

Human Body

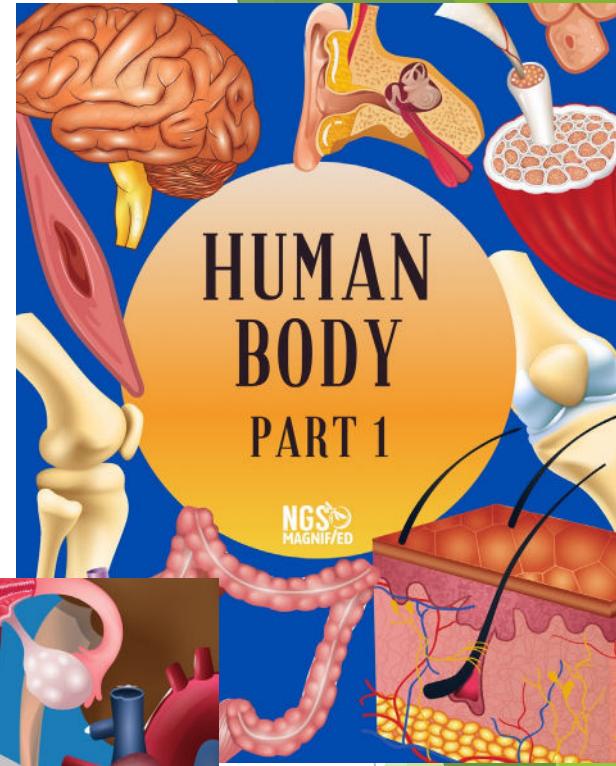
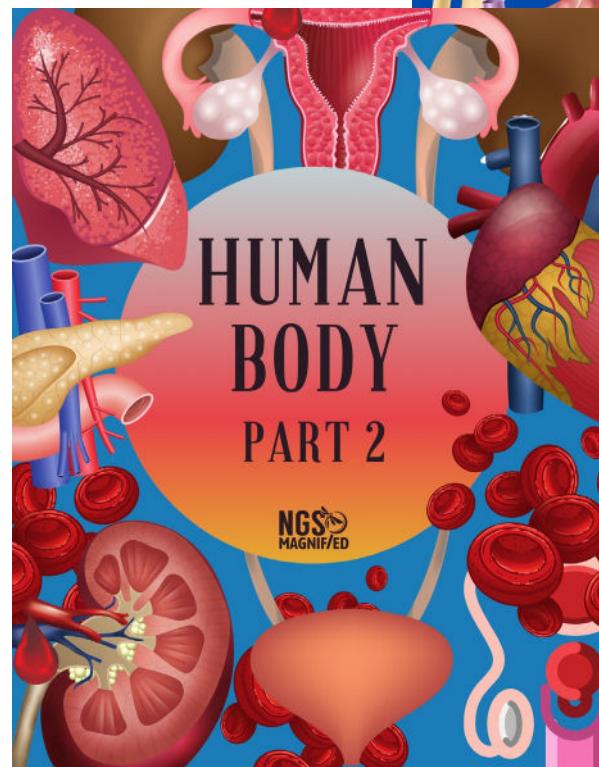


Human Body Unit includes two units –

Human Body Part 1 & Human Body Part 2

Each unit includes:

- Print and digital Interactive Notebooks
- Editable Resources including notes, PowerPoints, and test
- Instructional Videos
- Teacher-led Demos & Guided Inquiry Labs
- Task Cards & Digital Task Cards
- Study Guides





Suggested Pacing Guide

The following is a *suggested pacing guide* for my COMPLETE COURSES (Earth, Life or Physical Science) which are based on 50-minute class periods. There are three variations below. Each variation is based on the number of sections in your SCIENCE INTERACTIVE NOTEBOOK chapter.

Based on a **4-Section Chapter**

Day	Lesson/Activity	Engage	Explain	Explore	Elaborate	Evaluate
1	• Teacher Demo	x				
	• Section 1 Notes – INB input		x			
	• INB Activity – INB output (homework if not completed in class)			x		
2	• Mini-quiz					x
	• Section 2 Notes – use PowerPoint		x			
	• INB Activity			x		
3	• Mini-quiz					x
	• Guided Inquiry Lab – Student Led			x		
	• Section 3 Notes – use PowerPoint	x				
4	• INB Activity			x		
	• Mini-quiz					x
	• Section 4 Notes – use PowerPoint	x				
5	• INB Activity			x		
	• Mini quiz					x
	• Science Stations			x		
6	• Science Stations				x	
7	• Final draft and testing for Creation Station (STEM)				x	x
8	• Task Card Review (game-style, full class, partner)			x		
9	• Chapter Test				x	
10	• Have students complete notes for next chapter*	x				

* **Note-taking option:** Once students are done with chapter test, they get the next set of notes and work quietly on completing them while other students finish up. All notes are to be completed when they return to class. Have students glue each page of notes into the next few pages of their INB (right side only). This way, when you go over the PowerPoint each day, they have already reviewed topic and are ready for class.

5 E Model

Engage – Teacher-led demos foster wonder and classroom discussion and serve as the hook for the lesson. Videos and images of natural phenomena also foster questioning and communication. NGSS phenomena are aligned to middle school NGSS standards.

Explain – PowerPoints, instructional videos, and guided notes (input side of interactive notebooks) provide definitions, explanations, and information through mini-lecture, text, internet, and other resources which encourages students to explain concepts and definitions in their own words.

Explore – Students investigate problems, events, or situations. As a result of their mental and physical involvement in these activities, students question events, observe patterns, identify and test variables, and communicate results.

Elaborate – It is important to involve students in further experiences that apply, extend, or elaborate the concepts, processes, or skill they are learning. Elaborate activities provide time for students to apply their understanding of concepts and skills. They might apply their understanding to similar phenomena or problems.

Evaluate – Use a variety of assessment to gather evidence of student's understanding and provide opportunities for them to assess their own progress.

Student Interactive Notebook

Each concept shares:

- Actual photos of both the INPUT and OUTPUT pages of Science Interactive Notebook
- Instructions on how to create/use/complete activity for OUTPUT side
- Mini-Quizzes for each concept to check students' understanding
- Answer Keys for all mini-quizzes
- Appendix with Teacher Notes for Interactive Notebook in LARGE print.



Section 2: Muscular System

Muscular System

Directions: Cut out the following packets and flashcards. For color in the muscle that is named at the top of each card. Paste the "Anterior Muscles" packet and "Posterior Muscles" Science Interactive Notebook and place completed Flashcards appropriate packet.

The Skeleton

Directions: Print out. Cut down the center. Fold down. Tape the folded skeleton over your desk. Use this when you are teaching students. Turn over and practice "Anterior" and "Posterior". No scissors. Make sure to cut out the fold line for the hinge when you print.

Quiz: The Skeleton

Answers

1. skeleton
2. cartilage
3. tendons
4. peritoneum
5. sweat gland
6. muscle
7. synovial fluid
8. bone

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Section 4: Nervous System

Right or Left Brain Dominance?

Introduction: Your brain is like a complex computer system that's designed to work in two hemispheres. Each hemisphere controls different parts of our body. The left hemisphere is often referred to as the "logical brain". It controls the sense, creativity and artistic sense, processing information from the right side of the brain. The left brain is sometimes referred to as the "language brain" because it controls logical thinking, reading and writing processes, memory, and sequential logic.

This brain has a right brain hemisphere and a left brain hemisphere. Each hemisphere controls different parts of our body. The right hemisphere controls our left side movements and what our left eye sees, whereas our right hemisphere controls the right side of our body and processes what our right eye sees.

Even though our brain is divided into two hemispheres, both sides of the brain and brain processes still work together. The two sides of the brain work together to help us learn and remember things. When we are learning new things, our brain processes information in different ways. This is important to be a successful learner.

The Intestines Cut-out

Stomach

Large Intestine (Colon)

Small Intestine

Rectum

Anus

Sigmoid Colon

Quiz: Muscular System

1. List three types of muscle tissue.
2. Tie the diagram to the right writing down one posterior muscle.
3. What is the difference between voluntary and involuntary muscles?
4. Write in the muscle labeled 'A'.
5. What is the muscle labeled 'B'?
6. What is the muscle labeled 'C'?

Teacher Notes

Section 2: Muscular System

Section 4: Nervous System

The Intestines Cut-out

Student Digital Notebook

The student notebook is on Google Drive and ready for you to share with your students. Here's a quick overview of the features:

Set up like a traditional interactive notebook with input and output sides.

Directions: Click the heart icon below to access the PDF, open in Kami. Follow the directions and complete the activity described. Label the heart diagram using the vocabulary words below. You may choose to do this in Kami as well and insert completed heart.

inferior vena cava
superior vena cava
pulmonary artery
right ventricle
left ventricle
aorta
pulmonary vein
right atrium
left atrium

THE HEART: WHAT A MUSCLE!

CARDIOVASCULAR SYSTEM

The heart -

- Has four chambers - _____ are the two upper chambers; _____ are the two lower chambers
- _____ is the wall that separates the right side from the left side
- _____ is a group of cells located in the _____ atrium that sends out a signal to make the heart _____
- _____ separates atria from the ventricles and prevent _____ from flowing backward (lub-dub is opening and closing of valves)

Blood Vessels -

- Arteries -
- Veins -
- Capillaries -

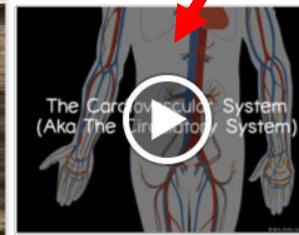
Pattern of blood flow → through two "loops" with heart at center

Loop one -
Loop two -

Encouraging independent learners. Directions for output side are here along with what they need to complete the activity.

Hyperlinked tabs so student can easily move through chapter for review

Students watch video < 6 min to complete notes.



Digital Textbook

For further exploration, click button(s) below:

Hearth, Structure, and Function

Notes are chunked into manageable sections with large spaces for textboxes

Some pages have links so students can go deeper into the topic if they need.

Demos, labs, & Science Stations

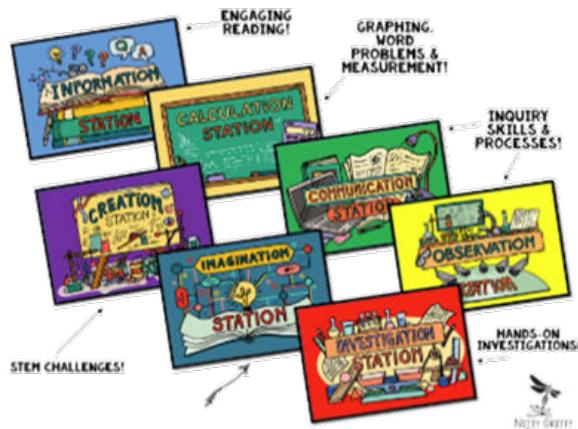
Working in the lab and being engaged in science experiments is the most exciting part of science.



Demo, Labs, and Science Stations Includes:

1. **SCIENCE STATION SIGNAGE** for all 7 stations is provided in color and in black and white (see preview) and all student answer sheets have icons that correspond with each station for ease of use.
2. **DEMONSTRATION** (teacher-led) allows teachers to invite scientific discussions and can help uncover misconceptions and, most importantly, lead to heightened curiosity and interest in the topic being studied.
3. **GUIDED INQUIRY LAB** which is a traditional lab that allows students to perform an investigation in order to solve a problem. Students will hypothesize, collect and analyze data and communicate their results.
4. **TEACHER GUIDES to DEMOS & SCIENCE STATIONS** help get you started and give you background information to make your science lessons engaging.
5. **7 SCIENCE STATIONS** which are designated locations in the classroom with activities that challenge students to extend their knowledge and elaborate on their science skills by working independently of the teacher in small groups or pairs. Stations included are:
 - INFORMATION STATION – Group members will read an interesting and relevant science passage then complete a task to help increase science literacy and deepen their understanding of the science concept.
 - OBSERVATION STATION – Group members will have images, illustrations, or actual samples at this station that show applications or processes of the science topic. Using what they've learned, they will need to apply their observation skills to complete the questions attached to each.
 - CALCULATION STATION – Group members use their math skills to complete the station challenge. Skills may include graphing, analyzing data, using models, measurement, and calculating formulas or word problems.
 - INVESTIGATION STATION – Group members will work with one another to explore the concept through hands-on activities so they may practice specific inquiry process skills as they learn.
 - COMMUNICATION STATION – There are three different options for this station: interviews, video, group essay. Depending on the option you choose, group members will communicate what they know by answering questions in creative ways.
 - CREATION STATION – Group members will work together to solve a STEM (Science, Technology, Engineering, Math) challenge by creating models or designs that demonstrate their understanding of the science topic being taught.
 - IMAGINATION STATION – This station makes science concepts relevant for students by asking them to imagine scenarios that will bring about discussion and critical thinking.
6. **INQUIRY PROCESS SKILLS CHECKLIST** is provided with each set to show teachers and administrators the inquiry skills used by students in each activity. These skills include, but are not limited to, communicating, creating models, inferring, classifying, identifying variables, measuring, observing, predicting, gathering and organizing data, comparing and contrasting, interpreting data, and manipulating materials.

SCIENCE STATIONS



Eye Safety

SCIENCE SKILLS AND LAB SAFETY

• projector
• eye dropper
• mask
• mask
• mask

Procedure:

1. Blow an eye on the underside of the Petri dish and display for class using the projector.
2. Crack open the egg and place the egg white only in the Petri dish.
3. Explain that the proteins in egg white are similar to those found in the protein layer of the eye.
4. Tell them that acetone was being cautious and has splashed acid into their eye. cold drops of acid to the eye when.
5. Ask students to make observations of what is happening to the egg white.
6. Try adding water to reverse the effects. Ask students make observations.

Discussion:

Q: What happened to the egg white?
A: The protein layer became cloudy and damaged the eye.

Q: What type of safety equipment must be worn when doing lab?
A: goggles, aprons, hair ties, gloves

Teacher guide and answer key offered for every lab!

Easy-to-get materials!



Measure with SI Units

SCIENCE SKILLS AND LAB SAFETY

The standard system of measurement used by scientists around the world is known as the International System of Units (SI). Prefixes are used to make units easier to use. They can help in multiplying or dividing by 10. Each step is 10 times larger than the last. Millions only add one more step. The following table lists the prefixes used to name the most common SI units.

Prefix	Symbol	Amount
kilo-	k	1,000
hecto-	h	100
deka-	d	10
deci-	d	0.1
centi-	c	0.01
milli-	m	0.001

Materials:

- graduated cylinder
- tape
- balance
- petri dish
- graduated cylinder with markings
- fertilizer solution
- soil
- 20 ml. graduated cylinder
- colored pencils

Safety:

Drip, Drop, Splat!

How does the density of a liquid affect the height and shape of droplet splatters?

Materials:

- colored water (graduated cylinder A)
- colored syrup (graduated cylinder B)
- eye dropper
- paper
- metric ruler
- meter stick

Procedure:

1. Make a hypothesis of how density of a liquid will affect splatter size. Write your lab sheet.
2. Place the piece of paper down on the lab table in order to catch droplets.
3. Measure the heights listed in the data table using a meter stick. Place meter stick with end starting at zero on paper and move up stick when measuring height of drops.
4. Use the eye dropper to drop ONE drop of colored water and ONE drop of colored syrup. Make sure to drop on different places on paper.
5. Measure the size of the splatter in MILLIMETERS. Record in data table on answer sheet.
6. Repeat for each height.
7. Use the collected data to graph the splatter size versus drop height for each liquid.

Analyze and Conclude:

1. Was your hypothesis correct? Explain.
2. What are two controls in your experiment that helped you collect the most accurate data possible?

USER-FRIENDLY PAGES:

Students easily recognize which answer sheet to use at each station by matching station icons located on each page!!

INVESTIGATION

Name _____ Date _____

Hypothesis

Drop height (cm)

Colored Water	Colored Syrup			
5	25	50	75	100

Height of Drop vs. Splatter Size

Legend: Water Syrup

Node of Drop Size

Rate of Drop Size

Analyze and Conclude:

1. _____

2. _____

TEACHERS SAVE TIME:
Laminate station pages and reuse for each class and for years to follow!
Inquiry skills used are timeless!

Instructional Videos



Human Body Instructional Videos and Digital Assessments are designed to help teachers move instruction from the group learning space to the individual learning space. Not only does this give students independence in their learning, but it also allows more time for dynamic and interactive learning when teachers meet with students in a group setting.

This resource is perfect for:

- Flipped Classroom
- Absent students
- 1:1 Classrooms
- Sub Plans
- Hybrid Schedules
- Teachers who want more time to guide students as they apply concepts and engage creatively in the subject matter

Features of this resource include:

- Instructional videos which are six minutes or less to keep students focused
- Videos and assessments can be completed independently
- Auto grading and reporting in Google Forms
- Share link with students through educational platforms or email
- Quizzes are editable with 5 - 8 questions per quiz
- Information in video pairs with NGS Magnified Interactive Notebooks

Task Cards & Digital Task Cards

Task cards are a great tool for concept review that can be used in a variety of ways - pairs, small groups, team games, or individually. The reason they are so effective is there is only ONE task per card, allowing students to focus on that single task until they have successfully completed it. Answers sheet and answer key for teachers are included.

The digital, self-checking task cards are hosted at Boom Learning™ and are compatible with Google Classroom. These are perfect for displaying on your interactive whiteboard and leading class games or review sessions.

Print Task Cards

Print Task Cards (Human Body - Part 1)

DECIDE

The ____ system makes blood cells.

a. skeletal c. digestive
b. circulatory d. nervous

EXPLAIN

The spaces in bones are filled with a soft connective tissue called ____.

a. air c. blood

DECIDE

The passageway leading from the larynx to lungs is called the ____.

a. alveoli c. esophagus
b. trachea d. arteries

DECIDE

Which component of blood carries oxygen to the body cells?

a. nose c. pharynx
b. trachea d. alveoli

COMPLETE

In gas exchange, ____ pass the alveoli into the blood.

COMPLETE

The blood components called ____ start a chain reaction that produces a blood clot.

IDENTIFY

Identify the structure of the respiratory system where gas exchange occurs.

Digital Task Cards

Digital Task Cards (Human Body Part 1)

The ____ system makes blood cells.

Human Body Part 1

The ____ muscle is found ONLY in the heart.

Human Body Part 2

Which of the following is part of both the respiratory system AND the digestive system?

trachea
alveoli
pharynx
nose

Human Body Part 2

Study Guides: Includes print or digital options

NGS Magnified Study Guides are directly aligned to the notes and assessments offered by NGS Magnified and include a variety of review strategies that meet the needs of your learners for independent study and indirect instruction.

Each study guide provides a combination of strategies which may include:

- Graphic organizers
- Vocabulary building
- Compare and contrast
- Problem-solving
- Concept mapping
- Interpreting data
- Critical thinking
- Theme connection
- Matching
- Fill-in-the-blank
- Short answer
- Real-world application
- QR videos with accompanying questions

STUDY GUIDE

THE HUMAN BODY PART 2

SECTION 1
Directions: Answer the questions below about the respiratory system.

1. Describe the purpose of the respiratory system.

2. What is the difference between breathing and respiration?

Breathing Respiration

SECTION 2
Directions: Label the parts on the diagram that are used for respiration. Then pick four of them and explain their primary function below.

Trachea
bronchi
lungs
nose
pharynx
epiglottis

SECTION 3
Directions: Fill in the table below with the correct description for each.

Function of the accessory system	Function of kidneys	Function of nervous system

SECTION 4
Directions: Label the heart using the word bank then answer the questions below.

1. left atrium
right atrium
left ventricle
right ventricle

SECTION 5
Directions: Explain the difference between arteries and veins. Then explain the two patterns of blood flow in the body.

Artery Vein

SECTION 6
Directions: Fill in the blanks with the correct term.

Artery Vein

1. I help blood clot.
2. I can move mostly of water and certain nutrients and wastes.
3. I contain hemoglobin and transport oxygen.
4. I help fight bacteria and viruses.

SECTION 7
Directions: Explain the lymphatic system. Include in your description the terms lymph and lymph nodes.

Artery Vein



Assessments:

Teachers can use a variety of assessments to evaluate student progress throughout the unit. The curriculum provides mini-quizzes for each Interactive Notebook chapter and an online assessments that goes with the instructional videos. The chapter test includes multiple choice, short answer, interpreting diagrams, and an essay.

Name _____ Date _____

Quiz: Muscular System

1. List the three types of muscle tissue.
2. Is the diagram to the right illustrating anterior or posterior muscles?
3. What is the difference between voluntary and involuntary muscles?
4. What is the muscle labeled 'A'?
5. What is the muscle labeled 'B'?
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Name _____ Date _____

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CHAPTER TEST DATES TO: _____
Multiple Choice
Choose the answer. If not best complete each statement.

1. The theory that reflects the idea that there is a limit to the number of species that can live in a particular area is _____.
a. Hardy-Weinberg
b. Hardy-Weinberg
c. environmental
d. evolution
2. Below are the facts and concepts about biology. _____
a. biology
b. environment
c. environment
d. environment
3. Using the _____, _____
a. analysis
b. analysis
c. analysis
d. analysis
4. The _____ is _____
a. environment
b. environment
c. environment
d. environment
5. Most _____ are _____
a. analysis
b. individuals
c. individuals
d. individuals
6. _____ is _____
a. analysis
b. analysis
c. analysis
d. analysis
7. Using the _____, _____
a. analysis
b. analysis
c. analysis
d. analysis
8. All living things _____ to make more living things.
a. individuals
b. individuals
c. drive
d. adapt
9. The _____ of biology is learning about the _____.
a. study
b. the environment
c. environment
d. all of the above
10. The information gathered from experiments is called _____.
a. data
b. data
c. hypothesis
d. conclusion
11. The three commands used to solve problems are called _____.
a. pure systems
b. pure systems
c. problem solving
d. problem solving
12. Quantitative research is the _____
a. graphs or charts
b. description of behavior
c. description of behavior
d. all of the above
13. _____ is the first thing you do.
a. Fix the environment
b. Do the experiment
c. Start first aid measures
d. Do the experiment
14. Staying one or more of your _____
a. decreasing
b. decreasing
c. increasing
d. increasing

ANSWER KEY INCLUDED — IMAGES ARE BLURRED FOR COPYRIGHT REASONS

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