Section II. Recommendation 2: Acceleration Model Pathways

Recognizing that districts in New York State typically provide students in ninth grade with instruction in either Biology (currently Living Environment) or Earth Science, two (2) acceleration pathways are provided. The first pathway culminates in Regents Biology in eighth grade and the second culminates in Regents Earth Science.

Course 1 and 2 PEs could be taught in either Grade 6 or 7. Table 1

Acceleration Model Pathway A
This pathway culminates in Regents Biology in Grade 8. The performance expectations in red font refer to Middle School Standards taught in conjunction with corresponding High School   Standards.[5]

Course 1 (Grade 6)	Course 2 (Grade 7)	Course 3 HS Life Science (Grade 8)
Structure and Properties of Matter MS-PS1-1: Atomic Composition Model MS-PS1-3: Synthetic Materials MS-PS1-4: Thermal Energy and Particle Motion MS-PS1-7: Density of Matter* MS-PS1-8: Substances and Mixtures* **Chemical Reactions** MS-PS1-2: Chemical Properties and Reactions MS-PS1-5: Conservation of Atoms in Reactions MS-PS1-6: Thermal Energy Design Project **Forces and Interactions** MS-PS2-1: Collision Design Solution	**Waves and Information** MS-PS4-1: Wave Properties MS-PS4-2: Wave Reflection, Absorption, and Transmission MS-PS4-3: Digitized Wave Signals **Earth's Systems** MS-ESS2-1: Cycling of Earth's Materials MS-ESS2-4: Cycling of Water. Through Earth's Systems MS-ESS3-1: Uneven Distribution of Earth's Resources MS-ESS2-5: Interacting Air Masses and Weather MS-ESS2-6: Atmospheric and Oceanic Circulation **Structure, Function, and Information Processing** MS-LS1-1: Cell Theory	**Structure and Function** MS-LS3-1: Mutations - Harmful, Beneficial, or Neutral HS-LS1-1: Genes, Proteins, and Tissues MS-LS1-3: Interacting Body Systems HS-LS1-2: Interacting Body Systems MS-LS1-8: Information Processing HS-LS1-3: Feedback Mechanisms and Homeostasis **Matter and Energy in Organisms and Ecosystems** HS-LS1-5: Photosynthesis and Energy Transformation HS-LS1-6: Formation of Carbon-Based Molecules MS-LS1-7: Food and Chemical Reactions HS-LS1-7: Cellular Respiration and Energy Transfer

MS-PS2-2: Forces, Mass and the Motion of an Object
MS-PS2-3: Electric and Magnetic Forces
MS-PS2-4: Gravitational Interactions
MS-PS2-5: Electric and Magnetic Fields

Energy

MS-PS3-1: Kinetic Energy of an Object
MS-PS3-2: Potential Energy of the System
MS-PS3-3: Thermal Energy Transfer Solution
MS-PS3-4: Thermal Energy Transfer
MS-PS3-5: Energy Transfer to or from an Object
MS-PS3-6: Electric Circuits*

Space Systems

MS-ESS1-1: Earth-Sun-Moon System
MS-ESS1-2: Gravity and Motions in Space
MS-ESS1-3: Scale Properties in the Solar System

History of Earth
MS-ESS2-2: Geoscience Processes at Varying Scales
MS-ESS2-3: Evidence of Plate Tectonics

MS-LS1-2: Cell Parts and Function

Matter and Energy in Organisms and Ecosystems

MS-LS2-4: Ecosystem Interactions and Dynamics

Interdependent Relationships in Ecosystems

MS-LS2-2: Interdependent Relationships in Ecosystems

Growth, Development, and Reproduction

MS-LS1-4: Animal Behaviors and Plant Structures - Reproductive Success
MS-LS1-5: Environmental and Genetic Growth Factors
MS-LS4-5: Artificial Selection

Natural Selection

MS-LS4-1: Fossil Evidence of Common Ancestry and Diversity
MS-LS4-2: Anatomical Evidence of Evolutionary Relationships

History of Earth

MS-ESS1-4: Geologic Time Scale

Weather and Climate

MS-ESS3-5: Causes of Global Warming

Human Impacts

MS-ESS3-2: Natural Hazards
MS-ESS3-3: Human Impact on the Environment
MS-ESS3-4: Human Consumption of Natural Resources

MS-LS2-3: Matter Cycling and Energy Flow in Ecosystems
HS-LS2-3: Aerobic and Anaerobic Cycling of Matter
HS-LS2-4: Biomass and Trophic Levels
HS-LS2-5: Cycling of Carbon in Ecosystems
HS-ESS2-6: Carbon Cycling
HS-ESS2-7: Coevolution of Life and Earth's Systems

Interdependent Relationships in Ecosystems

MS-LS2-1: Effects of Resource Availability
HS-LS2-1: Carrying Capacity of Ecosystems
MS-LS2-5: Biodiversity and Ecosystem Services Solutions
HS-LS2-2: Biodiversity and Populations in Ecosystems
HS-LS2-6: Ecosystem Dynamics, Functioning, and Resilience
HS-LS2-7: Human Impact Reduction Solution
HS-LS2-8: Social Interactions and Group Behavior
HS-LS4-6: Human Impact on Biodiversity Solution

Growth, Development, and Reproduction

MS-LS 3-1: Mutations - Harmful beneficial or neutral
MS-LS3-2: Asexual and Sexual Reproduction
HS-LS1-4: Cellular Division and Differentiation
HS-LS3-1: Chromosomal Inheritance
HS-LS3-2: Inheritable Genetic Variation

		HS-LS3-3: Variation and Distribution of Traits HS-LS1-8: Human Reproduction* **Natural Selection** MS-LS4-3: Embryological Evidence of Common Ancestry HS-LS4-1: Evidence of Common Ancestry and Diversity MS-LS4-4: Natural Selection HS-LS4-2: Four Factors of Natural Selection MS-LS4-6: Adaptation of Populations over Time HS-LS4-3: Adaptation of Populations HS-LS4-4: Natural Selection Leads to Adaptation HS-LS4-5: Environmental Change - Speciation and Extinction