# Muscle Map Lab: Low-write

Name _____

Date _____

Period _____

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**Do Now** Clench your teeth. Put your fingertips on your cheeks, just in front of your ears. Relax, then clench again. 2 minutes, before you open the lab

**A. What did you feel under your fingers when you clenched?**

**B. About how many skeletal muscles are in your body?** ☐ About 60 ☐ About 200 ☐ More than 600

☐ I can find 20 major skeletal muscles on a body map.

☐ I can use the parts of a muscle's name to tell where it is or what it does.

☐ I can name the muscle that does a move, and its partner.

## Part 1. Find the muscles (Tab 1)

**SEP 2 Developing and Using Models · CCC Systems and System Models**

Click all 20 numbered dots. Use both views: Whole body, and Head and neck.

**1.** Write the name of each numbered muscle. Some are done for you. Use the word bank.

**Word bank:** Biceps brachii · Deltoid · External oblique · Frontalis · Gastrocnemius · Gluteus maximus · Hamstrings · Latissimus dorsi · Masseter · Orbicularis oculi · Orbicularis oris · Pectoralis major · Quadriceps femoris · Rectus abdominis · Sartorius · Sternocleidomastoid · Temporalis · Tibialis anterior · Trapezius · Triceps brachii

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **1** | Frontalis | **6** | | **11** | | **16** | Latissimus dorsi |
| **2** | | **7** | Deltoid | **12** | | **17** | |
| **3** | | **8** | | **13** | Quadriceps femoris | **18** | |
| **4** | Orbicularis oris | **9** | | **14** | | **19** | Hamstrings |
| **5** | | **10** | Rectus abdominis | **15** | | **20** | |

**2.** Count the muscles in each region. Use the graph.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Head and neck** | | **Trunk** | | **Shoulder and arm** | | **Hip and leg** | |

READ FIRST. In the lab, find the green Learn It box and read it. Then answer 3 to 5.

**3.** Which region is each muscle in? Tick one in each row.

| | | | | |
|---|---|---|---|---|
| **Trapezius** | ☐ Head and neck | ☐ Trunk | ☐ Shoulder and arm | ☐ Hip and leg |
| **Deltoid** | ☐ Head and neck | ☐ Trunk | ☐ Shoulder and arm | ☐ Hip and leg |
| **Sartorius** | ☐ Head and neck | ☐ Trunk | ☐ Shoulder and arm | ☐ Hip and leg |
| **Masseter** | ☐ Head and neck | ☐ Trunk | ☐ Shoulder and arm | ☐ Hip and leg |

**4.** Is each muscle on the front or the back? Tick A (anterior = front) or P (posterior = back).

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Rectus abdominis** | ☐ A ☐ P | **Tibialis anterior** | ☐ A ☐ P | **Gastrocnemius** | ☐ A ☐ P | **Biceps brachii** | ☐ A ☐ P | **Latissimus dorsi** | ☐ A ☐ P |

**5.** Play Find It. My score: _____ of 10. Hardest muscle to find: _____

## Part 2. Read the name (Tab 2)

**SEP 4 Analyzing and Interpreting Data · CCC Patterns**

Decode at least 8 names. Then read the graph.

**6.** Decode the names. Use the word bank.

**Word bank:** two heads · of the upper arm · widest · of the back · breastbone, collarbone, bump behind the ear

| Name | Word part | What it means |
|---|---|---|
| **Biceps brachii** | bi + ceps | |
| | brachii | |
| **Latissimus dorsi** | latissimus | |
| | dorsi | |
| **Sternocleidomastoid** | sterno + cleido + mastoid | |

**7.** Which kind of clue is used most? ☐ Location ☐ Shape ☐ Action In how many of the 20 names? _____

READ FIRST. In the lab, find the green Learn It box and read it. Then answer 8 to 10.

**8.** What kind of clue is each word part? Tick one in each row.

| | |
|---|---|
| **masseter = chewer** | ☐ Location ☐ Shape ☐ Size ☐ Heads ☐ Direction ☐ Action |
| **deltoid = triangle** | ☐ Location ☐ Shape ☐ Size ☐ Heads ☐ Direction ☐ Action |
| **rectus = straight** | ☐ Location ☐ Shape ☐ Size ☐ Heads ☐ Direction ☐ Action |
| **maximus = largest** | ☐ Location ☐ Shape ☐ Size ☐ Heads ☐ Direction ☐ Action |
| **triceps = three heads** | ☐ Location ☐ Shape ☐ Size ☐ Heads ☐ Direction ☐ Action |

**9.** Decode new names. Clues: posterior = back, minimus = smallest, extensor = straightens, digitorum = fingers.

| | |
|---|---|
| **Tibialis posterior. Where is it?** | ☐ front of the shin ☐ back of the thigh ☐ back of the shin |
| **Gluteus minimus. Next to the gluteus maximus, it is** | ☐ bigger ☐ smaller ☐ the same size |
| **Extensor digitorum. What does it do?** | ☐ straightens the fingers ☐ bends the fingers ☐ pulls the arm in |

**10.** Adductor longus. Adductor = pulls in. Longus = long. It pulls the leg
☐ in, toward the middle ☐ out, away from the body and it is ☐ long ☐ round

## Part 3. Move it (Tab 3)

**SEP 6 Constructing Explanations · CCC Structure and Function**

Try at least 8 moves. Do each move yourself and feel for the muscle. Press I felt it when you do.

**11.** Copy four moves you tried.

| Move | Muscle that pulls | Felt it? |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

**12.** Copy the mass of each leg muscle from the graph.

| Quadriceps femoris | Gluteus maximus | Hamstrings | Gastrocnemius |
|---|---|---|---|
| g | g | g | g |

**13.** About how many times heavier? Example, not yours: 600 ÷ 300 = 2 times. Yours: 898 ÷ 407 = _____

READ FIRST. In the lab, find the green Learn It box and read it. Then answer 14 to 16.

**14.** Which muscle pulls the other way? Tick its partner in each row.

| | |
|---|---|
| **Biceps brachii bends the elbow.** | ☐ Triceps brachii ☐ Latissimus dorsi ☐ Hamstrings ☐ Tibialis anterior |
| **Quadriceps femoris straightens the knee.** | ☐ Triceps brachii ☐ Latissimus dorsi ☐ Hamstrings ☐ Tibialis anterior |
| **Deltoid lifts the arm out.** | ☐ Triceps brachii ☐ Latissimus dorsi ☐ Hamstrings ☐ Tibialis anterior |
| **Gastrocnemius points the foot down.** | ☐ Triceps brachii ☐ Latissimus dorsi ☐ Hamstrings ☐ Tibialis anterior |

**15.** Model check (SEP 2). The map leaves out ☐ the deep muscles under these 20 ☐ the skin

**16.** Explain it (SEP 6). Finish each sentence. The quadriceps weighs _____ grams and the hamstrings weigh _____ grams. The quadriceps does a bigger job: it straightens the knee to lift your whole _____ when you stand up or climb stairs. A heavier muscle has more fibers, so it can pull _____.