

Name \_\_\_\_\_

Per \_\_\_\_\_ Date \_\_\_\_\_ Assign. #



### Chicken Foot Dissection

**Background:** The chicken leg is very similar to the human leg in that both are made up of many different cells, tissues, and organs. These body parts interact and cooperate to allow the chicken to perform a variety of activities such as walking, hopping, sitting, and standing. In this investigation, the various tissues and structures of the leg of a chicken will be found and described.

As you investigate the chicken foot you will see the muscles which are a dark pink tissue that surrounds the bone. You will also see silvery white tough connective tissue, this is the tendon that attaches the muscle to the bone. Muscles move in antagonistic (opposite) pairs to move a bone. So for every movement there should be a pair of tendons. One muscle and tendon to contract and close the joint, and another tendon and muscle to relax or open the joint. The chicken foot has long easy to reach tendons which make the foot ideal to use. Chickens actually walk on their toes and NOT on their feet.

If you were to remove all the skin you will see the ligaments, a whitish tissue that holds bones together. The thin strand of material along the muscle is the nerve. The nerves are what send messages from the brain to different parts of the body, such a muscles or from sensory organs to the brain.

**Problem:** How is movement produced in a chicken foot?

**Materials:** chicken foot, dissecting pan, scissors, forceps, paper towels

#### Procedures:

1. Place the chicken foot in your dissecting pan. Examine the tough outer layer covering the outside.

2. Find the silvery white tough connective tissue that is near the top of the foot next to the bone. Taking the sharp end of the scissors slit the chicken's skin near the open end on the ventral (bottom) side all the way down the foot. There should be a bundle of tendons directly in the mid point.

Pull this silvery mass from under the skin with your fingers. Holding the mass of tendons, **PULL!!!**

a. What happened to the toes? \_\_\_\_\_

3. Now separate each tendon from the bundle and pull separately.

a. How many individual tendons are there? \_\_\_\_\_

b. What happens when you pull ONLY ONE tendon?  
\_\_\_\_\_

4. Now do the same thing to the front of the foot. Slit the skin and find the tendons. They will not be in a large mass like the ventral tendons GRAB these tendons and pull.

a. What happens to the toes? \_\_\_\_\_

b. What happens when you stop pulling these tendons? \_\_\_\_\_

5. Pull each separate tendon like you did with the last bundle.

a. Are these 2 sets of tendons antagonistic pairs? Explain \_\_\_\_\_  
\_\_\_\_\_

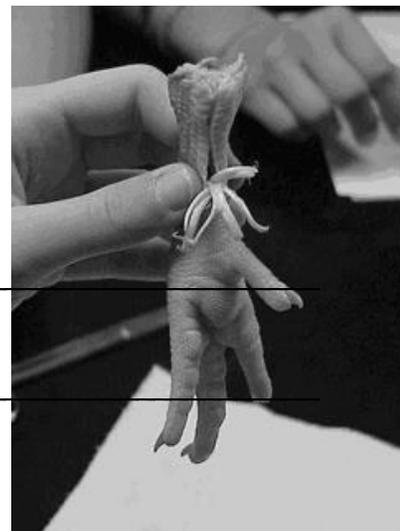
b. When the chicken was alive what were the tendons at each end attached to? \_\_\_\_\_

6. Using one of your hands, form a claw with your fingers. Look at the back of your hand.

a. Do you see hard strings leaving the backs of your fingers and going to your wrists? \_\_\_\_\_

b. What do they look like? \_\_\_\_\_

c. Can you see or feel a similar set of structures in your palm? \_\_\_\_\_



d. Can you see them in your arm? \_\_\_\_\_

7. Encircle your arm about an inch higher than your wrist. Wiggle your fingers.

a. What do you FEEL? \_\_\_\_\_

8. Why do you think that tendons which move the toes/fingers attach muscle to bone instead of the muscle attaching directly to the bone? \_\_\_\_\_

Why would a chicken not be able to walk if there was some damage to the nerve going to the muscle in the chicken leg? \_\_\_\_\_

**Conclusion:** Write a well organized paragraph which answers the problem: How is movement (opening and closing) produced in a chicken's foot? Be specific. Include the following vocabulary in your conclusion: tendon, muscle, joint, bone, antagonistic, nerve, contract and relax. The more detail and specific you are, the more credit you will get. It should be understandable to someone who wasn't here for the lab. Underline the required vocabulary as you use it.