

Honors Physiology Body Map Assignment

Name: _____

Unit 2 covers *histology*, or the study of tissues and their structures/ functions. To begin the unit, your assignment is to create a body map featuring a very prominent organ in the human body...

Background -

The **skin** is the largest organ in the body — both in weight and in surface area — and separates the body's internal environment from the external environment. The skin has many diverse roles. It acts as a channel of **communication** with the outside world; **protects** the body from water loss; uses specialized **pigment** cells, called melanocytes, to protect the body from ultraviolet radiation; participates in calcium **homeostasis** by contributing to the body's supply of vitamin D; and helps regulate body **temperature** and **metabolism**.

Elastic tissues such as the skin require a strong and resilient structural **framework**. This framework is called the extracellular matrix, or **connective tissue**. The orientation of the connective tissues — adipose (fat cells), cartilage, bone, tendons, and ligaments — found beneath the skin are also key for tissue appearance and function. All connective tissue is composed of three major classes of biomolecules: **structural proteins** (collagen and elastin), **specialized proteins** (fibrillin, fibronectin, and laminin), and **proteoglycans**.

Directions -

On a separate sheet of paper, using the template provided (or your own drawing), you are going to create a “map” of your body’s tissues. This map should show any major **scars** you have, injuries, moles, birth marks, sunburns, bee stings, broken bones, etc. *that you feel comfortable sharing* – and the story behind them “location” on the map.

For example -



#1 – 3 small scars on my shoulder are what remain of the shoulder surgery I had when I was 18 years old. I tore my labrum and biceps tendon while playing basketball, and had to have arthroscopic surgery to have the tissue fixed.

#2 – A small scar on the upper cartilage of my ear lobe is barely visible after my puppy bit me at age 2! We grew up together, and one day playing while playing with her toy, she caught the top of my ear and left a small (and now very faint) scar.