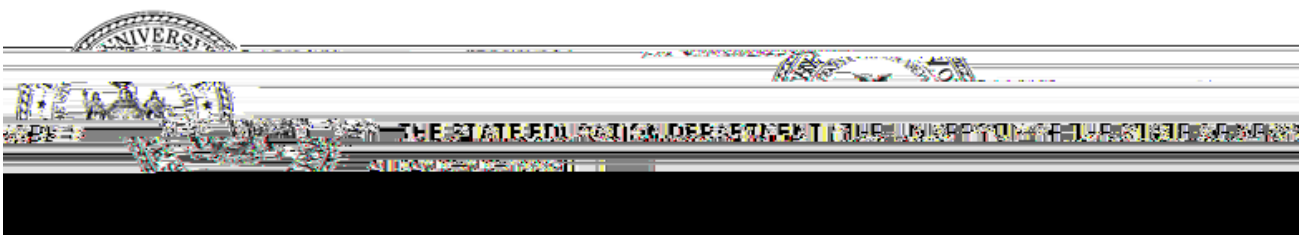
New York State Testing Program

P-12 Science Learning Standards

Performance Level Descriptions

Life Science: Biology

Fall 2023



How were the PLDs developed?

Following research-based best practice for the development of PLDs, the number of performance levels and their definitions were specified prior to the articulation of the full descriptions. The New York State Education Department (NYSED) convened a group of NYS science educators to develop the initial draft PLDs for Life Science: Biology. In developing PLDs, participants considered policy definitions of the performance levels and the knowledge and skill expectations for each grade level in the Science Learning Standards. Once they established the appropriate knowledge and skills from a particular standard for NYS Level 4 (fully meet), panelists worked together to parse the knowledge and skills across the other performance levels in such a way that the progression of the knowledge and skills was clearly seen moving from Level 1 to Level 5. This process was repeated for all of the standards within the course. The draft PLDs then went through additional rounds of review and edits from a number of NYS-certified educators, content specialists, and assessment experts under NYSED supervision.

How can the PLDs be used in Instruction?

The PLDS, which differentiate and stratify the overall continuum of knowledge and skills defined by the Learning Standards into five distinct levels of learning should be used as guidance by educators. NYSED encourages the use of the PLDs for a variety of purposes, including differentiating instruction to maximize individual student outcomes, creating formative classroom assessments and rubrics to help identify target performance levels for individuals or groups of students, and tracking student growth along the proficiency continuum as described by the PLDs. The knowledge and skills shown in the PLDs describe *typical* performance and progression. However,

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Topic and PE	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
Interdependent Relationships in Ecosystems **HS-LS2-1**	Develop, analyze, and/or apply mathematical and/or computational representations to support explanations of biotic and abiotic factors at different scales, proportions, and quantities affecting the carrying capacity of ecosystems.	Use mathematical and/or computational representations to support explanations of biotic and abiotic factors that affect carrying capacity of ecosystems at different scales.	Use a mathematical and/or computational representation to support an explanation of a biotic or an abiotic factor that affects the carrying capacity of an ecosypthematical		

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Topic and PE	NYS Level 5	NYS Level 4	NYS Level 3	NYS Level 2	NYS Level 1
Engineering Design **HS-ETS1-3**	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts. Explain how these solutions affect society and the environment.	Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.	Identify a solution to a complex real-world problem based on prioritized criteria and/or trade-offs (positives and negatives) for a range of constraints, such as cost, safety, reliability, and aesthetics, as well as possible social, cultural or environmental impacts.	Describe a solution to a complex real-world problem based on given criteria and constraints.	Identify a solution, from those provided, to a complex real-world problem based on given criteria and/or constraints.
Engineering Design **HS-ETS1-4**	Use a computer simulation to model the impact of proposed solutions to related complex real-world problems with numerous criteria and constraints on interactions within and between systems relevant to the problem.	Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.	Given data (from a computer simulation) describe the impact of proposed solutions to a complex real-world problem with limited criteria and constraints on interactions within and/or between systems relevant to the problem.	Given data (from a computer simulation) identify the impact of a proposed solution to a complex real-world problem, or the impact on an interaction within or between two systems relevant to the problem.	Identify the impact of a given solution to a complex real-world problem.