

Summary Description

This is the final in a series of 8 lessons that introduces the student to human anatomy.

Learning Objectives

To have the student learn a few key facts about skin, hair, and nails.

Approximate Time for Lesson

30 minutes

Suggested Maturity Level for Instruction

Student should be able to read simple words and perform simple addition and subtraction. Also, student should be able to sit still and engage in one-on-one conversation.

References:

Human Skin, Discovery Kids - <http://yucky.discovery.com/noflash/body/pg000146.html>

Your Skin, KidsHealth -

http://kidshealth.org/PageManager.jsp?lic=1&article_set=54047&cat_id=20607

Your Hair, KidsHealth -

http://kidshealth.org/PageManager.jsp?lic=1&article_set=54035&cat_id=20607

Your Nails, KidsHealth -

http://kidshealth.org/PageManager.jsp?lic=1&article_set=54041&cat_id=20607

Materials Needed

1. Internet Access - Pull up the following:
 - a. Picture of the skin (go to <http://www.nature.com/nature/journal/v445/n7130/images/nature05664-f1.2.jpg>)
 - b. Picture of a hair (go to http://www.mayoclinic.com/images/image_popup/sn7_hairfollicle.jpg)
 - c. Picture of a nail (go to http://z.hubpages.com/u/1137350_f496.jpg)
 - d. Video of the skin, hair, and nails (go to http://www.youtube.com/watch?v=IAAt_MfIJ-Y&feature=related)

Preparation

Make sure you have materials open, printed and/or available prior to beginning the lesson.

Script

Introduction (5 minutes)

1. **Teacher:** Ok. Last lesson we learned about the nervous system and how about the brain, spinal cord, and neurons all worked together to make your body work.

2. Teacher: Today is our final lesson on human anatomy and the lesson is about our skin, hair, and nails. So are you ready to learn about our skin, hair, and nails? [\[Get positive response from Student and begin lesson\]](#)

Lesson (20 minutes)

1. Teacher: Great. Now, our skin, hair, and nails are what cover our bodies - kind of like gift wrapping paper covers a present. I don't think that's any surprise, but did you know that your skin, hair, and nails are all made from the same thing? [\[Receive Student's negative response and move on\]](#)
2. Teacher: That's right, the top layer of your skin (the part that you see), your hair, and your nails are made of something called keratin. Keratin is a special protein that your body makes especially for this job. Now let's look at each of these 3 parts of your body one by one. First, let's talk about your skin.
3. Teacher: Your skin is the largest organ of your body. It holds everything that's inside your body...well, inside your body so that all your muscles, bones, blood, and organs don't fall out all over the place and make a big mess. But your skin also is important because it protects the insides of your body as well - it keeps germs and unwanted water out and all the stuff that your body needs in. Your skin also keeps your body warm so that we don't always need to go into the sunlight when we get cold.
4. Teacher: Now, since your skin is an organ, it's alive...well, most of it is anyway. Here's how it works: [\[Show the Student the picture of the skin\]](#) Your skin is made up of many layers. Think of your skin like a bunch of giant rugs stacked on top of each other. That top layer is called the epidermis [\[point to the epidermis\]](#) - it's the part of your skin that everyone sees. All the layers combined below the epidermis is called the dermis [\[point to the dermis\]](#). What happens is that, constantly, even when you're asleep, new skin cells are being created and make up the dermis. But as this happens, the older skin cells are being pushed up to the higher layers. In fact, when the skin cells belong to the highest layer of the epidermis, those skin cells are so old that they are already dead. So, what everyone is seeing when they see your skin is actually dead skin cells - what do you think about that? [\[Engage the Student in conversation\]](#)
5. Teacher: Yeah, it's kind of gross, I know. But it's true. But one more thing, if your body is constantly creating skin cells that are being pushed up to your epidermis, what do you think is happening to the dead skin cells that are already at the top layer? I mean, your skin doesn't constantly get thicker from all those skins cells being created, right? So what do you think happens to all those dead skin cells? [\[Engage the Student in conversation but come to the point that the dead skin cells eventually fall off the skin\]](#)
6. Teacher: That's right. So as new skin cells are constantly being created by your body, dead skin cells at the top are constantly falling off your body. In fact, every minute that passes by, about 30,000 to 40,000 dead skin cells fall from your body from scratching, clapping, rubbing your skin against clothes or even touching your skin. And after about a month, you have a new set of skin!

7. Teacher: In fact, in your lifetime, you will shed about 40 pounds of dead skin cells. [THIS NEXT PART MAY BE A LITTLE TOO DISGUSTING, SO READ AHEAD TO SEE IF YOU WANT TO SAY IT. OTHERWISE MOVE ONTO THE NEXT LINE] Ok - you want to hear something even grosser than dead skin cells? Well, just like we talked about in our lesson on food chains, decomposers called dust mites actually eat our dead skin cells. Now you can't see these dust mites because they are so small that you need a microscope, but believe me, they are there in everyplace where humans shed a lot of our dead skin. Why, in our pillows and mattresses alone, there are over 1 million dust mites feeding on your dead skin cells that you shed just from last night!
8. Teacher: OK - enough about that. Let's move onto talking about hair. Since we are mammals, we have hair covering our entire body even though it doesn't look like it. And the hair on our body does different things depending on where the hair is located. For example, hair on top of our heads helps keep us warm. Eyelashes help keep dust and bright light out of our eyes. And the hair on our eyebrows help keep rain and sweat from dripping into our eyes.
9. Teacher: But no matter where the hair is on our body, it all grows the same way. Here's a picture of a single hair. [Show the Student the picture of the hair follicle] This part at the bottom [point to the hair root] is called a hair root. And just like a plant root, a hair root is where the single hair begins to grow. Now, each hair in your body comes attached to a muscle [point to the muscle] which start to pull when it gets cold. In fact, when many of these hair muscles are pulling up, you get to see something on your skin called goose bumps. Also, each hair comes with a small pocket called the sebaceous gland [point to the sebaceous gland], which makes oil for protection from water and also makes your hair shiny.
10. Teacher: Now, just like your skin, your body is constantly making hair while old hair is constantly falling off your body. Why, in your head alone where you have about 100,000 hairs, about 50-100 fall off each day.
11. Teacher: Alright, enough about hair. Let's move onto nails. Now you may look at your nails and not think too much of them, other than, say, what color would look best on them if you're a girl. But your nails actually do an important job in protecting the tips of your fingers and toes, which are especially sensitive areas of your body. Also, your fingernails help you pick up really small things, like small seeds.
12. Teacher: Now take a look at this. [Show the Student the picture of the fingernail] See this picture on the top? Well, according to this picture, the part that you and I know as our nail is called the nail plate. The part here that looks like a half-moon is called the lunula. And the tiny part of skin that covers the bottom of your nail is called the cuticle.
13. Teacher: And you guessed, just like the skin and hair, nails are always growing. Nails start growing even below the cuticle, in a spot called the nail root. [point to the nail root] Just like the skin and hair, new nail cells push up the old nail cells so that by the time

the nails are at the top, they are ready to be clipped. By the way, you don't feel anything when you clip your nails because the top part of your nails is already dead.

14. Teacher: Alright, that's about it for skin, hair and nails. Before we review, let's watch this short video to help you understand what we learned today. [\[Show the Student the video on skin, hair, and nails\]](#)
15. Teacher: OK - time for review. Go stand up and get in front of the class (consider inviting other members of the family also to set the stage). [\[Ask Student the following:](#)
 - a. What are some reasons why skin is important to us? Any of the following: 1) skin keeps everything inside our body inside where it belongs, 2) skin protects our body, and 3) skin keeps us warm
 - b. What is the top part of our skin called? Epidermis
 - c. Why is it that when our hair falls out that we don't just all become bald? Because new hair is constantly growing
 - d. Why do we need fingernails? To protect our fingertips and also to help us pick up really small things
 - e. What is skin, hair, and nails made of (hint: it's the same thing for all 3)? Keratin

[Teacher reviews any questions that the Student missed\].](#)

Wrap Up (5 minutes)

Teacher: [\[Clapping\]](#) You did GREAT! Wonderful job! Are there any questions that you have regarding skin, hair, and nails? [\[Engage in conversation with the Student and follow up with questions you cannot answer by researching the Internet\]](#)