

Name: _____ Period: _____ Date: _____

Ms. Randall Anatomy and Physiology

Lab activity Tissue Histology

Background:

The **cell** is considered to be the basic structural and functional unit of life. Cells have become specialized to perform very specific functions, usually along with other cells of the same kind. Such groups of similar cells working together to carry out a particular function are called **tissues**.

Tissues may interact with each other in order to accomplish a particular life function. Structures resulting from such interactions are known as **organs**. In turn, these organs may exhibit a structural and functional interdependency, resulting in **organ systems**. The sum total of a variety of organ systems gives rise to an **organism**.

Animal tissues include four basic types: **epithelium**, **connective** (or supportive), **muscular**, and **nervous**. Every human organ contains each of these four tissues. In this activity you will have the opportunity to observe the histological characteristics of various tissue types.

Objective: To describe the histological characteristics of various tissue types.

For each of the listed tissues, do the following:

1. Set up the slide on the mechanical stage of the microscope.
2. Examine the slide at low(scanning), medium and high magnifications
3. Scan the slide to find a portion comparable to the photograph found in the textbook or online links provided below. You may need to increase or decrease the magnification.
4. Draw & label each tissue using the highest magnification in the space provided
 - a. Draw what you see through the microscope, using textbook and online illustrations as guidelines.
 - b. Give the function of the tissue and an example of a location in the body

Refer to the following sites for additional images:

https://bio.rutgers.edu/~gb102/lab_6/index.html

<https://www.kumc.edu/instruction/medicine/anatomy/histoweb/index.htm>

1) SIMPLE COLUMNAR EPITHELIUM

Label: basement membrane (basal lamina), cell nucleus, cytoplasm, cell membrane, free (apical) surface

2) HYALINE CARTILAGE (use TRACHEA section)

Label: extracellular matrix, chondrocyte, lacuna, perichondrium

3) GROUND BONE

Label: extracellular matrix, osteocyte, lacuna, canaliculi, Haversian canal (central canal), osteon

4) BLOOD SMEAR

Label: red blood cell (erythrocyte), white blood cell (leukocyte), platelet (thrombocyte)

5) SKELETAL MUSCLE

Label: individual skeletal muscle cell, nuclei, striations, cytoplasm, sarcolemma (cell membrane)

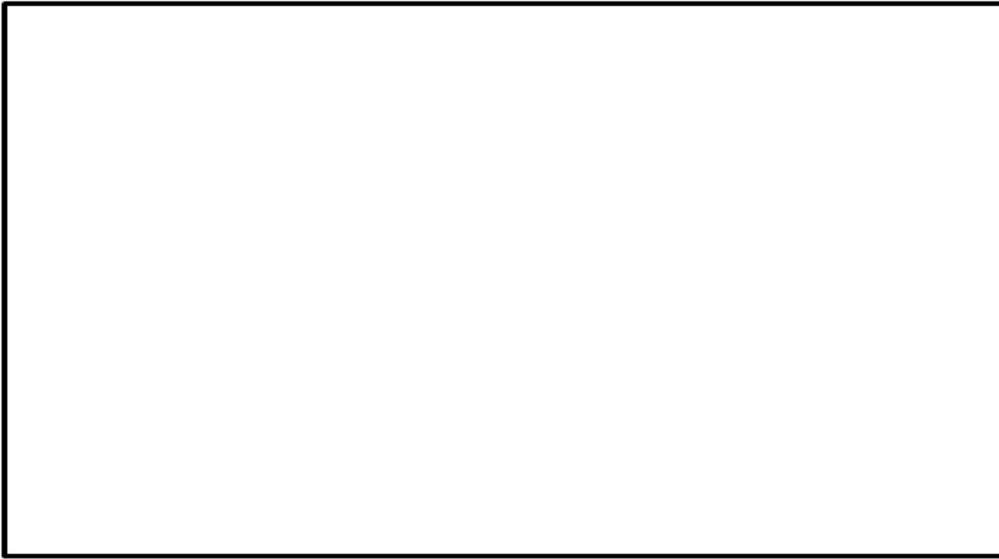
6) CARDIAC MUSCLE (use longitudinal sections)

Label: nuclei, striations, cytoplasm, intercalated disks

7) SMOOTH MUSCLE

Label: nuclei, cytoplasm

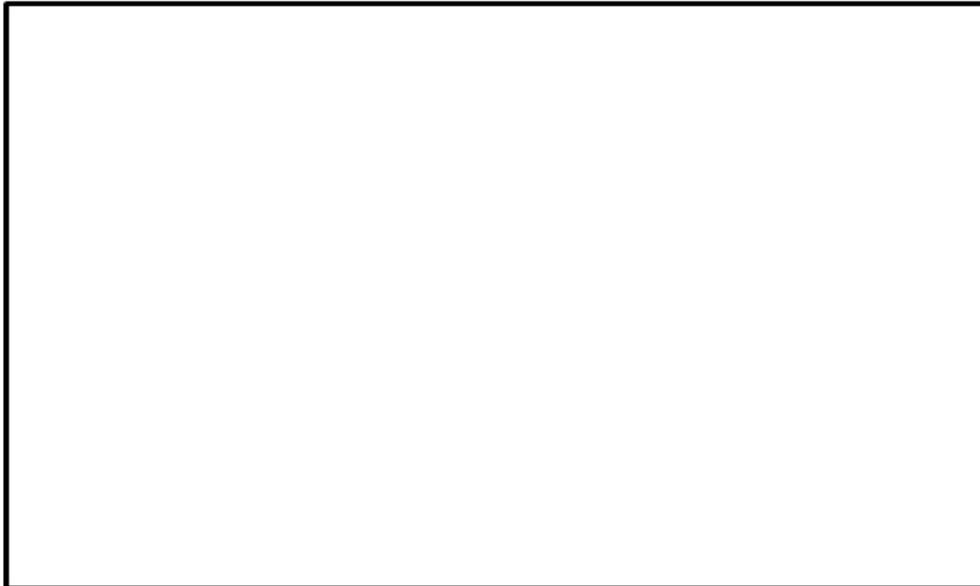
Sample: _____



Function: _____

Example: _____

Sample: _____



Function: _____

Example: _____