

Station 1

- Name this bone
- Name bone marking A
- Name bone marking B
- Name long bone region C

Femur

linea aspera

greater trochanter

neck

Station 2

- Name this bone
- Name bone marking A
- Name bone marking B
- Name bone marking C

humerus

olecranon fossa

medial epicondyle

capitulum

Station 3

- Name bone A
- Name bone B
- Name bone C
- Structurally, what type of synovial joint does bone A form with the tibia?

talus

calcaneus

metatarsal

hinge / uniaxial

Station 4

- Name bone A
- Name opening B
- Name bone marking C
- Name the perforated region below C
- Name opening D

sphenoid

foramen ovale

external crista galli

cribriform plate

foramen magnum

cervical

Station 5

- What type of vertebrae is this?
- Name bone opening A
- Name bone region B
- Name bone region C

transverse foramen

spinous process

body

Station 6

- Name bone A
- Name rib type B
- Name rib type C
- What type of cartilage connects rib B to bone A?

sternum

true

false

hyaline

Station 7

- Name bone A
- Name bone projection B
- Name bone projection C
- Name bone region D

scapula

acromion

coracoid

glenoid fossa / cavity

Station 8

- a. Name bone region A
- b. Name bone projection B
- c. Name bone region C
- d. What type of cartilage separates the pubis?

acetabulum
 iliac crest
 pubic symphysis
 fibrocartilage

Station 9

- a. Name bone A
- b. Based on shape, what type of bone is bone A?
- c. Name bone B
- d. Give the general name for connective tissue element C
- e. What type of cartilage is tissue D?
- f. What is tissue D's function

patella
 sesamoid
 tibia
 ligament
 fibrocartilage
 shock absorption/cushioning

Station 10

- a. Name bone A
- b. Name bone B
- c. Name opening C
- d. Name bone D
- e. Name bone F
- f. What type of ossification forms bones A & B?

frontal
 parietal
 infraorbital foramen
 zygomatic
 maxilla
 intramembranous

Station 11

- a. Name 2 movements that this joint is capable of.
- b. Name bone A

rotation/circumduction/flexion/
 extension/adduction/abduction
 clavicle

Station 12

- a. Name the structure in bracket A
- b. Name structure B
- c. Name the thin structures connecting structure B to other such structures
- d. Name structure C

osteon
 lacunae
 canaliculi
 Central canal

1. Consider the knee joint:

(6)

<p>What structural components make the joint as a whole unstable? Explain.</p>	<p>Weak articulation point (no joint cavity). Small, linear ligaments hold tibia & femur together. Any force from the side destabilizes the bones. easily</p>
<p>What structural components make the joint as a whole stable? Explain.</p>	<p>Ligaments run through joint, front to back - prevent too much twisting motion. Patella helps lock bones in place & prevent hyperextension. Meniscus absorbs compressive forces.</p>

2. Over time, what effect will each of the following events have on bone density & strength? (10)

You wear SPF 45, which blocks Vitamin D synthesis.	<i>reduce</i>
Dr. Jekyll injects you with PTH.	<i>reduce</i>
Dr. Frankenstein runs electrical current through your bones.	<i>increase</i>
You begin lifting weights.	<i>increase</i>
Normal menstrual cycles cease.	<i>reduce</i>

3. Consider bone cells: (5)

Name 3 types of bone cells.	<i>osteoblast, osteocyte, osteoclast</i>
Which one produces the <i>organic</i> matrix of bone?	<i>osteoblast</i>
Which one digests the matrix of bone?	<i>osteoclast</i>

4. Name any two skeletal maladies that may result from a calcium deficiency. (2)

Osteoporosis, rickets, osteomalacia

5. Discuss two reasons why bone remodels and repairs itself much better and faster than cartilage. (4)

Bone is highly vascularized, cartilage is not. Bone cells are in contact with each other, making diffusion more rapid, cartilage cells are isolated. Bone has cells specifically designed to continually dismantle & repair matrix, cartilage does not.

6. Label each of the following events as indicative of endochondral or intramembranous ossification. (8)

Spongy bone forms first.	<i>intramembranous</i>
Begins with a cartilage model.	<i>endochondral</i>
Osteoblasts differentiate from resident mesenchymal cells.	<i>intramembranous</i>
Proceeds from one ossification center.	<i>intramembranous</i>

7. Other than providing leverage for movement, list three other functions of the skeletal system. (3)

*fat storage
blood cell production
Calcium storage*

*Guarding entrances & exits to body
Assisting in venous return of blood
protects organs.
vital.*

8. Consider shoulder and hip joints:

(9)

<p>Discuss two structural reasons why shoulder dislocations are more common than hip dislocations.</p>	<p>Shoulder joint is weak, thin, short ligaments hold bones together. Thinner, small, relatively weak muscles fix shoulder joint. Head of humerus is shallow in glenoid fossa. Broad ligaments encase hip joint. Large muscles stabilize femur in acetabulum. Head of femur is buried deeply in the acetabulum.</p>
<p>What other type of joint injury would I probably also sustain during a dislocation & why?</p>	<p>Sprain or bone chip. Pulling away a bone out of its socket would almost certainly tear ligament in the process. It might also shave off a piece of bone due to extreme forces being placed on a bone that is not built to withstand.</p>
<p>What is the purpose of synovial fluid?</p>	<p>Circulate nutrients, absorb shock, lubricate joint.</p>

9. Draw a typical long bone labeling the diaphysis, epiphyses, site of red bone marrow, periosteum and compact bone.

(5)

