

The Human Digestive System

5E Lesson

The 5E model is a scientifically proven method to improve student engagement and learning in your classroom



- ✓ Engagement
- ✓ Exploration
- ✓ Explanation
- ✓ Elaborate
- ✓ Evaluate

Complete Teacher Instructions

The Human Digestive System 5E Lesson

Grades 8-11	Human Digestive System
Essential Questions:	
Lesson Objectives:	
- Students will be able to describe the structure and function of the path food takes through it - The students will learn about accessory organs, such as the salivary glands, liver, and pancreas, and their role in digestion	
Student Expectations:	
MS-LS1-3	Use arguments supported by evidence for how the body is composed of groups of cells.
HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of matter from molecules to cells, and how the structure of biological systems relates to function.
	- In multicellular organisms, the body is a system of multiple subsystems are groups of cells that work together to form specialized for particular body functions. - Demonstrate an understanding of animal anatomy and physiology of the digestive systems. - Explain the anatomy of the digestive system and the importance of nutrients needed for energy and growth
Possible Student Misconceptions:	
- Digestion starts in the stomach - The stomach is the only location where digestion takes place - Waste from the digestive system exits as either feces or urine - Digestion gives the body energy - The esophagus and trachea are the same structure	
Materials (with quantities)	
1 device (smartphone, chromebook, laptop, tablet, or computer) - A means of projecting a PowerPoint presentation - Internet access	
Teacher Notes:	
All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you.	

The Human Digestive System - 5E Lesson

Engagement Phase

Vsaauce3 – How Much Can You Eat? video → <http://www.teachwithfergy.com/how-much-can-you-eat/>

Begin by asking your students the following three questions:

- 1) How much can you eat?
- 2) What limits the amount of food you can eat?
- 3) What would happen if you just kept eating?

- Individually or in small groups, students should answer the above questions
- Watch the video → <http://www.teachwithfergy.com/how-much-can-you-eat/>
- Revisit the questions as a class

Exploration Phase

Digestive System Lab Station Activity

- In groups of 2-3, have your students complete the Digestive System Lab Station Activity. Once they're done, they will submit their passport to you.

Teacher Notes:

- The complete instructions for my Lab Station activity can be found in the START HERE – Lab Station Activity file.

Explanation Phase

Digestive System Lesson

- Over the course of 2 – 3 days, go through the Digestive System lesson. There are two fun activities and tons of opportunities to engage your students and show how the content is relevant to their lives
- There is also a Bill Nye video you can show your student either before or after the lesson

Duration 10-15 min.

Teacher Role – Facilitate learning and guide student understanding

Goals

- Connect student's experiences
- Create interest
- Ask questions
- Understand the objectives of the lesson

Duration: 55-60 min.

Teacher Role – Facilitate learning and guide student understanding

Goals

- Students receive real experience with the topic
- Students use and develop creative thinking skills
- Students make observations, record results, and make connections

Duration: 2-2.5 hours

Teacher Role – Explain the concepts by presenting the material found in the presentation.

- The lesson covers the following topics:
 - ✓ Why do we have a digestive system?
 - ✓ Main structures of the digestive system
 - ✓ Digestive Enzymes
 - ✓ Chemical and Mechanical Digestion
 - ✓ Digestive Organs
 - ✓ Accessory Organs

Teacher Notes:

- All videos can be accessed directly from the PowerPoint. To retrieve them, click on the video icon while in slideshow mode and it will automatically open for you.
- I have also enclosed a .PDF version of both the teacher and student versions
- I've created a video walkthrough if needed. It can be accessed here - <https://youtu.be/oCIKIP9SaDQ>

Goals

- Students develop understanding of the content
- Observations and experiences are discussed and critiqued
- Students develop vocabulary
- Students are able to connect the content presented to previous experiences

Elaborate Phase

Have your students complete the research assignment describe in – [Evaluate - Diseases of the Digestive System](#)

Duration: 1-2 hour plus time at home

Teacher Role – Facilitate learning and keep students focused

Goal

- Students use their newly obtained knowledge to propose solutions and extend their learning to new situations

Evaluate Phase

Digestive System quiz

Have your students complete - [Evaluate - The Human Digestive System - Quiz](#)

Duration: 20 min.

Teacher Role – Distribute and collect evaluation

Goal

- Students are given the opportunity to demonstrate their understanding and evaluate their own progress

Teacher Notes:

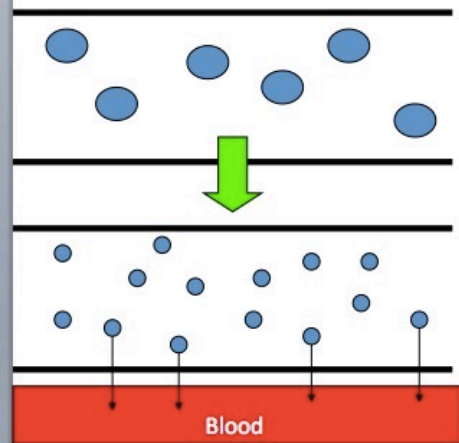
- It's sometimes best to have the students peer evaluate
- Placing students in small groups and having them exchange papers to mark will accomplish two things
 - 1) Provide immediate feedback on the quiz they just completed
 - 2) Significantly reduce your marking time
- Peer evaluation is not needed, only suggested when appropriate

Each phase is clearly described

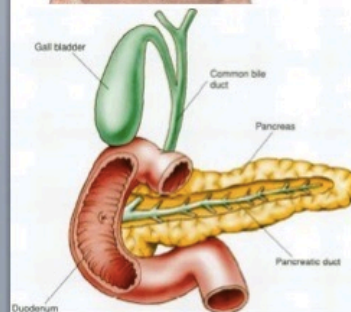
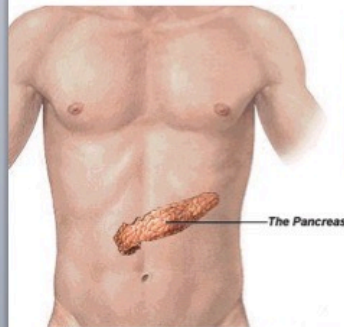
Complete Lesson

Small Intestine

- The small intestine further splits food into smaller pieces. **Most of the nutrients we take in are absorbed in the small intestine**



small intestine



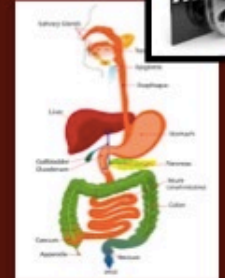
Pancreas

- Is involved in supplying enzymes required for digestion directly into the small intestine
- Secretes a hormone called insulin directly into the blood stream
 - Insulin causes most of the body's cells to _____
 - _____



The Human Digestive System

- Pre-lesson Inquiry
- Why do we have a digestive system?
- Main Components
- Digestive Enzymes
- Chemical and Mechanical Digestion
- Digestion Activity 1 and 2



Interactive Lab Station Activity

The Human Digestive System Lab Station Activity



7 Lab Station Activities to get your kids
out of their seats and engaged in their
learning

Example Lab Station Cards

Station 3

Explain yourself – Write down an answer to the following question in paragraph form.

Which accessory digestive system organ do you feel is more important – the pancreas or the liver? Explain yourself.

Station 6

Test Your Knowledge – Answer the following 5 multiple choice questions then provide a written explanation for how/why you came to your conclusions.

Get away from tired practices and unengaged students



Provide a Scientifically-Proven means of instruction



Incorporate Technology and Increase Collaboration

