Name Date

Lab Activity

# Chicken Wing Anatomy Lab

**Purpose**

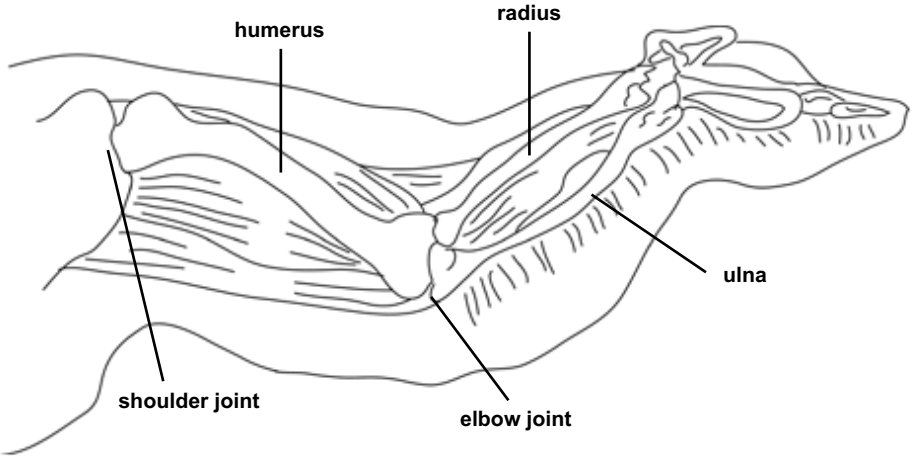
Observe the muscles, bones, and blood vessels that make up a bird's wing.

**Materials**

protective gloves
scissors
sharp knife
chicken wing
safety goggles

**Procedure**

1. Study the diagram of a chicken wing. Use the diagram to help you locate certain muscular and skeletal structures.

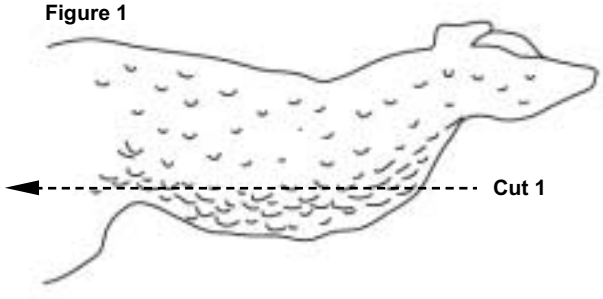



2. Rinse the chicken wing under cool, running water. Dry it thoroughly with a paper towel.

3. Examine the wing at the point where it was removed from the body. Depending on the way the wing is cut, you might see cartilage and bone marrow.

4. Using the scissors, cut down the middle of the skin, starting at the top end of the upper wing. Try not to cut through the muscles below the skin. Do this by piercing the skin and then slipping the scissors between the skin layer and the muscle. Cut until you reach the shoulder joint.
(See Figure 1, Cut 1.)

**Figure 1**



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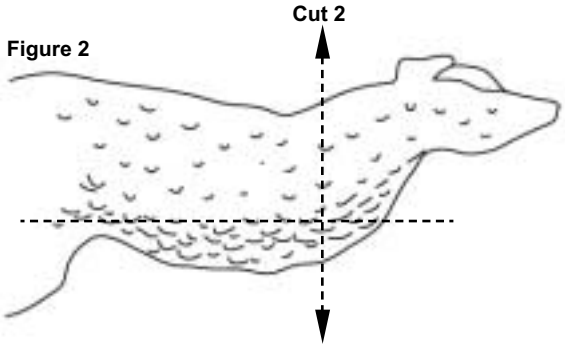
5. Cut down the sides of the skin to make a T-shaped cut. Start at the first cut and cut away from it in both directions. Peel the skin and cut to loosen it. (Note: the chicken skin can be very difficult to remove. Take your time peeling it back so as not to damage the tissues underlying it. (See Figure 2, Cut 2.)

Figure 2




**Fat**

6. Look for yellowish tissue clumped together beneath the skin. This is fat tissue, made of fat cells.

**Muscles**

7. Observe the muscles in the wing. They look like bundles of pale pink tissue.
8. Find two muscles in the wing that bend and straighten the elbow joint. Each muscle pulls on the lower wing bones in one direction (the flexor bends the joint). Since the flexor cannot lengthen by itself to push the bone back to straighten the joint, another muscle pulls the bone in the opposite direction (extensor).
9. Hold the wing down at the shoulder and alternately pull on each muscle. Observe what happens.

**Tendons**

10. Tendons are shiny white tissues at the ends of the muscles that attach muscles to bones. Find as many tendons as you can on the chicken wing.
11. Pull on a tendon to see how it helps the chicken move its wing.

**Joints and Ligaments**

12. Two bones come together at a joint. Bend and straighten the elbow joint and observe how the bones fit together.
13. Ligaments connect bones to other bones at joints. They look like a shiny white covering of the joint surfaces.
14. Closely examine the elbow joint between the upper wing and the lower wing and identify the ligaments.

**Cartilage**

15. Between the bones is another shiny white material that is slippery. This is cartilage, which helps the bones move without grinding against one another, or without causing trauma.

**Wing**

16. Move the wing again. Explore how the muscles, tendons, ligaments, and cartilage play roles in the wing's movement.
17. Complete the Observation Table. When you have finished observing the wing and writing your notes, throw the chicken remains away. Wash all equipment in hot, soapy water.
18. Wash your hands with hot water and soap.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**Observation**
Complete the Observation Table and questions.

| Tissue | Description (color, texture, etc.) | Tissue it attaches to |
|---|---|---|
| Skin | | |
| Fat | | |
| Muscle | | |
| Tendon | | |
| Ligament | | |
| Cartilage | | |

1. Do you think this wing is from the left side or the right side of the chicken's body? Explain your answer.

2. Which joint in the human body is similar to the joint you studied?

3. Describe any interesting observations you made about the chicken wing. Include names of bones and tissues in your description when possible.

**Analysis**

1. What type of tissue actually moves the chicken wing?

2. Why are tendons important to a muscle's ability to make the body move?

3. What tissue of the chicken wing is commonly referred to as the "meat"?


# Chicken Wing Anatomy Lab

**Conclusion**

1. Based on your observations, explain the roles of muscles, tendons, bones, and joints in the back-and-forth movement of the lower chicken wing.

**Going Further**

If you are interested in learning about the circulatory, respiratory, and digestive system of chickens, you may wish to do the online extension activity.