MIAMI-DADE COUNTY PUBLIC SCHOOLS
District Pacing Guide

M/J COMPREHENSIVE SCIENCE 3 **Course Code: 200210001**

STRAND: G: How Living Things Interact With Their Environment
BODY OF KNOWLEDGE: L: Life Science

TOPIC XX: Cycles

Pacing		Date(s)
Traditional	17 days	03-03-11 to 04-01-11
Block	8 days	03-07-11 to 04-01-11

SUNSHINE STATE STANDARD(S)	ESSENTIAL CONTENT	OBJECTIVES	INSTRUCTIONAL TOOLS	NEXT GENERATION SUNSHINE STATE STANDARDS (Field Tested 2011)
Standard 1: The student understands the competitive, interdependent, cyclic nature of living things in the environment. SC.G.1.3.4 – (AA) The student knows that the interactions of organisms with each other and with the nonliving parts of their environments result in the flow of energy and the cycling of matter throughout the system. Standard 2: The student understands the consequences of using limited natural resources. SC.G.2.3.4 – (AA) The student understands that humans are part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems. (Also assesses SC.D.2.3.2)	A. Cycles in Nature 1. Water 2. Carbon 3. Nitrogen 4. People's effects on cycles in nature B. Energy transfers in nature 1. Energy pyramid 2. Food chain 3. Food web C. Revisit Essential Content	• Summarize how materials such as water, carbon and nitrogen are used repeatedly • Create a collage showing the carbon and nitrogen cycles • Investigate various ways humans affect the carbon and nitrogen cycles, both positively and negatively • Organize a flow chart to show energy transfer in an energy pyramid • Critique how energy, carbon or nitrogen flow through a system • Create a way to reduce your effects on a system at home, school or in the community • Identify various producers, consumers and decomposers in an ecosystem and describe their relationship to cycles as well as the energy transfers that occur • Compare and contrast a food chain and food web • Observe and write to explain the interactions of a food chain or food web occurring in your neighborhood • Illustrate the available energy at each level of various food chains and energy pyramids • Identify the chemical changes that occur in energy transfers • Identify how organisms shape and reshape the landscape as they cycle matter • Revisit deficient benchmarks	Core Text Book: Florida Science Gr. 8 (TX) Chapter 18 p 535-541 Vocabulary: consumer, producer, energy, food chain, food web, predator, prey, carnivore, herbivore, decomposer, population, community, ecosystem, biome, biosphere, biotic, abiotic Technology: 1. Food Web 2. How is energy transfer through a community of organisms? (VL) 3. Ecosystems and threats 4. Essential Science Content Podcasts 5. JASON Project (see p. 3) Strategies: JASON Project (see p. 3)Note taking, journal writing, compare and contrast, research, review, computer assisted Instruction, inquiry o ELL: o Enrichment: o SPED: Assessment: Formative Assessments; Formal/Authentic Lab: 1. Modeling the Water cycle (TX p 540) 2. Everything You do Makes a Difference (EL) 3. Modeling the Greenhouse Effect (EL) 4. JASON Project (se p. 3) Related Program:	Big Idea 15: Diversity and Evolution of Living Organisms SC.8.L.18.3 Construct a scientific model of the carbon cycle to show how matter and energy are continuously transferred within and between organisms and their physical environment. (SC.G.1.3.4) SC.8.L.18.4 Cite evidence that living systems follow the Laws of Conservation of Mass and Energy. (SC.G.1.3.4)

Discovery EDUCATION Curriculum Aligned Resources

	**Video**	The Water Cycle: Evaporation, Condensation, Precipitation, and Runoff Evaporation, Transpiration, and Sublimation Condensation Precipitation: Rain, Snow, and Hail Runoff Percolation The Diversity of Life Within Ecosystems Carbon, Nitrogen, and Phosphorus: Nutrients Cycle Through Ecosystems to Sustain Life The Flow of Energy through Ecosystems Nitrogen Cycle Oxygen & Carbon Dioxide Cycle Water Cycle Pyramids of Energy and Numbers: Consumer Levels A Riparian Ecosystem The Ocean's Producers: Plankton Phytoplankton and the Food Web Seaweed and Photosynthesis Why Study Primary Producers? Finding Phytoplankton Plankton and the Environment
	**Image**	Nitrogen cycle Water cycle Carbon cycle Carbon cycle Carbon cycle Food chain Energy flow in a food chain
	**Interactive Glossary**	consumer producer energy food chain food web predator prey carnivore herbivore decomposer population community ecosystem biome biosphere

Technology:	Animation: **Arctic Food Web** **Transfer of Energy**
Strategies:	Articles: **The Water Cycle** **How Energy & Water Interact in the Atmosphere** **Condensation**
Labs	**Energy and the Water Cycle** **Cycling Carbon** **The Food Web Game** **Clouds in a bottle**

MIAMI-DADE COUNTY PUBLIC SCHOOLS
Instructional Focus Calendar

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Date	Pacing guide Benchmark(s)	Data Driven Benchmark(s)	Activities	Assessment(s)	Strategies
Traditional: 03-03-11 to 04-01-11 **Block:** 03-07-11 to 04-01-11	**Standard 1:** The student understands the competitive, interdependent, cyclic nature of living things in the environment. **SC.G.1.3.4 – (AA)** The student knows that the interactions of organisms with each other and with the nonliving parts of their environments result in the flow of energy and the cycling of matter throughout the system. **Standard 2:** The student understands the consequences of using limited natural resources. **SC.G.2.3.4 – (AA)** The student understands that humans are part of an ecosystem and their activities may deliberately or inadvertently alter the equilibrium in ecosystems. (Also assesses SC.D.2.3.2)				