

SCOPE AND SEQUENCE

COURSE TITLE: Human Anatomy and Physiology (Trimester 1)

UNIT/TOPIC	RESOURCE S/ CHAPTERS	Essential Learning Outcomes/ I can Statements	ACTIVITIES/ HOW	ASSESSMENT	Standards/ Benchmarks	Technology Integrated
Homeostasis, Chemistry	Chapter 1, Chapter 2	1) Students will be able to explain the difference between anatomy and physiology. 2) Students will explain the characteristics of life in humans. 3) Students will know the levels of organization. 4) Students will identify the systems of the human body. 5) Students will explain the two types of homeostasis and what they control in the body. 6) Students will be able to describe what an atom is made of. 7) Students will be able to describe the three types of bonds. 8) Students will describe the properties of water. 9) Students will describe a lipid, protein, carbohydrate, and nucleic acid.	1) Powerpoint notes chapter 1-1, 1-2 2) Chapter 1 terms 3) anatomical terms worksheet 4) Notes chapter 2-1, 2-2, 2-3 5) Chapter 2 terms	1) Chapter 1 open notes quizzes chapter 1-1, 1-2, 1-3 2) Chapter 2 open notes quizzes chapter 2-1, 2-2, 2-3 notes quizzes 3) Test chapter 1-2	9.4.1.1.1 Explain how cell processes are influenced by internal and external factors, such as pH and temperature, and how cells and organisms respond to changes in their environment to maintain homeostasis. 9.4.1.1.2 Describe how the functions of individual organ systems are integrated to maintain homeostasis in an organism. 9.4.1.2.1 Recognize that cells are composed primarily of a few elements (carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulfur), and describe the basic molecular structures and the primary functions of carbohydrates, lipids, proteins and nucleic acids.	1) PowerPoint 2) Moodle 3) Chromebooks

					<p>9.1.3.1.3 Describe how positive and/or negative feedback occur in systems. <i>For example:</i> The greenhouse effect.</p> <p>9.1.3.4.3 Select and use appropriate numeric, symbolic, pictorial, or graphical representation to communicate scientific ideas, procedures and experimental results.</p> <p>9.1.3.4.4 Relate the reliability of data to consistency of results, identify sources of error, and suggest ways to improve data collection and analysis. <i>For example:</i> Use statistical analysis or error analysis to make judgments about the validity of results.</p>	
Cells	Chapter 3, 4	<p>1) Students will describe the organelles of a cell.</p> <p>2) Students will describe the steps of cellular respiration.</p> <p>3) Students will describe DNA and protein synthesis.</p>	<p>1) Powerpoint notes chapter 3</p> <p>2) Powerpoint notes chapter 4</p> <p>3) Chapter 3/4 terms</p> <p>4) Cell coloring worksheet</p> <p>5) Osmosis lab</p>	<p>1) Chapter 3 open notes quizzes.</p> <p>2) Chapter 4 open notes quizzes</p> <p>3) Test chapter 3/4</p>	<p>9.4.1.2.2 Recognize that the work of the cell is carried out primarily by proteins, most of which are enzymes, and that protein function depends on the amino acid</p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p>

		<p>4) Students will describe mitosis and meiosis.</p> <p>5) Students will describe the cell theory.</p> <p>6) students will describe diffusion, osmosis, facilitated diffusion, and active transport.</p> <p>7) Students will describe endocytosis and exocytosis.</p>			<p>sequence and the shape it takes as a consequence of the interactions between those amino acids.</p> <p>9.4.1.2.4 Explain the function and importance of cell organelles for prokaryotic and/or eukaryotic cells as related to the basic cell processes of respiration, photosynthesis, protein synthesis and cell reproduction.</p> <p>9.4.1.2.5 Compare and contrast passive transport (including osmosis and facilitated transport) with active transport, such as endocytosis and exocytosis.</p> <p>9.4.1.2.6 Explain the process of mitosis in the formation of identical new cells and maintaining chromosome number during asexual reproduction.</p> <p>9.4.3.1.1 Explain the relationships among</p>	
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					<p>DNA, genes and chromosomes.</p> <p>9.4.3.1.3 Describe the process of DNA replication and the role of DNA and RNA in assembling protein molecules.</p> <p>9.4.3.2.2 Use the processes of mitosis and meiosis to explain the advantages and disadvantages of asexual and sexual reproduction.</p> <p>9.1.3.4.2 Determine and use appropriate safety procedures, tools, computers and measurement instruments in science and engineering contexts.</p> <p><i>For example:</i> Consideration of chemical and biological hazards in the lab.</p> <p>9.1.3.4.3 Select and use appropriate numeric, symbolic, pictorial, or graphical representation to communicate scientific ideas,</p>	
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					<p>procedures and experimental results.</p> <p>9.1.3.4.4 Relate the reliability of data to consistency of results, identify sources of error, and suggest ways to improve data collection and analysis.</p> <p><i>For example:</i> Use statistical analysis or error analysis to make judgments about the validity of results.</p>	
Tissues	Chapter 5	<p>1) Students will describe and identify the different types of epithelial tissue.</p> <p>2) Students will be able to describe glandular epithelium.</p> <p>3) Students will be able to describe the functions and characteristics of connective tissue.</p> <p>4) Students will be able to identify the different types of connective tissue.</p> <p>5) Students will describe and identify the various types of muscle tissue.</p> <p>6) Students will be able to identify and describe nervous tissue.</p>	<p>1) Powerpoint notes chapter 5</p> <p>2) Chapter 5 terms</p> <p>3) Tissue project</p> <p>4) Tissue coloring worksheet</p>	<p>1) Chapter 5 open notes quizzes</p> <p>2) Chapter 5 notes test</p> <p>3) Tissue identification lab test</p>	<p>9.1.3.4.2 Determine and use appropriate safety procedures, tools, computers and measurement instruments in science and engineering contexts.</p> <p><i>For example:</i> Consideration of chemical and biological hazards in the lab.</p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p> <p>4) Internet Search Engines</p> <p>5) Google Slides</p>

		7) Students will be able to describe tissue repair.				
Skin	Chapter 6	<p>1) Students will describe the layers of the epidermis.</p> <p>2) Students will describe growth and repair of skin.</p> <p>3) students will describe the layers of the dermis.</p> <p>4) Students will describe how skin color is made.</p> <p>5) Students will describe the functions of skin.</p> <p>6) Students will describe the varying levels of burns and how to estimate the area of burns.</p> <p>7) Students will be able to distinguish the differences of sweat, sebaceous, and ceruminous glands.</p>	<p>1) Powerpoint notes chapter 6</p> <p>2) Chapter 6 terms</p> <p>3) Skin coloring worksheet</p> <p>4) Skin disease/disorder brochure</p>	<p>1) Chapter 6 open notes quizzes</p> <p>2) Chapter 6 test</p>	<p>9.1.3.1.1</p> <p>Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example: A power plant or ecosystem.</i></p> <p>9.1.3.1.2</p> <p>Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p> <p>4) Google docs (brochure template)</p>
Skeletal System	Chapter 7	<p>1) Students will be able to describe the four types of bones.</p> <p>2) Students will be able to name the parts of the long bone.</p> <p>3) Students will be able to describe what bone is made out of.</p> <p>4) Students will be able to describe the different bone cells.</p> <p>5) Students will be able to describe the</p>	<p>1) Powerpoint notes chapter 7</p> <p>2) Chapter 7 Terms</p> <p>3) Skeletal system coloring worksheet.</p>	<p>1) Chapter 7 open notes quizzes</p> <p>2) Chapter 7 notes test.</p>	<p>9.1.3.1.1</p> <p>Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example: A power plant or ecosystem.</i></p> <p>9.1.3.1.2</p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p>

		<p>different functions of bone.</p> <p>6) Student will distinguish the different ways bones develop.</p> <p>7) Students will name the different types of bone breaks and describe how bone repairs.</p> <p>8) Students will describe the different types of cartilage.</p> <p>9) Students will name skeletal diseases.</p>			<p>Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p>	
<p>Skeletal System- Lab</p>	<p>Chapter 7</p>	<p>1) Students will name bones and identify structures on the bones</p>	<p>1) Daily practice naming bones and structures</p>	<p>1) Lab test of axial skeleton 2) Lab test of appendicular skeleton</p>	<p>9.1.3.1.1 Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example: A power plant or ecosystem.</i></p> <p>9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p>	

SCOPE AND SEQUENCE

COURSE TITLE: Human Anatomy and Physiology (Trimester 2)

UNIT/ TOPIC	RESOURCE S/ CHAPTERS	OBJECTIVES/ GOALS	ACTIVITIES/ HOW	ASSESSMENT	Standards/ Benchmarks	Technology Integrated
Muscular System	Chapter 10/11	<p>1) Students will describe what the origin, insertion, agonist, and antagonist of muscles are.</p> <p>2) Students will name and describe the myofilaments.</p> <p>3) Students will be able to describe in detail the sliding filament theory of muscle contraction.</p> <p>4) Students will be able to describe ATP's role in muscle contraction.</p> <p>5) Students will be able to describe the difference between aerobic and anaerobic respiration.</p> <p>6) Students will compare fast-glycolytic and slow-oxidative muscles.</p> <p>7) Students will understand the types of muscle contraction.</p>	<p>1) Powerpoint notes chapter 10 & 11.</p> <p>2) Chapter 10/11 terms</p> <p>3) Muscle diagram coloring</p> <p>4) Practice muscle naming with a large muscle diagram poster.</p> <p>5) Muscle project</p>	<p>1) Chapter 10/11 open notes quizzes</p> <p>2) Chapter 10/11 Notes Test</p> <p>3) Muscle identification quiz</p>	<p>9.1.3.1.1 Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example: A power plant or ecosystem.</i></p> <p>9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p> <p>4) Google Slides</p> <p>5) Internet Search Engine</p>

Nervous System	Chapters 12-14	<p>1) Students will be able to describe the central and peripheral nervous system.</p> <p>2) Students will be able to describe the difference between the efferent/afferent divisions and somatic/autonomic divisions.</p> <p>3) Students will be able to describe the parts of a neuron and the different types of neurons.</p> <p>4) Students will be able to describe the steps to an action potential.</p> <p>5) Students will be able to describe the difference between a chemical and electrical synapse.</p> <p>6) Students will be able to describe the mechanisms of a synaptic transmission.</p> <p>7) Students will be able to describe what a neurotransmitter is and the different types.</p> <p>8) Students will be able to describe and</p>	<p>1) Powerpoint notes chapter 12-14.</p> <p>2) Chapter 12-14 terms</p> <p>3) Brain coloring worksheet</p> <p>4) Brain dissection</p>	<p>1) Chapter 12-14 open notes quizzes.</p> <p>2) Chapter 12-14 notes test</p> <p>3) Brain lab test</p>	<p>9.1.3.1.1 Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example: A power plant or ecosystem.</i></p> <p>9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p> <p>9.1.3.4.2 Determine and use appropriate safety procedures, tools, computers and measurement instruments in science and engineering contexts.</p> <p><i>For example: Consideration of chemical and biological hazards in the lab.</i></p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p>
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		label the different parts of the brain. 9) students will be able to describe the different nerve plexuses.				
Senses	Chapter 15	1) Students will be able to describe what a sensory receptor is and the different kinds. 2) Students will describe the structures and processes for sense of smell. 3) Students will describe the structures and processes for sense of taste. 4) Students will describe the structures and processes for sense of hearing. 5) Students will be able to describe sense of balance. 6) Students will be able to describe the structure and process of the sense of sight.	1) Powerpoint notes chapter 15 2) Chapter 15 terms 3) Senses coloring worksheet	1) Chapter 15 open notes quizzes 2) Chapter 15 test	9.1.3.1.1 Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs. <i>For example:</i> A power plant or ecosystem. 9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.	1) PowerPoint 2) Moodle 3) Chromebooks
Cardiovascular system	Chapters 17-19	1) Students will be able to identify and describe the types of leukocytes. 2) Students will be able to describe	1) Chapter 17-19 Powerpoint notes	1) Chapter 17-19 open notes quizzes 2) Chapter 17-19 Test	9.1.3.1.1 Describe a system, including specifications of boundaries and subsystems,	1) PowerPoint 2) Moodle 3) Chromebooks

		<p>erythrocyte formation.</p> <p>3) Students will describe blood typing and the Rh system.</p> <p>4) Students will be able to describe the heart.</p> <p>5) Students will be able to describe blood flow through the heart.</p> <p>6) Students will describe arteries, veins, and capillaries.</p> <p>7) Students will be able to describe and label and EKG.</p> <p>8) Students will be able to describe blood pressure.</p> <p>9) Students will be able to list and describe areas a pulse can be taken.</p>	<p>2) Heart coloring worksheet</p> <p>3) Chapter 17-19 terms</p> <p>4) Leukocyte lab</p> <p>5) Heart dissection</p>	<p>3) Heart dissection test</p>	<p>relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example:</i> A power plant or ecosystem.</p> <p>9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p> <p>9.1.3.4.2 Determine and use appropriate safety procedures, tools, computers and measurement instruments in science and engineering contexts.</p> <p><i>For example:</i> Consideration of chemical and biological hazards in the lab.</p> <p>9.1.3.4.3 Select and use appropriate numeric, symbolic, pictorial, or graphical representation to communicate scientific ideas, procedures and experimental results.</p>	
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Respiratory System	Chapter 23/24	<p>1) Students will be able to identify and describe the structures of the upper and lower respiratory system.</p> <p>2) Students will be able to describe how the respiratory system stays clean.</p> <p>3) Students will be able to describe the lungs.</p> <p>4) Students will be able to describe how partial pressure allows breathing to occur.</p> <p>5) Students will describe factors that influence gas exchange.</p> <p>6) Students will describe what emphysema is.</p> <p>7) Students will describe how oxygen and carbon dioxide are transported in the blood.</p>	<p>1) Chapter 23/24 Powerpoint notes</p> <p>2) Chapter 23/24 terms</p> <p>3) Respiratory system coloring worksheet</p>	<p>1) Chapter 23/24 open notes quizzes</p> <p>2) Chapter 23/24 test</p>	<p>9.1.3.1.1 Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example: A power plant or ecosystem.</i></p> <p>9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p>
Digestive System/ dissection	Chapter 25/26	<p>1) Students will be able to identify the layers of the gastrointestinal tract.</p> <p>2) Students will be able to describe the oral cavity and salivary glands.</p> <p>3) Students will be able to identify and describe the organs of the digestive system.</p>	<p>1) Chapter 25/26 Powerpoint notes</p> <p>2) Chapter 25/26 terms</p> <p>3) Digestive system coloring worksheet</p> <p>4) Mink dissection</p>	<p>1) Chapter 25/26 open notes quizzes.</p> <p>2) Chapter 25/26 test</p> <p>3) Mink dissection test.</p>	<p>9.1.3.1.1 Describe a system, including specifications of boundaries and subsystems, relationships to other systems, and identification of inputs and expected outputs.</p> <p><i>For example: A power plant or ecosystem.</i></p>	<p>1) PowerPoint</p> <p>2) Moodle</p> <p>3) Chromebooks</p>

		<p>4) Students will be able to describe the mechanisms of digestion.</p> <p>5) Students will describe the digestive secretions.</p> <p>6) students will be able to describe the process of absorption.</p> <p>7) Students will be able to describe the process of elimination.</p> <p>8) Students will be able to identify the organs of a dissected mink.</p>			<p>9.1.3.1.2 Identify properties of a system that are different from those of its parts but appear because of the interaction of those parts.</p> <p>9.1.3.4.2 Determine and use appropriate safety procedures, tools, computers and measurement instruments in science and engineering contexts.</p> <p><i>For example:</i> Consideration of chemical and biological hazards in the lab.</p>	
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