**Dissection of a Chicken Leg**

**Background:** Our leg is very much like that of a chicken including the femur (thigh bone), knee (hinge joint), fibula and tibia (smaller bones of the shin), cartilage, and ligaments that are all part of our skeletal system. Beyond that, we also have similar muscle structure, tendons, fat, and skin. We will be exploring each of these similar characteristics.

I want you to review the following YouTube videos by Professor Wilson- these both go over tissues found in chicken thigh/leg and in humans, and bone anatomy of the chicken thigh/leg.

<http://www.youtube.com/watch?v=_uLHveuSm_4&feature=relmfu>

<http://www.youtube.com/watch?v=DhN0nFPmMsc&feature=relmfu>

**Purpose**: The *purpose* of this activity is to locate and correctly identify tissues, observe them in their natural state, and discuss ways their structure is related to their function.

**Materials:** You will need the following items:

Chicken with skin present- thigh and leg attached (either this combo or an entire chicken)

Sharp scissors and/or knife

Gloves

Dissection Tray

Camera

**Safety:** Please follow precautions when handling raw poultry products. Wash all items touching chicken with a soap and water. Wearing gloves will help with limiting exposure to raw poultry products. Be careful using sharp knives and/or scissors.

**Procedures:**

1. Place the chicken thigh/leg, skin side up, in your tray or plate. Point out the texture of the **skin** and the dermal papillae. Note the follicles where feathers grew. Take a picture of this for the data section.
2. Turn the chicken leg over. Note the fat. You may want to pull off some of the fat and show the difference in the consistency of the muscle and fat. Take a picture of the **adipose tissue** for the data section.
3. Locate the end of the bone that may be seen at either end of the leg. This is **hyaline (articular) cartilage**. Identify the cartilage as the white tissue that surrounds the end of the bone to protect it. The purpose of the cartilage is to keep bones from touching each other. It stops the wearing down of bone that would occur if the bones were in constant contact with each other. Take a picture for the data section.
4. Return the chicken leg to the skin up position. Pull the skin of the thigh back to show the underside of the skin. Locate the **blood vessels** of the skin. Take a picture for the data section.
5. Remove the remainder of the skin. Review the other tissue that is now visible (fat, **muscle**, cartilage, **bone**). Take a picture for the data section.
6. Pick up the leg and bend the joint. Show that it is a hinge joint because it only moves in one direction. Demonstrate the movement of the joint.
7. Using scissors, carefully cut away some of the muscle to expose **tendons** (white areas of the muscle) that connect the muscle to the bone. Tendons are part of the muscular system. They become very evident near the ends of the bones. Ligaments are more difficult to locate. Ligaments attach the bones to other bones. Look around the joint and attempt to locate

**ligaments**. Also expose the cartilage for viewing. Show that the cartilage surrounds the bone where it would be touching another bone. Cartilage is the protective cushion between bones. DO NOT expose the joint yet. Take a picture of tendons and possibly the ligaments if found for the data section.

1. Carefully cut away the muscle, fat, tendons, etc. to expose as much of the bone and joint as possible. Carefully break the largest bone. Do not crush the bone. Observe the red jelly-like tissue inside the bone. This is the **bone marrow** in the medullary cavity. Marrow produces red blood cells and platelets for use throughout our body. Red blood cells carry food and oxygen to all cells in our body. Platelets allow blood to clot rather than continue free flowing. Use the point of the scissors to show the consistence of the marrow. Also discuss how brittle the one is and how easily it was broken.

**Data**: Include pictures of all requested steps by preparing a data section in Word or other document format. You will need titles and labels for all structure and pictures. Leader lines must be completely straight, labels must be horizontal.