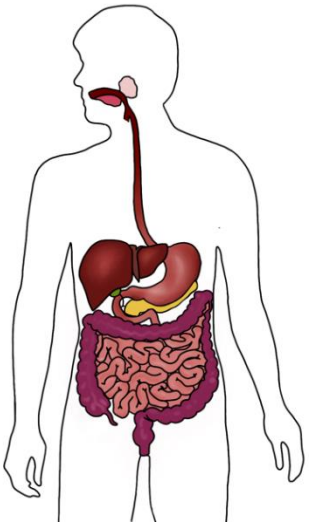
Name: _____

The Digestive System

Introduction: The foods that we eat contain the nutrients that our body cells need to do their daily jobs, grow, and multiply. Nutrients such as carbohydrates, proteins, lipids, vitamins, minerals, and water are bound up in our food, though. How do we get these important nutrients out of our food and into our cells? That is the job of the digestive system! **Digestion** is the process of breaking down food into smaller molecules that the body can use.



The digestive system is broken down into two groups of organs: *organs that food enters* and *organs that food **does not** enter*. Organs that food physically passes through make up the **gastrointestinal tract**. The gastrointestinal tract is often referred to as the GI tract, digestive tract, or alimentary canal. This long, winding tube starts at the mouth and coils through the body, ending at the anus. In a living adult, this tract is usually between 16 and 23 feet! Think about how tall you are. Your gastrointestinal tract is more than three times your height! Organs included in the gastrointestinal tract are the mouth, pharynx, esophagus, stomach, small intestine, large intestine, rectum, and anus.

Organs that do not have food enter them (but help with digestion) are known as **accessory organs**. These organs *help* with the breakdown of food, but do not hold or contain food at any time. They aid digestion by creating chemicals or applying force to help break down food. The accessory organs include the teeth, tongue, salivary glands, liver, gallbladder, and pancreas.

Both accessory organs and the gastrointestinal tract are responsible for **chemical digestion** and **mechanical digestion**. In mechanical digestion, physical force is used to break down food. Examples of mechanical digestion include the teeth chewing or the stomach churning. In chemical digestion, enzymes are used to break down food. Many of these enzymes are produced in the accessory organs, such as the liver or pancreas. An example of chemical digestion would be salivary amylase (an enzyme in saliva) breaking down carbohydrates as you chew.

After food has been broken down into smaller units by chemical and mechanical digestion, **absorption** is able to occur. In the process of absorption, nutrients pass through the wall of the gastrointestinal tract into the bloodstream.

Lastly, **defecation** or **elimination** occurs when unabsorbed materials are eliminated from the body as feces. It takes food between 1 and 5 days to pass through the GI tract from mouth to anus.

1. What are 6 examples of nutrients that our cells need to grow, multiply, and complete their daily functions? _____

   _____
2. What exactly is digestion? _____

   _____
3. What are the two groups of organs within the digestive system? _____

   _____
4. What is an example of mechanical digestion? _____

5. What is an example of chemical digestion? _____

   _____

6. After chemical and mechanical digestion have occurred, which process is able to happen?

   _____

7. Where do nutrients and other small molecules pass to as they are absorbed through the wall of the gastrointestinal tract? _____
8. What is the process called when “feces is eliminated from the body?” _____

Matching: Each statement describes either the **gastrointestinal tract** or the **accessory organs** of the digestive system. Put a checkmark in the box that each statement is describing.

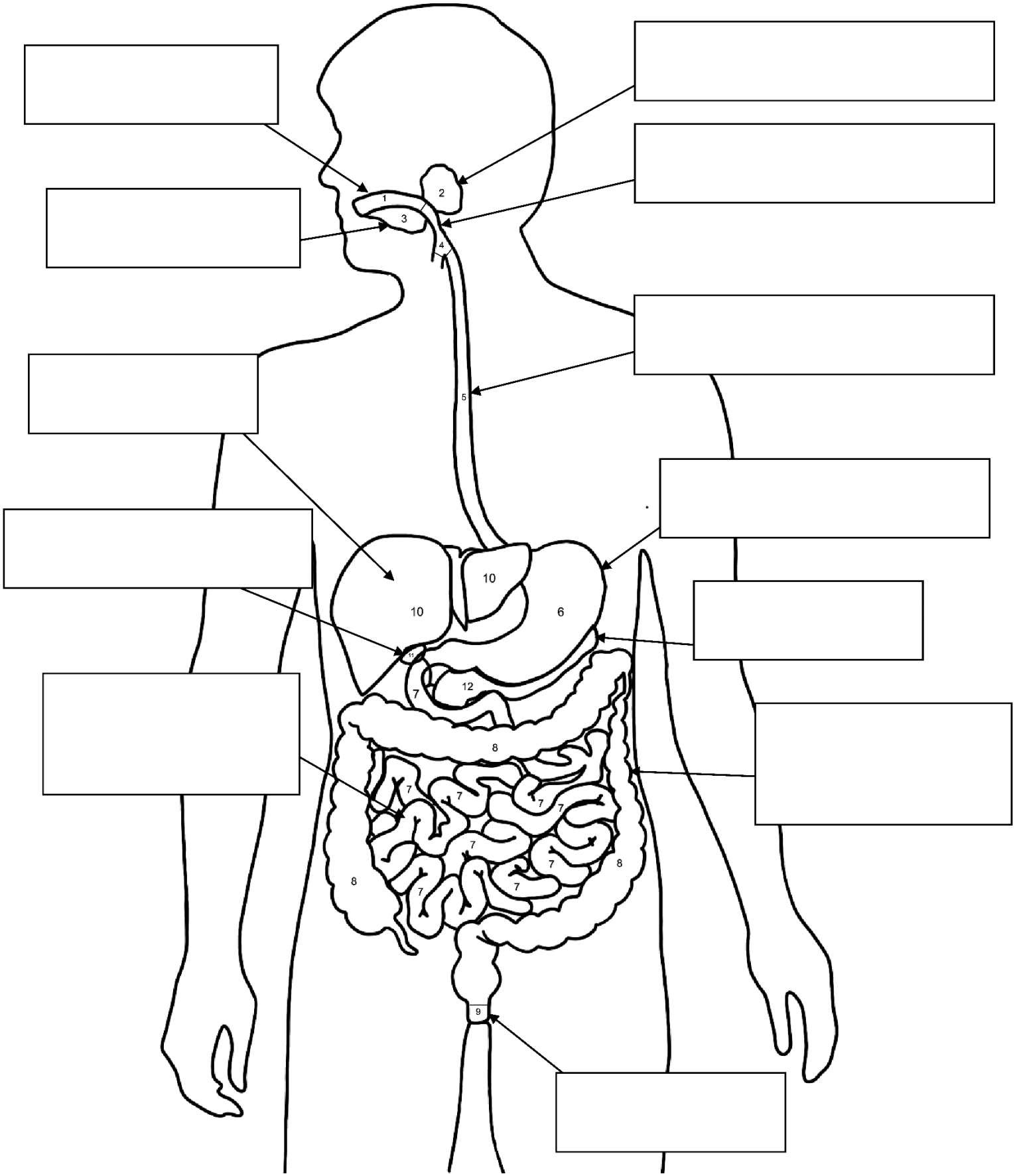
Description	Gastrointestinal tract	Accessory organ	Not part of the digestive system!
Also known as the alimentary canal			
Pathway of organs that food passes through			
Organs that food **does not** pass through			
Also known as the digestive tract			
Also known as the urinary tract			
16 to 23 feet			
5 to 10 feet			
Includes the pancreas			
Includes the gallbladder			
Includes the large intestine			
Includes the pharynx			
Includes the liver			
Includes the small intestine			
Includes the stomach			
Includes the teeth			
Includes the mouth			
Includes the esophagus			
Includes the tongue			
Includes the salivary glands			
Includes the rectum			
Includes the esophagus			
Includes the anus			

Coloring Page Instructions

Instructions: On page 4, color and label each structure according to the key.

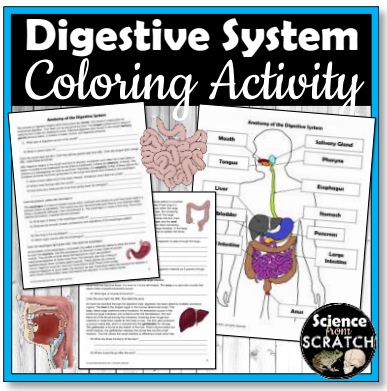
Structure #	Structure	Color
1	Mouth	Dark red
2	Salivary Glands	Light blue
3	Tongue	Dark orange
4	Pharynx	Yellow
5	Esophagus	Light green
6	Stomach	Dark blue
7	Small intestine	Purple
8	Large intestine	Brown
9	Anus	Light red
10	Liver	Black
11	Gallbladder	Dark green
12	Pancreas	Light orange

Anatomy of the Digestive System

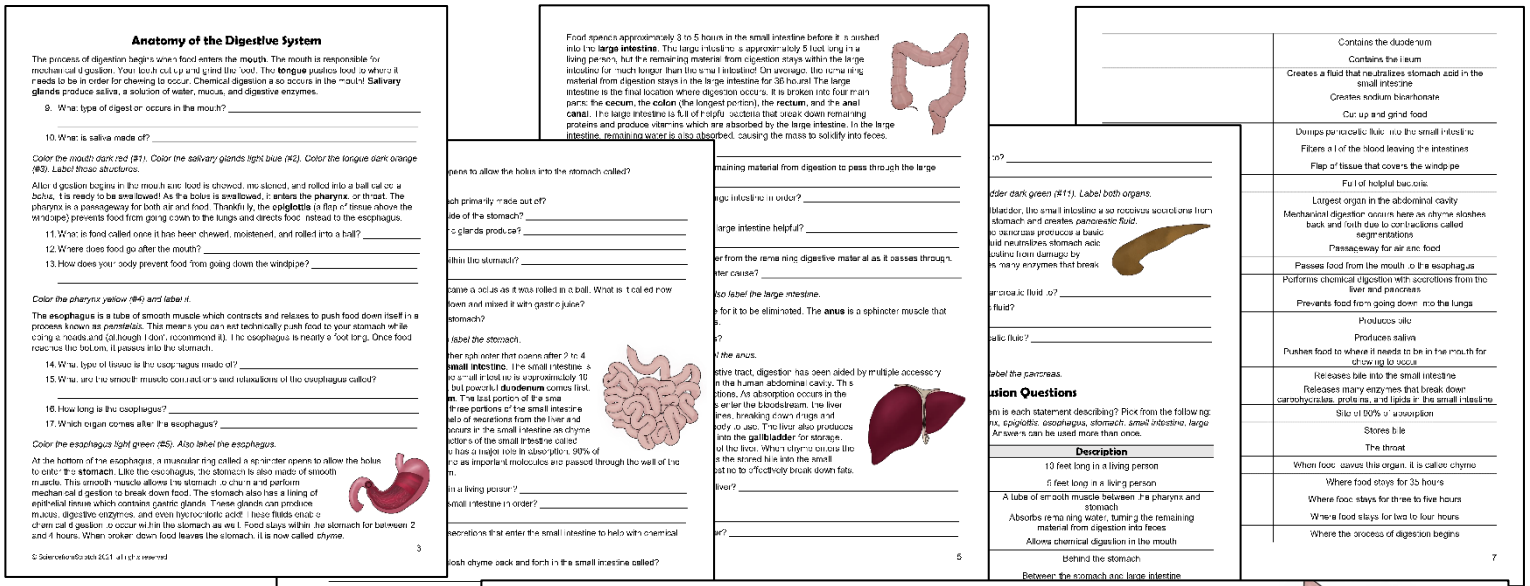


Hi teachers!

This free resource is a smaller part of my larger resource, [Digestive System Coloring & Activity Packet](). What's different between the two resources? The paid version includes 5 additional pages that go in-depth on each organ of the digestive system! These easy-to-read pages will take your students on a journey through the digestive tract. For each organ (starting with the mouth) your students will read a short blurb on the organ, answer questions that show evidence that they actually read, and then color the organ on the coloring page. After they finish coloring, they will fill out a Conclusion Chart that will solidify their learning (and be useful for future test questions!)

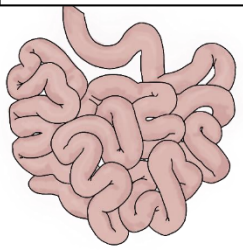


Here's what you'll get from the full resource:



Here's a sample from page 4!

At the end of the stomach there is another sphincter that opens after 2 to 4 hours to allow chyme to pass into the **small intestine**. The small intestine is actually very long! In a living person, the small intestine is approximately 10 feet! It is broken into 3 parts: the short, but powerful **duodenum** comes first. After the duodenum comes the **jejunum**. The last portion of the small intestine is the **ileum**. Together, these three portions of the small intestine continue chemical digestion (with the help of secretions from the liver and pancreas). Mechanical digestion also occurs in the small intestine as chyme is sloshed back and forth due to contractions of the small intestine called *segmentations*. The small intestine also has a major role in absorption. 90% of absorption happens in the small intestine as important molecules are passed through the wall of the small intestine and into the bloodstream.



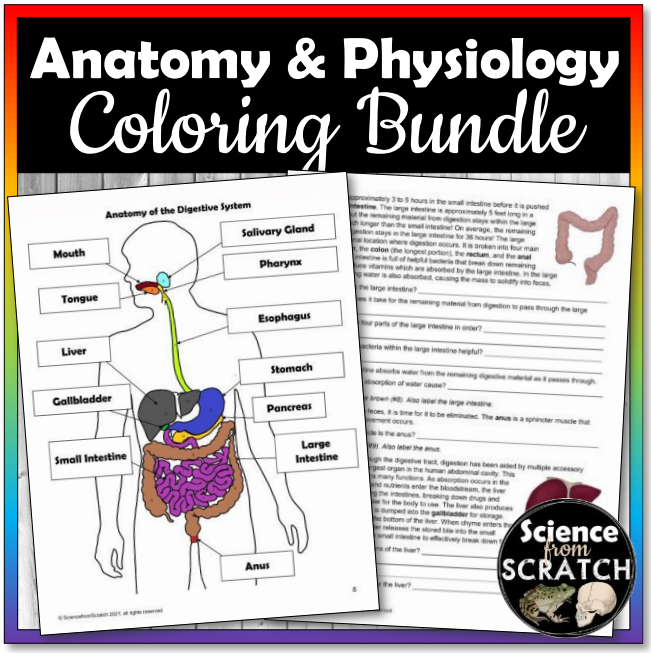
25. How long is the small intestine in a living person? _____
26. What are the three parts of the small intestine in order? _____
27. Which accessory organs make secretions that enter the small intestine to help with chemical digestion? _____
28. What are the contractions that slosh chyme back and forth in the small intestine called? _____
29. What type of digestion happens in the small intestine? _____
30. What percentage of absorption happens in the small intestine? _____
31. Where does the small intestine pass these newly absorbed nutrients to? _____

Color the small intestine purple (#7). Also label the small intestine.

I love using the Digestive System Coloring & Activity Packet for the first 1 or 2 days of the Digestive System Unit with my Anatomy & Physiology juniors and seniors because…

1. Science literacy is important. These juniors and seniors are headed off to college soon, where they will be expected to read from a textbook and understand the text. My classroom always needs more opportunities for my students to practice these reading and comprehension skills.
2. My students love them! As much as lecture is a vital tool in my classroom, sometimes my students just need a break. (and honestly, I enjoy taking a break from lecturing too… this activity gives me time to catch up on grading or to check in with individual students).
3. By using this activity on the first day or two of the unit, my students build a strong foundation for the digestive system as we head into the more complex details of the anatomy and physiology of the digestive system during the rest of the unit. I love instilling my students with confidence prior to beginning a unit.

I have a full set of Coloring and Activity Packets within my store that are all fully prepped, easy-to-use, and require zero prior teaching. If you are looking for a great way to introduce a unit or take a break from lecture in the middle of a unit, these are the resources for you!



I also love having these activities available for **substitute plans**. The bundle includes 7 different activities, which means at least 7 different days of sub plans ready-to-go for your upcoming school year.

You can buy the Coloring Activities individually, or you can purchase my **Anatomy & Physiology Coloring & Activity Packet Bundle** that includes all activities at a discount!

As a high-school Anatomy & Physiology teacher, I know how complicated teaching can be. I'm here to help you make the complicated *less complicated* 😊.

Feel free to reach out with any questions! My email is rachel@sciencefromscratch.com.

Rachel