447 Anatomy and Physiology Level 1

Unit1: Anatomical Orientation

Essential Questions

1. What terminology is used to discuss anatomy?
2. How is the body organized to function effectively and maintain homeostasis?

Framework Standard	Content/Skills	Resources	Instructional Strategies	Assessments
Distinguish between anatomy and physiology.	-Define *anatomy* and *physiology*.	-Intro to the Human Body 5th Edition (Tortora) Text -PPT Presentation- Chapter 1 -Copies - Chapter Guided Notes - Outline/Notes rubric - Bingo Cards	-Human Body Orientation PPT and Guided Notes -Anatomy Bingo	-Chapter 1 Reading (Outline/Notes) -Test: Introduction to Anatomy -Notebook Check
Investigate the interrelationship between the structures and functions of the body systems.	- Sequence the levels of structural organization from the molecular level through the organismic level. - Articulate how function is dependent on structure. - Identify all of the major systems of the body and their organs and briefly describe the functions of each.	-Intro to the Human Body 5th Edition (Tortora) Text -Anatomy and Physiology Coloring: A Complete Study Guide (Marieb) -The Anatomy Coloring Book (Kapit) -PPT Presentation- chapter 1 -Various Items for Structure vs. Function Activity (Forks, spoon, glove, cup, etc.) -Copies - Chapter Guided Notes -Human Body Charts for each student - Outline/Notes rubric - Bingo Cards - Coloring Worksheets	-Human Body Orientation PPT and Guided Notes -Quick Activity: Structure vs. Function -Human Body Systems Chart in Pairs -Systems and Regions Coloring Worksheet (pg.1 and 2 in Kapit coloring book)	-Chapter 1 Reading (Outline/Notes) -Test: Introduction to Anatomy -Completion of all hand outs -Informal Observation during paired work -Notebook Check

Locate the body cavities and the major organs in each.	-Identify and label the body cavities and major organs in each. -Honors: Add divisions of the abdomen.	-Intro to the Human Body 5th Edition (Tortora) Text -Anatomy and Physiology Coloring: A Complete Study Guide (Marieb) -The Anatomy Coloring Book (Kapit) -PPT Presentation- Chapter 1 -Copies - Chapter Guided Notes -Human Body Charts for each student - Outline/Notes rubric	-Human Body Orientation PPT and Guided Notes -Systems and Regions Coloring Worksheet (pg.1 and 2 in Kapit coloring book)Coloring Worksheets	-Chapter 1 Reading (Outline/Notes) -Completion of all Hand outs -Test: Introduction to Anatomy -Notebook Check
Use correct anatomical terminology when discussing body structures, sections, and regions.	-Apply correct terminology to reference body regions. - Apply correct terminology to reference anatomical orientation and direction. - Apply correct terminology to reference body planes and sections. -Demonstrate and verbally describe the anatomical position. -Honors: Must know all regions. -Level 1: Selected regions. -Level 2: Skip body regions.	-PPT Presentation -Copies - Chapter Guided Notes - Outline/Notes rubric - Bingo Cards - Coloring Worksheets	-Human Body Orientation PPT and Guided Notes -Simon Says Body Regions -Anatomy Bingo -Practice questions as a class using white boards or dipsticking (regional and orientation)	-Chapter 1 Reading (Outline/Notes) -Test: Introduction to Anatomy -Dipsticking/Whiteboards -Informal Observation during Simon Says -Notebook Check

Reading and Writing Standards for Unit 1	Evidence from Unit 1
RS.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistences in the account.	-Chapter 1 Reading (Outline/Notes) -Human Body Systems Chart
RS.2.Determine the central ideas or conclusions of a text; summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.	-Chapter 1 Reading (Outline/Notes) -Human Body Systems Chart -Chapter 1 Test Open Response and Short Answer Questions
RS.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	-Chapter 1 Reading (Outline/Notes) -Body Systems Chart -Chapter 1 Test
RS.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas	-Chapter 1 Reading (Outline/Notes)

RS.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.	-Chapter 1 Reading (Outline/Notes)
WS.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes	-Chapter 1 Test Open Response and Short Answer Questions
WS.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	-Chapter 1 Test Open Response and Short Answer Questions
WS.10. Write routinely over extended time frames and shorter time frames for a range of discipline specific tasks, purposes, and audiences.	-Chapter 1 Test Open Response and Short Answer Questions

Unit 2: Atoms, Molecules, Cells, and Tissues
Essential Questions
1. What are the roles of the four major organic macromolecules in the human body?
2. How does each organelle contribute to cell functioning?
3. What is the primary function of each body tissue?

Framework Standard	Content/Skills	Resources	Instructional Strategies	Assessments
1.2 Describe the basic molecular structures and primary functions of the four major categories of organic molecules (carbohydrates, lipids, proteins, nucleic acids). SKIP:HONORS LEVEL	-Identify and describe a covalent bond. -Be able to identify and describe the function and structure of the four major macromolecules of life. -Describe how dehydration synthesis and hydrolysis are necessary for constructing and digesting macromolecules.	-Supplies for investigating macromolecules lab -Copies -Macromolecule Chart -Study Guide Macromolecules -Lab packet -Outline/Notes rubric	-Macromolecule Chart -Investigating Macromolecules Lab Stations -Practice Macromolecule Worksheet	-Macromolecules Quiz -Completion of Macromolecule Worksheet -Investigating Macromolecules Lab -Notebook Check
2.1 Relate cell parts/organelles to their functions. Explain the role of cell membranes as a highly selective barrier. SKIP:HONORS LEVEL	-Be able to identify and describe the function of each organelle. -List the major types of cellular transport. -Define selective permeability.	-Poster paper -Copies -Cell Analogy Rubric and Directions -Organelle Chart -Cell Transport Graphic Organizer	-Complete Organelle Chart -Cell Analogy Project -Complete Cell Transport Graphic Organizer	-Cell Analogy Project -Chapter 3 Reading (Outline/Notes) -Organelle Quiz -Cells and Tissue Test
No Standard	-Be able to identify and describe the four types of tissues, and their basic structures and functions.	-Tissues PPT with coloring book -Colored pencils -Copies -Intro to the Microscope -Tissues Lab -Tissues Coloring Books	-Notes on Microscope Parts -Tissues PPT w/guided notes -Tissues Coloring Book	-Chapter 3 Reading (Outline/Notes) -Tissues Lab -Cells and Tissues Test
Reading and Writing Standards for Unit 2			Evidence from Unit 2	
RS.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistences in the account.			-Chapter 3 & 4 Reading (Outline/Notes) -Tissue Lab Report	

RS.2.Determine the central ideas or conclusions of a text; summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.	-Chapter 3 & 4 Reading (Outline/Notes) -Chapter 3&4 Test Open Response and Short Answer Questions -Tissues Lab Report
RS.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	-Investigating Macromolecules Lab -Tissues Lab
RS.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	-Chapter 3 & 4 Reading (Outline/Notes) -Chapter 3&4 Test Open Response and Short Answer Questions
RS.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas	-Chapter 3 & 4 Reading (Outline/Notes)
RS.6. Analyze the author's purpose in providing explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that still remain unresolved.	-Investigating Macromolecules Lab
RS.8. Evaluate the hypotheses, data, analysis and conclusions in a science or technical text, verifying the data when possible and corroboration or challenging conclusions with other sources of data.	-Investigating Macromolecules Lab
RS.9. Synthesize information from a range of sources into a coherent understanding of a process, phenomenon or concept, resolving conflicting information when possible.	-Investigating Macromolecules Lab -Tissue Lab Report -Chapter 3&4 Test Open Response and Short Answer Questions -Cell Analogy Project
RS.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.	-Chapter 3 & 4 Reading (Outline/Notes)
WS.1. Write arguments focused on discipline specific content.	-Investigating Macromolecules Lab
WS.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes	-Chapter 3&4 Test Open Response and Short Answer Questions -Investigating Macromolecules Lab -Tissues Lab Report
WS.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	-Chapter 3&4 Test Open Response and Short Answer Questions -Investigating Macromolecules Lab -Tissues Lab Report
WS.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying new approach, focusing on addressing what is most significant for a specific purpose and audience.	-Investigating Macromolecules Lab -Tissues Lab Report
WS.7. Conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	-Cell Analogy Project -Investigating Macromolecules Lab -Tissues Lab Report
WS.9. Draw evidence from informational texts to support analysis, reflection and research.	-Cell Analogy Project -Investigating Macromolecules Lab -Tissues Lab Report
WS.10. Write routinely over extended time frames and shorter time frames for a range of discipline specific tasks, purposes, and audiences.	-Chapter 3 & 4 Reading (Outline/Notes) -Chapter 3&4 Test Open Response and Short Answer Questions -Daily Catalyst Questions

Unit 3: Integumentary System

Essential Questions
1. What are the functions of the integumentary system?
2. What is the anatomy of the integumentary system?
3. How are the accessory organs of the skin important in the body's homeostasis?

Framework Standard	Content/Skills	Resources	Instructional Strategies	Assessments
4.8 Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.	-Describe how the integumentary system helps maintain homeostasis in the human body. -Identify the functions of the integumentary system. -Recognize the degree of	-Intro to the Human Body 5th Edition (Tortora) Text -Integumentary Notes -Copies - Integumentary Guided Notes	-Integumentary guided notes -Color skin diagram	-Integumentary Reading (Outline/Notes) -Integumentary Quiz -Notebook Check
	innervation and vascularity of the parts of the integumentary system.	- Skin Diagram -Integumentary Study Guide		
2.1 Identify and the structures of the skin and explain their role in protecting the body and maintaining homeostasis.	-Label the epidermis, dermis, and hypodermis. -Sequence the layers of the epidermis. -Describe the role of keratin. -Describe the function of melanin and its effect on vitamin D production. -Recognize and name the layers and structures found in the dermis. -Identify the components of the hypodermis.	-Intro to the Human Body 5th Edition (Tortora) Text -Integumentary Notes -Copies - Integumentary Guided Notes - Skin Diagram -Integumentary Study Guide	-Integumentary guided notes -Color skin diagram	-Completion of Worksheets -Integumentary Reading (Outline/Notes) -Integumentary Quiz -Notebook Check
4.8 Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.	-Describe the distribution and function of the sebaceous and sweat glands. -Compare and contrast apocrine and eccrine glands. -Describe the structure and function of hair and nails.	-Intro to the Human Body 5th Edition (Tortora) Text -Integumentary Notes -Copies - Integumentary Guided Notes - Skin Diagram -Integumentary Study Guide	-Integumentary guided notes -Color skin diagram	-Completion of Worksheets -Integumentary Reading (Outline/Notes) -Integumentary Quiz -Notebook Check

No Standard	-Differentiate between first-,second- and third-degree burns. -Identify when a laceration requires stiches. -Identify various maladies of the integumentary system including bacterial, fungal and viral infections and genetic disorders.	-Intro to the Human Body 5th Edition (Tortora) Text -Intro to the Human Body 5th Edition (Tortora) Text -Integumentary Notes - Computer access for research -Copies -Skin disorder presentation rubric	-Integumentary guided notes -Skin Disorder Project (go to computer lab)	-Integumentary Reading (Outline/Notes) -Integumentary Quiz -Notebook Check -Skin Disorder Project

Reading and Writing Standards for Unit 3	Evidence from Unit 3
RS.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistences in the account.	-Chapter 5 Reading (Outline/Notes) -Skin Disorder Project
RS.2.Determine the central ideas or conclusions of a text; summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.	-Chapter 5 Reading (Outline/Notes) -Chapter 5 Test Open Response and Short Answer Questions -Skin Disorder Project
RS.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	-Chapter 5 Reading (Outline/Notes) -Chapter 5 Test Open Response and Short Answer Questions
RS.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas	-Chapter 5 Reading (Outline/Notes)
RS.7. Integrate and evaluate multiple sources of information presented in diverse formats and media in order to address a question or solve a problem.	-Skin Disorder Project
RS.8. Evaluate the hypotheses, data, analysis and conclusions in a science or technical text, verifying the data when possible and corroboration or challenging conclusions with other sources of data.	-Skin Disorder Project
RS.9. Synthesize information from a range of sources into a coherent understanding of a process, phenomenon or concept, resolving conflicting information when possible.	-Skin Disorder Project -Chapter 5 Test Open Response and Short Answer Questions
RS.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.	-Chapter 5 Reading (Outline/Notes)
WS.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes	-Chapter 5Test Open Response and Short Answer Questions -Skin Disorder Project
WS.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	-Chapter 5 Test Open Response and Short Answer Questions -Skin Disorder Project
WS.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying new approach, focusing on addressing what is most significant for a specific purpose and audience.	-Skin Disorder Project
WS.6. Use technology, including the internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.	-Skin Disorder Project
WS.7. Conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	-Skin Disorder Project

WS.8. Gather information from multiple authoritative print and digital resources, using advanced searches effectively; assess the strengths and weaknesses of each sources in a specific task, purpose and audience; integrate information into the test selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	-Skin Disorder Project
WS.9. Draw evidence from informational texts to support analysis, reflection and research.	-Skin Disorder Project
WS.10. Write routinely over extended time frames and shorter time frames for a range of discipline specific tasks, purposes, and audiences.	-Chapter 5 Reading (Outline/Notes) -Chapter 5 Test Open Response and Short Answer Questions -Daily Catalyst Questions

Unit 4: Skeletal System

Essential Questions

1. How does the skeletal system achieve its five major functions?
2. What is the internal anatomy of a bone?
3. What are the bones that make up the axial and appendicular skeleton?

Framework Standard	Content/Skills	Resources	Instructional Strategies	Assessments
4.8 Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.	-Describe how the skeletal system helps maintain homeostasis in the human body. -Identify the functions of the skeletal system. -Recognize the degree of innervation and vascularity of the parts of the skeletal system.	-Intro to the Human Body 5th Edition (Tortora) Text -The Anatomy Coloring Book (Kapit) -Skeletal System Notes -Anatomy of a Lone Bone Diagram (Kapit p. 17) -Copies -Anatomy of a Long Bone	- Introduction to the Skeletal System Notes -Anatomy of a Long Bone Diagram (Kapit p.17) -Bone Matrix Coloring	-Introduction to the Skeletal System Quiz -Skeletal System Test -Notebook Check -Skeletal Reading (Outline/Notes)
Introduction to Skeletal System See Appendix for bones and structures each level is responsible for.	-Name the four main classifications of bones. -Compare and contrast compact and spongy bone. -Describe the gross anatomy of a long bone. -Describe microscopic anatomy of bone tissue. -Describe how osteoclasts and osteoblasts work together to maintain bone homeostasis. - Describe the process of bone growth and formation. - Compare and contrast the various types of fractures.	-Intro to the Human Body 5th Edition (Tortora) Text -Anatomy and Physiology Coloring: A Complete Study Guide (Marieb) -The Anatomy Coloring Book (Kapit) -Supplies for Chicken Bone Lab -Youtube access -Colored pencils -Copies -Chicken Bone Lab -Bone Matrix Coloring -Anatomy of a Long Bone Diagram (Kapit p.17) -Bone and Tooth Minerals Article -Bone Fracture and	-Chicken Bone Lab -Anatomy of a Long Bone Diagram (Kapit p.17) -Bone and Tooth Minerals Article and discussion -Bone Matrix Coloring -Bone Fractures and Remodeling Notes -Marieb Coloring pp82&83 -Bone Fracture & Healing Videos	-Introduction to the Skeletal System Quiz -Skeletal System Test -Notebook Check -Skeletal Reading (Outline/Notes) -Chicken Bone Lab Report -Completion of worksheets

		Remodeling Notes - Marieb coloring pp. 82&83		

Reading and Writing Standards for Unit 4	Evidence from Unit 4
RS.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistences in the account.	-Chapter 6&7 Reading (Outline/Notes) -Bone and Tooth Minerals Article Questions
RS.2.Determine the central ideas or conclusions of a text; summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.	-Chapter 6&7 Reading (Outline/Notes) -Chapter 6&7 Test Open Response and Short Answer Questions -Bone and Tooth Minerals Article Questions
RS.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	-Chicken Bone Lab
RS.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	-Chapter 6&7 Reading (Outline/Notes) - Chapter 6&7 Test Open Response and Short Answer Questions -Bone and Tooth Minerals Article Questions
RS.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas	- Chapter 6&7 Reading (Outline/Notes)
RS.8. Evaluate the hypotheses, data, analysis and conclusions in a science or technical text, verifying the data when possible and corroboration or challenging conclusions with other sources of data.	-Chicken Bone Lab
RS.9. Synthesize information from a range of sources into a coherent understanding of a process, phenomenon or concept, resolving conflicting information when possible.	-Chicken Bone Lab -Bone and Tooth Minerals Article Questions - Chapter 6&7 Test Open Response and Short Answer Questions
RS.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.	- Chapter 6&7 Reading (Outline/Notes)
WS.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes	- Chapter 6&7 Test Open Response and Short Answer Questions -Chicken Bone Lab
WS.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	- Chapter 6&7 Test Open Response and Short Answer Questions
WS.7. Conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	-Chicken Bone Lab
WS.9. Draw evidence from informational texts to support analysis, reflection and research.	-Chicken Bone Lab -Bone and Tooth Minerals Article Questions
WS.10. Write routinely over extended time frames and shorter time frames for a range of discipline specific tasks, purposes, and audiences.	-Chapter 6&7 Reading (Outline/Notes) -Chapter 6&7 Test Open Response and Short Answer Questions -Daily Catalyst Questions

Unit 5: Muscular System

Essential Questions

1. What are the roles of the three types of muscle tissue in the human body?
2. What are the functions of Muscle?
3. What are the major events of muscle contraction and relaxation?
4. How are muscles affect by exercise?
5. What are the major muscles of the human anatomy of the Muscular system?

Framework Standard	Content/Skills	Resources	Instructional Strategies	Assessments
4.8 Recognize that the body's systems interact to maintain homeostasis. Describe the basic function of a physiological feedback loop.	-Describe how the muscular system helps maintain homeostasis in the human body. -Identify the functions of the muscular system. -Recognize the degree of innervation and vascularity of the parts of the muscular system.	-Intro to the Human Body 5th Edition (Tortora) Text	-Introduction to the Muscular System Notes	-Introduction to the Muscular System Quiz -Muscular System Test -Notebook Check -Muscular Reading (Outline/Notes)
Introduction to Muscular Tissue	-Compare and contrast the three types of muscle tissue. -Explain the gross anatomy of a skeletal muscle. -Describe the anatomy of sarcomere. -Sequence the events of muscle contraction starting at the neuromuscular junction.	-Intro to the Human Body 5th Edition (Tortora) Text -Anatomy and Physiology Coloring: A Complete Study Guide (Marieb) -The Anatomy Coloring Book (Kapit) -Copies - Muscle Contraction Guided Notes -Neuromuscular Junction Guided Notes -Coloring Worksheets	-Muscle Tissue Graphic Organizer -Muscle Contraction and Neuromuscular Junction Notes -Acting out the Sarcomere Activity -Coloring and Labeling Worksheets	-Introduction to the Muscular System Quiz -Muscular System Test -Notebook Check -Completed Worksheets -Muscular Reading (Outline/Notes)

2.4 Identify the reactants, products, and basic purposes of cellular respiration.	-Identify and explain the energy sources for the muscles. -Explain the effects of exercise on the muscles and energy systems. -Explain the processes of post exercise recovery including repaying oxygen debt and repairing muscles.	-Intro to the Human Body 5th Edition (Tortora) Text	-Energy Sources Graphic Organizer -Bigger, Faster, Stronger Video -Real Sports Olympic Drug Testing Video	-Introduction to the Muscular System Quiz -Muscular System Test -Notebook Check -Muscular Reading (Outline/Notes)
Human Muscles See Appendix for muscles each level is responsible for.	-Demonstrate the different types of body movements. -Explain the interactions of different muscle during a movement. -Identify pertinent muscles and their attachments. *See appendix for complete list	-Intro to the Human Body 5th Edition (Tortora) Text -Anatomy and Physiology Coloring: A Complete Study Guide (Marieb) -The Anatomy Coloring Book (Kapit) -Copies -Muscle Tracing Activity Rubric -Coloring Worksheets -Muscle Chart	-Coloring Worksheets -Muscle Tracing Activity -Mammal Dissection -Muscle Chart	-Introduction to the Muscular System Quiz -Muscular System Test -Notebook Check -Muscular Reading (Outline/Notes) -Muscle Tracing Activity -Dissection Notes

Reading and Writing Standards for Unit 5	Evidence from Unit 5
RS.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistences in the account.	-Chapter 8 Reading (Outline/Notes)
RS.2.Determine the central ideas or conclusions of a text; summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.	-Chapter 8Reading (Outline/Notes) -Chapter 8 Test Open Response and Short Answer Questions
RS.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	-Chapter 8 Reading (Outline/Notes) -Chapter 8 Test Open Response and Short Answer Questions
RS.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas	- Chapter 8 Reading (Outline/Notes)
RS.9. Synthesize information from a range of sources into a coherent understanding of a process, phenomenon or concept, resolving conflicting information when possible.	-Bigger,Faster,Stronger Movie Write-up
RS.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.	- Chapter 8 Reading (Outline/Notes)
WS.1. Write arguments focused on discipline specific content.	-Bigger,Faster,Stronger Movie Write-up

WS.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes	- Chapter 8 Test Open Response and Short Answer Questions -Bigger,Faster,Stronger Movie Write-up
WS.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	- Chapter 6&7 Test Open Response and Short Answer Questions -Bigger,Faster,Stronger Movie Write-up
WS.9. Draw evidence from informational texts to support analysis, reflection and research.	-Bigger,Faster,Stronger Movie Write-up

Unit 6: Nervous System

Essential Questions:
1. What are the roles of the two types of nervous cells in the human body?
2. How do the two branches of the nervous system contribute body function?
3. What are the major events of nerve impulse and how is it conducted from one neuron to another?
4. How do afferent and efferent neurons work together to achieve an appropriate response to environmental stimuli?
5. What are protective of the nervous system and how do they function?
6.What are the major functional regions of the brain?

Framework Standard	Content/Skills	Resources	Instructional Strategies	Assessments
Function of the Nervous System	-Describe how the nervous system helps maintain homeostasis in the human body. -Identify the functions of the nervous system.	-Intro to the Human Body 5th Edition (Tortora) Text -Nervous PPT -Copies -Guided Notes	-Nervous PPT w/guided notes	-Introduction to the Nervous System Quiz -Nervous System Test -Notebook Check -Nervous System Reading (Outline/Notes) -Nervous System Disorder Project
Organization of the Nervous System	-Define central nervous system and peripheral nervous system and list the major parts of each. -Compare and contrast afferent and efferent neurons. -Compare and contrast white and gray matter.	-Intro to the Human Body 5th Edition (Tortora) Text -Nervous PPT -Copies -Guided Notes	-Nervous PPT w/guided notes	-Introduction to the Nervous System Quiz -Nervous System Test -Notebook Check -Nervous System Reading (Outline/Notes) -Nervous System Disorder Project
Nervous Tissue	-Describe the structure of a neuron. -Describe the roles of the major	-Intro to the Human Body 5th Edition (Tortora) Text	-Nervous PPT w/guided notes -Neuron Coloring	-Introduction to the Nervous System Quiz

	types of neuroglia. -Describe the events of an action potential. -Describe how a nerve impulse is communicated from one neuron to the next neuron or effector organ. -Identify the roles of dopamine, serotonin and acetylcholine.	-Anatomy and Physiology Coloring: A Complete Study Guide (Marieb) -The Anatomy Coloring Book (Kapit) -Copies - Neuron Coloring - Guided Notes	-Video Clips of neurotransmission	-Nervous System Test -Notebook Check -Nervous System Reading (Outline/Notes) -Nervous System Disorder Project
The Brain	-Identify the four main regions of the brain as the diencephalon, brain stem, cerebellum and cerebrum and describe their general functions. -Identify the four lobes of the cerebrum and their general functions.	-Intro to the Human Body 5th Edition (Tortora) Text -Anatomy and Physiology Coloring: A Complete Study Guide (Marieb) -The Anatomy Coloring Book (Kapit) -Copies - Guided Notes - Brain Coloring - Dissection Guide - Brain Imaging	-Nervous PPT w/guided notes -Brain Regions Coloring - Type II: Brain Imaging Summary - Neurobiology Videos: -Make me a Genius -Inside the Brain -NOVA: How the Brain Works - -The Secret Life of the Brain -Sheep Brain Dissection -Nervous System Disorder Project	-Nervous System Test -Notebook Check -Nervous System Reading (Outline/Notes) - Dissection Quiz -Nervous System Disorder Project

Reading and Writing Standards for Unit 6	Evidence from Unit 6
RS.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistences in the account.	-Chapter 9 Reading (Outline/Notes) -Nervous System Disorder Project
RS.2.Determine the central ideas or conclusions of a text; summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.	-Chapter 9 Reading (Outline/Notes) -Chapter 9 Test Open Response and Short Answer Questions -Nervous System Disorder Project
RS.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	-Sheep Brain Dissection
RS.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	-Chapter 9 Reading (Outline/Notes) -Chapter 9 Test Open Response and Short Answer Questions -Nervous System Disorder Project
RS.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas	- Chapter 9 Reading (Outline/Notes)
RS.6. Analyze the author's purpose in providing explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that still remain unresolved.	-Nervous System Disorder Project -Sheep Brain Dissection
RS.7. Integrate and evaluate multiple sources of information presented in diverse formats and media in order to address a question or solve a problem	-Nervous System Disorder Project
RS.8. Evaluate the hypotheses, data, analysis and conclusions in a science or technical text, verifying the data when possible and corroboration or challenging conclusions with other sources of data.	-Nervous System Disorder Project

RS.9. Synthesize information from a range of sources into a coherent understanding of a process, phenomenon or concept, resolving conflicting information when possible.	-Nervous System Disorder Project -Chapter 9 Test Open Response and Short Answer Questions -Sheep Brain Dissection
RS.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.	- Chapter 9 Reading (Outline/Notes)
WS.1. Write arguments focused on discipline specific content.	-Nervous System Disorder Project
WS.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes	- Chapter 9 Test Open Response and Short Answer Questions -Nervous System Disorder Project
WS.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	- Chapter 9 Test Open Response and Short Answer Questions -Nervous System Disorder Project
WS.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying new approach, focusing on addressing what is most significant for a specific purpose and audience.	-Investigating Macromolecules Lab -Nervous System Disorder Project
WS.6. Use technology, including the internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.	-Nervous System Disorder Project
WS.7. Conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	-Nervous System Disorder Project
WS.8. Gather information from multiple authoritative print and digital resources, using advanced searches effectively; assess the strengths and weaknesses of each sources in a specific task, purpose and audience; integrate information into the test selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.	-Nervous System Disorder Project
WS.9. Draw evidence from informational texts to support analysis, reflection and research.	-Nervous System Disorder Project
WS.10. Write routinely over extended time frames and shorter time frames for a range of discipline specific tasks, purposes, and audiences.	-Chapter 9 Reading (Outline/Notes) -Chapter 9 Test Open Response and Short Answer Questions -Daily Catalyst Questions

Unit 7: Honors and Level 1 only

Unit 7: The Cardiovascular System

Essential Questions:

1. What is the function of the cardiovascular system?
2. What are the components of blood and their functions?
3. What are the characteristics of the three types of blood vessels? Where are they found?
4. What are the major blood vessels of the body and where are they located?
5. What is the pathway of the blood through the heart and systemic circulation?
6. How does the body maintain cardiovascular homeostasis?

Framework Standard	Content/Skills	Resources	Instructional Strategies	Assessments
Introduction to the Cardiovascular System	-Describe how the cardiovascular system helps maintain homeostasis in the human body. -Identify the six functions of the cardiovascular system.	-Intro to the Human Body 5th Edition (Tortora) Text -Cardiovascular PPT -Copies -Guided Notes	-Cardiovascular PPT w/guided notes	-Introduction to the Cardiovascular System Quiz -Cardiovascular System Test -Notebook Check -Cardiovascular System Reading (Outline/Notes)
Components of the Blood	-Describe the principle functions of each of the four blood components including red blood cells, white blood cells, platelets and plasma. -Describe mechanism of blood clotting. -Define anemia and list possible causes. -Describe the ABO and Rh blood groups.	Intro to the Human Body 5th Edition (Tortora) Text -Cardiovascular PPT -Copies -Guided Notes	-Cardiovascular PPT w/guided notes -Blood Clotting Video	-Introduction to the Cardiovascular System Quiz -Cardiovascular System Test -Notebook Check -Cardiovascular System Reading (Outline/Notes)
Blood Vessels	-Compare and contrast the three types of blood vessels in terms of structure and function. -Identify the major veins and arteries of the human body. -Define aneurism and explain	Intro to the Human Body 5th Edition (Tortora) Text -Cardiovascular PPT -Copies -Guided Notes	-Cardiovascular PPT w/guided notes - You Tube Clips	-Cardiovascular System Test -Notebook Check -Cardiovascular System Reading (Outline/Notes)

	possible causes and effects. -Define aneurism and explain possible causes and effects. -Define atherosclerosis, throbus and embolus and explain possible causes and effects. -Describe the role of skeletal muscle in maintaining proper circulation.			
The Heart	-Trace the pathway of blood through the heart. -Identify and label the chambers and valves of the heart. -Explain the role of the sinoatrial node, atrial ventricle node and purking fiber in coordinating cardiac contraction. -Describe the origin of the heart sounds and causes of a heart murmur. -Define systole and diastole and their role in cardiovascular fitness. -Define clinical terms related to heart rate including bradycardia, tachiicardia and hypertension. -Define and measure heart rate. -Identify the effect of cardiovascular fitness on heart rate. -Describe and electrocardiogram and identify the features of a normal rhythm. -Describe the causes of a heart attack and the effects of defibrillation.	Intro to the Human Body 5th Edition (Tortora) Text -Cardiovascular PPT -Copies -Guided Notes - Dissection Guide - Blood Pressure and Heart Rate Activity - Heart Diagram	-Cardiovascular PPT w/guided notes -Video -Heart Diagram -Mammal heart Dissection - Blood Pressure and Heart Rate Lab	-Cardiovascular System Test -Notebook Check -Cardiovascular System Reading (Outline/Notes) -Dissection Quiz -Blood Pressure and Heart Rate Lab

Reading and Writing Standards for Unit 6	Evidence from Unit 6
RS.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistences in the account.	-Chapter Reading (Outline/Notes)
RS.2.Determine the central ideas or conclusions of a text; summarize complex concepts, processes or information presented in a text by paraphrasing them in simpler but still accurate terms.	-Chapter Reading (Outline/Notes) -Chapter Test Open Response and Short Answer Questions
RS.3. Follow precisely a complex multistep procedure when carrying out experiments, taking	-Mammal Heart Dissection

measurements, or performing technical tasks; analyze the specific results based on explanations in the text.	-Blood Pressure and Heart Rate Lab
RS.4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.	-Chapter Reading (Outline/Notes) -Chapter Test Open Response and Short Answer Questions
RS.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas	- Chapter Reading (Outline/Notes)
RS.6. Analyze the author's purpose in providing explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that still remain unresolved.	-Mammal Heart Dissection -Blood Pressure and Heart Rate Lab
RS.9. Synthesize information from a range of sources into a coherent understanding of a process, phenomenon or concept, resolving conflicting information when possible.	-Chapter Test Open Response and Short Answer Questions -Mammal Heart Dissection -Blood Pressure and Heart Rate Lab
RS.10. By the end of grade 12, read and comprehend science/technical texts in the grades 11-CCR text complexity band independently and proficiently.	-Chapter Reading (Outline/Notes)
WS.2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes	-Chapter Test Open Response and Short Answer Questions -Blood Pressure and Heart Rate Lab
WS.4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	- Chapter Test Open Response and Short Answer Questions -Blood Pressure and Heart Rate Lab
WS.5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying new approach, focusing on addressing what is most significant for a specific purpose and audience.	-Blood Pressure and Heart Rate Lab
WS.6. Use technology, including the internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.	-Blood Pressure and Heart Rate Lab
WS.7. Conduct short as well as more sustained research projects to answer a question or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.	-Mammal Heart Dissection -Blood Pressure and Heart Rate Lab
WS.9. Draw evidence from informational texts to support analysis, reflection and research.	-Mammal Heart Dissection -Blood Pressure and Heart Rate Lab
WS.10. Write routinely over extended time frames and shorter time frames for a range of discipline specific tasks, purposes, and audiences.	-Chapter Reading (Outline/Notes) -Chapter Test Open Response and Short Answer Questions -Daily Catalyst Questions