Name: _____ Block: _____ Date: _____

Virtual Musculoskeletal System Exploration: Chicken Wing

Background:
Skeletal muscles are attached to bones, give shape to the body, generate heat, and make movement possible. Skeletal muscles cannot function without the bones of the skeletal system. Muscles pull on bones in specific ways and with the guidance of ligaments allow joints to flex or extend in a specific direction. The skeletal system is a network of various living tissues which provide protection for organs and give the human body its structure. It is also the site of blood cell formation. Chicken wings are homologous to the upper limb of humans; that is, they have many of the same structures due to their shared evolutionary history as vertebrates. We can therefore study a chicken wing to help us relate the structure of muscles, bones, and joints to their function.

Directions:
1. Watch this video: https://www.youtube.com/watch?v=BjjF5yh7mV8&t=20s

2.Answer the following questions. You may use other sources on the internet if necessary.

Questions:

1. What is the very first step in dissecting the chicken wing? _____

2. What happens when you pull on the triceps muscle? _____

3. What is an extensor? _____

4. What happens when you pull on the biceps muscle? _____

5. What is a flexor? _____

6. What type of tissue makes up the "meat" of a chicken? _____

7. What is the function of ligaments? _____

8. What is the function of tendons? _____

9. What is the function of the cartilage found at a joint? _____

_____

10. There is a yellowish tissue clumped together beneath the skin of the chicken wing. This is fat tissue, made of fat cells. What are two functions of this fat? _____

_____

11. Based on your observations, EXPLAIN **how** and **why** muscles work in “opposing pairs” to move bones. _____

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_____

12. Complete the following with the diagram of the chicken wing on the back of this page.

a. Label the following bones in the diagram: carpals, humerus, metacarpals, phalanges, radius, ulna

b. Draw the biceps muscle where it is correctly attached (to bones) with the tendon. Draw the tendon in gray, the muscle in red. Label the biceps muscle.

c. Draw the triceps muscle where it is correctly attached (to bones) with the tendon. Draw the tendon in gray, the muscle in red. Label the triceps muscle.

d. Label (with an arrow) the direction the radius and ulna move when the triceps contract.

e. Muscles attach in two locations. The attachment end that moves a bone is call the INSERTION. The attachment end that stays stationary, anchoring the muscle, is called the ORIGIN. Label the origin and insertion of the BICEPS muscle.