

## TOPIC: BONES OF THE LOWER LIMB

### Bones of the Thigh and Leg

1. **Femur:** \_\_\_\_\_ & largest long bone.

1a. **Head:** round \_\_\_\_\_ that fits into the acetabulum.

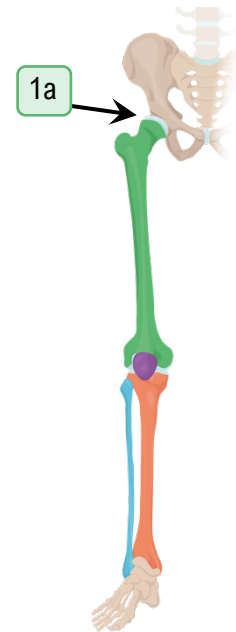
2. **Patella:** \_\_\_\_\_ bone — \_\_\_\_\_.

3. **Tibia:** larger, \_\_\_\_\_ bone.

- Contributes to the \_\_\_\_\_ joint.

4. **Fibula:** \_\_\_\_\_, more lateral bone.

- *Tibia is Tough: Fibula is Fine.*



**EXAMPLE:** You forgot your shin guards at soccer practice and managed to get kicked in the shin, inner ankle, and outer ankle. Which bone is getting kicked in each scenario?



Shin: \_\_\_\_\_

Inner Ankle: \_\_\_\_\_

Outer Ankle: \_\_\_\_\_

**PRACTICE:** With which bones does the femur articulate?

- a) The tibia, the fibula, the coxal bone, and the patella.
- b) The tibia, the coxal bone, and the patella.
- c) The tibia, and the coxal bone.
- d) The tibia, the fibula, and the coxal bone.

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**PRACTICE:** The structure of the upper limbs (the arms) and the lower limbs (the legs) follow a similar pattern. Which of the following statements comparing the limbs is *not* accurate?

- a) Between the girdle and the wrist/ankle, the lower limbs have more bones.
- b) The radius and ulna bear weight roughly equally, where the tibia bears much more weight than the fibula.
- c) The humerus articulates with both bones of the forearm at the elbow, while the femur only articulates with one bone of the lower leg.
- d) The radius and ulna have less mobility between them than the tibia and fibula.

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### Bones of the Foot

- Foot and ankle are made up of 3 sections of bones—like the \_\_\_\_\_.

1. **Tarsals:** \_\_\_\_ short bones of the ankle.

1a. \_\_\_\_: top of ankle.

- *Talus Top of the Tarsals.*

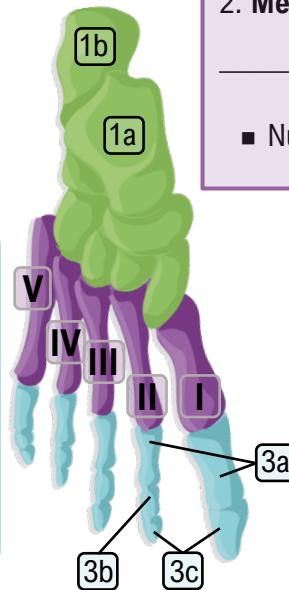
1b. Calcaneus: \_\_\_\_ bone.

2. **Metatarsals:** long bones that create the \_\_\_\_\_ of the foot with the tarsals.

- Numbered 1: medial, through 5: lateral.

3. **Phalanges:** ~14 tiny \_\_\_\_ bones.

- Singular \_\_\_\_: *Greek battle formation.*
- Each toe has:
  - Proximal 3a, Middle 3b, Distal 3c.
- \_\_\_\_ toe only has proximal and distal.



**EXAMPLE:** If you have five toes and proximal, middle, and distal phalanges;  $5 \times 3 = 15$ . Why do you only have 14 phalanges?



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**PRACTICE:** How do the metatarsals contribute to the foot's ability to bear weight?

- a) Their irregular shape helps them distribute the weight of the body.
- b) The seven bones distribute the weight, so each bone only withstands a fraction of the total body weight.
- c) The bones have additional collagen to help them resist force and twisting.
- d) The bones help create arches that distribute the weight.

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**PRACTICE:** Distinguish between the Talus and the Calcaneus.

- a) The talus is considered one of the tarsals; the calcaneus is not.
- b) The talus articulates with the tibia; the calcaneus only articulates with other tarsals.
- c) The calcaneus is the heel bone; the talus makes up the parts of your ankle bones that you can feel.
- d) The calcaneus is the largest tarsal; the talus is the smallest tarsal.