Section A: Intro to A&P
1. Define anatomy. ____________________________________________________________
2. Define physiology. __________________________________________________________
3. How does the anatomy of an organ determine its function? Provide an example. ____________________________________________________________
4. Which type of anatomy?
   a. If asked to study organs in the abdominal cavity. _____________________________
   b. If asked to study how the skin changes as one ages. ___________________________
   c. If asked to identify epithelial tissue within the body. ___________________________
   d. If asked to examine organs in the cardiovascular system. ______________________
5. Identify the levels of organization starting with the simplest and concluding with the most complex.

6. What do you call a group of cells that perform similar functions? ___________________

Section B: Systems
1. Locate the following organs using diagrams in the textbook. For each organ listed, indicate what organ system it belongs to. After filling in the chart, find the organs on the models.

<table>
<thead>
<tr>
<th>Organ</th>
<th>Organ System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart</td>
<td>Skeletal</td>
</tr>
<tr>
<td>Lungs</td>
<td>Muscular</td>
</tr>
<tr>
<td>Trachea</td>
<td>Endocrine</td>
</tr>
<tr>
<td>Larynx</td>
<td>Respiratory</td>
</tr>
<tr>
<td>Esophagus</td>
<td>Digestive</td>
</tr>
<tr>
<td>Stomach</td>
<td>Urinary</td>
</tr>
<tr>
<td>Small Intestines</td>
<td></td>
</tr>
<tr>
<td>Kidneys</td>
<td>Cardiovascular</td>
</tr>
<tr>
<td>Urinary Bladder</td>
<td></td>
</tr>
<tr>
<td>Brain</td>
<td>Nervous</td>
</tr>
<tr>
<td>Ovaries</td>
<td>Integumentary</td>
</tr>
<tr>
<td>Spinal Cord</td>
<td></td>
</tr>
</tbody>
</table>
Lymphatic

Immune

Reproductive

➢ Get a bag of index cards and practice matching the systems, organs and functions. After matching the cards, check your notes to see if you are correct.

Section C: Homeostasis
1. For your body to maintain homeostasis, it must perform and maintain a minimum of 12 functions that we have come to call characteristics of life. Identify 5 of these characteristics and give a brief explanation of what each characteristic is.

2. What are the 5 survival needs of the human body?

3. Nutrients, water and oxygen are basic materials our body needs to survive. Why is temperature and atmospheric pressure so important for the survival of the human body?

4. What is homeostasis?

5. How is communication essential for homeostasis and which system(s) are responsible for it?

Section D: Terminology
A precise set of terms and planes have evolved to describe positions, relationships, and directions within the human body. To avoid confusion they must always be related to the standard anatomical position standing erect, palms of the hands forward. Planes are fixed lines of reference along which the body is often divided (sectioned) to facilitate the viewing of structure. By studying a region from sagittal, transverse, and frontal planes of reference a 3-dimensional perspective can be obtained. Terms of position and direction describe the position of one organ relative to another, usually along one of the three major body planes. Color the body planes and directional terms (arrows) in the diagram.
**BODY PLANES**

a. **Median, Midsagittal – Color Red**  
Divides the body into left/right halves.

b. **Sagittal – Color Green**  
Divides the body into unequal left and right parts and parallel to the median plane.

c. **Frontal, Coronal – Color Blue**  
Divides the body into anterior and posterior parts.

d. **Transverse, Cross Horizontal – Color Yellow**  
Divides the body into upper and lower parts.

**ANATOMICAL DIRECTIONS**

e. **Cranial, Superior – Color Orange**  
These terms refer to a structure being closer to the head or higher than another structure in the body.

f. **Caudal, Inferior – Color Brown**  
These terms refer to a structure being closer to the feet or lower than another structure in the body.

g. **Anterior, Ventral – Color Gray**  
These terms refer to a structure being more in front than another structure in the body.

h. **Posterior, Dorsal – Color Purple**  
These terms refer to a structure being more in back than another structure in the body.

i. **Medial – Color Pink**  
This term refers to a structure being closer to the median plane than another structure in the body.

j. **Lateral – Color Dark Green**  
This term refers to a structure being further away from the median plane than another structure in the body.

k. **Proximal – Color Dark Blue**  
Employed only with reference to the limbs, term refers to a structure being closer to the median plane or root of the limb than another structure in the limb.

l. **Distal – Color Black**  
Employed only with reference to the limbs, term refers to a structure being further away from the median plane or the root of the limb than another structure in the limb.

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**Section E: Directional Terminology**

1. What is the advantage for the medical community to use a “universal” language?

2. Describe the anatomical position. Why might it be confusing if we did not use this position as a reference point?

3. Identify the correct directional term.
   a. ______________ means toward the front
   b. ______________ means further away from the point of attachment of a limb
   c. ______________ means towards the head or up
   d. ______________ means closer to the body surface
   e. ______________ means towards the midline
4. Use the directional terms to complete the following statements.
   a. The esophagus is ______________________ to the spinal cord.
   b. The heart is ______________________ to the diaphragm and ______________________ to the lungs.
   c. The kidneys are ______________________ to the heart.
   d. The knee is ______________________ to the hip, but ______________________ to the foot.
   e. The spine is ______________________ to the sternum.
   f. The sternum is ______________________ to the heart.
   g. The cranium is ______________________ to the scalp.
   h. The nose is ______________________ to the ears.
   i. The elbow is ______________________ to the fingers.

Section F: Body Planes
1. Identify the planes or sections on the diagram.
2. Use the terms to indicate the plane or section.
   a. Name the plane in which the entire width of the sternum may be seen. ______________________
   b. Name the plane that divides the body into mirror image halves. ______________________
   c. A plane that divides the forearm into proximal and distal portions is a ______________________ section.
   d. A plane parallel to the midsagittal plane is a ______________________ plane.
   e. A plane removing just the tip of the nose parallel to the face is a ______________________ section.
   f. Looking at the cut surface of the removed nose is a ______________________ view.
   g. Looking at the bottom of a brain removed from the cranium is a ______________________ view.
   h. Looking at the heart from the right side of a right ______________________ view.
   i. Assume a midsagittal section of the brain. When looking at the cut surface, this is a ______________________ view.
   j. You were told to cut an animal along two planes so that both lungs are observable in both sections. The two sections that meet this requirement are the ______________________ and ______________________.

Section G: Body Cavities
1. Label the body cavities in the diagram.
2. Why is the abdominal cavity more prone to injuries than the other cavities?
3. What separates the dorsal cavity into two subdivisions?
4. What separates the ventral cavity into two subdivisions?
5. Identify the body cavities where the following surgical procedures would occur.
   a. Removal of the uterus. ______________________
   b. Coronary bypass surgery (heart surgery). ______________________
   c. Removal of a serious brain tumor. ______________________
   d. A stomach ulcer operation. ______________________
   e. A spinal tap to remove cerebrospinal fluid. ______________________
   f. A biopsy of lung tissue. ______________________
   g. Removal of a polyp on the lining of the large intestines. ______________________
   h. Surgery to tack up the urinary bladder. ______________________

HONORS A&P
Abdominal Regions & Quadrants

- Use the links on ‘Websites’ under the Human A&P tab….click on the following links and practice. Links: Planes, Abdominopelvic Regions, Quadrants
- Answer these questions.
  - In which quadrant would a surgeon cute to remove the gall bladder? ______________________
  - In which quadrant would an acute appendicitis be felt? ______________________

Section H: Regional Terms

- Practice terms using blank diagrams. Label the lines with numbers and practice using a separate piece of paper.
- Create index cards with common name and regional terms. Maybe include a pic.
- Use the links on ‘Websites’ under the Human A&P tab….click on the ‘Regional terms’ links and practice.

Section I: Technology

1. How does this technology create images? Provide examples.

   a. CT (computed tomography) – ______________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________

   b. Ultrasound (sonography) – ______________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________

   c. PET (positron emission tomography) – ______________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________

   d. MRI (magnetic resonance imaging) – ______________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________
      ___________________________________________________________________