New York State Testing Program

Educator Guide to the 2025 Elementary-level (Grade 5) and Intermediate-level (Grade 8) Science Tests

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Foreword

The information contained in this Educator Guide is designed to raise educator awareness of the structure of the 2025 New York State Elementary-level (Grade 5) Science (ELS) and the Intermediate-level (Grade 8) Science (ILS) Tests measuring the New York State P-12 Science Learning Standards (https://www.nysed.gov/sites/default/files/programs/curriculum-instruction/p-12-science-learning-standards.pdf).

The guide provides educators with pertinent information about the test development process, the learning standards that the tests are designed to measure, the test specifications used to create the tests, and the test design, which includes what types of questions will be asked and the estimated length of the testing session. Links to additional resources are provided to further enhance educators' understanding of the structure of the science tests. Educators are encouraged to review the guide prior to the test administration to gain familiarity with the test format. The information presented can also be used as a platform for educator discussion on how student assessment results can guide future instruction.

The Elementary and Intermediate testing schedule for the Spring 2025 administration can be found on the website (https://www.nysed.gov/state-assessment/grades-3-8-test-schedules). Questions regarding the New York State Testing Program and test design may be addressed to the Office of State Assessment at emscassessinfo@nysed.gov. Questions regarding the New York State Learning Standards may be addressed to the Office of Standards and Instruction at P12StandardsInstruction@nysed.gov.

2025 New York State ELS and ILS Testing Program

Purpose of State Testing

The federal Every Student Succeeds Act (2015) requires that states test students at least three times in science: once in grades 3 through 5, once in grades 6 through 9, and once in grades 10 through 12. The NYS Elementary-level and Intermediate-level Science Testing Program has been designed to measure science knowledge and skills as defined by the New York State P-12 Science Learning Standards. The Elementary-level Science Test assesses science standards for grades 3–5 (with a foundation of preK-2), and the Intermediate-level Science Test assesses science standards for grades 6–8. The ELS and ILS state tests are designed to report student proficiency in one of four performance levels. Please refer to page 13 of this guide for further information regarding the Performance Level Descriptions.

New York State Educators Involvement in Test Development

While teachers have always been included in the Elementary-level and Intermediate-level Science Test Development Process, the New York State Education Department (NYSED) continues to expand the number of opportunities for New York State educators to become involved. This includes writing all of the test questions. New York State educators provide the critical input necessary to ensure that the tests are fair, valid, and appropriate for students through their participation in many test development activities. The test development process includes the development, review, and approval of test questions, construction of field and operational test forms, final approval of test forms prior to administration, and the development of scoring materials. NYSED remains committed to improving the quality of the State's assessments and the experiences that students have taking these tests. For more information on opportunities for educators to participate in the test development process, please visit the Test Development Participation website (https://www.nysed.gov/state-assessment/test-development-participation-opportunities).

Required Investigations for the Elementary- and Intermediate-level Science Tests

The Investigations for Elementary-level Science and Intermediate-level Science have been designed to be hands-on, 3-dimensional learning tasks aligned to the New York State P-12 Science Learning Standards that can be embedded into curriculum. The Investigations are not a standardized State test; rather they are performance-based tasks that are a component of the State's strategy for assessing science. The Investigations will emphasize Performance Expectations (PEs) not measured at the level of proficiency on the written assessment, thereby ensuring these PEs are part of instruction. Completion of the Investigations prepares students for the written test by providing a hands-on opportunity to demonstrate attainment of science knowledge and skills that also will be assessed on the written test. Scores on the Investigations will not be reported to the State or included in the students' final test scores. Additional information about the required Investigations, including how to access them, is available in the Frequently Asked Questions Related to Investigations for the Elementary- and Intermediate-level Science Tests (https://www.nysed.gov/sites/default/files/programs/state-assessment/els-ils-new-investigation-faq.pdf).

Computer-Based Test (CBT) Administration

Schools will be required to administer the Elementary-level and Intermediate-level Science Tests on computer. Potential advantages of CBT include faster turnaround of student results, additional flexibility in administration windows, reduced administrative preparation, reduction or elimination of standalone field testing, an exploration of adaptive testing models, and fiscal savings for districts. Please refer to the Statewide Implementation of Computer-based Testing memo (https://www.nysed.gov/sites/default/files/programs/state-assessment/memo-statewide-implementation-of-computer-based-testing.pdf) for details and the implementation timeline. More information regarding computer-based test administration is available at the NYSED Computer-Based Testing (CBT) Support website (https://cbtsupport.nysed.gov/hc/en-ushttps://cbtsupport.nysed.gov/).

Paper-based tests will continue to be available to students requiring the accommodation of testing on paper as indicated in their IEP or 504 Plan and to Religious and Independent Schools who, due to religious belief, do not make use of the technology required for CBT.

The New York State P-12 Science Learning Standards

The New York State P-12 Science Learning Standards (NYSP-12SLS) are a series of Performance Expectations (PEs) that define what students should know and be able to do as a result of their study of science. The New York State P-12 Science Learning Standards are based on the Framework for K–12 Science Education (the Framework) developed by the National Research Council and the Next Generation Science Standards. The Framework outlines three dimensions that are needed to provide students with a high-quality science education. The integration of these three dimensions provides students with a context for the content of science, how science knowledge is acquired and understood, and how the sciences are connected through concepts that have universal meaning across the disciplines. These content-rich standards will serve as a platform for advancing children's 21st-century science skills, which include abstract reasoning, collaboration skills, the ability to learn from peers and through technology, and flexibility as learners in a dynamic learning environment. The implementation of these standards will provoke dialogue and learning experiences that will allow complex topics and ideas to be explored from many angles and perspectives. Students are expected to learn how to think and how to solve problems for which there is no one solution while learning science skills along the way. The integration of the three dimensions is provided throughout the [New York State P-12 Science Learning Standards](https://www.nysed.gov/sites/default/files/programs/curriculum-instruction/p-12-science-learning-standards.pdf) (https://www.nysed.gov/sites/default/files/programs/curriculum-instruction/p-12-science-learning-standards.pdf) and are described below.

Dimension 1: Science and Engineering Practices (SEP)

The Science and Engineering Practices (SEPs) describe (a) the major practices that scientists employ as they investigate and build models and theories about the world and (b) a key set of engineering practices that engineers use as they design and build systems. The term "practices" is used instead of a term such as "skills" to emphasize that engaging in scientific investigation requires not only skill but also knowledge that is specific to each practice.

The eight SEPs mirror the practices of professional scientists and engineers. The use of SEPs in the Performance Expectations is not only intended to strengthen students' skills in using these practices in the classroom, but also to develop students' understanding of the nature of science and engineering. Listed below are the eight Science and Engineering Practices from the Framework:

1. Asking questions and defining problems
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations and designing solutions
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information

Part of the intent in articulating these practices is to better specify what is meant by scientific inquiry and to identify the range of cognitive, social, and physical practices that it requires. As with all inquiry-based approaches to science teaching, the expectation is that students will engage in the practices themselves instead of merely learning about them secondhand. Students cannot fully comprehend scientific practices, nor fully appreciate the nature of scientific knowledge itself, without directly experiencing those practices for themselves.

Dimension 2: Disciplinary Core Ideas (DCI)

The continuing expansion of scientific knowledge makes it unrealistic to teach all the ideas related to a given discipline in exhaustive detail during the K–12 years. Given the vast amount of information available today, an important role of science education is to endow students with sufficient core knowledge so that they can acquire additional information on their own. By focusing on a limited set of ideas and practices in science and engineering, students will learn to evaluate and select reliable sources of scientific information, allowing them to continue their development well beyond their K–12 school years as science learners, users of scientific knowledge, and perhaps as producers of such knowledge.

The Disciplinary Core Ideas (DCIs) are built on the notion of learning as a developmental progression. They are designed to help children continually build on and revise their knowledge and abilities, starting from their curiosity about what they see around them and their initial conceptions about how the world works. The goal is to guide their knowledge toward a more scientifically-based and coherent view of the natural sciences and engineering, as well as of the ways in which they are pursued and their results used.

Dimension 3: Crosscutting Concepts (CCC)

The seven Crosscutting Concepts connect core ideas across disciplines and grade bands and give students an organizational structure to understand the world. They are not intended as additional content. Listed below are the Crosscutting Concepts from the Framework:

1. Patterns
2. Cause and Effect
3. Scale, Proportion, and Quantity
4. Systems and System Models
5. Energy and Matter in Systems
6. Structure and Function
7. Stability and Change of Systems

The Crosscutting Concepts have application across all domains of science. These Crosscutting Concepts are not unique to The Framework. They echo many of the unifying concepts and processes in the National Science Education Standards, the common themes in the Benchmarks for Science Literacy, and the unifying concepts in the Science College Board Standards for College Success. They also reflect discussions related to the NSTA Science Anchors project, which emphasizes the need to consider not only specific disciplinary content but also the ideas and practices that are applicable across all science disciplines.

Test Specifications

The Elementary-level and Intermediate-level Science Tests are rooted in a research-based approach to constructing assessments called Principled Assessment Design. This approach ensures that evidence gleaned from the assessment, as well as the interpretations of that evidence, align with and support the intended claims, purposes, and uses of the assessment. This method helps ensure that all aspects of the assessment are connected and that the results inform the initial questions/claims. Additionally, Principled Assessment Design allows for consistent development and administration of tests that are comparable and focus on conceptual and applied student understanding. This is achieved through the use of Assessment-based Claims and Assessment-based Evidence. Another essential step of Principled Assessment Design is provided through the Performance Level Descriptions (PLDs). PLDs provide a structure in which to build tasks that allow students to provide/produce evidence to exemplify knowledge and skills across the range of performance.

Claims and Evidence

Assessment-based Claims are overarching statements that identify the key things a student should be able to do at the end of instruction, while Assessment-based Evidence are statements that identify what a student needs to do/say/produce in order to support the acquisition of a claim. Evidence will operationalize the claim by merging concepts and skills to help define the specific language choices within the claim. It is important to recognize that not all combinations of concept and skill will be appropriate given the time and format constraints of the test, the intended purpose, audience, and complexity (i.e., some PEs will not be able to be assessed at every level of proficiency).[1]

Elementary-level Claims and Evidence (3–5 Grade Band)

Claim #1 (Physical Science):
A student can analyze and apply scientific ideas related to forces and motion, energy changes and energy conservation, patterns in wave properties and their application to transfer information, and the structures, properties, and interactions of matter within and between systems in the physical and biological world.

Evidence: *A student demonstrates understanding of Physical Science through application, evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- investigating the effects of forces on the motion of objects, and predicting future motion of objects based on observable patterns; [3-PS2-1, 3-PS2-2]
- investigating electromagnetic interactions between objects not in contact and applying these findings to a problem that can be solved using magnets; [3-PS2-3, 3-PS2-4]
- using evidence to describe the relationship between the speed and energy of an object; [4-PS3-1]

[1]Although similar in name, the Next Generation Science Standards (NGSS) Evidence Statements do not serve the same function as the Claims and Evidence produced for Elementary- and Intermediate-level Science.

- providing evidence of the transfer, conversion, and conservation of energy and applying these processes to a design solution; [4-PS3-2, 4-PS3-4]
- addressing the phenomena of energy transfer that occurs when objects in a system collide; [4-PS3-3]
- illustrating wave characteristics and how wave behavior can affect the motion of objects; [4-PS4-1]
- using technologies and instruments to design solutions for the transfer of information; [4-PS4-3]
- modeling how the behavior of light enables objects to be seen; [4-PS4-2]
- using phenomena as evidence to illustrate that matter is composed of unseen particles; [5-PS1-1]
- investigating interactions of matter when substances are mixed to prove that matter is conserved and to determine if a new substance is being formed; [5-PS1-2, 5-PS1-4]
- identifying materials based on their properties; [5-PS1-3]
- describing how the energy from the Sun is used in life processes; [5-PS3-1]
- describing evidence for the effects of the force of gravity on Earth objects. [5-PS2-1]

Claim #2 (Life Science):

A student can analyze scientific evidence and apply scientific ideas associated with life processes, the inheritance of traits, and the structure/function relationships between and within living systems, which affect the survival of living things in the physical environment.

Evidence: *A student demonstrates understanding of Life Science through application, evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- investigating a phenomenon to obtain evidence pertaining to animal group behavior and survival strategies; [3-LS2-1]
- utilizing fossil data to determine characteristics of early life forms and their environments; [3-LS4-1]
- investigating a phenomenon to obtain evidence for how the environment influences an organism's ability to survive; [3-LS4-3]
- utilizing scientific evidence to evaluate a solution to an environmental change that affects living organisms; [3-LS4-4]
- illustrating life cycles of organisms; [3-LS1-1]
- providing evidence that organisms possess variations in traits that are inherited and can be influenced by the environment; [3-LS3-1, 3-LS3-2]
- explaining the scientific idea of natural selection; [3-LS4-2]
- providing evidence that plants and animals have structures that are beneficial to life; [4-LS1-1]
- describing the systems of information transfer to and within animals; [4-LS1-2]
- illustrating materials needed for growth of organisms and how these materials are cycled through the living and non-living environment. [5-LS1-1, 5-LS2-1]

Claim #3 (Earth and Space Sciences):

A student can analyze scientific evidence of patterns and cause and effect relationships between Earth and its place in the solar system and between the interconnected processes and large-scale system interactions that operate among Earth's spheres on different scales, including how these processes impact humans and how humans affect natural resources.

Evidence: *A student demonstrates understanding of Earth and Space Sciences through application, evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- using Earth system data to describe weather and climate conditions across various temporal and spatial scales; [3-ESS2-1, 3-ESS2-2]
- investigating the relationship between the movement of water among Earth's spheres and weather; [3-ESS2-3]
- utilizing scientific evidence to mitigate meteorological hazards; [3-ESS3-1]
- synthesizing information about the impacts of using natural resources for energy; [4-ESS3-1]
- utilizing geologic data to determine past environments and landform characteristics; [4-ESS1-1]
- investigating the effects of weathering and erosion on Earth; [4-ESS2-1]
- using scientific evidence to identify patterns associated with large-scale system interactions; [4-ESS2-2]
- investigating design solutions to mitigate geologic hazards; [4-ESS3-2]
- illustrating the various connections between Earth's spheres; [5-ESS2-1]
- describing the distribution of water on Earth; [5-ESS2-2]
- identifying conservation efforts related to Earth's systems; [5-ESS3-1]
- describing the effect of spatial scale on the appearance of stars; [5-ESS1-1]
- identifying patterns that occur as a result of celestial motions. [5-ESS1-2]

Claim #4 (Engineering, Technology, and Applications of Science):

A student can identify problems and design and test solutions that fulfill human needs and wants, using the relationships between engineering, technology, and applications of science.

Evidence: *A student demonstrates understanding of Engineering, Technology, and Applications of Science through evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- identifying a problem to solve, and specifying clear criteria and limitations in order to develop multiple solutions using the engineering design process; [3-5-ETS1-1, 3-5-ETS1-2]
- investigating and assessing design solutions. [3-5-ETS1-3]

Intermediate-level Claims and Evidence (6–8 Grade Band)

Claim #1 (Physical Science):

A student can apply scientific practices, principles, and technologies to the structure and properties of matter, chemical reactions between substances, forces and their different types of interactions, the types and transfer of energy, and the properties of waves and their interaction with different intervening substances.

Evidence: *A student demonstrates understanding of Physical Science through application, evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- identifying substances based on their chemical and physical properties, and investigating if a chemical reaction or physical change occurs when substances are mixed; [MS-PS1-7, MS-PS1-8, MS-PS1-2]
- describing the changes that occur to a substance when thermal energy is added or removed, and developing a device that optimizes either the absorption or release of thermal energy; [MS-PS1-4, MS-PS1-6, MS-PS3-3]
- modeling the atomic structure of substances, and investigating the conservation of mass in chemical reactions; [MS-PS1-1, MS-PS1-5]
- describing the societal impacts of developing and using synthetic materials; [MS-PS1-3]
- investigating the effects of forces on objects by applying Newton's Laws of Motion; [MS-PS2-1, MS-PS2-2]
- investigating magnetic and electric forces and providing evidence that fields exist between objects exerting these forces; [MS-PS2-3, MS-PS2-5]
- providing evidence for the factors that affect attractive gravitational interactions; [MS-PS2-4]
- analyzing empirical data pertaining to the factors that affect kinetic energy; [MS-PS3-1]
- modeling how distance between objects affects the potential energy of a system; [MS-PS3-2]
- investigating the factors that affect thermal energy transfer in a sample of matter; [MS-PS3-4]
- providing empirical evidence that when work is done on or by a system, the energy in that system changes; [MS-PS3-5]
- investigating electric currents and energy transfer; [MS-PS3-6]
- quantitatively and qualitatively modeling the characteristics and energy of waves; [MS-PS4-1]
- modeling the interactions between waves and matter; [MS-PS4-2]
- comparing digital and analog signals using qualitative information. [MS-PS4-3]

Claim #2 (Life Science):

A student can apply scientific practices, principles, and technologies to the basic structure, function, and organization of living things, which allows for the synthesis of information and homeostasis, the cycling of matter and flow of energy through organisms and ecosystems, the interactions between living things that maintain biodiversity and ecosystem stability, the factors that affect and influence growth, development, and reproduction of organisms, and the evolutionary relationships between organisms and how natural selection and adaptation has led to changes in life on Earth.

Evidence: *A student demonstrates understanding of Life Science through application, evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- investigating and modeling the structure and function of cells and cell parts; [MS-LS1-1, MS-LS1-2]
- describing the evidence for how interacting body systems maintain homeostasis; [MS-LS1-3]
- synthesizing information about organisms' responses to stimuli; [MS-LS1-8]
- explaining and modeling the flow of energy and the cycling of matter within organisms and within their ecosystems; [MS-LS1-6, MS-LS1-7, MS-LS2-3]
- providing evidence for how populations are affected by changes to their ecosystem and resource availability; [MS-LS2-1, MS-LS2-4]
- predicting patterns of interactions among organisms in ecosystems; [MS-LS2-2]
- evaluating solutions to environmental problems based on their ability to maintain a healthy, stable ecosystem; [MS-LS2-5]
- using evidence to explain how specific behaviors and structures lead to successful reproduction in organisms; [MS-LS1-4]
- explaining how the growth of organisms is affected by various factors; [MS-LS1-5]
- modeling why changes to genes can affect the structure and function of organisms; [MS-LS3-1]
- modeling the genetic outcomes of sexual and asexual reproduction; [MS-LS3-2]
- describing technologies that influence the inheritance of genetic traits; [MS-LS4-5]
- identifying structural patterns in fossils as evidence for change in life forms throughout Earth's history; [MS-LS4-1]
- comparing anatomical patterns in organisms in order to explain evolutionary relationships among organisms; [MS-LS4-1, MS-LS-4-3]
- using evidence to explain natural selection and adaptation in populations. [MS-LS4-4, MS-LS4-6]

Claim #3 (Earth and Space Sciences):

A student can apply scientific practices, principles, and technologies to the cyclic patterns and scale properties of objects in the solar system and the role of gravity in the motions of objects within space systems, the evidence from geoscience processes and plate tectonics, at varying scales, to explain the history of Earth, the flow of energy that drives the cycling of Earth's materials resulting in an uneven distribution of resources, the causes for the change in weather and climate patterns, the impact humans have on Earth's systems, and the mitigation of the effects of natural hazards on humans.

Evidence: *A student demonstrates understanding of Earth and Space Sciences through application, evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- modeling to describe the cyclic patterns of events that occur due to motions in the Sun-Earth-Moon system; [MS-ESS1-1]
- modeling to describe the influence of gravity on celestial motions; [MS-ESS1-2]
- analyzing empirical data to compare properties of solar system objects; [MS-ESS1-3]
- explaining Earth's history using evidence from rock strata; [MS-ESS1-4]
- explaining how Earth's surface has changed at different temporal and spatial scales; [MS-ESS2-2]
- analyzing data to provide evidence that tectonic plates have moved; [MS-ESS2-3]
- modeling to describe how energy drives the cycling of Earth materials; [MS-ESS2-1, MS-ESS2-4]
- explaining how geologic processes influence the distribution of Earth's resources; [MS-ESS3-1]
- using data to describe the relationship between air mass interactions and weather; [MS-ESS2-5]
- modeling patterns of atmospheric and oceanic circulation to determine their effect on climate; [MS-ESS2-6]
- asking questions about the factors that cause global warming; [MS-ESS3-5]
- analyzing data to predict and mitigate the effects of natural hazards; [MS-ESS3-2]
- optimizing design solutions that reduce a human environmental impact; [MS-ESS3-3]
- using evidence to identify the relationship between human population growth and its impact on natural resources and the environment. [MS-ESS3-4]

Claim #4 (Engineering, Technology, and Applications of Science):

A student, using the relationships between engineering, technology, and applications of science, can identify criteria and constraints of a design problem to generate, evaluate, and test competing design solutions in order to develop a new solution such that an optimal design is achieved based on iterative testing and modification.

Evidence: *A student demonstrates understanding of Engineering, Technology, and Applications of Science through evaluation, analysis, and/or synthesis using Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts related to:*

- identifying a problem to solve, and specifying clear criteria and limitations in order to develop multiple solutions using the engineering design process; [MS-ETS1-1, MS-ETS1-2]
- investigating and assessing design solutions from data in order to achieve an optimal design solution. [MS-ETS1-3, MS-ETS1-4]

Performance Level Definitions

For each subject area, students perform along a continuum of the knowledge and skills necessary to meet the demands of the New York State Learning Standards. New York State Elementary-level and Intermediate-level Science assessments are designed to classify student performance into one of four levels based on the knowledge and skills the student has demonstrated. Due to the need to identify student proficiency, the state tests must provide students at each performance level opportunities to demonstrate their knowledge and skills in the Learning Standards.

These performance levels are defined as:

NYS Level 4

Students performing at this level **excel** in standards for their grade. They demonstrate knowledge, skills, and practices embodied by the Learning Standards that are considered **more than sufficient** for the expectations at this grade.

NYS Level 3

Students performing at this level are **proficient** in standards for their grade. They demonstrate knowledge, skills, and practices embodied by the Learning Standards that are considered **sufficient** for the expectations at this grade.

NYS Level 2

Students performing at this level are **partially proficient** in standards for their grade. They demonstrate knowledge, skills, and practices embodied by the Learning Standards that are considered partial but insufficient for the expectations at this grade. Students performing at Level 2 are considered on track to meet current New York high school graduation requirements but are **not yet proficient** in Learning Standards at this grade.

NYS Level 1

Students performing at this level are **below proficient** in standards for their grade. They may demonstrate **limited** knowledge, skills, and practices embodied by the Learning Standards that are considered **insufficient** for the expectations at this grade.

Performance Level Descriptions

Performance Level Descriptions exemplify the knowledge and skills students at each performance level demonstrate and describe the progression of learning within a subject area. The Performance Level Descriptions play a central role in the test development process, specifically question writing and standard setting. For information about the New York State P-12 Science Learning Standards Performance Level Descriptions for grades 3–5, please see the Elementary-level Performance Level Descriptions (https://www.nysed.gov/sites/default/files/programs/state-assessment/elementary-science-pldrev.pdf and for grades 6–8, please see the Intermediate-level Performance Level Descriptions (https://www.nysed.gov/sites/default/files/programs/state-assessment/intermediate-science-pld.pdf

Test Design and Administration

Test Blueprint

The tables below illustrate the domain-level test blueprint percent ranges for each grade. All questions on the 2025 Elementary-level and Intermediate-level Science Tests measure the New York State P-12 Science Learning Standards. All the Performance Expectations (PEs) at each grade level are connected to the Science and Engineering Practices (SEPs), Disciplinary Core Ideas (DCIs), and Crosscutting Concepts (CCCs). Therefore, the 2025 Elementary-level and Intermediate-level Science Tests will include questions that require students to connect all three dimensions (SEPs, DCIs, CCCs).

Domain-level Operational Test Blueprint—Percent Ranges for ELS			
Physical Sciences	**Life Science**	**Earth and Space Sciences**	**Engineering, Technology, and the Applications of Science[2]**
34–40%	**23–29%**	**27–33%**	**3–7%**

Domain-level Operational Test Blueprint—Percent Ranges for ILS			
Physical Sciences	**Life Science**	**Earth and Space Sciences**	**Engineering, Technology, and the Applications of Science[2]**
32–38%	**31–37%**	**21–27%**	**2–6%**

Test Organization — Question Clusters

All questions on the Elementary-level and Intermediate-level Tests are organized into clusters of questions that follow an assessment storyline. An assessment storyline provides a coherent path toward building Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts attached to a phenomenon. In question clusters, each question that is answered may add to the developing explanation, model, or design solution. The group of questions in a cluster follow a theme or storyline grounded in a phenomenon that is focused on an anchor Performance Expectation. However, questions that address other related Performance Expectations will also be included in the cluster.

[2]In addition to questions directly aligned to the Engineering, Technology, and the Applications of Science (ETS) domain, ETS skills and concepts can also be assessed through questions aligned to Physical Science, Life Science, and Earth and Space Sciences.

Question clusters include an introduction (which informs students of how many questions are a part of the cluster), a title, multiple stimuli (reading passages, data tables, graphs, diagrams, photos, etc.), and questions that draw on one or more of the stimuli. The questions within the cluster will include multiple-choice and constructed-response questions. There will be variation in the number of questions that make up each cluster depending upon the assessment storyline; as a result, there may be slight variation in the total number of exam questions (see Test Design below) from year to year.

To preview several question clusters at both the Elementary-level and Intermediate-level, go to the [Question Sampler](https://ny.nextera.questarai.com/tds/#practice) (https://ny.nextera.questarai.com/tds/#practice).

Stimuli

Elementary-level and Intermediate-level question clusters include multiple stimuli. Stimuli can include reading passages, data tables, graphs, diagrams, and photos. These stimuli provide students with an interesting and relatable setting that drives the progression of the assessment storyline. Stimuli are scientifically accurate and use real data when applicable. These come from vetted sources and are appropriate to the level being tested. When possible, New York State phenomena are emphasized as seen in the ELS Sampler 1 (North American Beaver), and ILS Sampler 2 (Fossil Parks in New York State).

Question Formats

The 2025 Elementary-level and Intermediate-level Science Tests contain 1-credit multiple-choice questions and 1-credit constructed-response questions (including Technology Enhanced Items). For multiple-choice questions, students select the response that best completes the statement or answers the question from four answer choices. For the constructed-response questions, students record their answer to an open-ended question. Technology Enhanced Items (TEIs) are used to assess standards or parts of standards that cannot be adequately assessed via typical question types. They allow students to show proficiency in skills such as completing models and graphing. At this time there are four types of TEIs that can be seen on the Elementary-level and Intermediate-level Science Tests:

- Graphing Items
  - Bar graphs and histograms can be offered for both Elementary-level and Intermediate-level, and line graphs can be offered for Intermediate-level.
  - All graphs work in a snap-to-grid format.
- Drag-and-drop Items
  - Appropriate image(s) or word(s) are placed into drop zones to complete a model or diagram.
- Multi-select Items
  - One or more correct answers can be selected to complete a question.
- Grid Items
  - Check marks are added to indicate a response that best completes the table/chart.

Some questions on the 2025 Elementary-level and Intermediate-level Science Tests will assess PEs at higher PLD levels. To facilitate this, these questions might include both a TEI portion and an open-ended text portion or other combinations of constructed-response components. These questions allow students to demonstrate higher-level skills and knowledge, while providing students scaffolding within the question.

Test Design

The chart below illustrates the test designs for the 2025 Elementary-level and Intermediate-level Science Tests. Approximately 60 percent of each test will be comprised of multiple-choice questions, while approximately 40 percent will be constructed-response questions (including Technology Enhanced Items). Embedded field test questions are included in the number of questions below. It will not be apparent to students whether a question is an embedded field test question that does not count toward their score or an operational test question that does count toward their score. There will be variation in the number of questions that make up each cluster, and as a result the total number of questions for each test will vary from year to year (see Test Organization - Question Clusters above).

2025 Elementary-level and Intermediate-level Science Test Design

Grade Level	Number of Question Clusters	Total Number of Questions
5	7–9	36–43
8	10–12	56–62

Testing Sessions

The 2025 Elementary-level and Intermediate-level Science Tests each consist of a single session that is administered in one day (Grades 3-8 Test Schedules, https://www.nysed.gov/state-assessment/grades-3-8-test-schedules). Students will be provided as much time as necessary within the confines of the regular school day to complete the test. School personnel should use their best professional judgment and knowledge about individual students to determine how long a student should be engaged in taking a particular assessment and when it is in the student's best interest to end the test session.

As long as students are productively working, they should be allowed as much time as they need within the confines of the regular school day to complete the 2025 Elementary-level and Intermediate-level Science Tests. For planning purposes, schools should allocate a minimum of 90 minutes for the administration of the ELS test. Likewise, for planning purposes, schools should allocate a minimum of 120 minutes for the administration of the ILS test. This information is intended for test preparation and planning only, as test duration will vary among students. Timing data from the 2024 ELS and ILS test administration showed that most students completed the tests in 120 minutes. Students should be productively engaged in completing the assessment and not be retained beyond that point. School personnel should use their best professional judgment and knowledge about individual students to determine how long a student should be engaged in taking an assessment and when it is in the student's best interest to release them.

The tests must be administered under standard conditions and the directions must be followed carefully. The same test administration procedures must be used with all students so that valid inferences can be drawn from the test results.

NYSED devotes great attention to the security and integrity of the New York State Testing Program. School administrators and teachers involved in the administration of State assessments are responsible for understanding and adhering to the instructions set forth in the School Administrator's Manual and Teacher's Directions when released.

When Students Have Completed Their Tests

Students should be encouraged to go back and check their work when they have finished their assessment. Once a student has completed their test, examination materials should be collected by the proctor. After a student's assessment materials are collected and the student has submitted their test, that student may be permitted to read silently. This privilege is granted at the discretion of each school. Talking and/or working on other schoolwork is not permitted.[3]

Given that the Spring 2025 tests have no time limits, schools and districts have the discretion to create their own approach to ensure that all students who are productively working are given the time they need **within the confines of the regular school day** to continue to take the tests. If the test is administered in a large-group setting, school administrators may prefer to allow students who have finished to submit their test, hand in their test materials, and then leave the room. Please take care that students leave the room as quietly as possible so as not to disturb the students who are still working on the test.

[3]For more detailed information about test administration, including proper procedures for proctoring, please refer to the *School Administrator's Manual* and the *Teacher's Directions.*

Scoring the Elementary-level and Intermediate-level Science Tests

The 2025 Elementary-level (Grade 5) and Intermediate-level (Grade 8) Science Computer-Based Tests will be scored by the Department's contractor, NWEA. Schools will still be responsible for the scoring of science tests administered on paper. Additional information will be available in the School Administrator's Manual and Scoring Leader Handbook when released.

Rulers and Protractors

For CBT, a ruler tool and a protractor tool are provided for the Elementary-level (Grade 5) Science Test and the Intermediate-level (Grade 8) Science Test as part of the Nextera™ Test Delivery System. Students taking PBT should be provided with a ruler for their exclusive use during the test. Students with disabilities may use adapted rulers if this is indicated as a testing accommodation on the student's Individualized Education Program or Section 504 Accommodation Plan. There are no questions on the 2025 Elementary-level (Grade 5) Science Test nor the Intermediate-level (Grade 8) Science Test that require use of a protractor. However, as this tool is available on CBT, students taking PBT may be provided with a protractor should they request one.

Calculators

For CBT, a four-function calculator is provided for the Elementary-level (Grade 5) Science Test and a scientific calculator is provided for the Intermediate-level (Grade 8) Science Test as part of the Nextera™ Test Delivery System. Schools may continue to supply students with exclusive use of the type of hand-held calculator the students use for everyday science instruction. Students taking PBT should be provided with hand-held calculators. When students make use of hand-held calculators:

- students taking the Grade 5 Science Test may be provided with four-function calculators with a square root key or scientific calculators;
- students taking the Grade 8 Science Test should be provided with scientific calculators. Graphing calculators are NOT permitted.