Table 2: MIDDLE SCHOOL LINKAGES

New York City Performance Standards / Related GLOBE Activity		Atm	Soil	Hyd	Phe	Land Cover	GPS	Earth Syst.
S1	**Physical Sciences Concepts**							
S1a	Properties and changes of properties in matter, such as density and boiling point; chemical reactivity; and conservation of matter	■	■	■		■		
S1b	Motions and forces, such as inertia and the n et effects of balanced and unbalanced forces							
S1c	Transfer of energy, such as transformation of energy as heat; light, mechanical motion, and sound; and the nature of a chemical reaction.	■	■	■	■	■		■
S2	**Life Sciences Concepts**							
S2a	Structure and function in living systems, such as the complementary nature of structure and function in cells, organs, tissues, organ systems, whole organisms, and ecosystems.				■	■		
S2b	Reproduction and heredity, such as sexual and asexual reproduction, and the role of genes and environment on trait expression							
S2c	Regulation and behavior, such as senses and behavior, and responses to environmental stimuli				■	■		
S2d	Populations and ecosystems, such as the roles of producers, consumers, and decomposers in a food web, and the effects of resources and energy transfer on populations					■		■
S2e	Evolution, diversity, and adaptation of organisms, such as common ancestry, speciation, adaptation, variation, and extinction							
S3	**Earth and Space Concepts**							
S3a	Structure of the Earth System, such as crustal plates and land forms; water and rock cycles; oceans, weather and climate	■	■	■		■		■
S3b	Earth's history, such as Earth processes, including erosion and movement of plates; change over time and fossil evidence							
S3c	Earth in the Solar System, such as the predictable motion of planets , moons, and other objects in the Solar System, including days, years, moon phases, and eclipses; and the role of the Sun as the major source of energy for phenomena on the Earth's surface.	■	■	■	■			■
S3d	Natural resource management							■
S4	**Scientific Connections and Applications**							
S4a	Big ideas and unifying concepts, such as order and organization; models, forms, and function; change and constancy; and cause and effect	■	■	■	■	■		■

Table 2: Middle School linkages (ctd)		Atm	Soil	Hyd	Phe	Land Cover	GPS	Earth Syst.
S4b	The designed world, such as development of agricultural techniques and the viability of technological designs							
S4c	Health, such as nutrition, exercise, and disease; effects of drugs and toxic substances; personal and environmental safety; and resources and environmental stress							
S4d	Impact of technology, such as constraints and trade-offs; feedback; benefits and risks; and problems and solutions.							■
S4e	Impact of science, such as historical and contemporary contributions; and interactions between science and society.				■	■		■
S5	**Scientific Thinking**							
S5a	Frames questions to distinguish cause and effect; and identifies or controls variables in experimental and non-experimental research settings		■			■		■
S5b	Uses concepts from Science Standards 1 to 4 to explain a variety of observations and phenomena	■	■	■	■	■		■
S5c	Uses evidence from reliable sources to develop descriptions, explanations, and models				■	■		■
S5d	Proposes, recognizes, analyzes, considers, and critiques alternative explanations; and distinguishes between fact and opinion	■	■	■	■	■		■
S5e	Identifies problems; proposes and implements solutions; and evaluates the accuracy, design, and outcomes of investigations	■	■	■	■	■		■
S5f	Works individually and in teams to collect and share information and ideas	■	■	■	■	■	■	■
S6	**Scientific Tools and Technologies**							
S6a	Uses technology and tools (such as traditional laboratory equipment, video, and computer aids) to observe and measure objects, organisms, and phenomena, directly, indirectly, and remotely	■	■	■	■	■	■	
S6b	Records and stores data using a variety of formats, such as data bases, audiotapes, and videotapes	■	■	■	■	■	■	■
S6c	Collects and analyzes data using concepts and techniques in Mathematics Standard 4, such as mean, median, and mode; outcome probability and reliability; and appropriate data displays.	■	■	■	■	■	■	■
S6d	Acquires information from multiple sources, such as print, the Internet, computer data bases, and experimentation.	■	■	■	■	■		■

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S6e	Recognizes sources of bias in data, such as observer and sampling biases	■	■	■	■	■	■	■
S7	**Scientific Communication**							
S7a	Represents data and results in multiple ways, such as numbers, tables, and graphs; drawings, diagrams, and artwork; and technical and creative writing	■	■	■	■	■		■
S7b	Argues from evidence, such as data produced through his or her own experimentation or by others	■	■	■	■	■	■	■
S7c	Critiques published materials							
S7d	Explains a scientific concept or procedure to other students							
S7e	Communicates in a form suited to the purpose and the audience, such as by writing instructions that others can follow; critiquing written and oral explanations; and using data to resolve disagreements							
S8	**Scientific Investigation**							
S8a	Controlled experiment		■					
S8b	Fieldwork	■	■	■	■	■	■	■
S8c	Design							
S8d	Secondary research, such as use of others' data	■	■	■	■	■	■	■