

# Science: Anatomy & Physiology

UNIT/Weeks	Timeline/Topics	Essential Questions
9	<p><b>The Human Body:</b></p> <ul style="list-style-type: none"> <li>• Levels of Structural Organization</li> <li>• Maintaining Life, Homeostasis</li> <li>• The Language of Anatomy</li> <li>• <b>Basic Chemistry:</b> <ul style="list-style-type: none"> <li>• Composition of Matter</li> <li>• Molecules and Compounds</li> <li>• Chemical Bonds</li> <li>• Chemical Reactions</li> <li>• Biochemistry: The Chemical Composition of Living Matter</li> </ul> </li> <li>• <b>Cells and Tissues:</b> <ul style="list-style-type: none"> <li>• Anatomy and Physiology of Cells</li> <li>• Body Tissues</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Why is a universal language of anatomy essential?</li> <li>• How is the human body organized to survive?</li> <li>• How do scientists divide the human body into sections?</li> <li>• How is all living matter arranged?</li> <li>• How are chemical reactions involved in matter?</li> <li>• What determines the type and extent of a chemical reaction?</li> <li>• How do properties of materials determine their use?</li> <li>• How is the cell organized for the basis of all life?</li> <li>• How is the body arranged for specialization?</li> </ul>
9	<p><b><u>Skin and Body</u></b></p> <ul style="list-style-type: none"> <li>• <b>Membranes:</b> <ul style="list-style-type: none"> <li>• Classification of Body Membranes</li> <li>• Integumentary System</li> <li>• Developmental Aspects of Skin and Body Membranes</li> </ul> </li> <li>• <b>Skeletal System:</b> <ul style="list-style-type: none"> <li>• Overview of Bones</li> <li>• Axial Skeleton</li> <li>• Appendicular Skeleton</li> <li>• Joints Developmental Aspects of the Skeleton</li> </ul> </li> <li>• <b>Muscular System:</b> <ul style="list-style-type: none"> <li>• Overview of Muscle Tissue</li> <li>• Microscopic Anatomy of Skeletal Muscle</li> <li>• Muscle Names</li> <li>• Muscle Types</li> <li>• Muscle Movements</li> <li>• Gross Anatomy of Skeletal Muscles</li> <li>• Developmental Aspects of the Muscular System</li> </ul> </li> <li>• <b>Nervous System:</b> <ul style="list-style-type: none"> <li>• Organization of the Nervous System</li> <li>• Nervous Tissue: Structure and Function</li> <li>• Central Nervous System</li> <li>• Peripheral Nervous System</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• How are the coverings arranged in the body for protection?</li> <li>• Summarize the damages to the skin?</li> <li>• How does knowledge of the skeletal system help one avoid injury?</li> <li>• How is the human body able to be flexible and stand upright?</li> <li>• In what ways is the human body arranged for movement?</li> <li>• How does knowledge of the muscular system help one avoid injury?</li> <li>• In what way is the muscular system arranged to enable it to move?</li> <li>• How are muscle able to keep us in motion?</li> <li>• How is knowledge of the nervous system beneficial</li> <li>• How does the nervous system work?</li> <li>• In what ways is the nervous system affected negatively?</li> </ul>

	<ul style="list-style-type: none"> <li>Developmental Aspects of the Nervous System</li> </ul>	
9	<p><b><u>Special Senses</u></b></p> <ul style="list-style-type: none"> <li><b>Eyes and Ears:</b> <ul style="list-style-type: none"> <li>Accessory Eye Structures</li> <li>Eye Tunic</li> <li>Pupillary and Convergence Reflexes</li> <li>The Ear: Hearing and Balance</li> <li>Chemical Senses: Taste and Smell</li> <li>Developmental Aspects of the Special Senses</li> </ul> </li> <li><b>Endocrine System:</b> <ul style="list-style-type: none"> <li>Endocrine System and Hormone Function</li> <li>The Major Endocrine Organs</li> <li>Other Hormone-Producing Tissues</li> <li>Endocrine Roles</li> </ul> </li> <li><b>Blood:</b> <ul style="list-style-type: none"> <li>Composition and Function of Blood</li> <li>Hemostasis</li> <li>Blood Groups and Transfusion</li> <li>Developmental Aspects of Blood</li> </ul> </li> <li><b>Cardiovascular System:</b> <ul style="list-style-type: none"> <li>The Heart</li> <li>Blood Vessels</li> <li>Developmental Aspects of the Cardiovascular System</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>How is knowledge of the structure of the ears and eyes important?</li> <li>In what ways can humans lose their sense of hearing?</li> <li>How do humans smell and taste?</li> <li>In what ways does the aging process effect our special sense organs?</li> <li>How can knowledge of the endocrine system be beneficial?</li> <li>In what ways do hormones effect the human body and maintain its function?</li> <li>In what ways is the endocrine system arranged to allow integration of all functions?</li> <li>How are the glands of the body arranged to maintain functional integration?</li> <li>In what ways does blood function to allow the body to survive?</li> <li>In what ways can blood defects affect the body?</li> <li>What are the three major phases in hemostasis?</li> <li>How is knowledge of the cardiovascular system essential to keeping one healthy?</li> <li>How is the heart constructed to allow one-way flow of blood?</li> <li>How can blood pressure effect one's heart?</li> <li>In what ways can the body be supported to help maintain cardiovascular health?</li> </ul>
5	<p><b><u>Body Defenses Part I</u></b></p> <ul style="list-style-type: none"> <li><b>Lymphatic System:</b> <ul style="list-style-type: none"> <li>Body Defenses</li> <li>Nonspecific and Specific Body Defenses</li> <li>Developmental Aspects of the Lymphatic System</li> </ul> </li> <li><b>Respiratory System:</b> <ul style="list-style-type: none"> <li>Functional Anatomy of the Respiratory System</li> <li>Respiratory Physiology</li> <li>Respiratory Disorders and Developmental Aspects of the Respiratory System</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>In what ways does the body protect itself from foreign invaders?</li> <li>What is the impact of a weak immune system to one's body?</li> <li>In what way the cardiovascular and lymphatic system interact?</li> <li>How does a person's knowledge of the respiratory system help them to stay healthy?</li> </ul>

	<ul style="list-style-type: none"> <li>• <b>Digestive System:</b> <ul style="list-style-type: none"> <li>• Anatomy of the Digestive System</li> <li>• Functions of the Digestive System</li> <li>• Nutrition</li> <li>• Developmental Aspects of the Digestive System and Metabolism</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• In what ways does the respiratory system help in the survival of the human body?</li> <li>• How are respiratory measurements used to predict the vitality of the human body?</li> <li>• How is the digestive system arranged to allow for ingestion, digestion and absorption of nutrients?</li> <li>• In what ways do nutrients affect the body?</li> <li>• How is normal metabolism maintained in the body?</li> </ul>
4	<p><b><u>Body Defenses Part II</u></b></p> <ul style="list-style-type: none"> <li>• <b>Urinary System:</b> <ul style="list-style-type: none"> <li>• Kidneys Ureters, Urinary Bladder and Urethra</li> <li>• Fluids, Electrolyte and Acid-base Balance</li> <li>• Developmental Aspects of the Urinary System</li> </ul> </li> <li>• <b>Reproductive System:</b> <ul style="list-style-type: none"> <li>• Anatomy of the Male Reproductive System</li> <li>• Male Reproductive Functions</li> <li>• Anatomy of the Female Reproductive System</li> <li>• Female Reproductive Functions, Cycles and Mammary Glands</li> <li>• Survey of Pregnancy and Embryonic Development</li> <li>• Developmental Aspects of the Reproductive System</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Why is it important to understand the functions of the urinary system?</li> <li>• How are the fluids of the body effected?</li> <li>• In what ways can the urinary system change?</li> <li>• What impact can knowledge of female and male reproductive systems have on a person's life?</li> <li>• In what ways is the male and female reproductive systems similar?</li> <li>• In what ways do hormones influence the reproductive systems of men and women?</li> </ul>