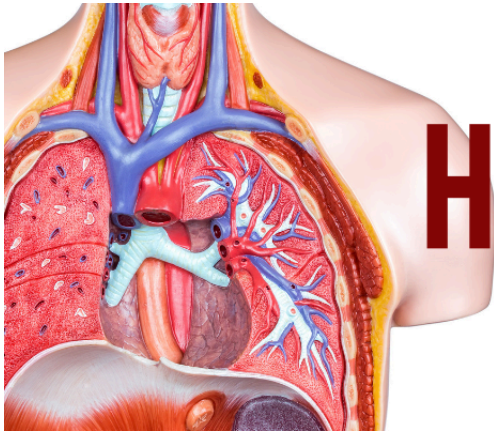




HUMAN BODY SYSTEMS

unit guide



In this middle school science unit, students explore the intricate workings of the human body systems, the importance of maintaining overall health, and the causes and effects of disorders and diseases. They delve into the structure and functions of the various body systems and gain a comprehensive understanding of how these systems work together to sustain life. Students learn about the best ways to keep their body systems healthy. They also investigate common disorders and diseases, exploring their causes, symptoms, and potential treatments. Through engaging activities, discussions, and hands-on investigations, students develop a profound awareness of their own bodies, the significance of healthy habits, and the impact of disorders and diseases on overall well-being.

There are still lots of resources being added to this bundle! Email me at lanyleeteaches@gmail.com to let me know what you want to see!

NGSS Standards Alignment

Middle School	
Standards	Lessons & Activities

MS-LS1-3 Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.	• Human Body Systems CERs
HS-LS1-2 Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	

Enduring Understandings

- The human body is a complex system comprised of interconnected systems that work together to maintain homeostasis and ensure overall health.
 - Understanding the structure and function of different body systems helps us comprehend how our bodies function and how they are affected by various factors.
 - Maintaining a healthy lifestyle through proper nutrition, regular exercise, and adequate rest is essential for optimal functioning of the body systems.
 - Personal hygiene practices, such as handwashing and dental care, are crucial in preventing the spread of diseases and maintaining good health.
 - Diseases can be caused by a variety of factors, including pathogens, genetic abnormalities, and environmental influences.
-
- The **immune system** plays a vital role in protecting the body against infections and diseases, and maintaining its health is essential for overall well-being.
 - The **cardiovascular system**, including the heart and blood vessels, is responsible for transporting oxygen, nutrients, and waste products throughout the body.
 - The **respiratory system** enables the exchange of oxygen and carbon dioxide, supporting cellular respiration and providing the body with the necessary oxygen for survival.
 - The **nervous system** coordinates and controls all bodily functions, allowing us to interact with our environment, experience sensations, and respond to stimuli.
 - The **digestive system** breaks down food into nutrients that can be absorbed and utilized by the body for energy and growth.
 - The **nervous system** controls and coordinates bodily functions through the transmission of electrical signals and allows for sensory perception, cognition, and motor responses.
 - The **skeletal system** provides structural support, protection of internal organs, and facilitates movement through the interaction of bones, muscles, and joints.
 - The **muscular system** enables movement, supports posture, and assists in various bodily functions.
 - The **endocrine system** regulates and controls bodily functions through the production and secretion of hormones.
 - The **integumentary system**, which includes the skin, hair, and nails, provides protection, regulates body temperature, and acts as a sensory organ.

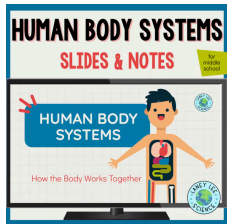
- The **urinary system** filters waste products from the blood, regulates fluid balance, and produces urine for excretion.
- The **reproductive system** enables reproduction and the production of offspring, with distinct roles for male and female reproductive structures and processes.

Essential Questions

- How do the different body systems work together to maintain overall health and well-being?
- What are the best practices for maintaining a healthy lifestyle, including proper nutrition, regular exercise, and adequate rest?
- What are the common symptoms and causes of various disorders and diseases, and how do they impact the body systems?
- What role does the immune system play in defending the body against infections and diseases, and how can it be supported and strengthened?
- How does the cardiovascular system function to transport oxygen, nutrients, and waste products throughout the body?
- How does the respiratory system enable the exchange of gases and support cellular respiration?
- What is the role of the digestive system in breaking down food and absorbing nutrients for energy and growth?
- How does the nervous system control and coordinate bodily functions, and how does it allow for sensory perception and responses to stimuli?
- What are the functions and structures of the skeletal system, muscular system, endocrine system, integumentary system, urinary system, and reproductive system, and how do they contribute to overall health and functioning?

Included Resources

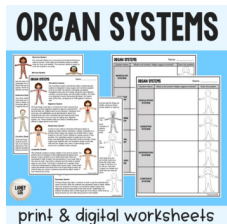
Presentation



Human Body Systems Presentation

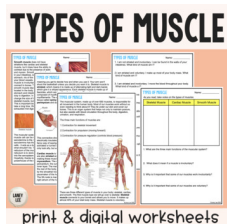
Cover all the major body systems with this 61-slide presentation. Designed for middle school, not too in-depth but not too shallow either! (Can you tell I'm proud of this one?)

Readings



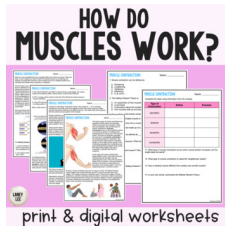
Organ Systems Overview Reading

This reading makes an excellent intro or review of the major organ systems. Use it at the start or end of the unit!



Types of Muscles Reading

Dive further into the muscular system and tissues with this reading on skeletal muscle, cardiac muscle, and smooth muscle. The reading covers functions & examples of each.



How Do Muscles Work? Reading

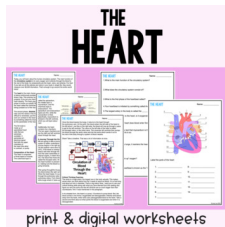
What makes muscles work? This reading covers the Sliding Filament Theory as well as the four kinds of contraction:

- Isotonic Contraction
- Isometric Contraction
- Eccentric Contraction
- Concentric Contraction



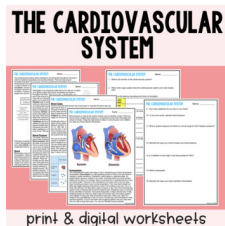
Muscles & Levers Reading

Don't miss the chance to connect physics to the human body! This reading will compare different body parts to first, second, and third-class levers.



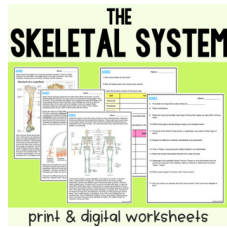
The Heart Reading

The heart is a wonderfully powerful organ! This resource explores the phases of a heartbeat, the parts of the heart, and the purpose of the heart.



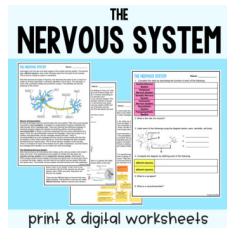
The Cardiovascular System Reading

Investigate pulmonary and systemic circulation, the composition of blood, blood pressure, homeostasis, and blood types with this reading on the cardiovascular system.



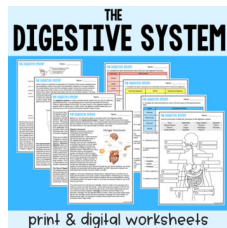
The Skeletal System Reading

What is the role of the skeletal system? Find out in this activity! Plus, you'll learn about the types of bone cells, the structure of a bone, and the types of bone.



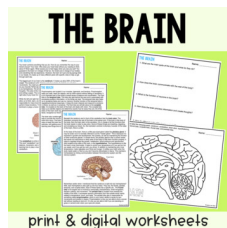
The Nervous System Reading

This resource reading resource delves into the fascinating world of the human nervous system. It covers covers the central and peripheral nervous systems, the somatic and autonomic nervous systems, the sympathetic and parasympathetic systems, neurons, and synapses.



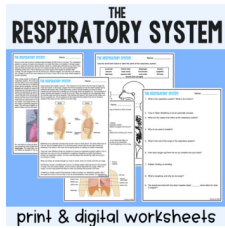
The Digestive System Reading

Cover mechanical and chemical digestion, the stages of the digestive process, and the parts of the digestive system with this reading activity. Great for homework or for modeling close reading in class!



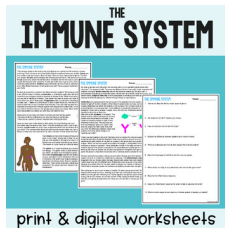
The Brain Reading

What's more fascinating than the brain? This reading covers all the major parts of the brain along with their roles. Plus, it includes a great coloring page that will be sure to brighten up your classroom!



The Respiratory System Reading

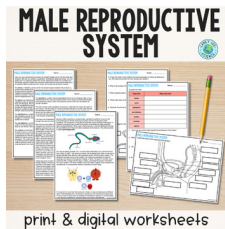
This reading resource provides a concise overview of the respiratory system, including the key parts of the system, the mechanics of breathing, and tips on maintaining a healthy respiratory system. This resource simplifies complex concepts to make learning about breathing and respiratory health accessible and engaging for middle schoolers.



The Immune System

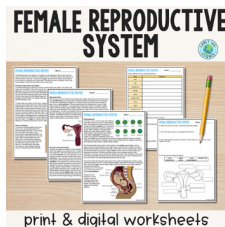
Our immune systems do not get enough credit!

This reading covers the types of germs the immune system battles, the organs responsible for immune functions, the role of antibodies and antigens, the distinction between innate and adaptive immunity, and the incredible power of the inflammatory response. This resource simplifies these essential immune system concepts, making it easy for middle schoolers to grasp the body's defense mechanisms and how to maintain a strong immune system.



Male Reproductive System Reading

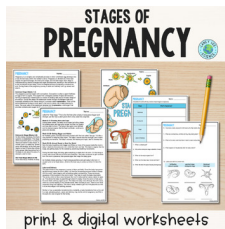
This informative resource is designed to guide students through the intricacies of the male reproductive system. It explores the key components, including the testes, where sperm is produced, the penis, responsible for reproduction and urination, the epididymis, crucial for sperm maturation and storage, the vas deferens, which transports mature sperm to the urethra, and the urethra, serving both urinary and reproductive functions. Additionally, it delves into the role of the prostate in semen production and highlights the significance of sperm in the reproductive process.



Female Reproductive System Reading

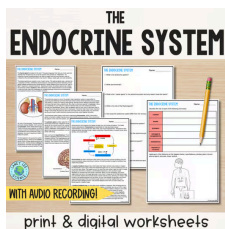
Take a comprehensive look at the female reproductive system. This reading covers the key components, including the ovaries, where ova (eggs) are produced, the importance of ova, and the hormones progesterone and estrogen, which regulate the menstrual cycle and support pregnancy. It also explores the uterus, where a fertilized egg can implant and develop into a fetus, the fallopian

tubes that guide the egg's path, and the cervix and vagina, essential for reproduction. Additionally, this resource demystifies the menstrual cycle, a monthly process that prepares the body for possible pregnancy, and explains ovulation, the moment when an egg is released for potential fertilization. It simplifies these intricate concepts, making them engaging and accessible for young learners studying the female reproductive system.



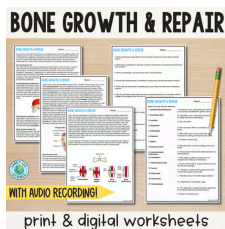
Pregnancy Reading

Use this reading to give a concise explanation of the female reproductive system and the remarkable journey of pregnancy. It covers the germinal stage, where the fertilized egg undergoes initial development, the embryonic stage, which marks the formation of vital organs and structures, and the fetal stage, where the developing baby grows and matures. This resource also sheds light on the labor and delivery process, providing a comprehensive yet accessible overview of the female reproductive system and the stages of pregnancy for middle school students.



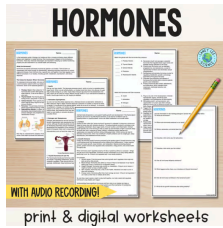
Endocrine System Reading

What are hormones anyway? Where are they produced, and what do they do in our bodies? The endocrine system is one of the most important for our growth and development but is often overlooked. Don't miss this reading activity to answer these questions and more!



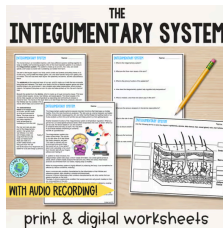
Bone Growth & Repair Reading

Explore the fascinating process of bone formation, composition, and healing. In this reading, students learn that bones are primarily formed through a process called ossification, the composition of bones, and all about bone healing.



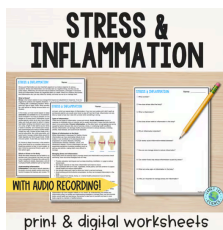
Hormones Reading

This engaging reading takes a deep dive into hormones! It briefly reviews the endocrine system and then delves into some of our body's hardest-working hormones, including insulin, adrenaline, estrogen, testosterone, cortisol, and more!



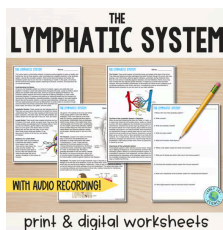
The Integumentary System Reading

In this guided reading on the integumentary system, students will explore its key components. They will learn how each part plays a vital role in protecting the body. The reading will also cover common disorders of the integumentary system, such as acne, eczema, psoriasis, and skin cancer, discussing their causes, symptoms, and potential treatments.



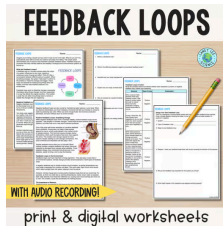
Stress & Inflammation Reading

In this guided reading, students will examine the concepts of stress and inflammation, their effects on the body, and strategies for management. They will first explore what stress is, understanding it as the body's response to external pressures, and then learn how chronic stress can lead to physical and mental health issues such as anxiety, weakened immunity, and heart problems. The reading will also explain inflammation as the body's natural defense mechanism against injury or infection, but highlight how chronic inflammation can contribute to conditions like arthritis and heart disease.



The Lymphatic System Reading

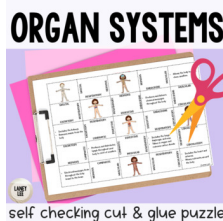
Using this guided reading, students will explore the key components of the lymphatic system, including lymph nodes, lymphatic vessels, the spleen, thymus, and lymph fluid. They will learn about the vital roles these components play in maintaining the body's immune defense by filtering out harmful substances, transporting white blood cells, and managing fluid levels.



Feedback Loops Reading

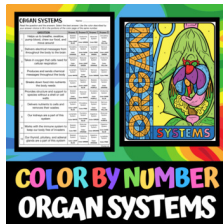
Help your students understand one of the most important concepts in human body regulation with this activity. This resource breaks down complex ideas into student-friendly language, covering what feedback loops are, how negative feedback maintains balance in the body (like regulating temperature or blood sugar), and how positive feedback amplifies processes (like childbirth or blood clotting).

Practice



Organ Systems Cut & Glue Puzzle

Review the major organ systems with this hands-on, self-checking puzzle!



Organ Systems Color by Number

Take a moment to review the major organ systems with this color by number. Great for a sub day!



Human Body Systems Stations

Stations are not only a great way to review or introduce material, but they can be used in many other ways as well! If students don't need to visit every station, turn this activity into a choice board or have students become experts on just one station and present their findings to one another. If you need to spend time in small groups with some students, or maybe you just need to do a quick notebook check, set up an additional station that allows students to meet with you.

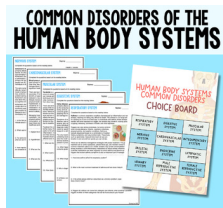
HUMAN BODY SYSTEMS



print & digital graphic organizer

Human Body Systems Graphic Organizer

Use this graphic organizer as a way to help students organize their thoughts. Print it at a reduced size to fit into interactive notebooks! This resource was designed to be used with the [Human Body Systems Stations](#), but it can be used with other resources in this unit as well!

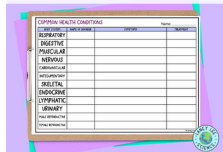


stations or choice board activity

Human Body Systems Stations - Common Disorders

What happens if one of your organ systems is not working optimally? Take a look at the major disorders of each organ system with this engaging set of stations.

common disorders of the HUMAN BODY SYSTEMS

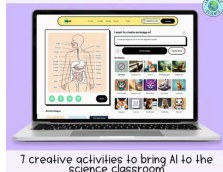


print & digital graphic organizer

Human Body Systems Disorders & Illnesses Graphic Organizer

Use this graphic organizer with the [Human Body Systems Stations - Common Disorders](#) as an easy way for students to take notes.

HUMAN BODY SYSTEMS AI ACTIVITIES

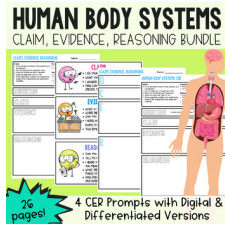


7 creative activities to bring AI to the science classroom

Human Body AI Activities

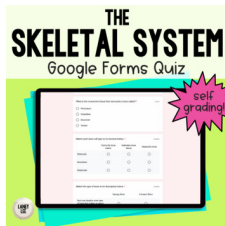
Prepare your students for the future by bringing AI to your science classroom! This resource is designed to introduce students to the exciting world of artificial intelligence and its applications through interactive, creative activities that teach students about the uses and limitations of AI.

Assess



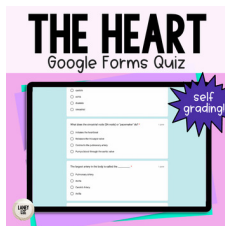
Human Body Systems CERs

Use these CER prompts as a quick way to check student understanding while also reinforcing the skills involved in developing a scientific argument. For each prompt, there are four levels of scaffolding included so that you can meet your students where they are!



The Skeletal System Google Forms Quiz

This 13-question assessment is designed to be rigorous and require students to predict, reflect, connect, and think critically about the content being presented. Use it with [The Skeletal System Reading](#).



The Heart Google Forms Quiz

This 18 question assessment is designed to be rigorous and require students to predict, reflect, connect, and think critically about the content being presented. Use it with the [The Heart Reading](#).

Resources by Concept

Topic 1: Strength & Stability

- [Types of Muscles Reading](#)
- [How Do Muscles Work? Reading](#)
- [Muscles & Levers Reading](#)
- [The Skeletal System Reading](#)

- [Bone Growth & Repair Reading](#)
- [The Skeletal System Google Forms Quiz](#)

Topic 2: Nutrition and Excretion

- [The Digestive System Reading](#)
- [The Respiratory System Reading](#)

Topic 3: Transport

- [The Heart Reading](#)
- [The Heart Google Forms Quiz](#)
- [The Cardiovascular System Reading](#)

Topic 4: Control & Signaling

- [The Nervous System Reading](#)
- [The Brain Reading](#)
- [Endocrine System Reading](#)
- [Hormones Reading](#)
- [Feedback Loops Reading](#)
- [The Integumentary System Reading](#)

Topic 5: Reproduction

- [Male Reproductive System Reading](#)
- [Female Reproductive System Reading](#)
- [Pregnancy Reading](#)

Topic 6: Health

- [The Immune System Reading](#)
- [The Lymphatic System Reading](#)
- [Common Disorders Stations](#)
- [Common Disorders Graphic Organizer](#)
- [Stress & Inflammation Reading](#)

General Overview

- [Human Body Systems Presentation](#)
- [Organ Systems Overview Reading](#)
- [Organ Systems Cut & Glue Puzzle](#)
- [Organ Systems Color by Number](#)
- [Human Body Systems Review Stations](#)
- [Human Body Systems Graphic Organizer](#)
- [Human Body Systems CERs](#)

Suggested Pacing

Week 1: Introduction

Organ systems are the building blocks of the human body. Learning about them helps individuals gain a fundamental understanding of how their bodies work, which is crucial for overall health and well-being.

Introduce the major organ systems with the [Human Body Systems Presentation](#), [Human Body Systems Review Stations](#) and use the [Human Body Systems Graphic Organizer](#) for note-taking.

Need to finish this unit faster? Take weeks 2-6 and assign them as individual projects to students or groups of students. Students can create videos, tri-fold boards, or presentations to share their findings with the rest of the class!

Week 2: Strength & Stability

The skeletal system provides the framework of the body, while the muscular system is responsible for movement. Teaching these systems helps individuals comprehend the structure and mechanics of the human body.

This week, use the [Types of Muscles Reading](#), [How Do Muscles Work? Reading](#), and [Muscles & Levers Reading](#) to cover the muscular system. Then, use the [The Skeletal System Reading](#), [Bone Growth & Repair Reading](#), and the [The Skeletal System Google Forms Quiz](#) to cover the skeletal system.

Week 3: Nutrition and Excretion

Both the digestive and the respiratory systems play a key role in taking in and excreting resources that the body needs to function.

Use the [Digestive System Reading](#) and the [Respiratory System Reading](#).

Week 4: Transport

The heart and cardiovascular system are responsible for pumping blood throughout the body, delivering oxygen and nutrients to cells and removing waste products. Understanding how they work is essential for comprehending basic life processes

Teach with [The Heart Guided Reading](#) and [The Cardiovascular System Reading](#). Then, assess with [The Heart Google Forms Quiz](#).

Week 5: Control & Signaling

The brain is the control center for all bodily functions, thoughts, emotions, and behaviors. Teaching about the brain and nervous system helps individuals understand why people think, feel, and act as they do.

This week, use [The Brain Reading](#) with the [The Nervous System Reading](#). Then the [Hormones Reading](#), [Endocrine System Reading](#), and [Feedback Loops Reading](#) should work together nicely. Finally, end with [The Integumentary System Reading](#).

Week 6: Reproduction

Understanding the reproductive system is essential for individuals to make informed choices about their sexual and reproductive health. This knowledge is the basis for decisions related to contraception, family planning, and sexual activity.

Use the [Male Reproductive System Reading](#), the [Female Reproductive System Reading](#), and the [Pregnancy Reading](#).

Week 7: Health

Understanding the immune system is crucial for students to grasp how the body defends itself against infections and illnesses. This knowledge can lead to better practices in disease prevention, including vaccination, hygiene, and a healthy lifestyle.

This week use the [Immune System Reading](#) and [The Lymphatic System Reading](#) along with the [Stress & Inflammation Reading](#), [Common Disorders Stations](#), and [Common Disorders Graphic Organizer](#).

Week 8: Review

There are several resources included in this unit to help you review and assess student learning. Use the [Organ Systems Overview Reading](#), the [Organ Systems Cut & Glue Puzzle](#), and the [Organ Systems Color by Number for review](#) and the [Human Body Systems CERs for assessment](#)!

Key Vocabulary

Respiratory system	Takes oxygen into the body when we inhale, and releases carbon dioxide when we exhale
Cardiovascular or Circulatory system	Carries needed materials to the body cells, including oxygen; carries waste away from the body, including carbon dioxide
Digestive system	Breaks down food to give the body energy
Mechanical digestion	Involves physically breaking down food substances into smaller particles to more efficiently undergo chemical digestion
chemical digestion	The process where complex molecules like proteins, fats, and carbohydrates are broken

	down into smaller pieces that your body can use, requires special proteins called enzymes
Urinary system	Removes waste products from the body
Nervous system	Responds to stimuli in the environment, and controls most body functions
Integumentary system	Protects the body, releases excess water in sweat, and helps regulate body temperature
Lymphatic System	Closely related to the immune system; helps fight viruses, germs, and diseases
Reproductive system	Produces sex cells that can unite with other sex cells to create offspring
Muscular system	Works with the skeletal system to allow the body to move
Skeletal system	Gives the body structure and protects internal organs
Immune system	A complex network of cells, tissues, organs, and the substances they make that helps the body fight infections and other diseases
Endocrine system	The glands and organs that make hormones and release them directly into the blood so they can travel to tissues and organs all over the body.
White Blood Cells	Defends against disease
Red Blood Cells	Carries oxygen to all body cells
Plasma	90% water plus dissolved proteins, glucose, mineral ions, hormones, & carbon dioxide.
Hormone	Chemicals synthesized and produced by the specialized glands to control and regulate the activity of certain cells and organs
Homeostasis	the tendency towards a relatively stable equilibrium between interdependent elements, especially as maintained by physiological processes.

Helpful Links

Activities:

- [Design a Pill Engineering Challenge](#)
- [What's In Blood Hands-On Activity](#)
- [Endocrine System Activity](#)
- [Endocrine System Activity](#)
- [Heart Stations](#)
- [Learn the Digestive System by Making Poop](#)
- [Human Body Project](#)

Video:

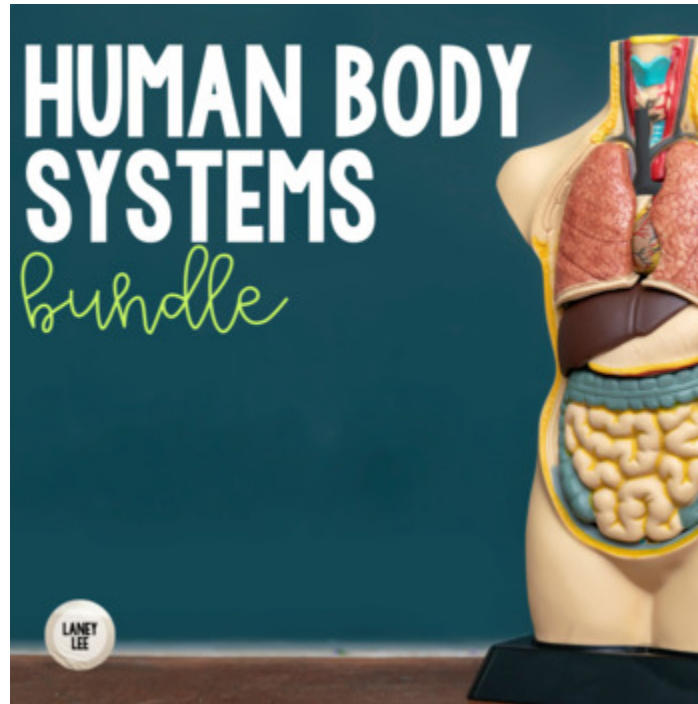
- [Human Heart Model](#)

PAID

- [Word Wall Coloring Pages](#) - I absolutely love these and have used this seller's resources in my class for years. Coloring is a great way to destress for the kids and might even give you a chance to catch up on grading!

Download the Unit!

If you've enjoyed this unit guide, please download the full unit by clicking below. With your purchase, you will enjoy free lifetime updates, and any additional resources added to this unit will be yours for free as well!



<https://www.teacherspayteachers.com/Product/Human-Body-Systems-Growing-Bundle-8005197>

Next Steps:

Jump into your next free planning resource!

Life Science	Earth & Space Science	Physical Science	Other	Full Year Pacing Guides
Human Body Systems	Geology	Force & Motion	Scientific Method	Life Science
Cells	Astronomy	Energy & Work	Engineering	Physical Science
Mitosis & Meiosis	Weather & Climate	Matter		Earth & Space Science
Reproduction & Heredity	Natural Hazards	Atoms & The Periodic Table		
DNA	Human Impact	Bonding & Reactions		
Evolution		Electric & Magnetic Forces		
Ecosystems		Waves		
Photosynthesis & Respiration				

I'd love to stay in touch! Below are some ways we can stay connected:

- I host a [Middle School Science Teachers](#) group on Facebook where we discuss best practices and share ideas and resources. Feel free to join that to participate in some great discussions!
- Find me on [Instagram](#)!
- [Sign up](#) for my newsletters to receive free resources every month!
- Email me at laneyleeteaches@gmail.com.

Looking forward to hearing from you soon!

