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Net frog dissection worksheet answers

No text content! ALTERNATE FROG DISSECTION WORKSHEETNAME _____ PERIOD _____ QUESTION: WHY ARE YOU CHOOSING TO DO THE ALTERNATIVE FROGDISSECTION? Part 1 Go to: are many videos, just click on the thumbnails and wait for the video to start. There are no sounds on most, so pay attention. Answer the questions below.1. LIFE CYCLE OF FROG A. Describe the mating process b. How to fertilise the eggs (internally or externally, on land/in water, connected/alone, etc.) c. Describe the appearance of the tadpole. How do they move? d. Why do you think it is necessary to lay so many eggs? E. Why do you think the hind legs are so much larger than the front legs?2. FEEDING BEHAVIORAF THE FROG/ TOAD a. What do frogs and toads eat? (Be sure to look all the way down the page.) B. Where is the tongue attached? What is its purpose in collecting food? c. What do tadpoles eat? d. Describe how frogs or toads move to catch their prey. SEED VIDEOS SPREADSHEET P. 23. SEEDS AND TOAD MOVEMENT A. Describe how frogs crawl. B. Describe how frogs jump. c. Describe how frogs swim. d. What other movements does a frog or a tadpole?4. FROG AND TOAD SOUNDS a. When (time of year and time of day) and why frogs have mating calls? B. How does the frog's body change when it makes the sound? c. Draw what the frog looks like when it makes the call:5. PAIRING a. How are the frogs placed during mating? What is the name of this behaviour? B. How does the male hold onto the female during the deposition of his sperm? c. Do you think that fertilisation is internal or external? What makes you think that? d. What are some of the unusual mating behaviors shown here?6. CAMOUFLAGE a. The names the frog/toad and how it is camouflage works. SEED VIDEOS SPREADSHEET P. 27. CLUSTERING AND OTHER INTERACTIONS A. Why should frogs/toads cluster in groups? B. What are the clusterings?8. TOE PADS FOR CLIMBING A. What special structures are on their feet? What is the purpose? B. What type of animal eats frogs?9. MISCELLANEOUS SEED AND TOAD OBSERVATIONS a. List three facts about frogs that you haven't listed yet. PART 2 GO TO NET FROG dissection: at least 10 things you learned about dissection or frog anatomy: Goals: Students who cannot perform the actual frog dissection can use this alternative to learn the parts of the frog and receive credit for dissection. Remember, there is no substitute for actually seeing the real structures on the frog and having the real experience of dissection. Many students will remember the frog dissection long after they have left school. However, it is understood that some students opt out for moral reasons, or some may not complete dissection due to Causes. This project consists of three parts, parts, performed by the student on their own time using a computer and an Internet connection. Artifacts you must turn to Full Credit Part 1 - Essay Questions Part 2 - Lab Guides (3) Frog Marking Review Part I – Dissection of frog without Frog There are many simulations available online and your first step is to complete two virtual dissections. Site 1 - Go to MHHE Virtual Frog Dissection and complete the module. To show that you have completed the dissections, answer the following questions, you will turn these questions to your teacher. 1. Describe the procedure you would use to cut the frog to expose organs to see. You can include drawings to explain the technique. 2. Describe the inside of the frog's mouth. What structures are visible and what are their features? You can also include drawings. 3. Describe what you first see when you open the frog's body cavity. Which bodies are obvious? Which bodies may require a more thorough inspection? 4. Compare a male with a female frog. How can you tell the difference? 5. Choose a body that you would find in the body cavities of the frog. Describe it in detail, explain what it does, where it is located and how you will find it in the frog, you can outline the organ to show its locations in relation to the other organs. Part II - Complete lab guides Students in class were required to follow a lab guide, follow the instructions and answer questions. This is still a requirement for those who are not actually in class and working on the frog. Print the following handouts (otherwise your teacher may have already given them to you). Frog outer anatomy | Seed dissection | Frog Brain and Play Dissection Some of the answers you will already know from completing the virtual dissection. Follow the handouts when you see the following seed galleries and slideshows. The captions help you stay on track and answer the questions. Gallery 1 - Exterior Anatomy of The Seed Gallery 2 - Seed Dissection Gallery 3 - Brain & Legs Part III - Preparation for Lab Test Students in class will take a test over the frog, where they will have to identify structures on a dissected and attached seed. You will either do this with the class or take the online version of the lab test - see your instructor for details. To prepare the test, visit the Ultimate Frog Anatomy Review for practice tests. Print a copy of the frog labeling review guides to complete and turn in on your instructor. Slideshare uses cookies to improve functionality and performance and to provide you with relevant advertising. If you continue to browse the site, you agree to the use of cookies on this website. See our user agreement and privacy policy. Slideshare uses cookies to improve functionality and performance and to provide you with relevant advertising. If you continue to search the site, you will accept use of cookies on this website. For more information, please refer to our privacy and user agreement policy. 1. FROG DISSECTION GROUP NAMES: _____ Materials: Dissect pins, tweezers, scissors, paper towels, dissect probe, preserved seed, dissection tray. Purpose: In this laboratory, you will dissect a frog to observe the external and internal structures of the frog anatomy sexing your seed: Place a seed on a dissection tray. To determine the frog's sex, look at the hand digits, or fingers, on its forelegs. A male frog usually has thick pads on its thumbs, which is an external difference between the sexes, as shown in the chart below. Male frogs are also usually smaller than female frogs. Observe more frogs to see the difference between males and females. Is your frog male or female? Explain: 2. PROCEDURE AND OBSERVATIONS: OUTER ANATOMY 1. Apply the frog on the stomach (ventral side) in the dissect pan 2. Examine the frog's hind legs and front legs. The hind legs are strong and muscular and used to jump and swim. The front legs provide balance and cushion the frog when it lands after jumping. Notice the difference between the toes on the hind legs and the front legs. How many toes are on the front legs _____. How many are on the back legs _____. Mark the back and front legs of Figure 1. 3. Find those big, bulging eyes. The frog has 3 eyelids. The 2 outer is the color of the body of the frog. They're not moving. Find the third eyelid. It is a transparent membrane protecting the eye, while the frog allows to see under water. It's called a NICTITATING membrane. Feel the eye and nictitating membrane on figure 1. 4. Behind each eye find the circular eardrum called a TYMPANUM. They find the two openings in the nasal cavity. The nasal openings, also called external NARES, found against the tip of the snout will close when the frog is under water. Moaning mouth, tympanum and the exterior nares on Figure 1. 5. Get the frog's skin. It's smooth, moist and thin. The frog can breathe directly through its skin as well as with its lungs. Turn the frog on its ventral side and feel the color difference. Why does each color help protect the frog from predators? Color acts as camouflage Figure 1. External anatomy of the Frog: 3. INNER MOUTH STRUCTURES: 6. Place the frog on its dorsal side in the dissect pan and cut the corners of the mouth. CAUTION: Be careful when using scissors. 7. Find the tongue. Is it attached to the front or back of the mouth? _____ In live seeds, the tongue is sticky and used to catch insects. Pull your tongue. Note that it is still flexible. 8. Feel the inside of the upper jaw (maxilla) and lower jaw (lower jaw). Teeth you are maxillary teeth. Find the 2 VOMERINE TEETH on the upper jaw. They are placed against the front of the upper jaw and between the internal nares (internal nostril openings). What are maxillary teeth and vomerine teeth used for? Holding on to prey 9. Gently press the eyes observing how they fill a room in the mouth. The eyes help keep the prey like a frog swallow it. 10. Find a vertical opening against the back of the mouth. This is GLOTTIS. It is the opening to the trachea (trachea) that leads to the lungs. 11. Find GULLET (throat) it leads to the opening of the esophagus. On both sides of the esophagus, near the severed jaws open to EUSTACHIAN TUBES. Use your probe. Where does the Eustachian tube go? To tympanic membrane What is its purpose? The inner ear is printed on 4. FIND and feel the following on Figure 2. 1. Vomerine Teeth: Used to hold prey 2. Internal Nares (nostrils) breathing 3. Eustachian Tube: Equalize the pressure in the inner ear 4. Glottis : Tubes leading to the lungs 5. Gullet: Opening leads to esophagus 6. Tongue: Front attached, aids in grabbing prey 7. Tympanic Membrane: eardrum, located behind the eyes 8. Nictitating Membrane: clear eyelid, protects the eye 9. Maxillary teeth: Used to keep swapping 10. Eye: Vision Figure 2: Dissect the frog: 5. 1. Place the frog on its dorsal side and secure it in place with dissecting pins through each of the legs. 2. With your scissors make an incision (through the skin only) along the center line of the abdomen from the pelvis to the neck. 3. Now make transverse cuts through the skin under each of the forems and over each of the hind legs. If necessary, you can fasten the skin back. Notice the blood vessels under the skin. Why are there so many blood vessels? Closed circulation, double-looped circulation, allows blood to reach all parts of the frog's body 4. Notice the abdominal muscles. Now cut through the muscle layer and repeat the incisions you mad in steps 2 and 3. BE careful not to CUT deeply and DAMAGE THE underlying organs. 5. You will need to cut through the sternum (sternum). Open and re-fasten the frog. 6. If your frog is female, the body cavity might be full of black eggs. You may need to remove one page to continue the dissection. 6. INNER ANATOMY: The digestive system consists of organs in the digestive tract and digestive glands. Swallowed food moves from the mouth down into the esophagus and into the stomach and then into the small intestine. Bile is a digestive juice made of the liver and stored in the gallbladder. Bile flows into a tube called bile duct. Digestive enzymes from the pancreas flow into this channel. Both bile and pancreatic enzymes flow into the small intestine. Most digestion and absorption of food in the bloodstream takes place in the small intestine. Indigestible materials pass through the large and then into cloaca, the common exit chamber of the digestive system, excreted, and reproductive systems. 1. Stomach: First place for chemical digestion, breaks down food 2. Liver: Makes bile (aids in digestion) 3. Gall bladder: Saves bile 4. Esophagus: Tube leading to the stomach 5. Pancreas: Makes insulin (aids in digestion) 6. Small intestine (duodenum and ileum): absorb nutrients from food 7. Mesentery: Holds coils of the small intestine together 8. Large intestine: Collects waste, absorbs water 9. Spleen: Part of circulatory system, hiding blood 10. Cloaca: Where sperm, eggs, urine and feces exit. 11. Artery: take blood away from the heart 12. Vein: take blood against the heart 13. left atrium pumps blood into the veneer 14. Just atrium pumps blood into the ventricle 15. Lung: body for oxygen and carbon dioxide exchange 1. Find and notice the largest organ in the abdominal cavity is the maroon liver. How many patches does the liver have? 3 2. Find the greenish sack attached to the liver. It's the gallbladder. What's hidden in the gallbladder? What does bile digest? Bile, helps digest food! 7. 3. Under and to the right of the liver is a J shaped STOMACH. With your scissors open J in your stomach to observe what the frog may have eaten. Was there something in your stomach? What do you think the frog ate? 4. The stomach attaches to the small intestine. The straight part of the small intestine is called DUODENUM and the coiled section is ILEUM. The coils of ileum are associated with thin transparent membranes with blood vessels. This tissue is called MESENTERY. Mesentery helps keep your gut from knotting up. After cutting the small intestine away from the colon, measure how long your small intestine is in cm and inches. _____ cm _____ Name the two parts of the small intestine: 1. Duodenum 2. Ileum 5. The small intestine expands to form the TYKTARMen. The colon is a straight tube that leads to the anus. The lower part of the colon is called cloaca. Waste, urine and sex cells have been expelled here. 6. In the mesentery along the inner curve of the stomach find the pink pancreas. In mesenteriet find a reddish spherical structure called the spleen. The spleen filters worn red blood cells and platelets from the blood. 7. The respiratory system consists of nostrils, trachea and bronchi, which open in two lungs. Find the lungs, 2 maroon saclike structures. 8. Circulatory diseases consist of the heart, blood vessels and blood. The heart has two receiving chambers, or ATRIA (singular: atrium), and a transmitting chamber, or ventricle. Blood is transported to the heart in vessels called veins. Veins from different parts of the body enter the right and left atria. Blood from both atria enters the ventricle and pumped into the arteries, which are blood vessels that carry blood away from the heart. The heart is located between the lungs. Compare the thickness of the atria and ventricle. Why is ventricle so much thicker than atria? Scrub because it needs to pump blood through the whole body 8. LABEL (Place the letter next to the corresponding body part): 1. LIVER 2. GALL BLADDER 3. STOMACH 4. THINNESS (ileum, duodenum) two letters 5. CLOACA 6. MESENTERY draw in label 7. pancreas 8. COLON 9. SPLEEN draw in label 10. HEART b.g.in 11. LEFT ATRIUM, 12. RIGHT ATRIUM, 13. VENTRIKEL 14. OESOPHAGUS 15. LUNG 16 ARTERY ARTERY. Kidneys: Filter Blood Ureters: Carry urine from kidneys to bladder Testicles: Make sperm Oviducts: eggs travel through these ovary: makes eggs (usually not visible on the frog) Urinary bladder: Stores Urine Cloaca: Where sperm, eggs, urine, and feces exit. ** The reproductive system and urinary tract collectively called urogenital system. 10. 9. The urinary tract consists of FROG's kidneys, ureters, urinary bladder, and cloaca kidneys are organs that filter waste from the blood and secrete urine. Connected to each kidney is an ureter, a tube through which urine passes into the urinary bladder. The urinary bladder is a sac that stores urine until it passes out of the body through cloaca. FEEL THE KIDNEYS, URETTERS AND URINARY BLADDER ON FIGURE 3. 10. The reproductive system of the female consists of ovaries that produce eggs and oviducts that transport eggs to cloaca. In males, it consists of TESTIS, which produces sperm, sperm channels that transport sperm to cloaca. MARK TESTIS, OVARIES, OVIDUCTS AND EGGS ON FIGURE 3. 11. Carefully examine the kidneys notice there is a light colored ribbon of tissue that runs through the center of each kidney. This tissue is the adrenal glands. 12. Voluntary muscles, which are the ones over which the frog has control, occur pairs of flexors and extensors. When a flexor of a leg or other body parts contracts, this part is bent. When

the extensor of this body part contracts, the part dishes. 13. The frog's central nervous system consists of the brain, which is surrounded by the skull, and the spinal cord, which is surrounded by the spine. Nerves branch out from the spinal cord. The frog's skeletal and muscle systems consist of its frames of bones and joints, to which almost all the voluntary muscles in the body are attached. 14. Fat bodies are orange/yellow in color and stored food. FIND AND MATURE THE FATS ON FIGURE 3. MARK Male AND FEMALE REPRODUCTIVE ORGAN FIGURE 3. 1. Kidney 2. Urinary bladder 3. ureter 4. testis 5. 6. oviducts 7. semen channels 8. fat organs 9. cloaca figure 3: 11. Extra credit: Examination and removal of frog's brain Turn the frog dorsal side up. Cut the skin and flesh upside down away from the nose to the bottom of Skull. Cut and scrape the top of the skull until the bone is thin and flexible. Make sure you scrape away from you. Insert the scissors horizontally just below the skull and over the eyes gently chip away the roof of the skull to expose the brain. Cut the heavier bone away along the sides of the brain. Carefully remove the thin, gray membrane that covers the brain. Find prostrates at the front end of the brain at the nostrils. The olfactory nerves leave these structures and connect to the most anterior lo being in the brain, olfactory loes (A). Just posterior to olfactory lops are cerebrum (B), and it's the frog's thinking center. Cerebrum helps the frog respond to its surroundings. Posterior to cerebrum are the optical patches (C) that work in vision. The ridge just behind the optical patches is the small brain (D), it is used to coordinate frog's muscles and maintain balance. Posterior to the small brain is medulla oblongata (E) this is the one that connects the brain to the spinal cord (F). To receive extra credit for exposing the brain you must first present a completed data table and get all brain parts tagged then show the brain dissection to your teacher for approval. The cleaner the dissection the better. Complete the data table and feel the brain: Brain Part Function Letter Cerebellum Cerebrum Olfactory Lobe Optic Lobe Medulla Oblongata 12. Post-Lab Question: 1.) How does the liver aid in digestion? Produces Bile, which digests food 2.) Name the three chambers of the frog's heart: • Left atrium • Right atrium • Ventricle 3.) Compared to the frog's body, the lungs are quite small. Does the size of a frog's lungs affect its ability to take in oxygen? Explain your answer: No, a frog takes in oxygen through capillaries in the mouth lining and absorbs oxygen through its thin, skin 4.) What is the purpose of fat organs? Why are these structures important to the frog? They store excess food in the form of fat, which gives the frog energy during hibernation They also help with mating 5.) Give two reasons that may explain why the small intestine is so long 1. Allows a large surface area to digest food 2. Takes food a long time to travel through the length of the small intestine, giving enzymes more time to digest food 6.) What roles do the kidneys play in excretion? Collect nitrogen waste from the blood and produce urine 7.) Through which body is the liquid waste removed from the frog? Cloaca 13. 8.) Describe the path an egg takes as it leaves the body of the female seed ovaries, down the sheppaccave, in cloaca, and out of the frog 9: Describe the path of sperm travel from the testicles out of the frog Testicles, through the vasa efferentia, into the kidneys, down ureters, in cloaca, out of the frog 10.) If you were asked to dissect a tadpole, what differences would you from what you saw in the adult seed? -Small mouth, gills, two-chamber heart, no legs, tails 11.) Describe where and how a frog can live during the change from tadpole to adulthood? Explain your reasoning Near the water's edge, where air breathing would be the easiest as lungs developed and where new frogs could climb ashore 12.) Compare and contrast fish and amphibian body structures: (Tip: It may be easier to make a Venn Diagram: You can use the back of the lab if necessary) Similar properties: - both are vertebrates, have protective color (camouflage), bony endoskeleton, closed circulatory system, back nerve act, fertilize eggs externally, Frogs Only - three-chambered heart, two pairs of legs, external organs for hearing, lungs like adults, undergo metamorphosis , live on both land and water, have smooth thin skin (No scales) Fish Only - two-chambered heart, fins, no external organs for hearing, gills, do not undergo metamorphosis, live only in water, have scales scales

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