## Tissues

Time: 45 min

Students are introduced to the four types of tissues through a worksheet. Activities include a review of skin structure and bone growth.

## Activities:

### 1) TISSUE WORKSHEET

SETUP: Print worksheet, one per student.

Instructions:

- Distribute worksheets, one per student.
- Students work on the worksheet when they are not doing an activity at one of the other stations.

Worksheets: tissue worksheet

### 2) SKIN LABELING

SETUP:

- Project an image of skin layers onto a white board (skin layer projection image)
- Write structures with which to label the skin layer image on sticky notes, one structure per sticky note.

Instructions:

- Put up sticky notes on the board with the projected image.
- Students use the sticky notes with structure names to label the structures and layers.

Worksheets: none

### 3) BONE OSSIFICATION MATCHING

SETUP:

- Have two separate but identical setups for this station.

- Set out about 6-7 bones (such as calvaria, femur, scapula, clavicle, patella, foot, jaw, etc.) for each of the two setups.
- Write out two sets of 'ossification type' cards (one set per setup) - each 3x5" index card card will read *either* 'intramembranous' or 'endochondral'. Perhaps have 6-7 cards labeled 'intramembranous' and 6-7 cards labeled 'endochondral' (12-14 cards total per setup) so that students don't try to match the ossification type with the bones by process of elimination.
- Place one set of cards at each station.

Instructions: Students place a card by each bone to indicate the bone growing by intramembranous or endochondral ossification.

Worksheets: none

# of TAs: One to work the skin model, one for the bone stations, and one to stay in the class room and be available for questions over the worksheet.

Instructor comments: Have students work in groups of 3 so they can move through the two stations faster. They get done with the stations fairly quickly, so groups of 2 can also work. Students only need to do one set of the bone stations since they are identical. Work to continuously call students to the stations while the rest do the worksheet to keep students moving through all activities in a timely manner.

# TISSUE WORKSHEET

Jump to activity description

1. Ken stabs Barbie in the face with a pencil in a fit of rage over the cost of their new dream house. Number the layers in Barbie's face that the pencil penetrates. Be careful!

Stratum corneum
Stratum granulosum
Superficial papillary region
Stratum basale
Reticular region
Hypodermis
Stratum spinosum
Stratum lucidum

2. Of the following bones, indicate whether bone growth occurs via endochondral or intramembranous ossification. E= endochondral, I = intramembranous

___ roofing bones of skull

___ humerus

___ clavicle

___ vertebra

___ scapula

___ patella

3. Which layer of the epidermis has stem cells that differentiate into keratinocytes?

4. T or F. Fingerprints are the result of the stratum spinosum layer of the epidermis dipping down into the dermis, forming ridges.

5. Which layer of the skin has many layers of flattened, dead keratinocytes?

6. What structures/layers does thin skin have that thick skin does not?

Is there anything that thick skin has that thin skin does not?

7. T or F Vessels closer to a capillary bed are always larger than vessels closer to the heart.

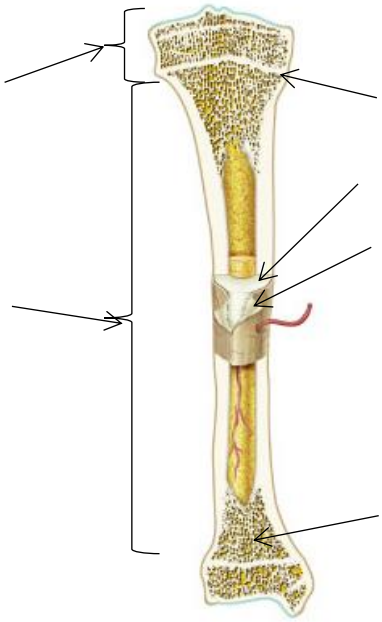
8. T or F The tunica media layer of an artery, made up of layers of skeletal muscle tissue, is superficial to the tunica interna layer, and is responsible for vasoconstriction and vasodilation of an artery.

9. When blood is shunted away from a region of the body, for example, away from your toes when it is very cold out, this is done via what type of anastomosis?

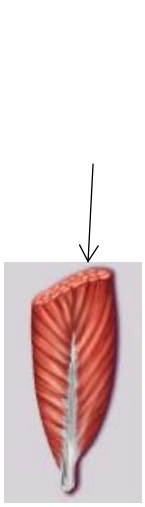
10. What type of anastomosis provides for alternate pathways of circulation, to and around a joint, for example?

11. What type of anastomosis provides for alternate pathways for blood to drain back from tissues?

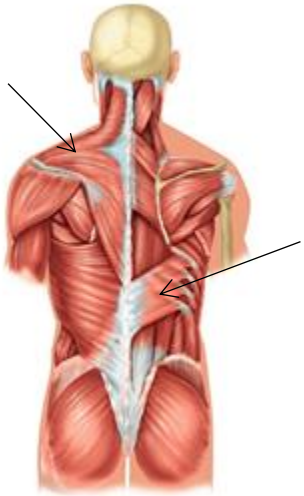
12. Label the following structures on this long bone.

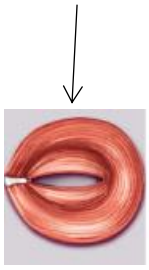


13. What muscle shapes are indicated by the arrows?



Be specific





A wee bit o' a review question…

Little Cindy Lou Who was in a terrible fight with her classmate. The classmate stabs Little CLW in the back with her pencil, driving the pencil deep into her spinal cord. Put the following in the order of layers that the pencil would go through, from external to internal.

spinal cord
dura mater
hypodermis
subarachnoid space
deep fascia
epidermis
pia mater
dermis
arachnoid

# SKIN LABELING

Jump to activity description