

# Muscular System Tour Lab

Name \_\_\_\_\_ Hour \_\_\_\_\_

## Muscular System

There are more than \_\_\_\_\_ muscles in the Human Body!!!

Muscles are:

Needed for \_\_\_\_\_

Needed for \_\_\_\_\_

Needed for \_\_\_\_\_

Needed for \_\_\_\_\_

Needed for \_\_\_\_\_

## Cardiac Muscle

✚ The muscle of the heart.

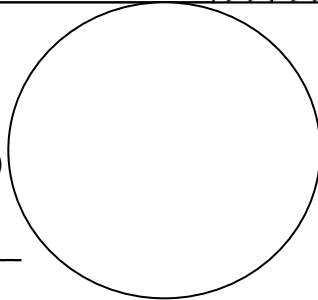
✚ Involuntary (\_\_\_\_\_)

✚ Works \_\_\_\_\_

✚ Strongest \_\_\_\_\_ Draw the cardiac muscle on high power.

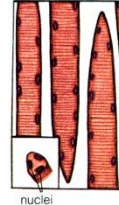
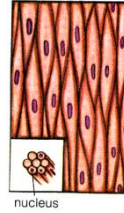
✚ Only \_\_\_\_\_

✚ Some \_\_\_\_\_



## 3 Types of Muscle

Identify the three types of muscle from the diagram:



\_\_\_\_\_

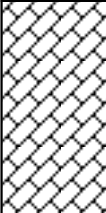
\_\_\_\_\_

\_\_\_\_\_

Muscle

Muscle

Muscle



## Smooth Muscle

✚ The muscle of \_\_\_\_\_

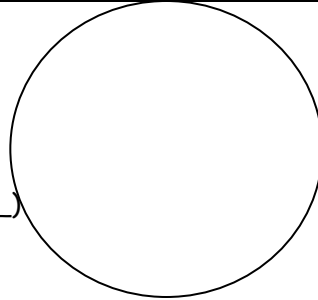
✚ Involuntary (\_\_\_\_\_)

✚ Contract \_\_\_\_\_

✚ Can remain \_\_\_\_\_

✚ Usually \_\_\_\_\_

✚ No stripes (striations)



## Skeletal Muscle

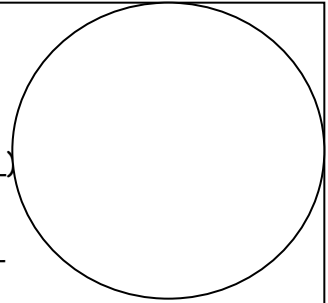
✚ Move your bones.

✚ Voluntary (\_\_\_\_\_)

✚ Over \_\_\_\_\_

✚ Long \_\_\_\_\_

✚ Stripes \_\_\_\_\_



Draw the skeletal muscle on high power. Label striations.

## Anatomy of a Muscle

Label:

Bone

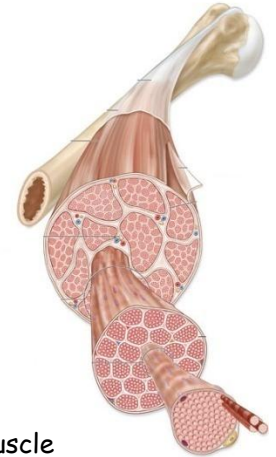
Tendon

Myofibril

Cell Nuclei

Fascicle

Body of Muscle



Muscle Fiber

Which of these (above) is the muscle cell?

## A.D.A.M. Video clip: Exercise

✚ Weightlifting, pushups, and sprinting are forms of anaerobic/aerobic exercise? (circle one)

✚ Muscles fatigue (get tired) fastest with anaerobic/aerobic exercise? (circle one)

## A.D.A.M. Video clip: Exercise fill in the chart

Type of Muscle	Where found	Voluntary / Involuntary
	Walls of body organs (stomach and intestines)	
cardiac		
	Attached to bones	

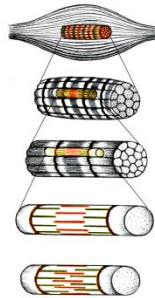
A.D.A.M. Video clip: Skeletal Muscle

✚ Which is larger, a muscle fascicle or a muscle fiber?

✚ Which is larger, a muscle fiber or a myofibril?

## How a Muscle Works

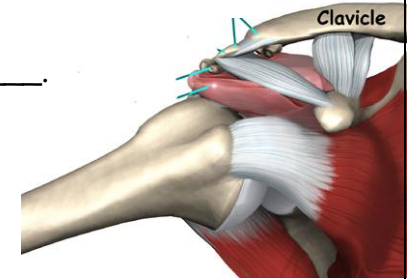
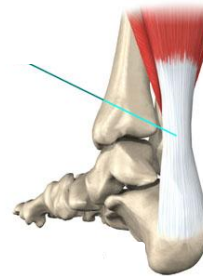
- + A skeletal muscle works by \_\_\_\_\_.
- + The muscle can shorten as much as \_\_\_\_\_.
- + Each muscle cell is made up of smaller \_\_\_\_\_.
- + The \_\_\_\_\_ are in contact with a nerve ending.
- + The nerve releases a chemical called a \_\_\_\_\_.
- + The \_\_\_\_\_ stimulates the entire muscle to contract.



Label the parts of the diagram.

## Muscle to Tendon to Bone

Tendons attach \_\_\_\_\_ to \_\_\_\_\_.



Label the two diagrams:  
Ligament, Tendons, Bone

## Opposites Contract ... and relax

- + Muscles work in \_\_\_\_\_.
- + While one muscle in the pair contracts the other must \_\_\_\_\_.



Label all parts of the diagram

## Muscle Fatigue ... Weight Lifting

How long did you hold the book before fatigue got the better of you?  
\_\_\_\_\_ minutes \_\_\_\_\_ seconds

Which arm felt the fatigue the most? (straight out or by your side)

Which muscles experienced the most fatigue? (circle one)  
a) biceps b) triceps c) deltoids d) pectoralis major

Hint: you may want to check the stations with the labeled muscles

## Muscle Fatigue ... Too Tired to Sit

How long did you sit before your legs started to burn like crazy?  
\_\_\_\_\_ minutes \_\_\_\_\_ seconds

How did it feel to try to walk right after sitting against the wall?

The funny feeling in your legs is called *muscle fatigue*. Fatigue is caused by a buildup of \_\_\_\_\_ in the muscle.

## Muscle Fatigue ... To Beat or Not to Beat

How is your heart (cardiac) muscle different from your arm (skeletal) muscle? (just compare how tired your arm got doing the work of the heart)

Does cardiac muscle experience fatigue?

Does skeletal muscle experience fatigue?

So, about how long did you "live", anyway?? \_\_\_\_\_ minutes

### Muscle Fatigue ... Get a Grip

What happened to the paper clip even when you kept your hand steady?

What caused this? Hint: read the introduction

### Muscle Fatigue ... Clothespin Calisthenics

How many times did you squeeze the clothespin the first one minute? \_\_\_\_\_

How many times did you squeeze the clothespin the second one minute? \_\_\_\_\_

The soreness in your hand and arm is called *muscle fatigue*. Fatigue is caused by a buildup of \_\_\_\_\_ in your muscles. Hint: read the introduction

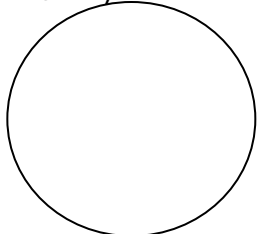
Why did you feel fatigue in your forearm rather than your fingers?

### Making a Temporary Muscle Slide (from Dead Meat)

What are striations?

Did you see striations in your slide?

Draw your slide here (high power). Label striations.



Have your teacher check your slide and sign here.



Teacher Signature \_\_\_\_\_

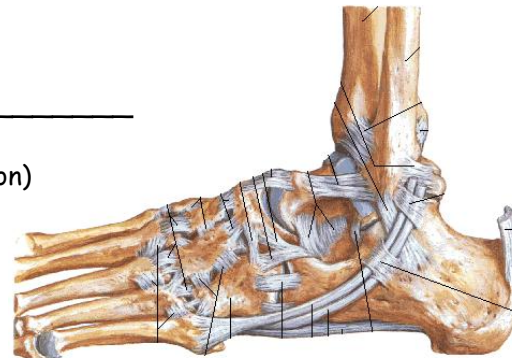
Describe the feeling of having your muscles artificially stimulated?



### Ligaments hold bones together

How many ligaments are shown in the *labeled* diagram? \_\_\_\_\_

Hint: you will need to count the *ligaments* in the diagram (not bone or tendon)

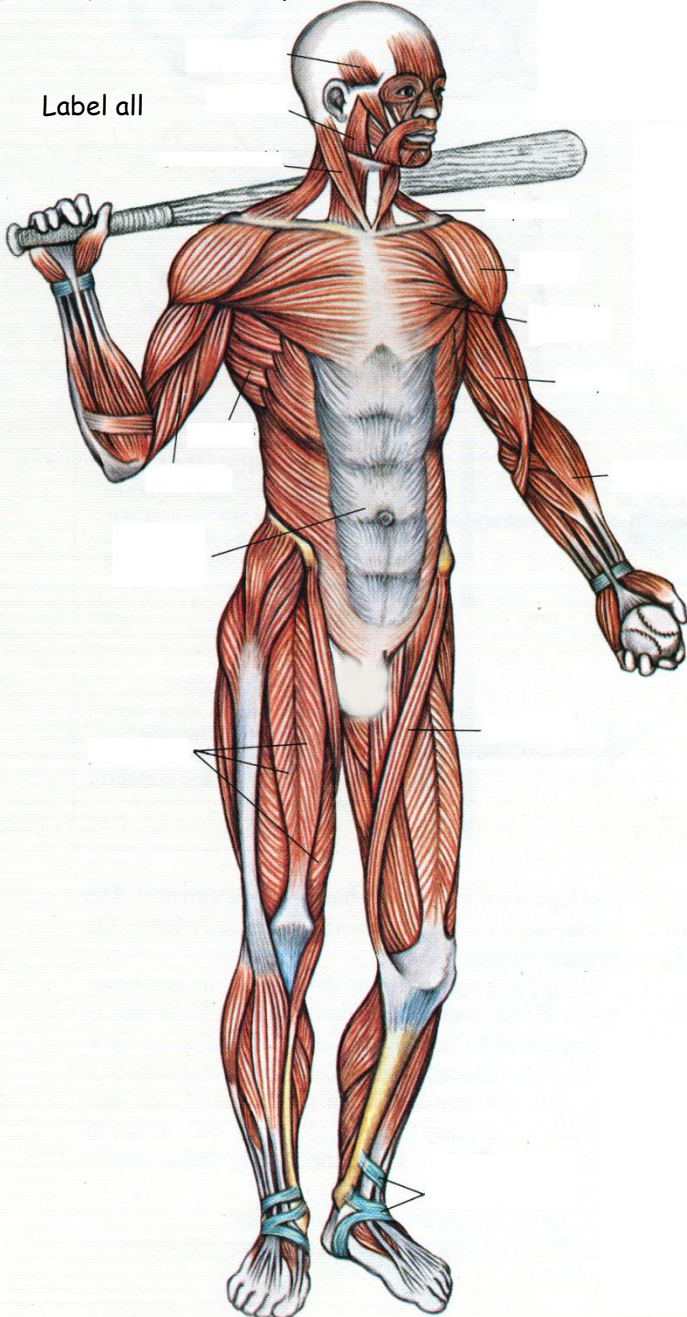


In this diagram, label these ligaments:

- Anterior tibiofibular ligament
- Dorsal talonavicular ligament
- Dorsal tarsometatarsal ligament

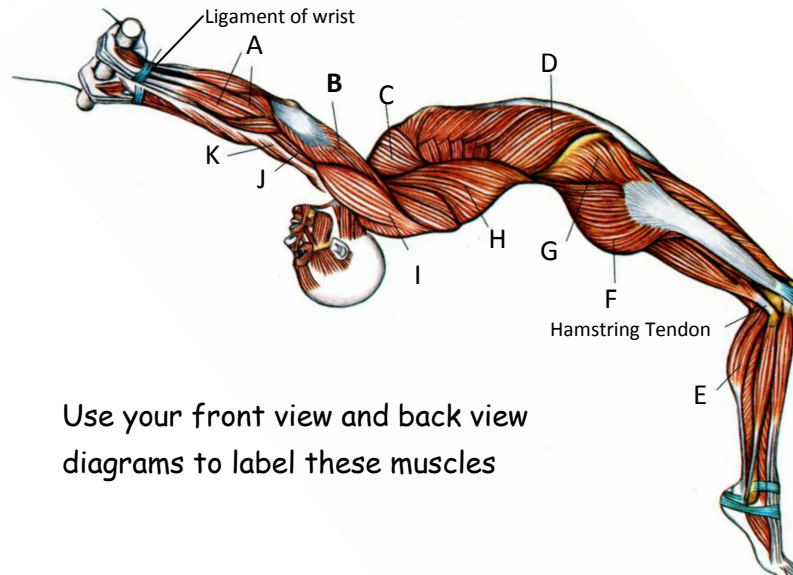
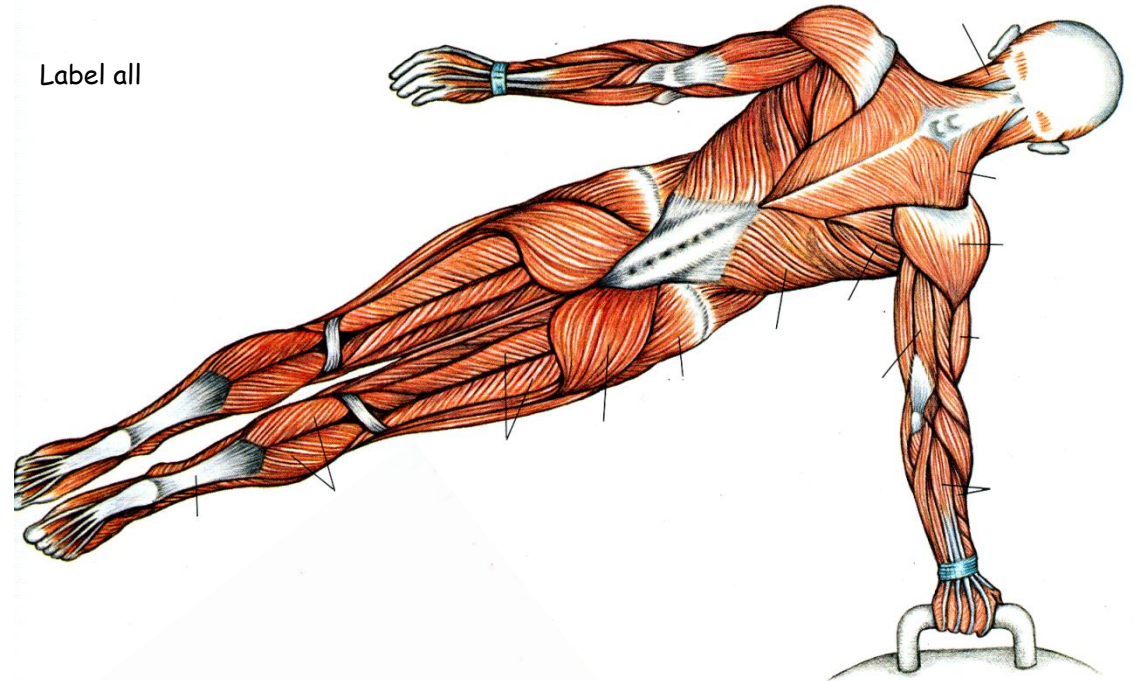
The Muscles ... a front view

Label all



The Muscles ... a back view

Label all

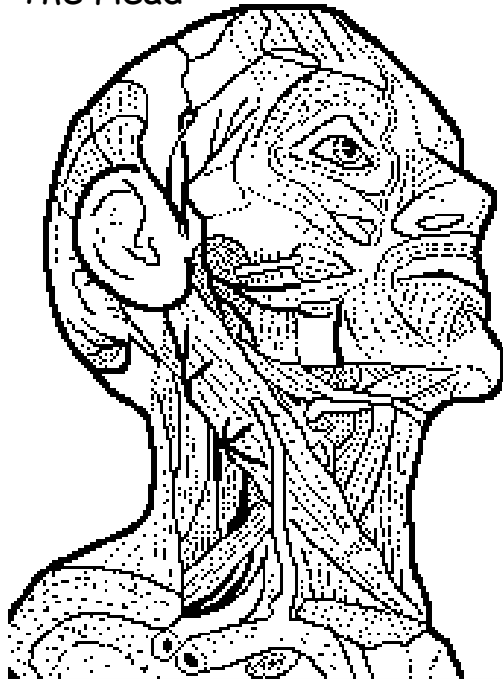


**Label:** place the letter next to the name.

- Gluteus maximus
- Latissimus dorsi
- Pectoralis major
- Gastrocnemius
- Muscles to fingers
- Triceps
- Brachioradialis
- Deltoid
- Biceps
- Exterior oblique
- Gluteus medius

Use your front view and back view diagrams to label these muscles

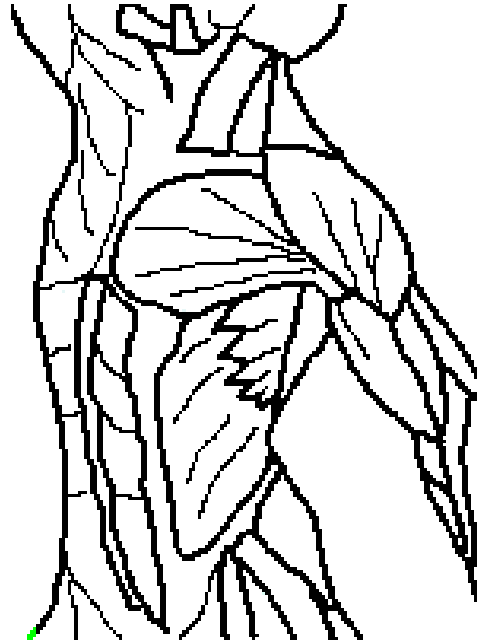
### The Head



Label and color these muscles of the head: (you can draw arrows)

- Sternocleidomastoid
- Obicularis Oculi
- Obicularis Oris
- Zygomaticus
- Masseter
- Trapezius
- Frontalis

### The Anterior Body



Label and color these muscles of the Anterior body:

- Pectoralis major
- Serratus anterior
- Deltoid
- Rectus Abdominus
- External oblique
- Biceps brachii
- Brachialis
- Triceps brachii
- Latissimus dorsi

## Muscle Tutorial

<http://www.gwc.maricopa.edu/class/bio201/muscle/mustut.htm>

Or just go to the

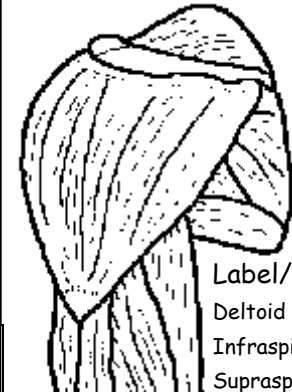
**Human Biology/Links**

page of our science website

([www.myscience8.com](http://www.myscience8.com)) and click on the

Muscle Tutorial link.

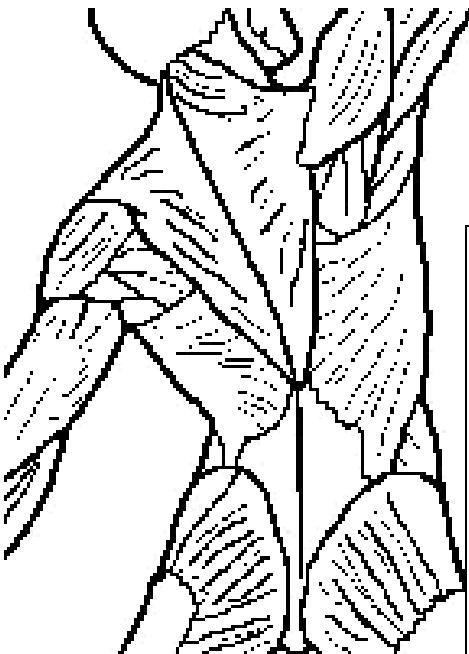
### Posterior Shoulder



Label/color:

- Deltoid
- Infraspinatus
- Supraspinatus
- Teres minor
- Teres major

### The Posterior Body



Label and color these muscles of the Posterior body: (you can draw arrows)

- Deltoid
- Trapezius
- Latissimus dorsi
- Gluteus medius
- Gluteus maximus
- Infraspinatus
- Teres major
- Triceps brachii

### The Thigh/Leg



Label and color these muscles of the Thigh/Leg: (you can draw arrows)

- Vastus medialis
- Vastus lateralis
- Sartorius
- Adductor longus
- Adductor mangus
- Gracilis
- Rectus femoris
- Gastrocnemius
- Soleus
- Tibialis anterior

### Anterior Shoulder

Label/color:

- Subscapularis
- Coracobrachialis
- Supraspinatus

