Bone n' Brawn

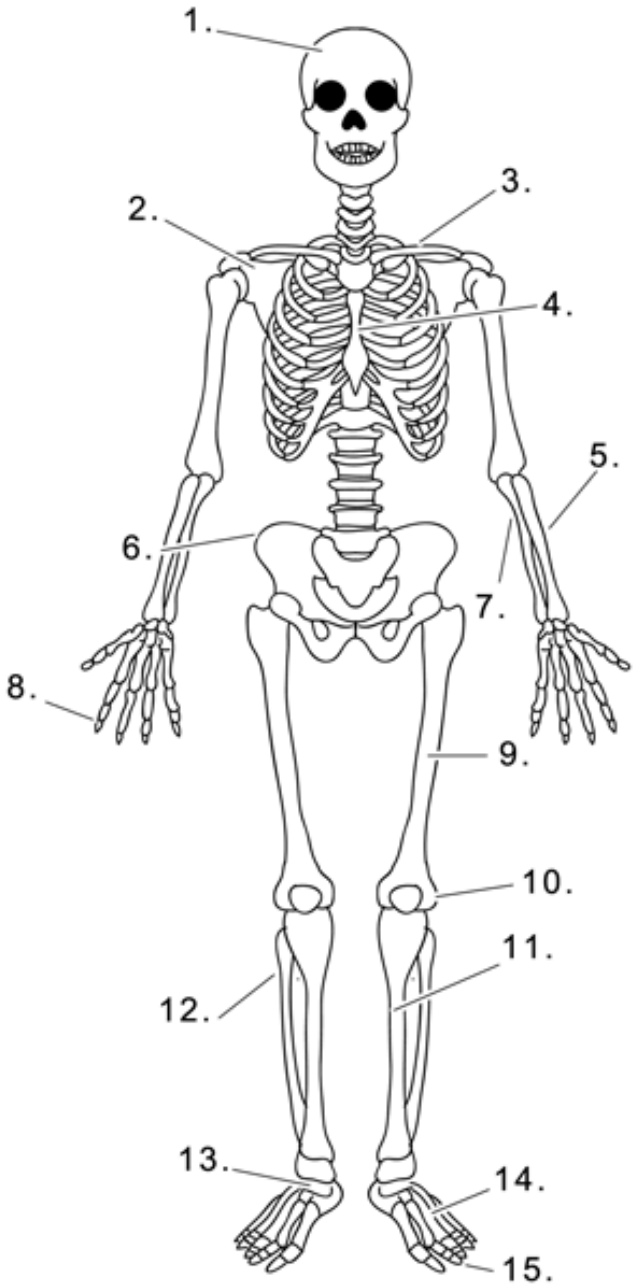
Exploring the World of Science

Eagle STEM Scrimmage

Team Name	
Team Number	
Student(s) Name	

Station 1

Observe the image below



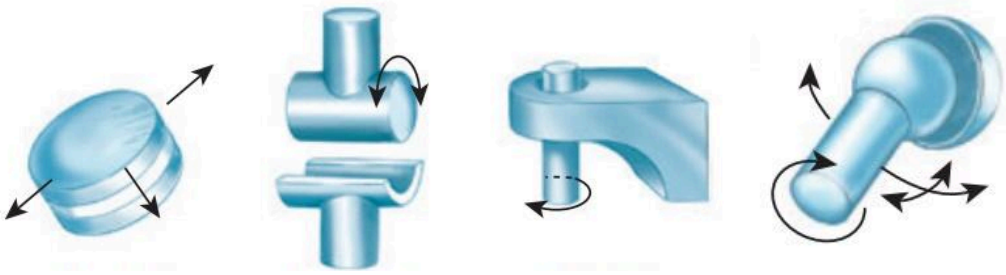
Tasks:

1. Label the following bones using the numbers on the provided skeleton diagram:
   a. Skull → #_____
   b. Femur → #_____
   c. Humerus → #_____
   d. Tibia → #_____
   e. Clavicle → #_____

2. Which bone is the **longest** in the human body?

3. Circle whether each is **axial** or **appendicular**:
   - Ribs: Axial / Appendicular
   - Pelvis: Axial / Appendicular
   - Radius: Axial / Appendicular

Station 2



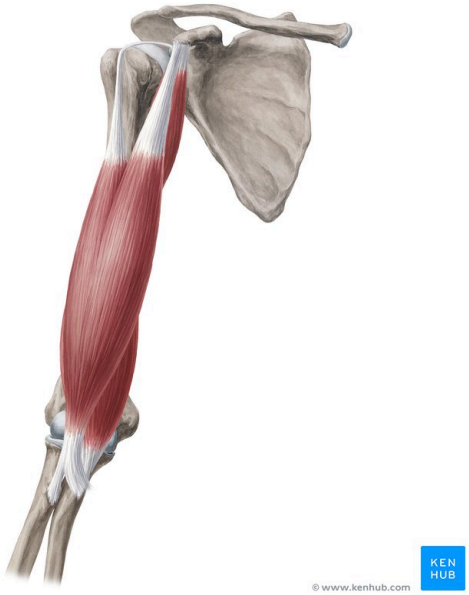
1. Match the JOINT TYPE to the BODY LOCATION:

Joint Type	Body Location	Answer (A, B, C, or D)
Ball-and-socket	_____	_____
Hinge	_____	_____
Pivot	_____	_____
Gliding	_____	_____

2. A hinge joint allows which kind of motion?
   a. Rotating
   b. Back-and-forth bending
   c. Sliding

3. Which joint type allows the **greatest range of motion**?

Station 3



Tasks:

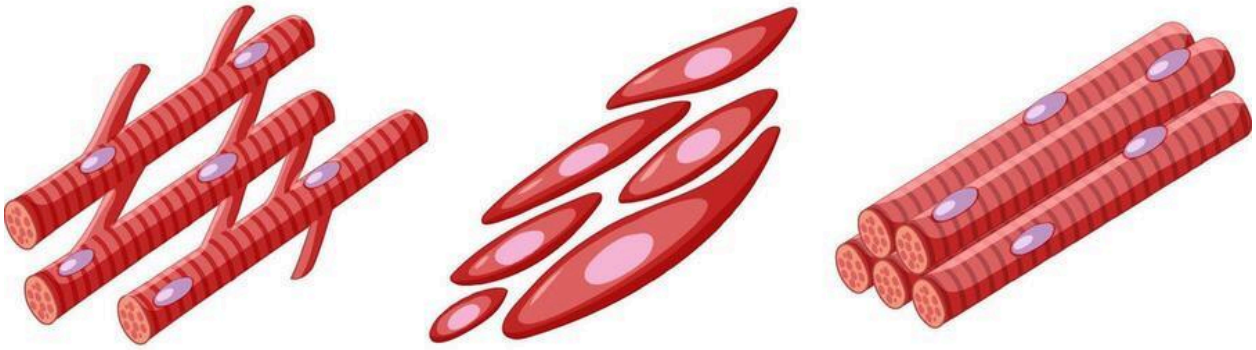
1. When you bend your arm, which muscle contracts?

2. When you straighten your arm, which muscle contracts?

3. Are tendons responsible for attaching:
   a. Bone to bone
   b. Muscle to bone
   c. Muscle to muscle
4. Label each as **muscle** or **tendon**:
   - Biceps: _____
   - Achilles: _____
   - Quadriceps: _____
   - Patellar tendon: _____

Station 4

Observe the following images



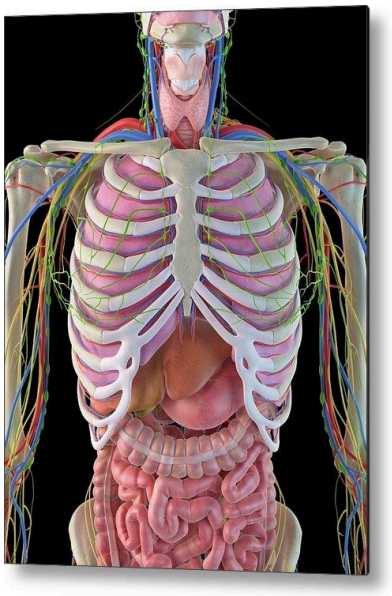
1. Identify the type of muscle, and a possible location for it:
    - Image X: _____
    - Image Y: _____
    - Image Z: _____

2. Which muscle type works **involuntarily**?

3. Which muscle type tires the **fastest**?

4. Which muscle type is **found only in one organ**?

Station 5



1. Which organ does the **skull** protect?

2. Which organs do the **ribs** protect?

3. What mineral makes bones strong?

4. What kind of tissue fills the center of bones and makes blood cells?

Station 6

Image A

Image B

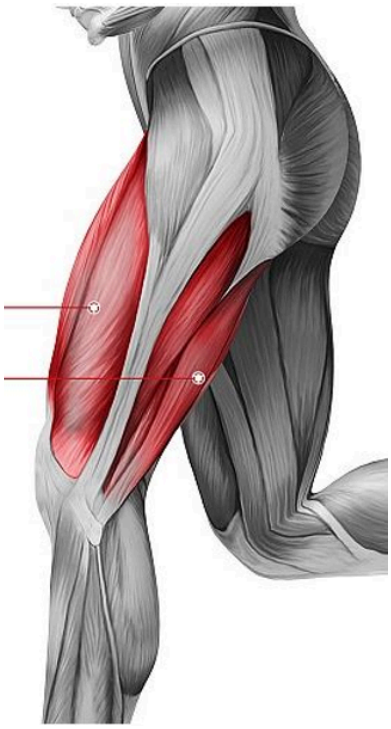
Image C

1. Identify each disorder:
    - Image A: _____
    - Image B: _____
    - Image C: _____

2. Which disorder is caused by lack of vitamin D and leads to softened bones?

3. Circle whether each problem is muscular or skeletal:
    - Cramps → Muscular / Skeletal
    - Osteoporosis → Muscular / Skeletal
    - Sprain → Muscular / Skeletal

Station 7



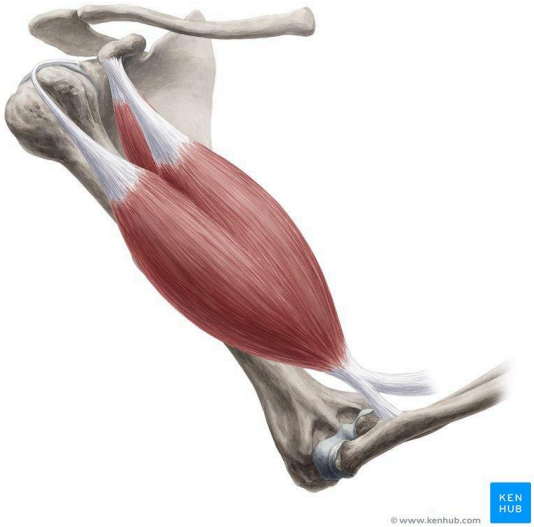
1. When you kick forward, which muscle group contracts?

2. When you bend your knee, which muscle group contracts?

3. What is the term for muscle pairs that work in opposite ways?

4. True or False: Muscles pull bones but cannot push them.

Station 8



1. Identify the bone in the model:

2. Identify the muscle connected to this bone model:

3. Explain in one sentence what this muscle allows the body to do:

Station 9

1. Match each bone to its correct location:
    - Fibula → _____
    - Ulna → _____
    - Sternum → _____
    - Scapula → _____

2. Circle which bones help form the **arm**:
   radius / femur / ulna / tibia

- Draw The Arm and Label the Bones

3. Circle which bones help form the **leg**:
   fibula / clavicle / tibia / humerus

- Draw The Arm and Label the Bones

Station 10

1. Explain which muscles help the child lift off the ground.

2. Explain why strong bones are needed for jumping.