



## THE DIGESTIVE SYSTEM – MOUTH TO STOMACH

by Lanny and Marilyn Johnson

"Time for school," Mrs. Jones called out to Billy and Mary.

"Oh, Mom, do we have to?" Billy asked.

"The sooner it's done, the faster you can go outside and play. Today we are going to begin studying the digestive system. Mary, do you know where things like vitamins and minerals come from that our body needs to live and grow?"

"I think it's from the things we drink and the food we eat."

"That's right. However, our body needs to break down (**digest**) that food and drink into stuff that the body can soak up. God designed a digestive system that uses many different organs working together to absorb food and get rid of the waste (**feces**). The entire length of our digestive system is around 20 to 30 feet long (6.1 to 9.1 m).<sup>1,2</sup>

"Surprisingly, the first stage of the digestive system begins to work even before you eat your first bite of food. Billy, have you ever noticed what happens in your mouth when you see and smell freshly baked cookies?"<sup>3</sup>

"Yeah! My mouth begins to water!"

"Special organs, called **salivary glands**, add

chemicals (**enzymes**) to water, making **saliva** (or spit). One of these enzymes is **amylase**, which breaks down starchy foods such as bread and potatoes.<sup>4,5</sup>

"Let's experiment. I want you both to put this small piece of saltine cracker on your tongue and, without chewing it, roll it around in your mouth and notice what begins to happen."

"My mouth is getting juicy, and the cracker is getting soft," Mary said.

"Okay. Chew and then swallow it. The amylase in your saliva chemically dissolves the starch in the cracker, making it soft. Now, put this small piece of cheese on your tongue and do the same thing," Mrs. Jones instructed.

"It is getting wet, but nothing else is happening," observed Mary.

"That is because the cheese does not have a starch for

your saliva to break down."

"So, how is the cheese broken down?" asked Mary.

"That's the job of teeth. Saliva moistens the food as it's broken into smaller bits when you chew. Meanwhile, the tongue keeps moving the food around, pushing it to the kind of teeth that are best designed to break it down. Once the food is mushy, the tongue rolls the mashed-up food into a little ball called a **bolus**, then pushes it to the back of your throat. Interestingly, without the moisture of the saliva, the taste buds on the tongue don't work."<sup>6,7,8</sup>

"At the back of the throat (**pharynx**), there are two tubes. One tube is called the windpipe

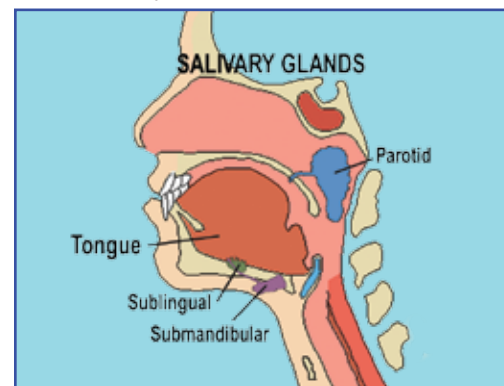
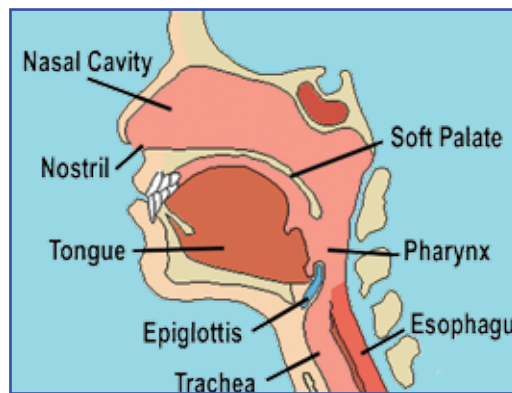
(**larynx**), which carries the air we breathe to our lungs. The other tube, called the **esophagus**, carries food and liquids to the stomach."<sup>9</sup>

"How do the food and air know which tube to take?" Mary asked.

"The roof of the mouth is called your **palate**. If you feel it with your tongue, you will notice that the front is hard, and the back is soft. When you swallow, the **soft palate** lifts, blocking food and liquids from going up your nose. At the same time, a small flap called the **epiglottis** closes over the larynx, so food goes down the esophagus to the stomach and not into the lungs. That's why you should swallow your food before you speak, or you will draw food into the windpipe and start choking."<sup>10</sup>

"The esophagus is a muscular tube about 10 inches long (25 cm), that squeezes the food in a series of waves called peristalsis, pushing the food along to your stomach."<sup>11</sup>

"I think that's enough for now about the digestive system, children. Some people may think that everything we studied today happened by chance and accident. However, I think as we look at all the special designs of our bodies, it makes more sense that we were created by an intelligent Creator who loves His Creation, which includes you and me."

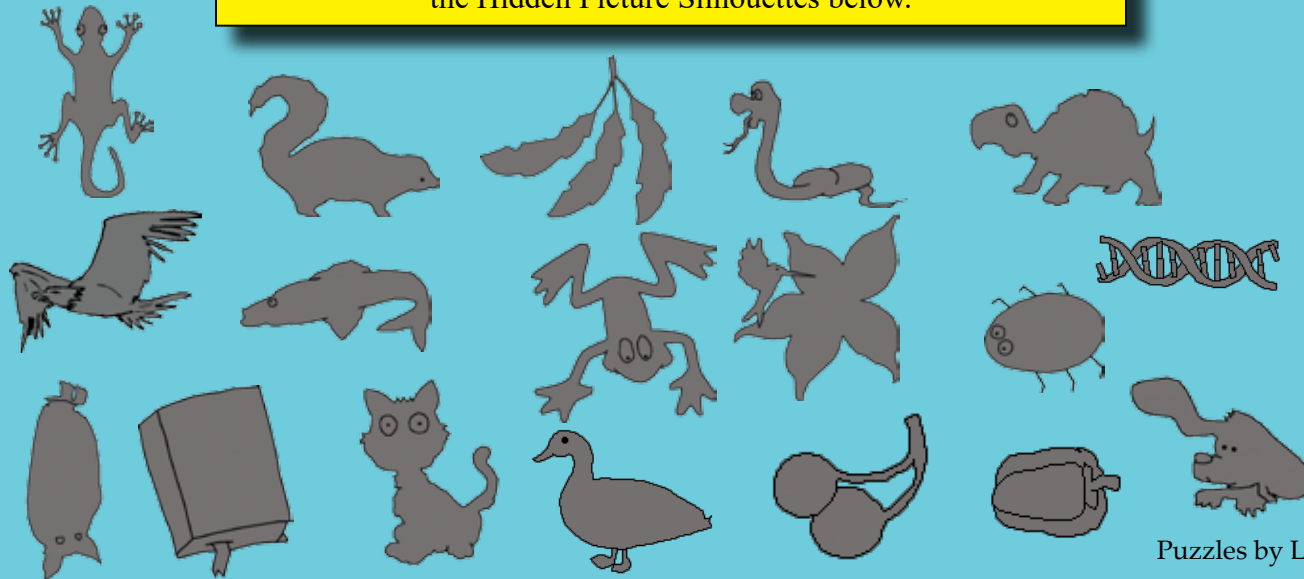


*Go to Answers for references (see back page).*



### HIDDEN OBJECTS

See if you can find the 18 hidden objects that God has created from the Hidden Picture Silhouettes below.



### WORD SEARCH

Look for hidden words from the **Blue** words in the verse below. The hidden word might be up, down, sideways, slanted, or backwards.

**I will praise thee; for I am fearfully and wonderfully made: marvellous are thy works; and that my soul knoweth right well.**

**PS 139:14**

FOR ANSWERS GO TO: <http://www.discovercreation.org/kids/NewsletterAnswers.htm>

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