

Southern Cayuga Central School District – Curriculum Map

Subject: Cayuga Community College Biology 103

School Year: 2021-2022

Title or Topics w/ NYS Standards	Essential Questions & Vocabulary	Content Skills (Activities to cover Essential Questions)	Major Assessments (Tests, Project, etc.)	Time Frame	NYSSLS
INTRODUCTION TO BIOLOGY Unit 1					
Introduction to Life on Earth Chapter 1	How do scientists study life? How does evolution unify Biology? How do scientists organize life? What are the characteristics of life?	Google Slides Khan Academy Lab - Slug CIBT Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams Safety Lab	September	
Atoms, Molecules and Life Chapter 2	What are atoms? How do Atoms interact to form molecules? Why is water so important to Life?	Google Slides Khan Academy Lab - Metric measurement, Microscope Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	September	HS-LS-1-6
Biological Molecules Chapter 3	Why is carbon so important in biological molecules? How are organic molecules synthesized? What are Carbohydrates? What are Lipids? What are Proteins? What are Nucleic Acids?	Google Slides Khan Academy Lab - Chemistry of Cells and Enzymes Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	October	HS-LS-1-6
Membrane Structure and Function Chapter 5	How is the structure of a membrane related to its function?	Google Slides Khan Academy Lab - Cell Membrane Function Study Guides	Exit Tickets Khan Academy Quizzes Group and individual Quizzes	October	HS-LS-1-2

	<p>How do substances move across membranes?</p> <p>How do specialized junctions allow cells to connect and communicate?</p>	Activities from instructor manual	Exams		
<p>Cell Structure and Function Chapter 4</p>	<p>What is the Cell Theory?</p> <p>What are the basic attributes of cells?</p> <p>What are the major features of eukaryotic cells?</p> <p>What are the major features of prokaryotic cells?</p>	<p>Google Slides</p> <p>Khan Academy</p> <p>Lab - Cell Structure and Function</p> <p>Study Guides</p> <p>Activities from instructor manual</p>		November	HS-LS-1-2
<p>Energy Flow in the Life of a Cell Chapter 6</p>	<p>What is energy?</p> <p>How does energy flow in chemical reactions?</p> <p>How is cellular energy carried between coupled reactions?</p> <p>How do cells control their metabolic reactions?</p>	<p>Google Slides</p> <p>Khan Academy</p> <p>Lab - Cell Structure and Function</p> <p>Study Guides</p> <p>Activities from instructor manual</p>	<p>Exit Tickets</p> <p>Khan Academy Quizzes</p> <p>Group and individual Quizzes</p> <p>Exams</p>	Nov-Dec	HS-LS-1-7
<p>Capturing Solar Energy: Photosynthesis Chapter 7</p>	<p>What is photosynthesis?</p> <p>Light-dependent reactions: how is light energy converted to chemical energy?</p> <p>Light-independent reactions: How is chemical energy stored in glucose molecules?</p> <p>What is the relationship between light-dependent and</p>	<p>Google Slides</p> <p>Khan Academy</p> <p>Lab - Photosynthesis</p> <p>Study Guides</p> <p>Activities from instructor manual</p>	<p>Exit Tickets</p> <p>Khan Academy Quizzes</p> <p>Group and individual Quizzes</p> <p>Exams</p>	December	HS-LS-1-5

	light-independent reactions? Water, CO ₂ , and the C ₄ pathway				
Harvesting Energy: Glycolysis and Cellular Respiration Chapter 8	How do cells obtain energy? How is the energy in glucose captured during glycolysis? How does cellular respiration capture additional energy from glucose?	Google Slides Khan Academy Lab - Cellular Respiration Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	Dec - Jan	HS-LS-1-7
UNIT 2 INHERITANCE					
DNA: The molecule of Heredity Chapter 9	How did scientists discover that genes are made of DNA? What is the structure of DNA? How does DNA encode information? How does DNA replication ensure genetic constancy during cell division? How do mutations occur?	Google Slides Khan Academy Lab - DNA Extraction Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	January	HS-LS-1-1
Gene Expression and Regulation Chapter 10	How are genes and proteins related? How is information in a gene transcribed into RNA? How is the base sequence of a messenger RNA molecule translated into protein?	Google Slides Khan Academy Lab - DNA Biology and Technology Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	February	HS-LS-3-1 HS-LS-3-2

	<p>How do mutations in DNA affect the function of genes?</p> <p>How are genes regulated?</p>				
<p>The Continuity of Life: Cellular Reproduction Chapter 11</p>	<p>What is the role of cellular reproduction in the lives of individual cells and entire organisms?</p> <p>How is DNA in eukaryotic cells organized into chromosomes?</p> <p>How do cells reproduce by Mitotic cell division?</p> <p>How is the cell cycle controlled?</p> <p>Why do so many organisms reproduce sexually?</p> <p>How does meiotic cell division produce haploid cells?</p> <p>When do mitotic and meiotic cell division occur in the life cycles of eukaryotes?</p> <p>When does mitotic and meiotic cell division occur in the life cycles of eukaryotes?</p> <p>How do meiosis and sexual reproduction produce genetic variability?</p>	<p>Google Slides</p> <p>Khan Academy</p> <p>Lab - Cell Division</p> <p>Study Guides</p> <p>Activities from instructor manual</p>	<p>Exit Tickets</p> <p>Khan Academy Quizzes</p> <p>Group and individual Quizzes</p> <p>Exams</p>	<p>February</p>	<p>HS-LS-1-4</p>

EVOLUTION AND DIVERSITY OF LIFE UNIT 3					
Principle of Evolution Chapter 14	How did evolutionary thought evolve? How do we know that evolution has occurred? How does natural selection work? What is the evidence that populations evolve by natural selection?	Google Slides Khan Academy Lab - Evidence of Evolution Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	March	HS-LS-4-1
How Organisms Evolve Chapter 15	How are populations, genes and evolution related? What causes evolution? How does natural selection work?	Google Slides Khan Academy Lab - Evidence of Evolution Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	March	HS-LS-4-2
The Origin of Species Chapter 16	What is a species? How is reproductive isolation between species maintained? How do new species form? What causes extinction?	Google Slides Khan Academy Lab - Origin of Species Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	Mar-April	HS-LS-4-3 HS-LS-4-4
Systematics: Seeking Order Amidst Diversity Chapter 18	How are organisms named and classified? What are the domains of life? Why do classifications change?	Google Slides Khan Academy Lab - Plant Structure Study Guides Activities from instructor manual	Exit Tickets Khan Academy Quizzes Group and individual Quizzes Exams	April	HS-LS-4-5
The Diversity of Plants Chapter 21	What are the key features of Plants?	Google Slides Khan Academy Lab - Plant Reproduction	Exit Tickets Khan Academy Quizzes	May	HS-LS-4-4

	What is the evolutionary origin of plants? How have plants adapted to life on land? What are the major groups of plants?	Study Guides Activities from instructor manual	Group and individual Quizzes Exams		
CCC Final Exam				June	