Hamilton Heights School Corporation
Curriculum Map
Anatomy & Physiology

Course Title: Anatomy & Physiology	Quarter 1:	Academic Year: 2025-26

Essential Questions						
Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Intro Anatomy and Body Systems	10-15	AP.2.1 AP.2.3 AP.2.4	• Describe various levels of structural organization within the human body • Define and identify the importance of homeostasis to human health	• Lab & Dissection étiquette • Use proper anatomical terminology to describe directional terms, regions, planes, and cavities • Identify correct organ systems for various organs	Body Systems, Planes, and Cavities Exam	Body Systems Project Frog Dissection
Cells & Tissues	10-12	AP.1.1 AP.1.2 AP.1.3 AP.1.5 AP.2.1 AP.2.2 AP.3.1 AP.3.2	• Describe the structure of the plasma membrane • Identify major organelles of a cell, their structure, and their function	• Diagram and identify mitotic stages	Mitotic Stages Quiz Cellular Structure and Function Exam	Cell Mitosis Lab Vaccine Case Study Human Cheek Cell Lab

Skeletal System	20-23	AP.4.1 AP.4.2 AP.4.3	• Explain the functions of the skeletal system • Differentiate between compact and cancellous bone • Identify microscopic bone structures • Explain the process of bone formation and growth	• Distinguish and identify bones with the axial and appendicular skeleton • Locate and name major bones of the human skeleton	Skull Practical Exam Appendicular Bones Quiz Skeletal System Exam	Skull Models Skeleton Models

Course Title: Anatomy & Physiology	Quarter 2:	Academic Year: 2025-26

Essential Questions						
Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Muscular System	15-20	AP.5.1 AP.5.2 AP.5.3 AP.5.4 AP.5.5 AP.5.6	• Describe similarities and differences between the three types of muscle • Identify major structures of a skeletal muscle fiber • Describe the events leading to and after a muscle contraction at the cellular level • Identify major human muscles including their name, origin, insertion, antagonist(s), and primary action	• Diagram and explain the function of the neuromuscular junction • For simple actions, identify major muscle action and antagonist(s)	Cellular Muscle Structure Exam Muscle Identification Quiz Muscle Movements Practical Exam	Tired Swimmer Case Study Muscle Fatigue Lab

Nervous System	15-20	AP.6.1 AP.6.2 AP.6.3 AP.6.4	• Name and describe the functions of the two major divisions of the nervous system • Describe the structure and function of neurons and their components • Describe the function of various glial cells • Explain how a nerve impulse is generated and conducted • Name the major parts of the brain and spinal cord and their functions • Contrast the structure and function of the autonomic and somatic nervous system	• Explain a brain disorder and its effects on the rest of the body • Demonstrate reflex actions and arcs • Dissect and identify components of a whole brain	Neurons and Glial Cell Quiz Brain Disorder Project Nervous System Exam	Sheep Brain Dissection
Somatic and Special Senses	5-10	AP.7.1 AP.7.2 AP.7.3	• Distinguish between somatic and special senses • Name the five kinds of receptors and explain their functions • Explain the relationships between smell and taste and the mechanism for each • Name the parts of the ear and their functions • Describe how input sensory information is received and converted by the CNS	• Dissect and identify part of the eye and describe its function	Eye Lab Practical Exam Ear Quiz Senses Exam	Cow Eye Dissection

Course Title: Anatomy & Physiology	Quarter 3:	Academic Year: 2025-26

Essential Questions						
Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Endocrine System	10-12	AP.8.1 AP.8.2 AP.8.3 AP.8.4 AP.8.5	• Name and locate the major endocrine glands and tissues of the body • Differentiate between the effects of steroid and non-steroid hormones • List hormones produced by the endocrine glands and physiological effects • Describe the function of the hypothalamus	• Describe pathological consequences of hypersecretion and hyposecretion of various hormones • Describe and give an example of a negative feedback mechanism in hormonal production and control	Endocrine System Exam	
The Blood	5-8	AP.9.1 AP.9.2 AP.9.3	• List the functions of blood • Describe the structure, function, and life cycle of erythrocytes • Identify the various types of leukocytes and their roles • Describe the components of plasma and their functions • Describe the events of hemostasis • Identify a few disorders of the blood	• Explain the basis of ABO and Rh incompatibilities for blood transfusions • Perform a differential white blood cell count and give examples of disorders that produce abnormal blood test values	Blood Exam	

Cardiovascular System	15-20	AP.10.1 AP.10.2 AP.10.3 AP.10.4 AP.10.5 AP.10.6	• Describe the structure and function of the heart • Describe the flow of blood through the heart • Explain how the conducting system of the heart works • Distinguish between an artery, vein, and capillary based on structure, location, and function • Describe the exchange of material across the capillary membrane • Locate major arteries and veins	• Dissect and identify major structures of the heart • Explain the mechanism and flow of blood from arteries to veins to the heart • Be able to take blood pressure and heart rate and various activities •	Heart Anatomy Quiz Cardiovascular System Exam	Cow Heart Dissection Blood pressure and Heart Rate Lab Blood Typing Lab
Immune System	5-10	AP.11.1 AP.11.2	• Distinguish between innate and adaptive defenses • Differentiate between antibody and antigen • Compare functions of B and T lymphocytes		Immune System Response Project	

Course Title: Anatomy & Physiology	Quarter 4:	Academic Year: 2025-26

Essential Questions

Unit Name	Total Days	Standards Number	Knowledge Objectives	Skills Objectives	Specific Assessments	Specific Resources
Digestive System	10-12	AP.12.1 AP.12.2 AP.12.3	• Describe the location and functions of the alimentary canal • Explain the difference between mechanical and enzymatic digestion • Explain the role of the accessory organs in the digestive process • Describe the functions and location of various digestive enzymes • List the major functions of the liver • Describe the functions of the small and large intestines • Describe the diseases/disorders of the digestive system	• Label the parts of a tooth and describe the functions of different teeth • Describe the processes of carbohydrate, lipid, and protein digestion, absorption, and metabolism • Investigate the action of enzymatic enzymes on various nutrients	Food Allergy Project Digestive System Exam	
Respiratory System	10-12	AP.13.1 AP.13.2 AP.13.3 AP.13.4	• Name the structures and describe the functions of the upper and lower respiratory tracts • Describe the mechanisms responsible for inspiration and expiration • Explain how alterations in blood CO_2 levels, blood pH, and blood O_2 levels effect on respiration • Discuss the role of hemoglobin in the transport of gases • Identify respiratory problems and causes of conditions	• Identify various air volumes during normal and forceful breathing efforts • Label major respiratory system structures • Trace the movement of air through the respiratory tract	Respiratory System Exam	Air Volume (VO_2 Max)

Urinary System	10-12	AP.14.1 AP.14.2 AP.14.3 AP.14.4 AP.14.5	• List the organs of the urinary system and state the function of each • Describe the structure and location of the nephron within the kidney and explain its function • Identify principal factors that influence filtration pressure and explain how they affect the rate of filtration • Explain the regulation of urine concentration and volume • Discuss disorders of the urinary system	• Trace the path of blood through the renal blood vessels • Trace the path of filtrate through the renal tubule • Locate and identify anatomical features of a kidney • Conduct urinalysis tests and use them to determine the substance present in a urine specimen	Anatomy of the Kidney Quiz Urinary System Exam	Sheep Kidney Dissection Urinalysis Lab
Reproductive System	10-12	AP.15.1 AP.15.2 AP.15.3 AP.15.4 AP.15.5	• Name the parts of the male and female reproductive system and their functions • Describe the structure of the testes and ovaries • Describe the route sperm cells follow from their production to outside the body • List the major events of the menstrual cycle • Discuss disorders of the reproductive system	• Describe the process of ovulation and fertilization • Trace the pathway of an egg throughout the menstrual cycle • Locate and name the structures of the male and female reproductive systems • Describe the role of the various hormones and how they regulate maturation, menstruation, and fetal development	Female Reproductive Anatomy Quiz Male Reproductive Anatomy Quiz Reproductive System Exam	