

## Essential Standards Chart: What is it we expect students to learn?

Grade:	11-12	Subject:	Physiology	Semester	Q1, Q2, Q3, Q4	Team Members:	Erin Granucci				
Standard/ Description		Example/ Rigor		Prior Skills Needed		Common Assessment		When Taught?		Enrichment	
What is the essential standard to be learned? Describe in student-friendly vocabulary.		What does proficient student work look like? Provide an example and/or description.		What prior knowledge, skills, and/or vocabulary is/are needed for a student to master this standard?		What assessment(s) will be used to measure student mastery?		When will this standard be taught?		What will we do when students have learned the essential standard(s)?	
I understand the organization of the human body.		<ul style="list-style-type: none"> <li>What is Anatomy and Physiology?</li> <li>Why can we not successfully learn Anatomy without reference to Physiology and visa versa?</li> </ul>		<ul style="list-style-type: none"> <li>Anatomy, physiology, metabolism, homeostasis, parietal, visceral, membranes, sagittal, transverse, coronal</li> <li>Familiarity with characteristics of life (CP Biology).</li> </ul>		<p style="text-align: center;"><b>CH. 1</b> "Introduction to Anatomy &amp; Physiology"</p> <ul style="list-style-type: none"> <li>Chapter 1 TEST</li> <li>Midterm Exam</li> </ul>		<p style="text-align: center;">FALL &amp; SPRING TERMS WEEKS 1-2</p> <p style="text-align: center;">Q1 &amp; Q3</p>		Students understand that the structures found inside the human body consist of locations that are based on function and function based on location.	
I know what important chemicals the human body is made of and their importance.		<ul style="list-style-type: none"> <li>Describe the difference between inorganic compounds and organic compounds found within the human body.</li> </ul>		<ul style="list-style-type: none"> <li>Chemistry, Atom, element, molecule, macromolecule, organic, inorganic, matter</li> <li>Be familiar with electrons, protons and neutrons and how to determine atomic mass.</li> </ul>		<p style="text-align: center;"><b>CH. 2</b> "Human Chemistry"</p> <ul style="list-style-type: none"> <li>Chapter 2 TEST</li> <li>Midterm Exam</li> </ul>		<p style="text-align: center;">FALL &amp; SPRING TERMS WEEK 3</p> <p style="text-align: center;">Q1 &amp; Q3</p>		Students will understand that all structures found within the human body are made of chemicals.	
I am able to identify and understand the function of structures located in cells found inside the human body.		<ul style="list-style-type: none"> <li>What determines the difference in shape and function of cells located in the human body?</li> </ul>		<ul style="list-style-type: none"> <li>Cells, tissue, organelle, mitochondria, ribosome, cell body, nucleus, lysosome, golgi apparatus, cell membrane.</li> <li>Be familiar with the basic structure of an animal cell.</li> </ul>		<p style="text-align: center;"><b>CH. 3 &amp; 5</b> "Cellular Structure" and "Tissues"</p> <ul style="list-style-type: none"> <li>Human Cell Model Project</li> <li>Midterm Exam</li> </ul>		<p style="text-align: center;">FALL &amp; SPRING TERMS WEEK 4</p> <p style="text-align: center;">Q1 &amp; Q3</p>		Students will be able to identify the major cells and understand that their function determines their shape and the organelles found within the cell.	
I am able to understand how the body changes food into needed chemicals.		<ul style="list-style-type: none"> <li>What building blocks are created when organic compounds are digested?</li> </ul>		<ul style="list-style-type: none"> <li>Enzymes, substrates, product, protein, carbohydrates, nucleic acids, lipids</li> <li>Know the basics of the substrate-enzyme complex.</li> </ul>		<p style="text-align: center;"><b>CH. 4</b> "Cellular Metabolism"</p> <ul style="list-style-type: none"> <li>Chapter 4 TEST</li> <li>Midterm Exam</li> </ul>		<p style="text-align: center;">FALL &amp; SPRING TERMS WEEK 5</p> <p style="text-align: center;">Q1 &amp; Q3</p>		Students will understand the metabolic pathways of lipids, carbohydrates, proteins and nucleic acids.	

I will understand how the body uses food as energy and to maintain the body.	<ul style="list-style-type: none"> <li>Describe the difference in ATP production between a physically fit individual and sedentary individual.</li> </ul>	<ul style="list-style-type: none"> <li>Nutrition, cellular respiration, fermentation, glycolysis, ATP, ADP, Krebs's Cycle, Electron transport chain, aerobic, anaerobic.</li> <li>Have a general idea of glycolysis and the Krebs's Cycle (CP Biology).</li> </ul>	<p><b>CH. 18</b> <b>"Nutrition"</b></p> <ul style="list-style-type: none"> <li>Chapter 18 TEST</li> <li>Midterm Exam</li> </ul>	<p>FALL &amp; SPRING TERMS WEEK 6</p> <p>Q1 &amp; Q3</p>	Students will understand that it takes chemistry from food in the form of organic compounds to make energy in the form of ATP which is required for cellular survival and the ability to do work.
I am able to identify the structures and functions of the skin, hair and nails.	<ul style="list-style-type: none"> <li>List the 3 layers of the skin.</li> <li>Give a description of how the skin maintains homeostasis.</li> </ul>	<ul style="list-style-type: none"> <li>Need basic understanding of homeostasis and the cells need to maintain balance.</li> </ul>	<p><b>CH. 6</b> <b>"Integumentary System"</b></p> <ul style="list-style-type: none"> <li>Chapter 6 TEST</li> <li>Midterm Exam</li> </ul>	<p>FALL &amp; SPRING TERMS WEEK 7</p> <p>Q1 &amp; Q3</p>	Students will know the importance of our skin and its ability to maintain homeostasis regarding body temperature, water loss, and as a barrier to infections.
I am able to identify the structures and functions of bones.	<ul style="list-style-type: none"> <li>Be able to identify the main bones located in the body and on the specimens/models.</li> <li>Describe how long bones create your blood.</li> </ul>	<ul style="list-style-type: none"> <li>Anterior, posterior, medial, lateral, proximal, distal, superior, inferior,</li> <li>Requires a basic understanding that our bones are used as points of connection for muscle.</li> </ul>	<p><b>CH. 7 &amp; 8</b> <b>"Skeletal System" and "Joints"</b></p> <ul style="list-style-type: none"> <li>Chapter 7/8 TEST</li> <li>Midterm Exam</li> </ul>	<p>FALL &amp; SPRING TERMS WEEKS 8-9</p> <p>Q1 &amp; Q3</p>	Students will know that bones are responsible for the production of our blood and also provide levers for which muscle to attach too; therefore, aiding in movement.
I am able to identify the structures and functions of muscle.	<ul style="list-style-type: none"> <li>Be able to identify the superficial muscles located in the body and on the diagrams.</li> <li>Describe how muscle produces isometric, concentric and eccentric contractions.</li> </ul>	<ul style="list-style-type: none"> <li>Contraction, isometric, concentric, eccentric, ATP, ADP, creatine, atrophy, hypertrophy, synergist, antagonist.</li> <li>Requires a basic understanding that muscles provide movement.</li> </ul>	<p><b>CH. 9</b> <b>"Muscular System"</b></p> <ul style="list-style-type: none"> <li>Chapter 9 TEST</li> <li>Chicken Wing Dissection</li> <li>Final Exam</li> </ul>	<p>FALL &amp; SPRING TERMS WEEKS 10-11</p> <p>Q2 &amp; Q4</p>	Students will know that there are three types of muscle (cardiac, skeletal, and smooth) and that it is the muscle that creates movement and production of core body temperature.
I am able to identify the structures and functions of the Nervous System.	<ul style="list-style-type: none"> <li>Be able to identify the anatomy of a neuron and the brain on the diagrams.</li> <li>Determine the lobe responsible for reactions such as motor and sensory.</li> </ul>	<ul style="list-style-type: none"> <li>Neuron, nerve, CNS, PNS, potential, reaction, reflex, effector, neurotransmitter, dominance.</li> <li>Must have a basic understanding that the brain controls everything in the body.</li> </ul>	<p><b>CH. 10 &amp; 11</b> <b>"Nervous System"</b></p> <ul style="list-style-type: none"> <li>Chapter 10/11 TEST</li> <li>Sheep Brain Dissection</li> <li>Final Exam</li> </ul>	<p>FALL &amp; SPRING TERMS WEEKS 12-13</p> <p>Q2 &amp; Q4</p>	Students will know that the brain controls the entire body and is responsible for communicating with effectors which react to the neuron's neurotransmitters.
I understand the path that blood flows through the heart.	<ul style="list-style-type: none"> <li>Be able to classify RBC, WBC and platelets.</li> <li>Draw the path of blood as it travels through the heart depicting deoxygenated and oxygenated blood.</li> </ul>	<ul style="list-style-type: none"> <li>Erythrocyte, leukocyte, thrombocyte, deoxyhemoglobin, oxyhemoglobin</li> <li>Understand that blood circulates through</li> </ul>	<p><b>CH. 14</b> <b>"Blood"</b></p> <ul style="list-style-type: none"> <li>Chapter 14/15 TEST</li> <li>Sheep Heart Dissection</li> <li>Final Exam</li> </ul>	<p>FALL &amp; SPRING TERMS WEEK 14</p> <p>Q2 &amp; Q4</p>	Students will know the role of RBC's, WBC's, and platelets and how blood is pumped throughout the body in order to nourish cells.

		the body and carries nutrients within it.			
I am able to identify the structures and functions of the heart, and major blood vessels.	<ul style="list-style-type: none"> <li>• Be able to identify the anatomy of the heart on the heart diagram.</li> <li>• Describe what causes the first and second beats of your heart beat.</li> </ul>	<ul style="list-style-type: none"> <li>• Superior, inferior, chamber, atrium, ventricle, valve, artery, vein, THR</li> <li>• Understand that the heart is the organ that pumps blood through the body.</li> </ul>	<p style="text-align: center;"><b>CH. 15</b>  <b>"Cardiovascular System"</b></p> <ul style="list-style-type: none"> <li>* Chapter 14/15 TEST</li> <li>* Sheep Heart Dissection</li> <li>* Final Exam</li> </ul>	<p style="text-align: center;">FALL &amp; SPRING TERMS  WEEK 15</p> <p style="text-align: center;">Q2 &amp; Q4</p>	<p>Students will know that the heart is a large muscular pump that pumps blood throughout the body.</p> <p>Students will also be able to evaluate the health of their own heart by calculating their individual Target Heart Rate.</p>
I am able to identify the structures and functions of the male and female reproductive system.	<ul style="list-style-type: none"> <li>• Be able to identify the anatomy of the reproductive systems on a diagram.</li> <li>• Explain the differences in male and female reproductive system functions.</li> </ul>	<ul style="list-style-type: none"> <li>• Gonad, urethra, bladder, fallopian tube, uterus, vagina, cervix, penis, testes, prostate, cowpers, seminal vesicle, epididymis,</li> <li>• Understand that the reproductive systems in the male and female are different.</li> </ul>	<p style="text-align: center;"><b>CH. 22</b>  <b>"Reproductive System"</b></p> <ul style="list-style-type: none"> <li>• Chapter 22/23 TEST</li> <li>• Fetal Pig Dissection</li> <li>• Final Exam</li> </ul>	<p style="text-align: center;">FALL &amp; SPRING TERMS  WEEK 16</p> <p style="text-align: center;">Q2 &amp; Q4</p>	<p>Students will be able to differentiate between the male and female reproductive structures and relate them to their functions understanding that the female repro. system has many more functions compared to the male's.</p>
I am able to identify the stages of pregnancy through labor to birth.	<ul style="list-style-type: none"> <li>• List the 3 stages of pregnancy.</li> </ul>	<ul style="list-style-type: none"> <li>• Fertilization, sperm, ovum, blastocyst, zygote, chromosomes, pregnancy</li> <li>• Have a basic understanding that it is the male that determines the sex of the child.</li> <li>• Have a basic understanding that it is the female that gives birth.</li> </ul>	<p style="text-align: center;"><b>CH. 23</b>  <b>"Human Development, Pregnancy, and Labor"</b></p> <ul style="list-style-type: none"> <li>• Chapter 22/23 TEST</li> <li>• Fetal Pig Dissection</li> <li>• Final Exam</li> </ul>	<p style="text-align: center;">FALL &amp; SPRING TERMS  WEEK 17</p> <p style="text-align: center;">Q2 &amp; Q4</p>	<p>Students will understand the sequence of human development from embryo to fetus and also understand the process of labor.</p>