

Grade 7 Science Pacing Guide 1st & 2nd Nine Weeks

Unit & Timeline:	Unit 1 (Weeks 1-2)	Unit 2 (Week 3)	Unit 3 (Week 4)
Genre:	From Molecules to Organisms	From Molecules to Organism	From Molecules to Organism
Big Idea:	Cell Structure and Processes (COLT, cell theory, Pro vs Eu, cell structures, animal vs plant)	Cell Structure and Processes (cellular energetics)	Cell Structure and Processes (cell reproduction)
Standards:	Priority: ALCOS 1: Develop and use a model to explain the functions of specific cell structures necessary for maintaining a stable environment, including the cell membrane, cell wall, chloroplasts, endoplasmic reticulum, golgi apparatus, mitochondria, nucleus, ribosomes, and vacuoles.	Priority: ALCOS 2: Construct an explanation of how photosynthesis and cellular respiration cycle matter and establish the flow of energy into and out of an organism.	Priority: ALCOS 3: Construct an explanation of how the process of mitosis maintains complex organisms and ensures new cells with identical genetic information.
	Supporting: ALCOS 1a.: Engage in argument from evidence to support claims of cell theory. 1b. Construct an explanation of how prokaryotic and eukaryotic cells differ in structure 1c. Plan and carry out an investigation to identify and explain features of a cell's semi-permeable membrane which enable it to control what enters and exits the cell.	Supporting: ALCOS 2a: Ask questions and construct an explanation of how anaerobic bacteria produce energy in environments with no oxygen.	Supporting: ALCOS 3a.: Ask questions and communicate information regarding how errors in mitosis may affect cell division.

Grade 7 Science Pacing Guide 1st & 2nd Nine Weeks (cont'd)

Unit & Timeline:	Unit 4 (Weeks 5-6)	Unit 5 (Weeks 7-9)
Genre:	Heredity: Inheritance/Variation of Traits	Heredity: Inheritance/Variation of Traits
Big Idea:	Genetics and Biotechnology (DNA/RNA and protein synthesis)	Genetics and Biotechnology (meiosis, genetic variation, technologies)
Standards:	Priority: ALCOS 12.: Develop and use models to explain how genes are expressed through the flow of genetic information from DNA to RNA to a functional protein.	Priority: ALCOS 13: Develop and use models to explain that meiosis results in new genetic combinations with increased variation. ALCOS 11: Develop and use models to demonstrate how genetic variations between parents and offspring result from differences in inherited genes located on chromosome ALCOS 14: Obtain, evaluate, and communicate information on the use of technologies that impact the inheritance and appearance of traits in organisms.
		Supporting: ALCOS.13a: Construct an explanation of the advantages and disadvantages of asexual and sexual reproduction ALCOS.13 b Construct an explanation from evidence of how genetic variants may result in harmful, beneficial, or neutral effects on the structure and function of an organism.

Grade 7 Science Pacing Guide 3rd & 4th Nine Weeks

Unit & Timeline:	Unit 1 (Weeks 1-2)	Unit 2 (Week 3-4)	Unit 2 (Week 5-6)
Genre:	From Molecules to Organisms	Ecosystems: Interactions, Energy, and Dynamics	Ecosystems: Interactions, Energy, and Dynamics
Big Idea:	Growth and Development (Human Body Systems)	Matter and Energy Flow (Bioenergetics)	Population Dynamics and Interdependent Relationships
Standards:	Priority: ALCOS 4: Obtain, evaluate, and communicate information explaining how cells, tissues, and organs of various systems of the human body work together for specific functions, including the circulatory, digestive, muscular, nervous, respiratory, and skeletal systems.	Priority: ALCOS 5: Construct an explanation of how the cycling of matter between abiotic and biotic parts of ecosystems demonstrates the flow of energy and the conservation of matter, including the carbon, nitrogen, and water cycles.	Priority: ALCOS 6: Analyze and interpret data to predict how environmental conditions, genetic factors, and resource availability will impact the growth of individual organisms and populations of organisms in an ecosystem. ALCOS 7: Analyze and interpret data to explain how density-independent and density-dependent limiting factors in an ecosystem can lead to shifts in populations. ALCOS 8: Construct an explanation that predicts patterns of interactions between and among organisms in different ecosystems.

Grade 7 Science Pacing Guide 3rd & 4th Nine Weeks

Unit & Timeline:	Unit 2 (Weeks 7)	Unit 5 (Weeks 8-9)
Genre:	Ecosystems: Interactions, Energy, and Dynamics	Unity and Diversity
Big Idea:	Biodiversity	Natural Selection and Phylogenetics
Standards:	Priority: ALCOS 9: Design a solution to maintain biodiversity and ecosystem services in a given scenario. ALCOS 10: Obtain, evaluate, and communicate information about characteristic animal behaviors and specialized plant structures and their effect on the probability of successful reproduction.	Priority: ALCOS 15: Analyze and interpret data from examination of fossils, relict species, and modern organisms to determine patterns of change in anatomical structures over time. ALCOS 16: Obtain, evaluate, and communicate evidence comparing patterns in the embryological development of multiple species to identify relationships not evident in the fully formed adult anatomy. ALCOS 17: Ask questions to clarify how natural selection over generations may lead to changes in the frequency of specific traits to enhance survival and reproduction of a population.
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