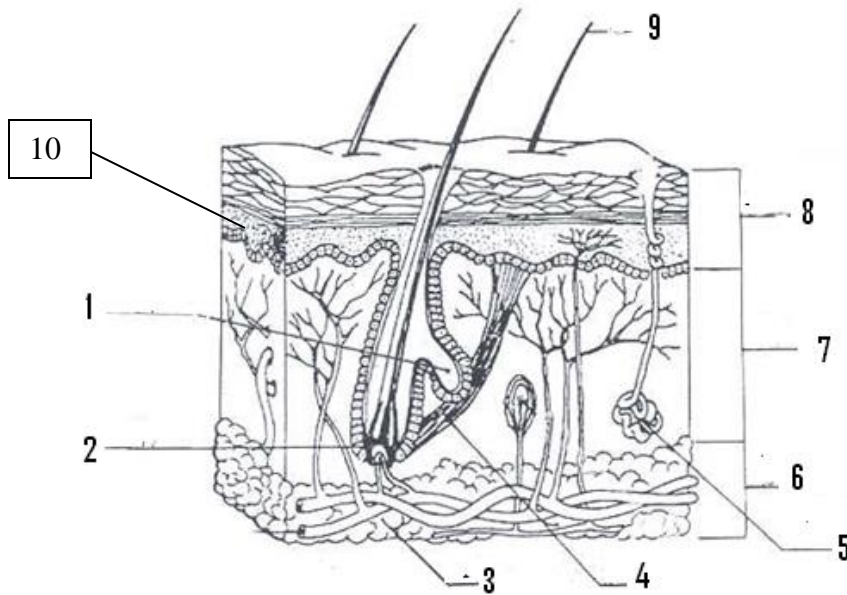


Skeletal & Muscular Systems Station Lab

Station 1 –Skin Diagram

1. On your answer sheet label the layers/structures of the skin indicated on the picture



Station 2 – Bone tissue slide (DO NOT MOVE THE SLIDE)

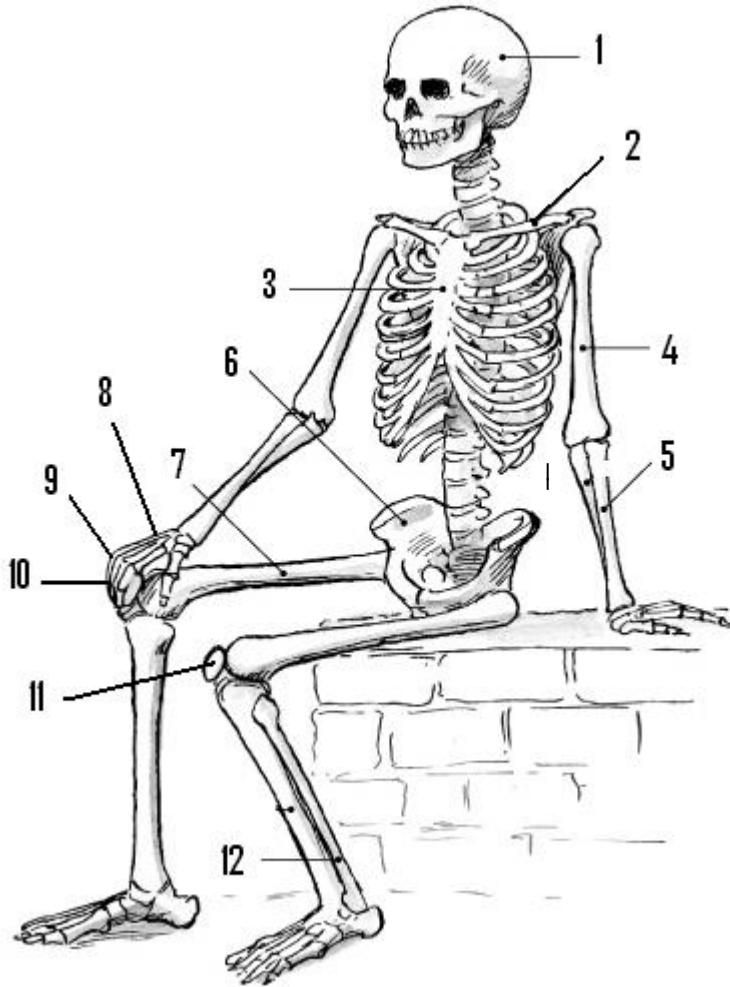
1. Look at the slide first under low power
2. Switch to high power
3. On your answer sheet draw and color the bone
4. Label your drawing as compact or spongy bone tissue, label the Haversian canals
5. Label total magnification you draw it under

Station 3 – Muscle Fatigue

1. Pick up the text book and hold it in your NON-DOMINANT hand. (the hand you do not write with) Count how many arm curls you can do in 20 seconds and record it on your data chart.
2. Repeat this process for five more, 20 second trials recording the result for each trial. **Do NOT rest your arm between trials.**
3. Prepare a line graph of the data you collected. The number of arm curls should be on the x-axis and the trial number on the y-axis.
4. Make sure you answer the questions.

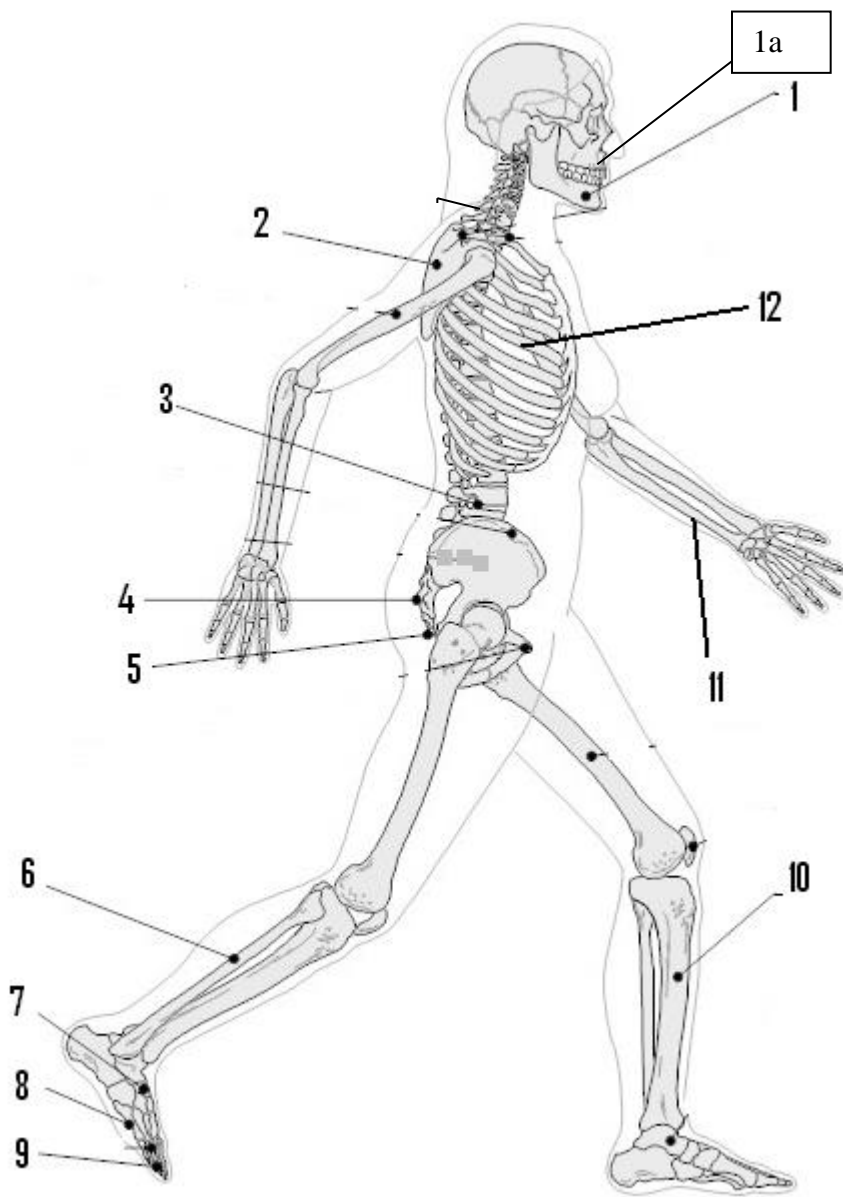
Station 4 – Skeletal labeling

1. On your answer sheet label the bones indicated on the picture
13. List the bones of the **axial** skeletal



Station 5 – Skeletal labeling

1. On your answer sheet label the bones indicated on the picture
13. List the bones of the **appendicular** skeletal



Station 6 – Types of muscle tissue

1. Label the boxes on your answer sheet & then check the appropriate box.
2. Draw a diagram of each of the muscle tissues & Label the nucleus

Characteristics of Muscles	Cardiac	Skeletal	Smooth
Voluntary			
Involuntary			
Striated			
Non-striated			
Found in heart			
Attached to bone			
Found in blood vessels, digestive track ect...			

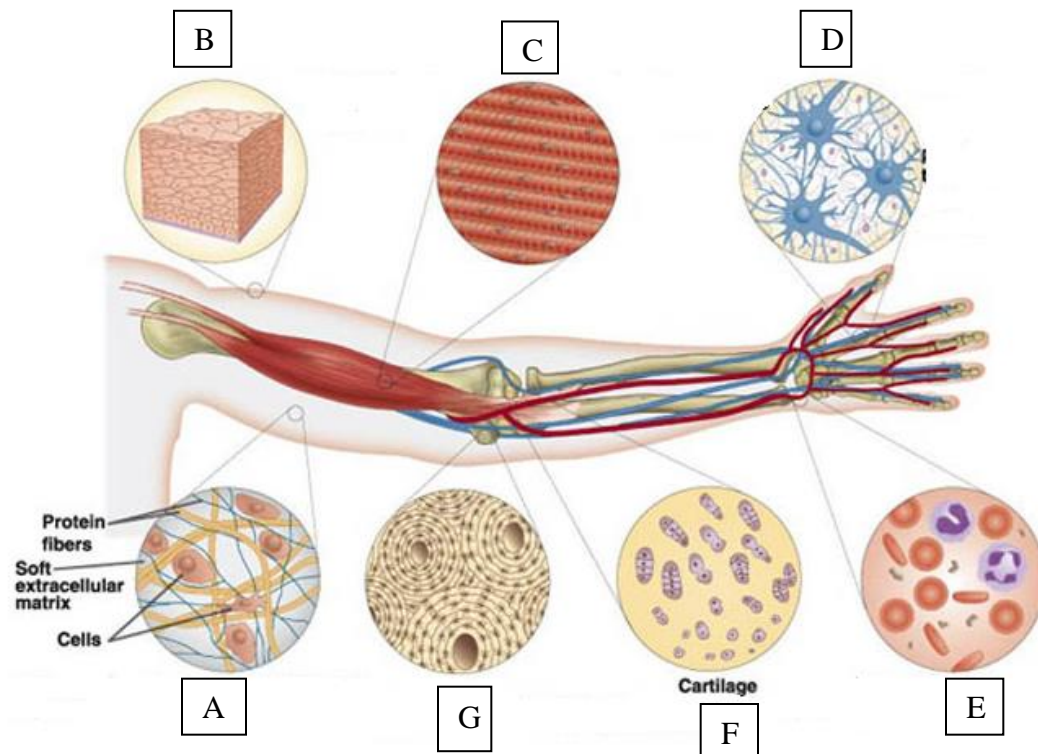
Station 7 – Effect of Temperature on muscles

1. Count the number of times you can make a fist in 20 seconds. Start with your hand completely outstretched and make a tight fist each time. Do it as fast as you can. Record the count on your data chart.
2. Now submerge your hand in a container of ice water so that the temperature is near the freezing point. Leave your hand in the water for **one full minute**.
3. Remove your hand and immediately count how many forceful fists you can make in 20 seconds. Record on your data chart.

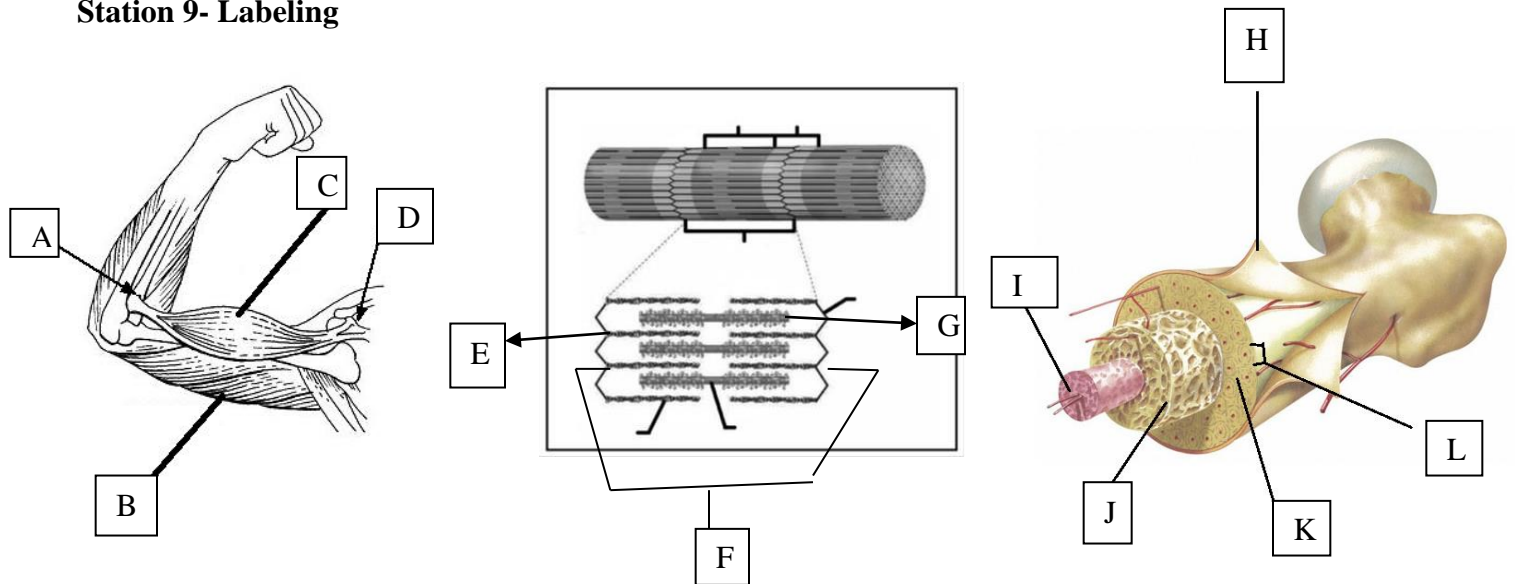
Station 8- Tissues of the human body

Give the type of tissue being described & label the picture

1. Tissue that can create electric signals & transmit them
2. Tissue that is made up of non-living matrix
3. Tissue most responsible for pushing your food through
4. Tissue that covers & lines organs
5. Tendons & ligaments
6. Epidermis of your skin
7. Adipose
8. Blood vessels, heart, biceps
9. Label A, B, C, D, E, F & G of the picture.



Station 9- Labeling



Identify the structure being described by **name & letter**

1. Contracting units of muscle fibers
2. Tough layer surrounding bone
3. Muscle that straightens the limb
4. Thick protein of muscle fibers; pulls on the thin one
5. Dense layer of bone
6. Site of muscle attachment to bone that does not move
7. Site of blood cell formation
8. Thin protein found in muscle fibers
9. Site of muscle attachment to bone that does move
10. Part of bone that provides strength without added a lot of mass
11. Muscle that bends limb

Station 10 (Brian)

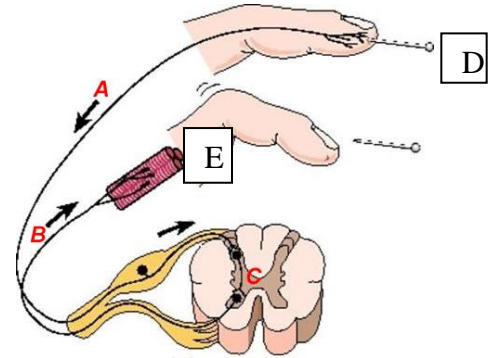
1. Control center for recognition and analysis of hunger, thirst, fatigue, anger, body temp.
2. Main communication link between brain and rest of body.
3. 31 pairs of nerves that branch off the spinal cord.
4. Coordinates and balances actions of muscles so body can gracefully and efficiently.
5. neural “switchboard” –regulates flow of info. between brain and rest of body.
6. Responsible for voluntary (conscious) activities of body, site of intelligence, learning and judgment.
7. controls heart rate, breathing, swallowing...etc
8. Receives messages from all sensory receptors throughout body, relays info. to proper region of cerebrum for further processing.
9. Connects brain and spinal cord (just below cerebellum).
10. Consists of the brain and spinal cord.

Station 11 Heart Picture – using the heart picture on your answer sheet draw blue arrows indicating the flow of deoxygenated blood through the heart and red arrows indicating the flow of oxygenated blood through the heart.

Station 12 Branches of the Nervous system

Give the branch of the nervous system being described & label the picture

1. Responsible for voluntary activities
2. These work opposite of each other
3. Controls a reflex
4. Controls your heart beating normally
5. Will slow down your heart rate, breathing rate
6. Will slow down digestion
7. Consists of the brain and spinal cord
8. Controls skeletal muscles
9. Controls normal breathing rate
10. Consists of the nerves off the spinal cord
11. Label A, B, C, D & E of the picture.



Station 13 A

1. Type of vessel that carries blood away from the heart.
2. Pumping chambers of the heart are known as the
3. The surge of blood felt in the arteries is known as
4. Type of vessel that carries blood back to the heart
5. Receiving chambers of the heart are known as
6. Tube made of cartilage so it doesn't collapse as air passes through
7. Diaphragm _____ when you inhale
8. Type of blood cell that contains hemoglobin
9. Most muscular of the four chambers of the heart.
10. Structures found in the heart to ensure 1-way flow of blood
11. Air sacks
12. Structure in heart that separates oxygen rich blood from oxygen poor blood.
13. Type of blood vessels that contains valves
14. Smallest type of blood vessels
15. Fragments of cells found in the blood
16. Passage way in back of throat for air or food
17. Type of blood cells that live for years
18. Blood vessel where exchange of nutrients and wastes occurs
19. Iron containing protein in RBC's
20. Flap of tissue that prevents food from entering the trachea

Station 13 B

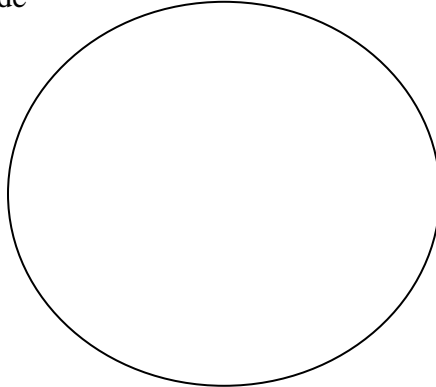
1. Site of water reabsorption
2. Principle metabolic waste product in urine
3. Enzyme secreted by gastric glands of stomach that begins chemical digestion of proteins
4. Accessory organ that produces bile
5. Swallowed wad of food
6. Receives filtrate from glomerulus
7. Portion(s) of small intestine in which chemical digestion of all nutrients is completed
8. Substance secreted in stomach that activates pepsin by lowering pH
9. Enzyme that begins chemical digestion of starch
10. Capillary network that filters blood in nephron
11. Soft, muscular tube that carries bolus to stomach
12. Functioning unit of the kidney
13. Acidic, partially digested stomach contents
14. Smooth rhythmic contractions that move food through esophagus to rectum
15. Folds of small intestine that increase surface area to maximize nutrient absorption
16. Emulsifying agent that mechanically digests lipids
17. Substance secreted by pancreas to neutralize chyme
18. Carries "clean" blood from kidney to inferior vena cava
19. Protects the stomach lining from its acidic contents
20. Fiber; component of plant cell walls

Integumentary, Skeletal & Muscular Systems Station Lab

Station 1 –Skin Diagram

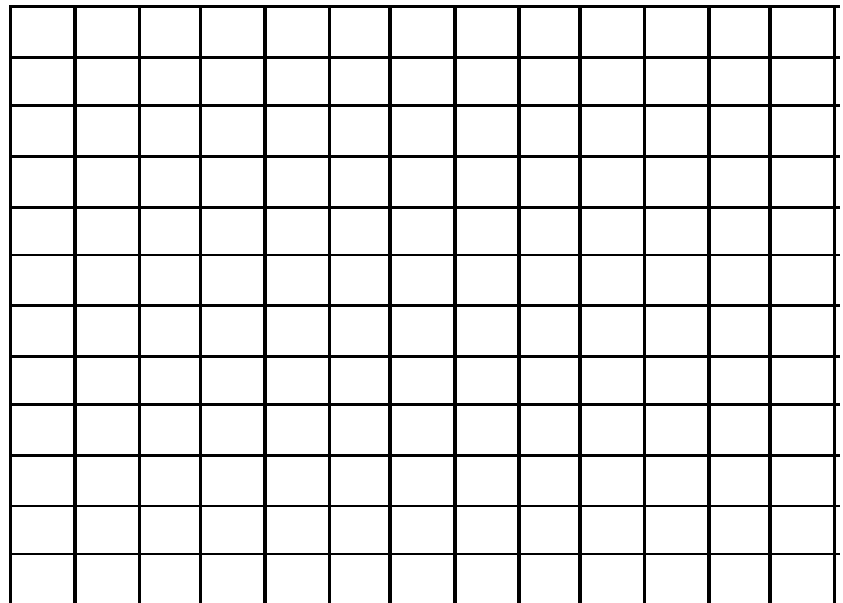
- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Station 2 –Bone tissue slide



Station 3- Muscle Fatigue

Trial #	Partner #1: # of arm curls in 20 sec.	Partner #2: # of arm curls in 20 sec.
1		
2		
3		
4		
5		
6		



total magnification _____

(Make sure your graph has titles)

1. What happened to your ‘strength’ as you progressed through each trial?
2. How does your graph show this?

3. Your _____ is how many muscle fibers contract at one time; whereas your _____ is how long you can sustain the contraction.

Station 4 – Skeletal labelling

- | | | |
|----------|----------|-----------|
| 1. _____ | 5. _____ | 9. _____ |
| 2. _____ | 6. _____ | 10. _____ |
| 3. _____ | 7. _____ | 11. _____ |
| 4. _____ | 8. _____ | 12. _____ |

13. List the bones of the **axial** skeletal _____

Station 5 – Skeletal labeling

- | | | | |
|----------|-----------|----------|-----------|
| 1. _____ | 1a. _____ | 5. _____ | 9. _____ |
| 2. _____ | | 6. _____ | 10. _____ |
| 3. _____ | | 7. _____ | 11. _____ |
| 4. _____ | | 8. _____ | 12. _____ |

13. List the bones of the **appendicular** skeletal _____

Station 6 – Types of muscle tissue

Characteristics of Muscles	Cardiac	Skeletal	Smooth

Cardiac	Skeletal	Smooth

Station 7 – Effect of Temperature on muscles

Temperature	Partner #1: Number of Fists	Partner #2: Number of Fists
Room Temp		
Cold		

1. What effect did the cold temperature have on the action of your hand muscles? Explain

Station 8- Tissues of the human body

- | | | |
|----------|------------|----------|
| 1. _____ | 6. _____ | C. _____ |
| 2. _____ | 7. _____ | D. _____ |
| 3. _____ | 8. _____ | E. _____ |
| 4. _____ | 9. A _____ | F. _____ |
| 5. _____ | B _____ | G. _____ |

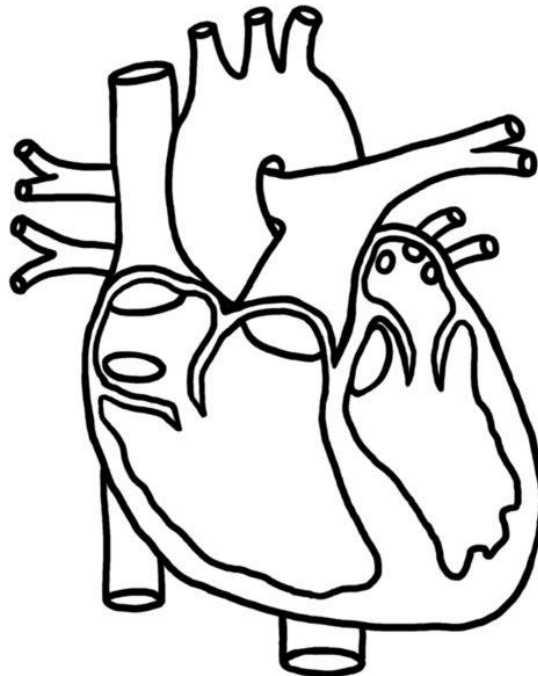
Station 9- Labeling- give letter & name of structure

- | | |
|----------|-----------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |

Station 10 Nervous system (Brian)

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Station 11 Heart picture



Station 12

- | | | |
|----------|-----------|--------------|
| 1. _____ | 6. _____ | 11. A. _____ |
| 2. _____ | 7. _____ | B. _____ |
| 3. _____ | 8. _____ | C. _____ |
| 4. _____ | 9. _____ | D. _____ |
| 5. _____ | 10. _____ | E. _____ |

Station 13 A

- | | |
|-----------|-----------|
| 1. _____ | 11. _____ |
| 2. _____ | 12. _____ |
| 3. _____ | 13. _____ |
| 4. _____ | 14. _____ |
| 5. _____ | 15. _____ |
| 6. _____ | 16. _____ |
| 7. _____ | 17. _____ |
| 8. _____ | 18. _____ |
| 9. _____ | 19. _____ |
| 10. _____ | 20. _____ |

Station 13 B

- | | |
|-----------|-----------|
| 1. _____ | 11. _____ |
| 2. _____ | 12. _____ |
| 3. _____ | 13. _____ |
| 4. _____ | 14. _____ |
| 5. _____ | 15. _____ |
| 6. _____ | 16. _____ |
| 7. _____ | 17. _____ |
| 8. _____ | 18. _____ |
| 9. _____ | 19. _____ |
| 10. _____ | 20. _____ |