



Human Body Systems

Virtual Learning

9-12th PLTW[®] HBS

PLTW[®] 5.1.1 Under Your Skin

Part I: The Anatomy & Histology of Skin

May 4, 2020



Human Body Systems

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Lesson: May 4, 2020

Objective/Learning Target:

Students will be able to investigate a cross-section of human skin, examine the tissues that make up skin as well as the accessory organs (hair follicles, sweat glands) that are found within the skin's layers. (*Reference: PLTW[®] 5.1.1 Under Your Skin*)



Let's Get Started/Warm Up Activities:

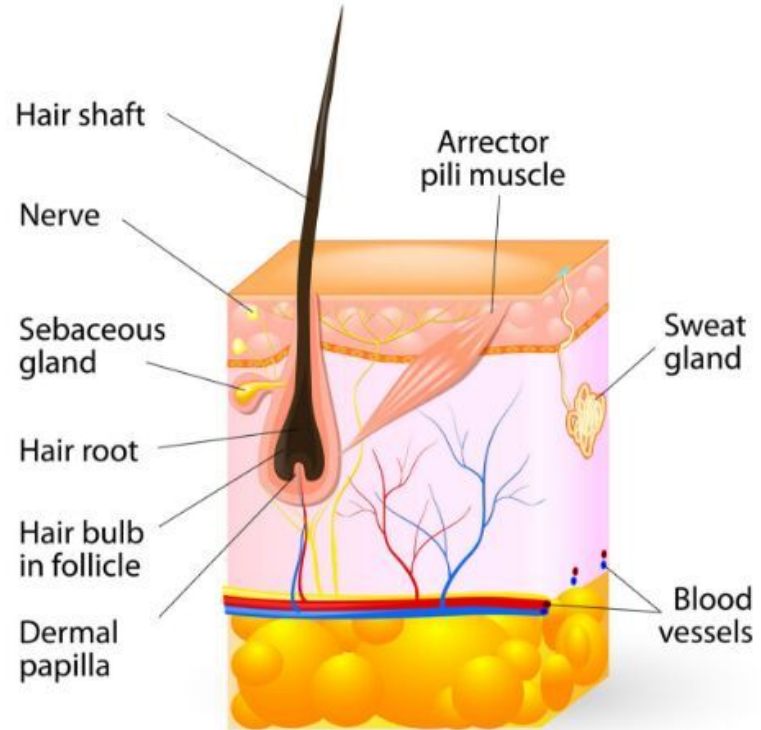
Before we start our lesson today, watch the following videos:

- [Human Skin: A Quick Introduction](#)
- [National Geographic: What is Skin?](#)

Lesson/Activity:

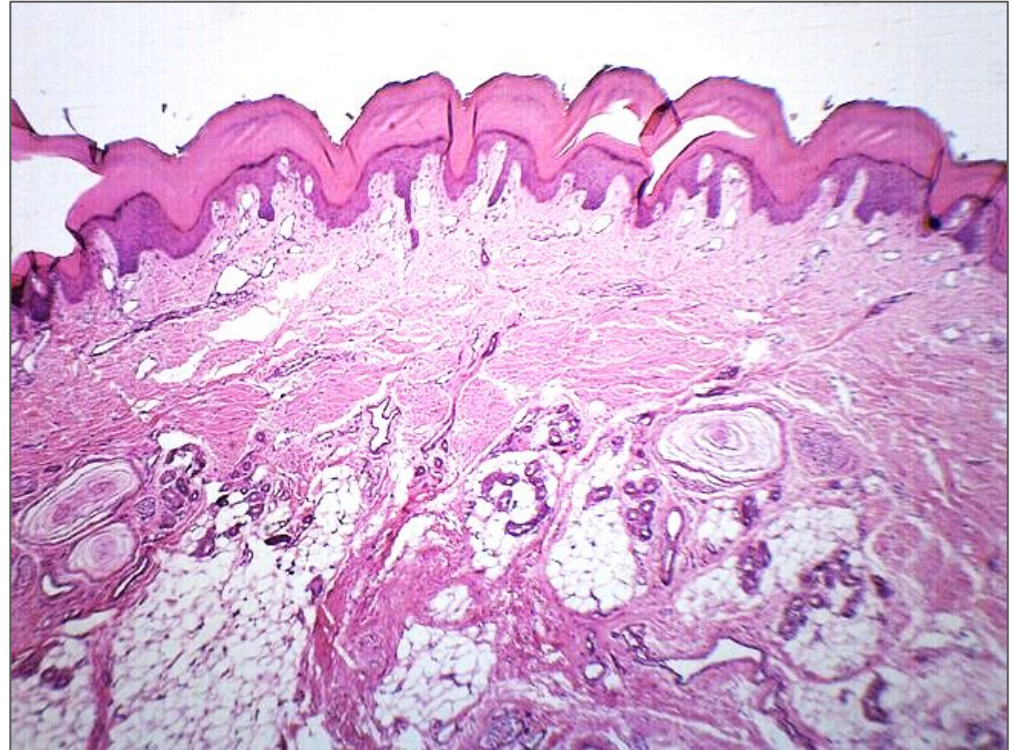
Activity #1: On a piece of paper or in your notebook, draw this diagram of human skin. Feel free to use colored pencils, crayons or markers if available.

Activity #2: Using websites of your own choosing, write down the main function of each term on the diagram.



Lesson/Activity continued:

Activity #3: Look at the human skin cross section (right diagram). Label the structures you can see under the microscope. Identify the specific types of tissue that make up the epidermis and the dermis.



Lesson/Activity continued:

Activity #4: Using websites of your own choosing, write down the main function of each of the following proteins in the skin:

- A. Keratin
- B. Collagen
- C. Elastin
- D. Melanin

Reflection question: A scanning electron micrograph (SEM) was used to take the images on the right of the top layer of human skin. Did you know your skin is constantly flaking off? After seeing these microscopic image, describe why you think this happens.



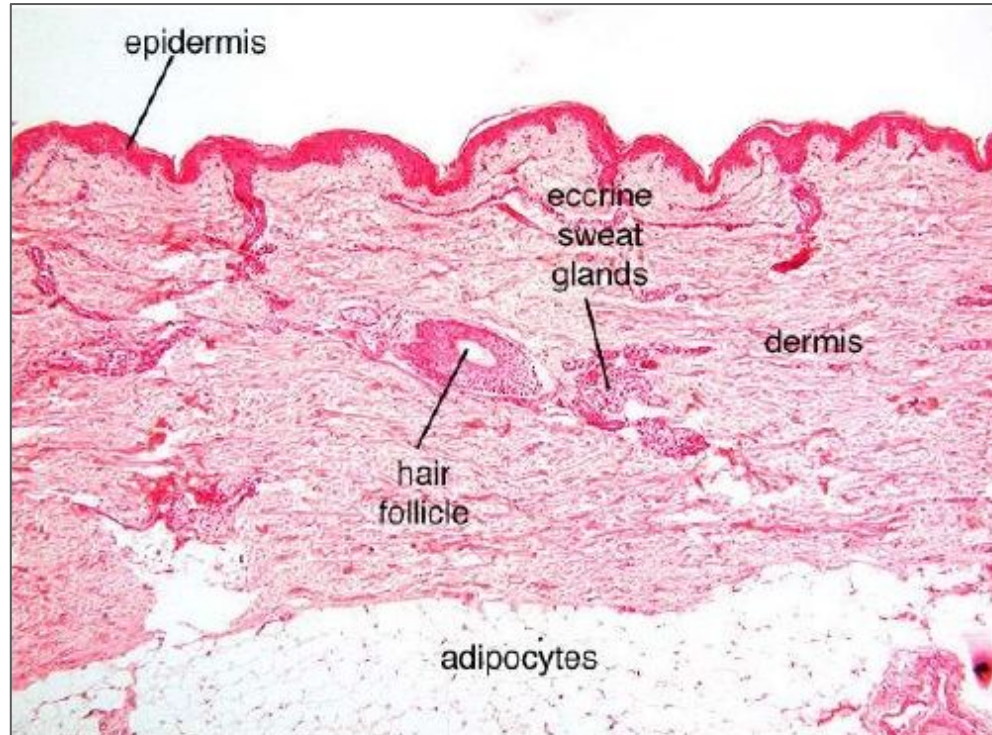
Lesson/Activity Answer(s):

Activity #1 & 2 Answer(s):

Click [HERE](#) to view answers.

Activity #3 Answer(s):

See diagram to the right.





Lesson/Activity Answer(s):

Activity #4 Answer(s):

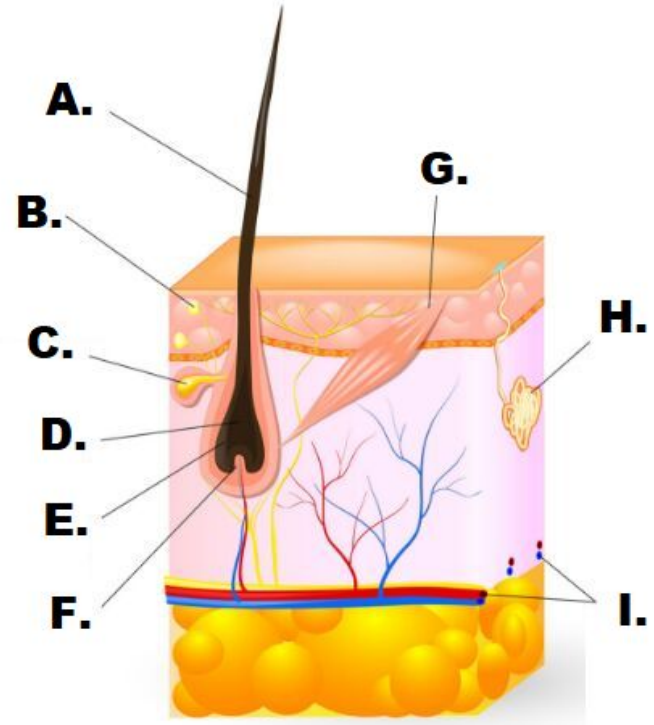
Click [HERE](#) to view answers.

Reflection Answer(s):

Desquamation is the natural process in which skin cells are created, sloughed away and replaced. The desquamation process happens in the outermost layer of the skin called the epidermis. Click [HERE](#) to read more.

Practice:

Practice: On a separate sheet of paper, and **WITHOUT** using your diagram from Activity #1, try practicing by writing down all of the anatomy terms that you can remember. Practice several times so that you remember the anatomy.





Practice Answer(s):

Practice:

Question(s): On a separate sheet of paper, and WITHOUT using your diagram from Activity #1, try practicing by writing down all of the anatomy terms that you can remember.

Answer(s): Click [HERE](#) to view the answer(s).



Additional Practice and/or Resources:

Learn More:

[HBS Unit 5.1.1 Flashcards](#)

Test your knowledge by clicking on the link above.

[Skin Fun Facts](#)

There is so much more to your skin than you might think. Here are some of the most interesting facts about your skin!

[How Do Cuts Heal?](#)

If you've ever had a little cut or scratch, you know it doesn't take long for it to heal! But do you know how different parts of your body work together to fix you up good as new when you're hurt? Check out this video to learn more.