Department: Science
Course Title: Anatomy and Physiology
Creator: S Wolfgang
Date: 11/18/2024

Unit Title	Unit Length (weeks)	Dates of Unit (Month - Month)	Essential Questions	Topics to be Covered Texts Used	Skills to be Assessed	Standard Alignment	Formative Assessments	Summative Assessments		
Introduction to Anatomy	6	Aug-Oct.	How is the human body organized to accomplish all of life's processes, all while maintaining homeostasis at an organ system level, all the way down to a cellular level?	Review of biology including characterisitcs of living things, cell structure and function, macromolecules, levels of organization, positive and negative feedback loops, role of enzymes, cellular transport, cell signaling and communication, signal transduction pathway; Introduction to anatomy/physiology including location and purposes of body cavities, different types of tissue, identify body regions and planes, anatomical vocabulary	Ask questions and define problems; construct explanations and design solutions; engage in argument using evidence; obtain, evaluate, and communicate information; plan and carry out investigations; alayze and interpret data; use mathematics and computational thinking; develop and use models	HS-LS1-1, HS-LS1-2, HS-LS1-3, HS-LS1-4, HS-LS1-6	Google forms, task cards, worksheets, station lab	Quizzes, Feedback Investigation Lab, Organ Model Project, Autopsy of a Pickle lab, Unit Test		
Support and Motion	6	Oct-Nov	How do the skeletal and muscular systems work together to provide movement and support for the rest of the human body, while also contributing to the maintenance of homeostasis?	structure and function of the skeletal system, differences in male and female skeletons, bone form versus function, structure of a long bone, process of bone remodeling; functional and structural classifications of joints, structure of a synovial joint, different types of synovial joints, how muscle contraction moves bones, structure and function of the muscular system, different types of muscle tissue, structure of a skeletal muscle, sliding filament model	Ask questions and define problems; construct explanations and design solutions; engage in argument using evidence; obtain, evaluate, and communicate information; plan and carry out investigations; analyze and interpret data; use mathematics and computational thinking; develop and use models;	HS-LS1-1, HS-LS1-2, HS-LS1-3, HS-LS1-4, HS-LS1-6	Worksheets/diagrams, lab activities, Google forms, lab stations	Quizzes, Movement Video Project, Skeletal Muscle Model Project, Muscle Fatigue Lab Investigation, Unit Test, Musculoskeletal Disease Project		
Control and Coordination	6	Nov-Jan	How does the body take in, process and respond to stimuli in order to maintain homeostatic control and coordinate communication among the body systems?	structure and function of a neuron, process of nerve impulse including voltage changes during an action potential, functions of neurotransmitters, structure and function of the nervous system divisions, structure and function of brain regions, components of the reflex arc, structure and function of the 5 senses including how energy is converted, structure and function of the endocrine system, how negative feedback mechanisms are used within the endocrine system, structure and function of hormones	Develop and use models; analyze and interpret data; use mathematics and computational thinking; construct explanations and design solutions; obtain, evaluate and communicate information	HS-LS1-2	Worksheets/diagrams, lab activities, Google forms, lab stations	CNS project, Quiz, Senses Lab Stations, Hormone Ad project, Disease Article project, Unit Test, Mid-term exam		

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Transport	4	Jan-Feb	How is the body designed to utilize blood as the main transport mechanism of resources to all of the body systems in order to maintain homeostasis?	structure and function of b	Obtain, evaluate, and communicate information; develop and use models, construct explanations and design solutions; plan and carry out investigation, analyze and interpret data, use mathematics and computatoinal thinking, engage in argument for evidence	HS-LS1-2	Worksheets/diagrams, lab activities, Google forms, lab stations, sheep heart dissection	Blood typing lab, Defects and Disease of the Cardiovascular System project, Journey of an Oxygen Molecule project, quiz, unit test, lung capacity lab		
Absorption and Excretion	4	Feb-Mar	How does the body effectively and efficiently absorb nutrients and excrete waste from the food we eat in order to acquire necessary substances for maintaining homeostasis?	use of macromolecules, vitamins and minterals in the body, structure and function of digestive system organs, structure and function of urinary system organs, process of blood filtering in kidneys	develop and use models; construct explanations and design solution;, engage in argument using evidence; obtain, evaluate and communicate information; plan and carry out investigations; analyze and interpret data	HS-LS1-2, HS-LS1-6	Worksheets/diagrams, lab activities, Google forms, lab stations	Digestive System Children's Book, Urinalysis Lab, Quiz, Unit Test, Fetal pig dissection		
Protection	5	Mar-Apr	How does the body defend itself from environmental harm and detect, deflect and destroy foreign invaders in oeder to maintain homeostasis?	structure and function of the skin, hair and glands; structure and function of lymphatic system; describe the different kinds of immunity	develop and use models; construct explanations and design solutions; obtain, evaluate and communicate information; plan and carry out investigations; analyze and interpret data; use mathematics and computatoinal thinking; construct explanations and design solutions	HS-LS1-2	Worksheets/diagrams, lab activities, Google forms, lab stations	Skin Model project, Sunscreen lab, A Case for the Lymphatic System project, antibiotic resistance lab, quiz, unit test		
Reproduction	3	Apr-May	How is the body designed in order to create cells that allow for sexual reproduction to create offspring?	structure and function of female and male reproduction systems; HPG axis; ovarian and uterine cycles; sequence of events from stem cells in gonads to fertilization; contrast meiosis and mitosis; compare and contrast processes of oogenesis and spermatogenesis; structure and function of sperm; process of implementation; process of pregnancy, embryotic developement and birth	develop and use models; comstruct, explanations and design solutions; obtain, evaluate and communicate information; analyze and interpret data, use mathematics and computational thinking; engage in argument using evidence	HS-LS1-2, HS-LS1-4, HS-LS3-1	Worksheets/diagrams,	Quiz, Fertilization Fairy Tale, Unit Test, Final Exam		