

Anatomy & Physiology (Master)

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Textbook: "Essentials of Human Anatomy and Physiology", Elaine N. Marieb Tenth Edition

Course Essential Questions:

1. How do all the organ systems work together to maintain homeostasis?
2. What advantages in technology are being used in the medical field to improve lives?
3. How is anatomical structure related to function?

[Unit 1: Human Body Organization/ Homeostasis/Anatomical Terms](#)

Content	Skills	Learning Targets	Assessment	Resources & Technology
Relationship between anatomy and physiology	<u>Students will be able to:</u> Outline all the functions of the organ systems.	I can identify all the functions of the organ systems.	<u>Formative Assessments:</u> Regions Poster	Chapter 1: The Human Body- An Orientation
Levels of structural organization	Construct a model of the 6 levels of organization and explain what each means.	I can construct a model of the 6 levels of organization and explain what each means.	Levels of organization and homeostasis POGILs	
Organ systems overview	Apply anatomical terms to construct an alien creature.	I can apply anatomical terms to construct an alien creature.	Levels of organization graphic organizer	
Necessary life functions	Define the concept of homeostasis and illustrate with examples.	I can define the concept of homeostasis and illustrate with examples.	Alien Activity	
Homeostatic controls			Review Scavenger Hunt	
Directional terms			<u>Summative Assessment:</u> Unit 1 Test	
Regional terms and body cavities				

Body planes and sections	terms are used to properly identify body structure location?			
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Unit 2: Histology

Content	Skills	Learning Targets	Assessment	Resources & Technology
Classification of epithelium: simple, stratified and glandular Connective tissue: bone, cartilage, dense, loose, blood Muscle tissue: skeletal, cardiac, smooth Nervous tissue	<u>Students will be able to:</u> Draw the 7 specialized cells of the body and describe how their shape determines function. Classify the four tissue types under the microscope.	<u>I can...</u> Draw the 7 specialized cells of the body and describe how their shape determines function. Classify the four tissue types under the microscope.	<u>Formative Assessments:</u> Microscope slides Lab practical <u>Summative Assessment:</u> Unit 2 Test	Chapter 3: Cells and Tissues

Unit 3: Integumentary System

Content	Skills	Learning Targets	Assessment	Resources & Technology
Functions of the integumentary system	<u>Students will be able to:</u> List the functions of the integumentary system and explain how these functions are accomplished.	<u>I can...:</u> List the functions of the integumentary system and explain how these functions are accomplished.	<u>Formative Assessments:</u> 3D Skin Model	Chapter 4: Skin and Body Membranes
Structure of skin				
Appendages of the skin				
Skin color	Create a model of the skins layers and describe the functions of those structures.	Create a model of the skins layers and describe the functions of those structures.	<u>Summative Assessments:</u> Unit 3 Test	
Burns				
Skin cancer				

Unit 4: General Bone Features/Axial & Appendicular skeleton/Joints & Articulations

Content	Skills	Learning Targets	Assessment	Resources & Technology
Function of bones	<u>Students will be able to:</u> Compare and contrast each type of joint and explain the movement it allows.	<u>I can...</u> Compare and contrast each type of joint and explain the movement it allows.	<u>Formative Assessments:</u> Bone Features	Chapter 5: The Skeletal System
Classification of bones				
Anatomy of a long bone			Bone Condition Research Project	
Bone formation and growth				

Bone fractures	Label all bones and external markings of the skeleton.	Label all bones and external markings of the skeleton.	Articulations Project	
Bones of the axial skeleton			<u>Summative Assessments:</u>	
Bones of the appendicular skeleton	Describe the process of bone formation and summarize the events of bone remodeling.	Describe the process of bone formation and summarize the events of bone remodeling.	Unit 4 Tests	
Joints	Summarize the prevention, causes and treatments of the major bone conditions.	Summarize the prevention, causes and treatments of the major bone conditions.		

[Unit 5: Muscular System](#)

Content	Skills	Learning Targets	Assessment	Resources & Technology
Body movements	<u>Students will be able to:</u> Explain on a cellular level how the muscle cell contracts.	<u>I can:</u> Perform an analysis of major muscle group contractions.	<u>Formative Assessments:</u> Sarcomere Model	Chapter 6: The Muscular System
Muscle types: skeletal, smooth, cardiac			Weight Room Muscle Analysis Lab	Lab Pro equipment
Muscle functions	Explain how the skeleton and muscles interact in movement.	Plan an experiment that measures muscle contraction force or electricity.	Activity Muscle Project	
Muscle contraction				

Identification of muscles in the body	<p>Describe similarities and differences in the structure and function of the 3 types of muscle tissue.</p> <p>Analyze the electrical contraction of muscles.</p> <p>Describe the effects of aerobic and resistance exercise on skeletal muscles and other body organs.</p>	Identify the major muscles of the body.	<p>Lab Pro Force Experiment</p> <p>Muscle Fatigue Case Study</p> <p><u>Summative Assessment:</u></p> <p>Unit 5 Test</p>	
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[Unit 6: The Cardiovascular System](#)

Content	Skills	Learning Targets	Assessment	Resources & Technology
<p>Anatomy of the heart</p> <p>Blood flow through the heart</p> <p>Blood pressure</p> <p>The conduction system</p> <p>Major blood vessels</p>	<p><u>Students will be able to:</u></p> <p>Name all the major blood vessels and chambers of the heart.</p> <p>Analyze blood pressure and EKG readings relating them to the activity in the body.</p>	<p><u>I can...</u></p> <p>Name all the major blood vessels and chambers of the heart.</p> <p>Analyze blood pressure and EKG readings relating them to the activity in the body.</p>	<p><u>Formative Assessments:</u></p> <p>Heart Dissection</p> <p>EKG Lab Pro</p> <p><u>Summative Assessment:</u></p>	<p>Chapter 11: The Cardiovascular System</p> <p>Lab Pro</p>

<p>Cardiac cycle and heart sounds</p> <p>Analyzing ECGs</p>	<p>Research the major diseases that can affect the cardiovascular system.</p> <p>List the cell types of the formed elements of blood and list the major functions of each type.</p> <p>Research a condition that affects blood cells.</p>	<p>Research the major diseases that can affect the cardiovascular system.</p> <p>List the cell types of the formed elements of blood and list the major functions of each type.</p> <p>Research a condition that affects blood cells.</p>	<p>Unit 6 Test</p>	
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Unit 7: The Digestive System

Content	Skills	Learning Targets	Assessment	Resources & Technology
<p>*Explain physical and chemical digestion.</p> <p>*How do accessory organs contribute to chemical digestion.</p> <p>*How do enzymes work to digest the organic compounds.</p>	<p><u>Students will be able to:</u></p> <ol style="list-style-type: none"> 1. Identify all the organs and accessory organs of the GI tract and explain their function. 2. List the major enzymes involved in digestion and the major foodstuffs on which they act. 	<p><u>I can...</u></p> <p>Identify all the organs and accessory organs of the GI tract and explain their function.</p> <p>List the major enzymes involved in digestion and the major foodstuffs on which they act.</p>	<p><u>Formative Assessments:</u></p> <ul style="list-style-type: none"> ● Stepping Stones ● Energy Drink Lab ● The Stringy Thing Model ● Diet Analysis Project <p><u>Summative Assessment:</u></p> <ul style="list-style-type: none"> ● Unit 6 Test 	<p>Chapter 14: The Digestive System and Body Metabolism</p>

*Recognize the uses of carbs, fats and proteins in cell metabolism.	3. List and describe the 6 main activities of the digestive system.	List and describe the 6 main activities of the digestive system.		
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[Unit 8: The Respiratory System](#)

Content	Skills	Learning Targets	Assessment	Resources & Technology
<p>*Describe the organs and their functions of the respiratory system.</p> <p>*Analyze the effects of environmental hazards on the respiratory system.</p> <p>*Explain the mechanics of breathing.</p>	<p><u>Students will be able to:</u></p> <ol style="list-style-type: none"> 1. Calculate total lung capacity and explain how breathing occurs. 2. Research environmental factors leading to respiratory conditions. 3. Name the organs from the nasal cavity to the alveoli of the lungs and describe the function of each. 	<p><u>I can...</u></p> <p>Calculate total lung capacity and explain how breathing occurs.</p> <p>Research environmental factors leading to respiratory conditions.</p> <p>Name the organs from the nasal cavity to the alveoli of the lungs and describe the function of each.</p>	<p><u>Formative Assessments:</u></p> <ul style="list-style-type: none"> ● Lung Capacity Lab ● Environmental Hazards Research Project <p><u>Summative Assessment:</u></p> <ul style="list-style-type: none"> ● Unit Assessment 	<p>Chapter 13: The Respiratory System</p>

Unit 9: Special Senses

Content	Skills	Learning Targets	Assessment	Resources & Technology
<p>*What specific receptors are associated with sight, sound, balance, smell and taste.</p> <p>*Explain possible homeostatic imbalances associated with each sensory organ.</p>	<p><u>Students will be able to:</u></p> <ol style="list-style-type: none"> 1. Label and explain what the special sense receptors do in the eyes, ears, tongue and nose. 2. Investigate perception imbalances in the human body. 	<p><u>I can...</u></p> <p>Label and explain what the special sense receptors do in the eyes, ears, tongue and nose.</p> <p>Investigate perception imbalances in the human body.</p>	<p><u>Formative Assessments:</u></p> <ul style="list-style-type: none"> ● Sense Project ● Sense Labs <p><u>Summative Assessment:</u></p> <ul style="list-style-type: none"> ● Unit 8 Test 	<p>Chapter 8: Special Senses</p>