

**Middle School** (Phase 3) Student Workbook

# SCIENCE: ANATOMY & PHYSIOLOGY

Unit 3: Guardians of the Body



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# Unit 3: Guardians of the Body

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# Unit Project Overview

## Life Inside: A First-Person Body Blog

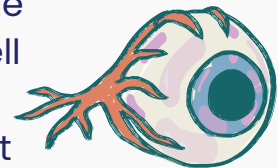
### Welcome Science Blogger!

Over the next eight lessons, your job isn't just to learn about your body. You're going to *become* your body... sort of.

For this project, you'll write a series of creative, first-person blog entries as if you were different parts of the body. Think of it as a diary, but instead of *you* telling the story, your eyeball, tongue, skin cell, ear, or immune cell will be doing the telling. Each "body part" will spill all the juicy details about its daily life—what it does, who it works with, what it loves, what annoys it, and how it keeps you alive and thriving.

You'll write one entry after each lesson, matching the part of the body you learned about, and your challenge is to mix real science with a fun, personality-filled voice!

By the end of Lesson 8, you'll have a complete blog—eight unique entries that together tell the story of "Life Inside" your amazing body.



# Unit Project (continued)

## Life Inside: A First-Person Body Blog

### Suggestions for Blog Entries:

- Lesson 1: A heroic white blood cell on patrol
- Lesson 2: The nervous system HQ, coordinating messages between the senses
- Lesson 3: An eyeball explaining the daily grind of focusing/blinking
- Lesson 4: A chatty ear drum who never stops vibrating to the beat
- Lesson 5: A nose on the lookout for delicious (or dangerous) smells
- Lesson 6: A tongue with strong opinions about sweet vs. sour
- Lesson 7: A skin cell who's always on the frontline, feeling everything
- Lesson 8: A "body steward" suggesting tips for keeping the body healthy

### Grading Rubric

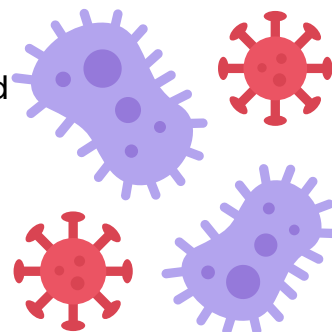
- 5: All 8 blog entries are complete, accurate, and show strong effort; each entry is written in first-person voice, and includes 2–3 accurate details from the lessons
- 4: 6–7 entries are complete with good effort and mostly accurate content; first-person voice and creativity are used in most entries; at least 2 science facts are included in each, though some may be less detailed
- 3: 4–5 entries included; basic effort and understanding shown; some entries are missing science facts or first-person perspective
- 2: 2–3 entries present; limited effort or unclear scientific content; entries may be very short, lack detail, or show little connection to the lessons
- 1: 1 incomplete or off-topic entry; very little effort; minimal or no use of first-person voice or science content
- 0: No work or not related to assignment

# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you learned that your immune system is always on the lookout for invaders called pathogens. Pathogens—like viruses, bacteria, and parasites—try to sneak in and cause sickness and infection. Luckily, the immune system's team of cells, tissues, and organs are ready to detect, chase down, and destroy them. For your project, you'll step into the shoes (or... cell walls?) of one of these defenders and tell the world what it's like to protect the body from sickness.



### Complete Today's Tasks

- ☐ **Choose Your Character.** Pick an immune system hero, such as an adenoid, white blood cell, or lymph node.
- ☐ **Give Your Character a Voice.** Decide what personality they'll have—are they brave and bold, calm and strategic, or maybe a little overdramatic about germs?
- ☐ **Describe the Setting.** Where is your character working? The bloodstream? The lymph nodes? Somewhere else in the body?
- ☐ **Tell the Story.** Write a first-person blog entry (5–8 sentences) describing:
  - A day on patrol in the body
  - How you spot pathogens
  - What you do to destroy them
  - How you work with the rest of the immune system team
- ☐ **Include Real Science Facts.** Work in at least 2–3 accurate details you learned today about how the immune system works.
- ☐ **Add Your 1<sup>st</sup> Entry to Your Body Blog.** This can be digital or physical. Keep your blog entries organized!

### Grading

While your project will not be graded until it is complete, keep in mind the criteria to receive full points: **each blog entry should be complete, accurate, show strong effort, be written in first-person, and include 2–3 scientific details from the lesson.**

# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you discovered that your five senses—sight, hearing, smell, taste, and touch—are constantly gathering information about the world. Each one uses special body parts to detect sights, sounds, scents, flavors, and sensations, then sends those messages to your brain for interpretation. These senses also team up to protect you from danger (like smelling smoke or hearing a car horn) and help you enjoy life (like tasting pizza or feeling a cozy blanket). For your project, you'll imagine you're the "Senses Headquarters," sending out updates on what's happening around the body.



### Complete Today's Tasks

- ☐ **Pick Your Perspective.** Will you write as the "Senses Headquarters" (the brain's sensory control center) or as one sense (e.g., sight) giving a status update to HQ?
- ☐ **Create a Personality.** Is your HQ super-organized and calm under pressure, or are they a bit frantic when danger's near?
- ☐ **Describe Your Job.** Explain how you gather information from the world, who sends it to you, and how you share it with the rest of the body.
- ☐ **Tell the Story.** Write a first-person blog entry (5–8 sentences) that includes:
  - An example of how you help the body stay safe
  - A moment when you help the body learn something new
  - A way you help the body enjoy life
- ☐ **Include Real Science Facts.** Work in at least 2–3 accurate science facts about the senses and how they work together.
- ☐ **Add Your 2<sup>nd</sup> Entry to Your Body Blog.** This can be digital or physical. Keep your blog entries organized!

#### Creative Blogging Tips

You could include "complaints" from different senses, a funny mix-up between them, or a dramatic "breaking news" alert from HQ.

### Grading

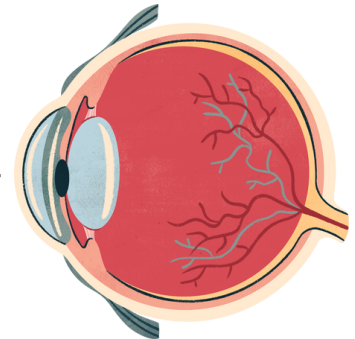
Your final project will be graded on the following criteria: each blog entry is **complete, accurate, shows strong effort, written in first-person, and includes 2–3 scientific details from the lesson.**

# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you learned that sight is one of the body's most powerful tools for learning, staying safe, and enjoying life. Your eyes, brain, and light work together to create vision, with each part of the eye doing a specialized job—focusing, letting in light, detecting color, and more. For your project, you'll imagine you're an eyeball (or even a specific part of one, like the cornea, retina, or optic nerve) writing about your busy day helping the body see the world clearly.



### Complete Today's Tasks

- ☐ **Choose Your Role.** Will you be the whole eyeball, or one hardworking part of it (lens, retina, optic nerve, cornea, pupil, iris)?
- ☐ **Decide Your Personality.** Are you a perfectionist about focus? A dramatic artist obsessed with colors? A watchful guard scanning for danger?
- ☐ **Describe Your Job.** Explain how you work with light and the brain to create vision.
- ☐ **Tell the Story.** Write a first-person blog entry (5–8 sentences) that includes:
  - How you use light to help the body see
  - A moment when you helped the body stay safe
  - A way you helped the body learn or enjoy life
- ☐ **Include Real Science Facts.** Work in at least 2–3 real facts about how vision works and what your chosen eye part does.
- ☐ **Add Your 3<sup>rd</sup> Entry to Your Body Blog.** This can be digital or physical. Keep your blog entries organized!

### Grading

Your final project will be graded on the following criteria: each blog entry is **complete, accurate, shows strong effort, written in first-person, and includes 2–3 scientific details from the lesson.**

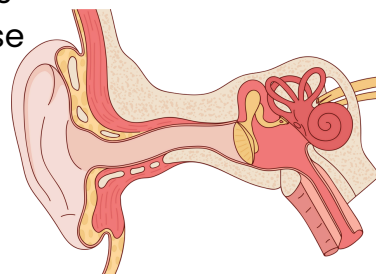
# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you discovered how sound begins as vibrations moving in waves through the air. Your ears catch those waves and send them to the brain, which interprets them as music, voices, laughter, warnings, and more.

Each part of the ear—the outer ear, inner ear, and auditory nerve—has a special role in turning simple vibrations into meaningful sound. For your project, you'll step into the role of an ear (or one of its parts) and describe what it's like to live a life full of buzzes, booms, and beats.



### Complete Today's Tasks

- ☐ **Choose Your Role.** Will you be the outer ear catching vibrations, the eardrum that never stops vibrating, or the cochlea decoding sound?
- ☐ **Decide Your Personality.** Are you a music lover? A strict sound detective? A little grumpy about loud noises?
- ☐ **Describe Your Job.** Explain how you receive sound waves and pass them along to the brain.
- ☐ **Tell the Story.** Write a first-person blog entry (5–8 sentences) that includes:
  - How you help the body learn or enjoy life through sound
  - A moment when you helped the body stay safe (like hearing a warning)
  - An example of working with other ear parts or the brain
- ☐ **Include Real Science Facts.** Work in at least 2–3 real facts about sound waves, hearing, and the ear's structure.
- ☐ **Add Your 4<sup>th</sup> Entry to Your Body Blog.** This can be digital or physical. Keep your blog entries organized!

### Creative Blogging Tips

Maybe complain about too much loud music, or tell a dramatic story about hearing danger just in time.

### Grading

Your final project will be graded on the following criteria: each blog entry is **complete, accurate, shows strong effort, written in first-person, and includes 2–3 scientific details from the lesson.**



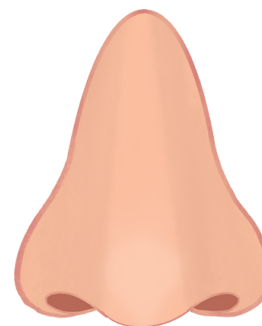
**Turn in ALL 4 of your activities from lessons 1–4 when you're done.**

# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you learned that smell begins when tiny odor molecules (called odorants) enter the nose and activate special olfactory receptors. These receptors send messages to the brain, which identifies scents as pleasant, dangerous, or just plain weird. For your project, you'll imagine being the nose—or even one of those hardworking olfactory receptors—and write about your daily adventures sniffing out the world.



### Complete Today's Tasks

- ☐ **Choose Your Role.** Will you be the whole nose, one nostril, or an olfactory receptor reporting scents to the brain?
- ☐ **Decide Your Personality.** Are you picky and dramatic, adventurous and curious, or proud of detecting even the faintest odors?
- ☐ **Describe Your Job.** Explain how you catch odor molecules and send information to the brain.
- ☐ **Tell the Story.** Write a first-person blog entry (5–8 sentences) that includes:
  - A time you helped the body stay safe (like smelling smoke or spoiled food)
  - A moment when you helped the body enjoy life (like sniffing flowers or dessert)
  - An example of how you work with the brain to make sense of smells.
- ☐ **Include Real Science Facts.** Work in at least 2–3 real facts about odor molecules, receptors, or how smell connects with the brain.
- ☐ **Add Your 5<sup>th</sup> Entry to Your Body Blog.** This can be digital or physical. Keep your blog entries organized!

#### Creative Blogging Tips

You could complain about stinky socks, or brag about detecting popcorn from far away.

### Grading

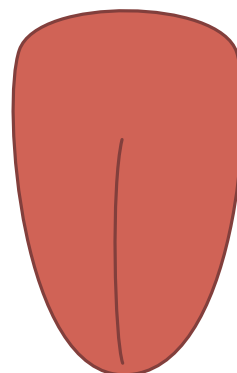
Your final project will be graded on the following criteria: each blog entry is **complete, accurate, shows strong effort, written in first-person, and includes 2–3 scientific details from the lesson.**

# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you discovered that your tongue is a muscle! Working together with your sense of smell, the tongue helps you detect five different tastes (sweet, sour, salty, bitter, and umami), which not only makes food enjoyable but also keeps you safe by warning against harmful or spoiled foods. Beyond taste, the tongue is busy all day helping you talk, swallow, lick, and even whistle. For your project, you'll imagine life as a tongue and write about your many important (and sometimes messy!) jobs.



### Complete Today's Tasks

- ☐ **Choose Your Role.** Will you write as the whole tongue, one taste bud, or maybe even a papilla (the little bumps where taste buds live)?
- ☐ **Decide Your Personality.** Are you always chasing flavors, a chatty tongue who loves talking, or a tired worker annoyed at being chewed on?
- ☐ **Describe Your Job.** Explain how you taste, how you team up with smell, and how you help with talking and swallowing.
- ☐ **Tell the Story.** Write a first-person blog entry (5–8 sentences) that includes:
  - An example of tasting something delicious (or disgusting!)
  - A time you helped keep the body safe from bad food
  - A shout-out to one of your other “jobs” like talking, whistling, or swallowing
- ☐ **Include Real Science Facts.** Work in at least 2–3 real facts about taste buds, the role of smell, or the tongue’s muscle work.
- ☐ **Add Your 6<sup>th</sup> Entry to Your Body Blog.** This can be digital or physical. Keep your blog entries organized!

#### Creative Blogging Tips

Complain about foods you don't like, brag about whistling skills, or celebrate your role in enjoying ice cream.

### Grading

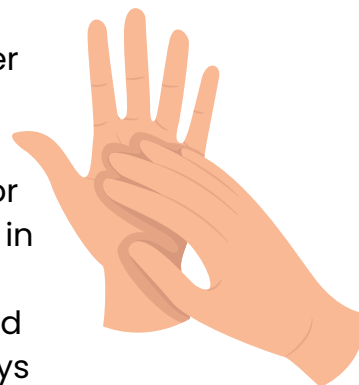
Your final project will be graded on the following criteria: each blog entry is **complete, accurate, shows strong effort, written in first-person, and includes 2–3 scientific details from the lesson.**

# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you learned that touch sensors in the skin gather information and send it to the brain, helping us enjoy things like soft blankets and warm sunshine—or stay safe by warning us when something is sharp, too hot, or painful. Pain may be unpleasant, but it plays a big role in protecting the body from harm. For your project, you'll imagine being the skin (or one of its touch sensors) and describe what it's like to live life on the front lines, always "feeling" what the world throws at you.



### Complete Today's Tasks

- ☐ **Choose Your Role.** Will you write as the whole skin, a single touch receptor, or even a pain sensor with strong opinions?
- ☐ **Decide Your Personality.** Are you a tough protector, a sensitive sensor who feels everything, or a grumpy critic of mosquito bites and paper cuts?
- ☐ **Describe Your Job.** Explain how you detect temperature, texture, pressure, or pain and how you send that information to the brain.
- ☐ **Tell the Story.** Write a first-person blog entry (5–8 sentences) that includes:
  - An example of detecting something enjoyable (like soft fur or a warm hug)
  - A time you protected the body from harm by sending a pain warning
  - A description of how you and the brain work together to interpret touch
- ☐ **Include Real Science Facts.** Work in at least 2–3 real facts about touch receptors, the role of pain, or the skin's connection to the nervous system.
- ☐ **Add Your 7<sup>th</sup> Entry to Your Body Blog.** This can be digital or physical. Keep your blog entries organized!

### Creative Blogging Tips

Maybe complain about stubbed toes, talk about textures, or joke about how you confused one surface for something else.

### Grading

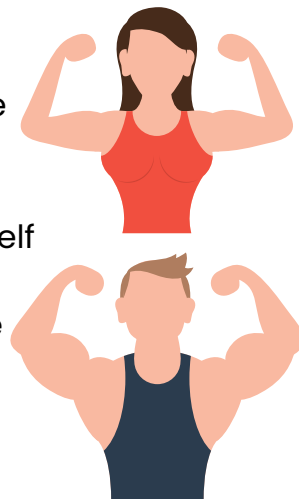
Your final project will be graded on the following criteria: each blog entry is **complete, accurate, shows strong effort, written in first-person, and includes 2–3 scientific details from the lesson.**

# Unit Project: Life Inside: A First-Person Body Blog

## Guardians of the Body: Senses, Systems, and Stewardship

### Instructions

Today you learned that you are the steward of your own body. Your body depends on you to notice its needs, make choices that keep it healthy, and avoid things that could cause harm. Every decision you make—what you eat, how you rest, whether you exercise, and how you protect yourself—affects your body’s health and well-being. For your final project entry, you’ll step back and let the whole body have the last word in your blog: a big, heartfelt (and maybe funny) message about what it needs from you to thrive.



### Complete Today’s Tasks

- ☐ **Choose Your Voice.** Write as your entire body speaking directly to “you” (the owner), thanking, warning, or advising.
- ☐ **Decide Your Personality.** Are you a cheerful encourager, a dramatic complainer, or a wise teacher giving important advice?
- ☐ **Write Your Final Blog Entry:** In 6–10 sentences, include:
  - A reminder of how you (the body) depend on the student to be a good steward
  - An example of a healthy choice that keeps you strong
  - A warning about something harmful to avoid
  - A hopeful or funny closing thought about your future together
- ☐ **Include Real Science Facts.** Work in at least 2–3 real facts about healthy habits, sickness prevention, or harmful behaviors.
- ☐ **Add Your 8<sup>th</sup> Entry to Your Body Blog.** This can be digital or physical. Ensure your entries meet the criteria for full points (see page 2 for rubric).
- ☐ **Create a Cover Page for Your Finished Blog.** Remember to include a title and add color and illustrations (physical or digital).

#### Creative Blogging Tips

Since this is your last entry, make it feel like a “grand finale” for your blog—memorable, maybe a little humorous, but also meaningful.



**Turn in ALL 4 of your activities from lessons 5–8 when you’re done.**

# Unit Project: Life Inside: A First-Person Body Blog (cont.)

## Guardians of the Body: Senses, Systems, and Stewardship

### Body Blog Checklist

Review the following checklist to ensure each of your blog entries meet the criteria for full points.



### Blog Entry 1: Immune System—Protection from Within

- Choose a character to represent the immune system.
- Describe the setting in first-person.
- Tell the story (5–8 sentences) including:
  - A day on patrol in the body
  - How the character spots pathogens
  - What the character does to destroy them
  - How the character works with the rest of the immune system team
- Include 2–3 accurate science facts from the lesson.

### Blog Entry 2: Introduction to the Five Senses

- Choose a perspective to represent the “Senses Headquarters”.
- Describe the job in first-person.
- Tell the story (5–8 sentences) including:
  - An example of how the character helps the body stay safe
  - A moment when the character helps the body learn something new
  - A way the character helps the body enjoy life
- Include 2–3 accurate science facts from the lesson.

### Blog Entry 3: Sight

- Choose a role to represent the sense of sight.
- Describe the job in first-person.
- Tell the story (5–8 sentences) including:
  - How the character uses light to help the body see
  - A moment when the character helped the body stay safe
  - A way the character helped the body learn or enjoy life
- Include 2–3 accurate science facts from the lesson.

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# Unit Project: Life Inside: A First-Person Body Blog (cont.)

## Guardians of the Body: Senses, Systems, and Stewardship

### Blog Entry 4: Hearing

- Choose a role to represent the sense of hearing.
- Describe the job in first-person.
- Tell the story (5–8 sentences) including:
  - How the character helps the body learn or enjoy life through sound
  - A moment when the character helped the body stay safe (like hearing a warning)
  - An example of working with other ear parts or the brain
- Include 2–3 accurate science facts from the lesson.

### Blog Entry 5: Smell

- Choose a role to represent the sense of smell.
- Describe the job in first-person.
- Tell the story (5–8 sentences) including:
  - A time the character helped the body stay safe (like smelling smoke or spoiled food)
  - A moment when the character helped the body enjoy life (like sniffing flowers or dessert)
  - An example of how the character works with the brain to make sense of smells.
- Include 2–3 accurate science facts from the lesson.

### Blog Entry 6: Taste

- Choose a role to represent the sense of taste.
- Describe the job in first-person.
- Tell the story (5–8 sentences) including:
  - An example of tasting something delicious (or disgusting!)
  - A time the character helped keep the body safe from bad food
  - A shout-out to one of the character's other "jobs" like talking, whistling, or swallowing
- Include 2–3 accurate science facts from the lesson.



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## Unit Project: Life Inside: A First-Person Body Blog (cont.)

### Guardians of the Body: Senses, Systems, and Stewardship

#### Blog Entry 7: Touch

- Choose a role to represent the sense of touch.
- Describe the job in first-person.
- Tell the story (5–8 sentences) including:
  - An example of detecting something enjoyable (like soft fur or a warm hug)
  - A time the character protected the body from harm by sending a pain warning
  - A description of how the character and the brain work together to interpret touch
- Include 2–3 accurate science facts from the lesson.

#### Blog Entry 8: Stewardship of Our Bodies

- Choose a role to represent the entire body.
- Describe the job in first-person.
- Write the final blog entry (6–10 sentences) including:
  - A reminder of how the body depends on you (the student) to be a good steward
  - An example of a healthy choice that keeps the body strong
  - A warning about something harmful to avoid
  - A hopeful or funny closing thought about the body's future
- Include 2–3 accurate science facts from the lesson.
- Create a cover page for the finished blog.



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