

### Summary Description

This is the fifth 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 the digestive system.

### Approximate Time for Lesson

50 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:

Digestive System, Discovery Kids - <http://yucky.discovery.com/noflash/body/pg000126.html>

Your Digestive System, KidsHealth - [http://kidshealth.org/kid/htbw/digestive\\_system.html](http://kidshealth.org/kid/htbw/digestive_system.html)

### Materials Needed

1. Internet Access - Pull up the following:
  - a. Picture of the digestive system (go to [http://en.wikipedia.org/wiki/File:Digestive\\_system\\_diagram\\_edit.svg](http://en.wikipedia.org/wiki/File:Digestive_system_diagram_edit.svg))
  - b. Video of the digestive system (go to <http://www.youtube.com/watch?v=0NjzvZbd1qk&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. So last lesson we learned about the muscular system, which are those things that help move your body parts. In fact, if you have no muscles, you could not move at all. There are 3 types of muscles; can you tell me any one of them? [Engage the Student in conversation but come to the point that any of the following is correct: 1) cardiac muscle (i.e., your heart), 2) smooth muscle (i.e., your esophagus and stomach lining), and 3) skeletal muscle (i.e., your biceps and triceps located in your upper arm) - the only type of voluntary muscle in your body]
2. Teacher: Good. So today, we're going to learn about how we take in food and use it for energy. The collection of all the organs that help us turn food into energy is called the digestive system. Can you say "digestive system"? [Have the Student repeat the word "digestive system" several times]
3. Teacher: Great, so are you ready to learn about the digestive system? [Get positive response from Student and begin lesson]

Lesson (40 minutes)

1. Teacher: OK. Now you probably already know this, but what happens when you don't eat for a long time? [Engage the Student in conversation but come to the point that we get hungry]
2. Teacher: That's right. Well, what you feel as hunger is an important sign that your body is telling you that you need to eat. If you never felt hunger, then you would never know when your body would need more food, and you would probably die from starvation without even knowing. That's why it's important to listen to your body when it tells you that you need to eat.
3. Teacher: Ok - here's something else that you know, but I'll ask anyway; when you are hungry, how where does the food first go into your body? [Engage the Student in conversation but come to the point that the mouth is where food enters the body]
4. Teacher: That's right. In fact, your mouth is the first part of your digestive system where food first enters. Now, as we look at this picture of our digestive system, I'll explain the rest. [Show the Student the picture of the digestive system]
5. Teacher: Alright, looking at the picture then, after you take a bite of food, these yellow looking sacs in your head [point to the salivary glands] called the salivary glands, make something called saliva, which is what you and I know as "spit". Now, all along you may have thought that spit was gross, but you really need it because spit has stuff inside it to help make the food you eat softer so that you can easily swallow it. While your spit is mixing with your food and your teeth are smashing the food into smaller pieces, your tongue tells your body whether whatever you're eating is ok for you to eat. Your tongue does this by tasting the food. If the food tastes rotten, you will stop eating right there. And so, your tongue helps you figure out whether you should be putting food into your body.
6. Teacher: Now after the bits of food have been smashed up by your teeth and made easy to swallow by your spit, the food goes down this tube [point to the esophagus] called the esophagus. Hey, remember that tube that we learned about in our lesson on the respiratory system that helps us breathe, called the windpipe? [point to the windpipe, the blue tube located at the neck that is connected to the esophagus] Don't get confused, because this esophagus is NOT the windpipe. The esophagus is not only a tube that helps food travel from our mouth to our stomach, it has smooth muscles in the inner lining (remember smooth muscles?) that actually pushes the food down into our stomach.
7. Teacher: Now, before I go on, have you ever wondered how you can eat and breathe without getting food down the wrong tube? Well, this is how it happens. There is something right there [Point to the point at which the esophagus and wind pipe meet], called the epiglottis. The epiglottis acts like a trap door that is open whenever you breathe, which lets the air into your windpipe, and shuts closed whenever you swallow, which

closes the way to your windpipe. Try it, swallow some food or water or even your spit – whenever you do this, your epiglottis is shutting down the way to your windpipe. Isn't that cool how your body just knows how to do that without you even telling it to do it? [\[Get positive response from Student and move on\]](#)

8. Teacher: Of course, sometimes, your epiglottis gets confused when you're trying to do more than just eating, like say, eating and talking, or even eating and laughing. Because your body usually breathes when you're talking or laughing, well, if you eat on top of doing these things, your epiglottis may open to try to take in air while you're trying to swallow some food. And that's exactly how food gets stuck in your throat (and why your parents always tell you not to talk while eating – you might end up choking!).
9. Teacher: Ok, now that we know how food gets to your stomach, let's talk about your stomach. [\[Point to the stomach\]](#) Your stomach is a pocket of acid and muscles that break the solid pieces of food down into nutrients, like vitamins, that your body needs for energy. It takes about 3-4 hours for your stomach to break down food. Your stomach also helps kill any bad bacteria that might still be living in the food that you just swallowed.
10. Teacher: After the food is transformed into nutrients by your stomach, it goes to this long spaghetti-like tube called the small intestine, here. [\[Point to the small intestine\]](#) The small intestine breaks down the nutrients even more than your stomach. This is the place where the food is broken down so much that it is virtually all nutritious liquid. The liver, pancreas, and gall bladder, [\[point to the liver, pancreas, and gall bladder\]](#) all help to break down the food in the small intestine by injecting special juices into it.
11. Teacher: After the small intestine is done making the food into a nutritious liquid, this liquid makes a quick stop at the liver. [\[Point to the liver\]](#) Now, the liver is very important because this organ inspects the nutritious liquid and throws away all the pieces in the nutritious liquid that the body doesn't need. Once the nutritious liquid passes through the liver, the nutrients finally travel through the blood to all parts of the body to create energy.
12. Teacher: Well, I wish I could stop right there. But there's one last part about the digestive system we haven't talked about – waste disposal. That is, what does the body do with all the pieces in the food that it doesn't need? I mean, remember that piece of food started out as a solid? Well, now that the teeth, spit, stomach, small intestine transformed that solid piece of food into liquid, what happens to the rest of the food that the body doesn't need? [\[Engage the Student in conversation but come to the point that you basically pee and poop out the food that your body does not need\]](#)
13. Teacher: That's right. Yes, it may sound gross, but hey, that stuff that you don't need in your body needs to get out somehow – isn't it better to get rid of all that yucky stuff anyway, rather than just have it all piling up in your body? Anyway, I'm getting off the subject. Back to the last part of digestion, elimination.

14. Teacher: After your small intestine is done turning the food into nutrients, the food parts that your body doesn't need are then moved here, to your large intestine. [\[Point to the large intestine\]](#)
  
15. Teacher: Ok - this is the last stop for your body to remove any water or anything else your body may need. And since your large intestine is removing any last bits of liquid from your food that it needs, you can imagine that whatever ends up in your large intestine is starting to turn back into a solid (since water is being taken out of the last bits of food). Also, remember that I said your liver helps inject juices into your small intestines to help break down food? Well, it just happens that this juice is a brown, green, or even yellow color. And so, the last pieces of food that you don't need, that happen to be brown, or green, or even yellow (thanks to your liver), get pooped out through your rectum and anus - otherwise known as your behind. [\[Point to the rectum and anus\]](#)
  
16. Teacher: And all that water from the food that you don't need goes out in the form of pee.
  
17. Teacher: Alright, you did a great job of listening. To help you understand even more, check out this short video on the digestive system. The person talking in it sounds different from how we talk, but it's really fun to hear her. [\[Show the Student the video on the digestive system\]](#)
  
18. 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 is spit for? To help us swallow the food we eat](#)
  - b. [What is the name of the tube that connects our mouth to our stomach? Esophagus](#)
  - c. [Which part of our bodies, the small intestine or large intestine, help pass all the pieces of food that we do not need out of our bodies? The large intestine](#)
  - d. [Why is our poop colored the way it is? Because the liver injects juices that help break down food into nutrients. These juices happen to be brown, green or yellow in color.](#)

[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 our digestive system? [\[Engage in conversation with the Student and follow up with questions you cannot answer by researching the Internet\]](#)