<table>
<thead>
<tr>
<th>Date</th>
<th>Content/Topics</th>
<th>Objectives</th>
<th>Activities/Assessments</th>
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</thead>
</table>
| Aug. 7th-21st | **Chapter 1** Body Regions/Cavities Directional Terms Homeostasis System Basics with introduction to structure and function Review necessary biochemistry | • Define anatomy and physiology and explain how they are related.  
• List and describe the major characteristics of life.  
• Analyze organ systems of the body and major components of each system.  
• Appraise homeostasis and its significance for living organisms.  
• Predict how positive and negative feedback are involved in homeostatic regulation.  
• Properly use the terms that describe relative positions, body sections, and body regions.  
• Identify major body cavities, their subdivisions, and involved organs and membranes. | • Lab: Anatomical directions, terms, and locations  
Literacy:Writing:2,4,6  
PL/CS:3a, e  
• Vocabulary  
Literacy:Reading:4  
• Homeostasis activity  
• Clinical correlations/Applications PL/CS:3a, e  
• Test: multiple choice/ORQ  
• Bimonthly scientific journal review  
Literacy:Reading:4,  
Literacy:Writing:2,4,6 |
| Aug. 22nd-28th | Review general biology cellular form, function, and metabolism concepts. | • Review cell structures & functions | • Slide Show/Cell Microscope Activity Quiz: multiple choice/ORQ  
Bimonthly scientific journal review  
Literacy:Reading:4,  
Literacy:Writing:2,4,6 |
| Aug. 29th-Sept. 21st | **Chapter 5** Tissues: Epithelial Connective Muscle Neural | • Analyze the types and functions of epithelial cells.  
• Explain how glands are classified.  
• Determine the relationship between form and function for each type of epithelial tissue.  
• Compare the structures and functions of the various types of connective tissues.  
• Analyze how connective tissue establishes the framework of the body.  
• Describe the four major types of membranes.  
• Analyze the three muscle tissue types and the special structural features of each type.  
• Analyze the basic structure and | • Vocab/Vocab Review  
Literacy:Reading:4  
• Lab: Histology of the tissue types using the microscope  
Literacy:Writing:2,4,6  
• Clinical correlations PL/CS:3a, e  
• Review  
• Test: MC/ORQ  
• Bimonthly scientific journal review  
Literacy:Reading:4,  
Literacy:Writing:2,4,6 |
| Aug. 29th-Sept. 21st | **Chapter 5**  
Tissues:  
Epithelial  
Connective  
Muscle  
Neural | • Analyze the types and functions of epithelial cells.  
• Explain how glands are classified.  
• Determine the relationship between form and function for each type of epithelial tissue.  
• Compare the structures and functions of the various types of connective tissues.  
• Analyze how connective tissue establishes the framework of the body.  
• Describe the four major types of membranes.  
• Analyze the three muscle tissue types and the special structural features of each type.  
• Analyze the basic structure and role of neural tissue  
• Determine how aging and injuries affect the tissues of the body. | • Vocabulary  
Literacy:Reading:4  
• Lab: Histology of the tissue types using the microscope  
Literacy:Writing:2,4,6  
• Clinical correlations  
PL/CS:3a, e  
• Review  
• Test: MC/ORQ  
• Bimonthly scientific journal review  
Literacy:Reading:4,  
Literacy:Writing:2,4,6 |
| --- | --- | --- | --- |
| Sept. 24th-Oct. 19th | **Chapter 6**  
Integumentary System:  
Epidermis  
Dermis  
Hypodermis/Subcutaneous  
Skin Functions  
Wound Healing | • Analyze the main structural features of the skin layers.  
• Describe the accessory organs associated with the skin.  
• Explain the function of each accessory structure.  
• Explain how the skin helps regulate body temperature.  
• Summarize the factors that determine skin color.  
• Describe the events that are a part of wound healing.  
• Describe life-span changes in the integumentary system. | • Vocabulary  
Literacy:Reading:4  
• Plotting the distribution of sweat glands  
A&H:2b,  
Literacy:Writing:2,4,6  
• Clinical correlations/Applications  
PL/CS:3a, e  
• Test: MC/ORQ  
• Bimonthly scientific journal review  
Literacy:Reading:4,  
Literacy:Writing:2,4,6 |
| Oct. 22nd-Nov. 9th | **Chapters 7-8**  
Skeletal System:  
Major Bones  
Identification and Structure  
Joints and Articulations  
Structural | • Identify the cell types found in bones and list their functions.  
• Compare the structure and function of compact and spongy bone.  
• Distinguish between intramembranous and endochondral bones and explain how such bones grow and develop.  
• Analyze the timing of bone development and growth. | • Vocabulary  
Literacy:Reading:4  
• Labs: General identification of bones of various skeletal regions.  
Literacy:Writing:2,4,6  
• Bones Project  
A&H:2b |
<table>
<thead>
<tr>
<th>Nov. 12th-Dec. 6th</th>
<th><strong>Chapter 9</strong> Muscular System: Skeletal Anatomy Correlation Contraction Muscle Energetics Muscle Aging Cardiac Muscle Smooth Muscle Biomechanics</th>
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<tbody>
<tr>
<td>• Describe how connective tissue is part of the structure of a skeletal muscle.</td>
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<tr>
<td>• Name the major parts of a skeletal muscle fiber and describe the function of each part.</td>
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<tr>
<td>• Explain the major events that occur during muscle fiber contraction.</td>
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<td>• Explain how energy is supplied to muscle fiber contraction, how oxygen debt develops, and how a muscle may become fatigued.</td>
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<tr>
<td>• Distinguish between fast and slow twitch muscle fibers.</td>
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<tr>
<td>• Distinguish between a twitch and a sustained contraction.</td>
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<tr>
<td>• Describe how exercise affects skeletal muscles.</td>
<td></td>
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<tr>
<td>• Explain how various types of muscular contractions produce body movement and help maintain posture.</td>
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<tr>
<td>• Distinguish between the structures and functions of a multiunit smooth muscle and visceral smooth muscle.</td>
<td></td>
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<tr>
<td>• Compare and contrast the contraction mechanisms of skeletal, smooth, and cardiac muscle fibers.</td>
<td></td>
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<tr>
<td>• Explain how the locations of the skeletal muscles help produce movements and how muscles interact.</td>
<td></td>
</tr>
<tr>
<td>• Identify and locate the major skeletal muscles of each body region and describe the action of each muscle.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| Vocabulary  |
| Literacy:Reading:4  |
| Muscle strength vs size activity  |
| Literacy:Writing:2,4,6  |
| Muscle fatigue activity  |
| Literacy:Writing:2,4,6  |
| Acting out a muscle contraction activity  |
| A&amp;H:2b  |
| Test: multiple choice/ID  |
| Bimonthly scientific journal review  |
| Literacy:Reading:4, Literacy:Writing:2,4,6  |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Chapter/Section</th>
<th>Topics</th>
<th>Activities</th>
</tr>
</thead>
</table>
| Dec. 7th-18th | **Chapter 20-21** Urinary System: Kidneys, Urine Formation, Elimination of Urine, Distribution of Body Fluids, Water Balance, Electrolyte Balance, Acid-Base Balance | • Analyze the components of the urinary system and their functions.  
  • Analyze the structure and functions of the kidneys, ureters, bladder, and urethra.  
  • Identify the major blood vessels associated with each kidney and trace the blood through the kidney.  
  • Discuss the reabsorptive or secretory functions of each section of the nephron and collecting system.  
  • Describe the normal characteristics of a urine sample.  
  • Discuss voluntary and involuntary regulation of urine.  
  • Discuss the effects of aging on the urinary system.  
  • Explain the basic concepts in fluid and electrolyte regulation. | • Vocabulary  
  Literacy: Reading:4  
  • Sheep kidney dissection lab  
  Literacy: Writing:2,4,6  
  • Glomeruli filtration lab  
  Literacy: Writing:2,4,6  
  • Dialysis discussion  
  PL/CS:3a, e  
  • Test: Multiple choice/ ORQ  
  • Bimonthly scientific journal review  
  Literacy: Reading:4, Writing:2,4,6 |
| Jan. 2nd-24th | **Chapters 10-12** Nervous System: CNS, Peripheral, Autonomic, Neuroglia, Neurons, Neuropathy, Reflexes and Senses | • Analyze and characterize the central and peripheral nervous system.  
  • Describe the locations and functions of neuralgia.  
  • Sketch and label the structure of a typical neuron and describe the functions of each component.  
  • Classify neurons on the basis of their structure and function.  
  • Determine how the resting potential is created and maintained.  
  • Describe the events in the initiation and propagation of action potentials.  
  • Analyze the factors that affect the speed with which action potentials are propagated.  
  • Describe the structure of a synapse and the mechanism of a synaptic transmission.  
  • Differentiate among the major kinds of neurotransmitters.  
  • Discuss the interactions that make possible the processing of | • Vocabulary  
  Literacy: Reading:4  
  • Measuring Reaction time lab  
  Literacy: Writing:2,4,6  
  • Adaptation of receptors lab  
  Literacy: Writing:2,4,6  
  • Eye and brain dissections PL/CS:3a, e  
  • Reality of vision lab  
  Literacy: Writing:2,4,6  
  • Senses lab  
  Literacy: Writing:2,4,6  
  • Activ Board Virtual Brain Surgery (Ed Head.org)  
  • Clinical correlations/Applications PL/CS:3a, e  
  • Test: multiple choice/ ORQ  
  • Bimonthly scientific journal review  
  Literacy: Reading:4, Writing:2,4,6 |
| Jan. 2nd-24th | **Chapters 10-12** | **Nervous System:**  
CNS  
Peripheral  
Autonomic  
Neuroglia  
Neurons  
Neuropathy  
Reflexes and Senses | • Analyze and characterize the central and peripheral nervous system.  
• Describe the locations and functions of neuralgia.  
• Sketch and label the structure of a typical neuron and describe the functions of each component.  
• Classify neurons on the basis of their structure and function.  
• Determine how the resting potential is created and maintained.  
• Describe the events in the initiation and propagation of action potentials.  
• Analyze the factors that affect the speed with which action potentials are propagated.  
• Describe the structure of a synapse and the mechanism of a synaptic transmission.  
• Differentiate among the major kinds of neurotransmitters.  
• Discuss the interactions that make possible the processing of information in neural tissue.  
• List the factors that affect neural function.  
• Analyze the structure and function of the spinal cord.  
• Analyze and identify all major structures associated with the CNS.  
• Analyze neural reflexes and classify the types.  
• Analyze the sensory and motor pathways and their functions.  
• Compare and contrast the | • Vocabulary  
Literacy:Reading:4  
• Measuring Reaction time lab  
Literacy:Writing:2,4,6  
• Adaptation of receptors lab  
Literacy:Writing:2,4,6  
• Eye and brain dissections PL/CS:3a, e  
• Reality of vision lab  
Literacy:Writing:2,4,6  
• Senses lab  
Literacy:Writing:2,4,6  
• Activ Board Virtual Brain Surgery (Ed Head.org)  
• Clinical correlations/Applications PL/CS:3a, e  
• Test: multiple choice/ORQ  
• Bimonthly scientific journal review  
Literacy:Reading:4, 
Literacy:Writing:2,4,6 |
| Feb. 8th -28th | **Chapters 14-16**  
Blood, Lymphatic System, and the Cardiovascular System:  
Blood and Blood Components  
Homeostasis  
Blood groups and Transfusions  
Heart Structure and Functions  
Blood Vessels  
Blood Pressure  
Paths of Circulation  
Arterial System  
Venous System  
Life-Span Changes | • Determine the functions of blood.  
• Analyze blood components structure and function.  
• Determine the origin and production of the formed elements of blood.  
• Analyze the functions of hemoglobin.  
• List examples of important blood tests and cite normal values of each.  
• Determine the importance of blood typing.  
• Determine the types of function of WBCs  
• Analyze the structure, function, and production of erythrocytes and platelets.  
• Determine the mechanism of factors that control blood loss.  
• Analyze the location of general features of the heart.  
• Trace the flow of blood through the heart identifying major blood vessels, changes, and valves.  
• Analyze the events of the cardiac cycle.  
• Define stroke volume, cardiac output, and describe the factors that influence these.  
• Analyze the effect of hormones, drugs, and temp., ion conc., etc, on the heart and vessels.  
• Distinguish among types of blood vessels.  
• Explain mechanisms that regulate blood flow.  
• Describe factors that influence blood pressure.  
• Identify major arteries and veins and the areas they serve.  
• Discuss the effects of aging.  
• Analyze the major components of the lymphatic system and explain their functions.  
• Discuss the importance of lymphocytes.  
• List the body’s nonspecific defenses and describe each.  
• Discuss resistance and the development of resistance.  
• Analyze the different types of T-cells and their roles.  
• Discuss the different types of antibodies and their roles.  
• Determine the origins of autoimmune disorders, immunodeficiency diseases, and allergies. |
|---|---|---|
|  | **Vocabulary**  
Heart cycle activity  
Sheep heart dissection  
WBC count lab  
BP and pulse lab  
Literacy:Writing:2,4,6  
Active Board blood transfusion lab  
Clinical correlations/Application (RhoGAM)  
Test: multiple choice/ORQ  
Bimonthly scientific journal review  
Literacy:Reading:4,  
Literacy:Writing:2,4,6 |
| March 1st-18th | **Chapter 19**  
Respiratory System: Why We Breathe  
Organs of the Respiratory System  
Breathing Mechanisms  
Control of Breathing  
Alveolar Gas Exchange  
Gas Transport  
Life-Span Changes | • Analyze the primary functions of the respiratory system.  
• Identify the organs of the respiratory system, their locations, structures, and functions.  
• Analyze the physical principles governing movement of air into and out of the lungs as well as into the blood.  
• Discuss the anatomical dead space.  
• Describe the origins and actions of the respiratory muscles on respiratory movements.  
• Describe the major factors that influence the rate of respiration.  
• Discuss aging on the respiratory system.  
• Vocabulary  
  Literacy:Reading:4  
  Measuring lung capacity lab  
  Literacy:Writing:2,4,6  
  Clinical correlations/Applications  
  PL/CS:3a, e  
  Test: MC/ORQ  
  Bimonthly scientific journal review  
  Literacy:Reading:4, Literacy:Writing:2,4,6 |}

| March 19th-April 18th | **Chapter 17-18**  
Digestive System: General Characteristics of the Alimentary Canal  
Mouth  
Salivary Glands  
Pharynx and Esophagus  
Stomach  
Pancreas  
Liver  
Small Intestines  
Large Intestines  
Life-Span Changes  
Healthy Eating  
CHOs  
Proteins  
Lipids  
Vitamins  
Minerals | • Identify the organs of the digestive tract and the accessory organs of digestion.  
• Analyze the functions of the digestive system.  
• Describe the histology of the digestive tract.  
• Analyze the processes by which materials move through the GI tract.  
• Analyze the anatomy and functions of the digestive system.  
• Analyze the absorption of carbohydrates, proteins, and lipids.  
• Analyze the effects of aging.  
• Explain what constitutes a balanced diet.  
• Define metabolic rate and discuss BMR.  
• Vocabulary  
  Literacy:Reading:4  
  How digestion works lab  
  Literacy:Writing:2,4,6  
  Digestive System surface area lab  
  Literacy:Writing:2,4,6  
  Clinical correlations/Application  
  Test: multiple choice/ORQ  
  Bimonthly scientific journal review  
  Literacy:Reading:4, Literacy:Writing:2,4,6 |
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<tr>
<th><strong>April 19th-May 10th</strong></th>
<th><strong>Chapters 22-23</strong></th>
<th><strong>Vocabulary</strong></th>
</tr>
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<tbody>
<tr>
<td><strong>Reproductive System:</strong></td>
<td><strong>Analyze the functions of the human reproductive system and its principal components.</strong></td>
<td><strong>Literacy:Reading:4</strong></td>
</tr>
<tr>
<td>Male and Female Reproductive Organs</td>
<td><strong>Describe the components of the male system, structure, and physiology.</strong></td>
<td><strong>The human menstrual cycle lab</strong></td>
</tr>
<tr>
<td>Hormonal Production</td>
<td><strong>Describe the normal composition of semen.</strong></td>
<td><strong>Literacy:Writing:2,4,6</strong></td>
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<tr>
<td>Mammary Glands</td>
<td><strong>Describe the maturation, nourishment, storage, and transport of spermatozoa.</strong></td>
<td><strong>The Miracle of Life video</strong></td>
</tr>
<tr>
<td>Birth Control</td>
<td><strong>Describe the components of the female system, structure, and physiology.</strong></td>
<td><strong>Clinical correlations/Applications.</strong></td>
</tr>
<tr>
<td>STDs</td>
<td><strong>Define the phases and events of the ovarian and uterine cycles.</strong></td>
<td><strong>Test: Multiple Choice/ORQ</strong></td>
</tr>
<tr>
<td>Pregnancy</td>
<td><strong>Discuss the physiology of sexual intercourse as it affects the reproductive systems of the male and female.</strong></td>
<td><strong>Rat dissection</strong></td>
</tr>
<tr>
<td>Prenatal Period</td>
<td><strong>Analyze the changes that occur with aging.</strong></td>
<td><strong>PL/CS:3a, e</strong></td>
</tr>
<tr>
<td>Postnatal Period</td>
<td><strong>Describe the process of fertilization.</strong></td>
<td><strong>Bimonthly scientific journal review</strong></td>
</tr>
<tr>
<td>Aging</td>
<td><strong>List the three prenatal periods and describe the major events of each.</strong></td>
<td><strong>Literacy:Reading:4, Writing:2,4,6</strong></td>
</tr>
</tbody>
</table>