovary and open on the third stage of the walk. Replace your specimen with a nearby classmate who has crayfish of the opposite sex. Then examine its reproductive system. 26. Dispose of your materials according to the teacher's instructions. 26. Clean the workplace and wash your hands before leaving the lab. Crayfish Crayfish Sheet Supplement Table BACK