

New Jersey Student Learning Assessment-Science (NJSLA-Science) Overview

Office of Assessments

Division of Academics and Performance





Purpose of Deck

This deck provides a high-level overview of the background, design, and development of the NJSLA-Science for district/school leadership to use in conversations with parents, educators, and other educational stakeholders as they unpack the results from the 2019 administration and begin conversations about science curriculum and instruction in their districts/schools.



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Overview of the New Jersey Student Learning Assessment – Science (NJSLA-Science)



Overview

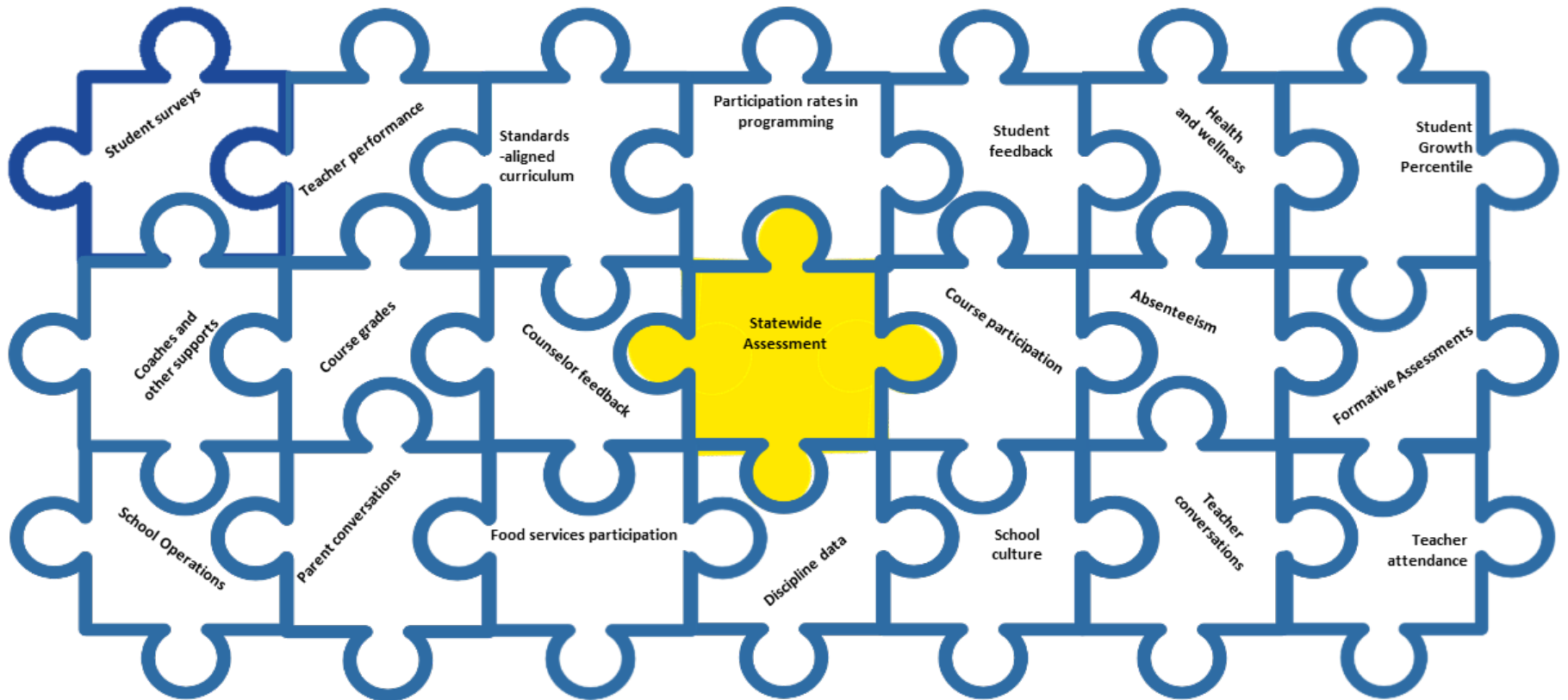
The NJSLA-Science:

- Is a federally required state assessment administered to students in grades 5, 8, and 11.
- Provides a snapshot of student performance on the New Jersey Student Learning Standards for Science (NJSLS-Science).
- Was developed in collaboration with New Jersey educators, the New Jersey Department of Education (NJDOE), and New Jersey's contracted science vendors.
- Is significantly different from the New Jersey Assessment of Skills and Knowledge (NJASK) because NJSLS-Science are more rigorous standards and NJSLA-Science focuses on the application of science knowledge and skills rather than memorization of content.



A Single Piece of the Puzzle

Statewide Assessment is just **one of many ways** that schools and districts gather information to better understand the needs of students.





The NJSLA-Science is a Summative Assessment

It is designed to measure student proficiency in:

- The knowledge specified by the NJSLS-Science grade band standards
- Students' ability to utilize the science and engineering practices to explain scientific phenomena appropriately

The NJSLA-Science is designed to provide data that helps districts evaluate their science curriculum and instruction. The data can be used at the district level to answer a range of important questions about student learning, such as:

- How much have the students in a certain school or school system learned over the course of a grade band?
- Is one instructional technique or curricular program more effective than another?
- Is our curriculum equitable for all our students?



NJSLA-S Test Implementation Timeline

- **2014:** The New Jersey Student Learning Standards–Science (NJSLS-Science) adopted
- **2016:** Districts expected to have begun aligning curriculum and instruction to the NJSLS-Science
- **2018:** NJSLA-Science Field testing
- **2019:** Operational testing and standard setting by NJDOE staff, 38 educators, and testing vendors; cut scores were adopted by the New Jersey State Board of Education in October
- **2020:** Release of Spring 2019 results and resources and State Board considers revised NJSLS-Science for adoption
- **2022:** Results of NJSLS-Science Spring 2021 will be used for district accountability (QSAC)



NJSLA-Science Data Review: Questions for Consideration

As districts begin reviewing the 2019 NJSLA-Science data the following are some questions to help initiate internal conversations:

- What are the patterns in the data that we notice?
- What could explain the patterns?
- Is our science curriculum appropriately aligned with the NJSLA-Science?
- What other data do we need to evaluate our curriculum and how do we obtain it?
- What other questions do we need to ask to confirm or refute our assumptions?



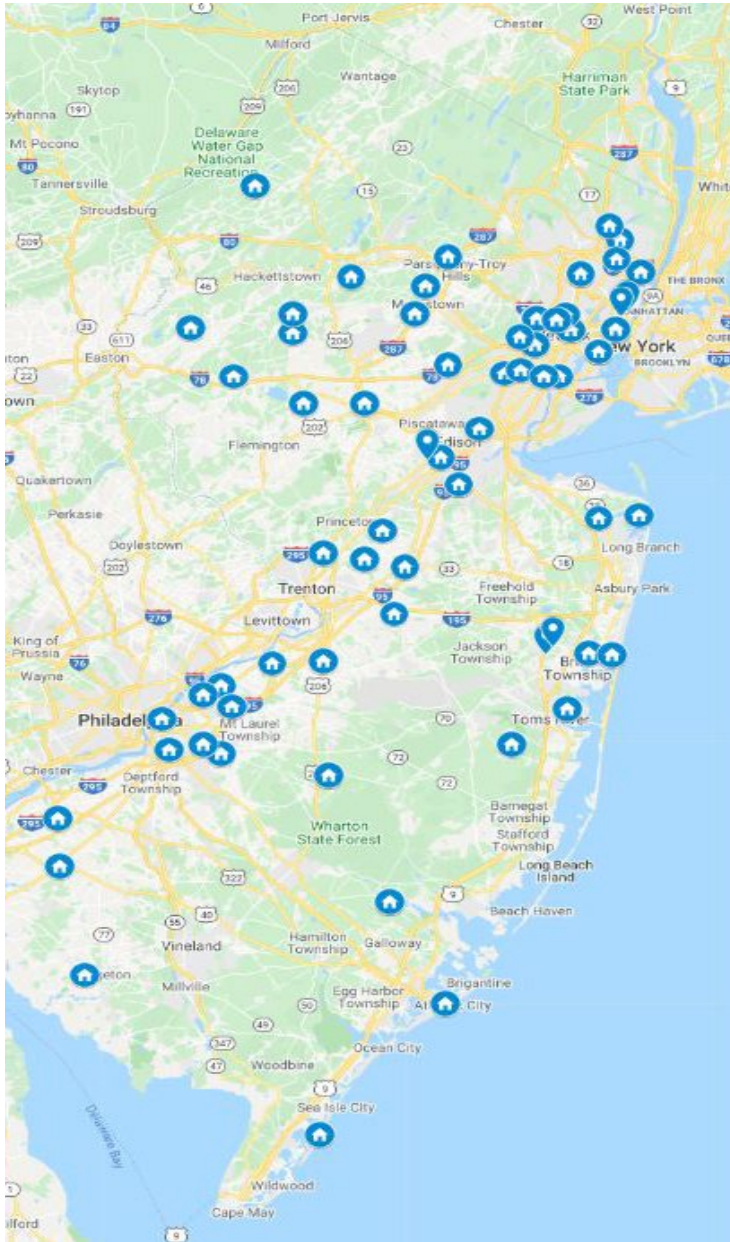


New Jersey Educator Involvement in the NJSLA-Science





Diverse Representation of New Jersey Educators



- The NJSLA-Science is developed by certified New Jersey educators for New Jersey students
- All items that appear on an assessment have been reviewed and approved by the Science Advisory Committees
- Educators from all 21 counties are represented across the Science Advisory Committees
- Representative of urban, suburban, and rural districts, as well as charter schools
- Diverse demographic representation of New Jersey educators



Science Advisory Committees and Roles

| Content Committee | Bias and Sensitivity Committee | Spanish Translation Committee |
|--|---|---|
| <ul style="list-style-type: none">• Ensure item alignment to the New Jersey Student Learning Standards-Science• Confirm that items contain grade-level appropriate content and vocabulary• Confirm scientific accuracy• Evaluate the statistics for each assessment item after field testing to determine if it is appropriate to be included in the item bank• Determine the scoring criteria | <ul style="list-style-type: none">• Review all newly developed items to ensure they meet the standards for being considered free of bias and adhere to industry accepted sensitivity guidelines.• Review the statistical analysis completed after field testing for any racial, ethnic, or gender bias. (If an item has poor statistical results from these analyses, it is eliminated from future tests.) | <ul style="list-style-type: none">• Review, in conjunction/consultation with an independent contractor, all translated items to ensure newly translated items are accurate and are readily comprehensible to the student population and ensure the fidelity of the translation from English to Spanish.• Committee members have numerous years of working with English Language Learner (ELL) populations in New Jersey's schools. |



New Jersey Department of Education (NJDOE) Oversight



NJDOE's role in the assessment development process is to:

- Monitor and direct the work of the state's assessment vendors (Measurement Incorporated and Pearson) progress in meeting timelines and producing high quality products.
- Manage the construction of valid and reliable assessments.
- Facilitate the work of the sub-committees ensuring that their work is of the highest quality.
- Oversee the entire implementation and administration of the NJSLA-Science.

NJSLA-Science Assessment Design



Goals of the NJSLA-Science Design

The NJSLA-Science was designed to achieve the following goals:

- Measure student proficiency on the New Jersey Student Learning Standards for Science (NJSLS-Science)
- Deliver results that can be used in tandem with local assessments and data to stimulate conversation to improve science instruction and student learning
- Fulfill the federal requirement to administer state science assessment to students in grades 5, 8, and 11
- Create instruments that reflect the rigor of scientific learning that is necessary for tomorrow's workforce and civic life.
- Assess students' abilities to explain how or why phenomenon occur and to design solutions to real-world problems.



Item Cluster Structure

The structure of the NJSLA-Science items is:

- Items are developed in clusters of 2 to 5
- Clusters are based upon a phenomena or study
- Students are provided a stimulus or simulation to provide context for the phenomena as well as relevant data tables and figures
- All items in the cluster are independently scored and the response to one item does not affect the students' ability to answer the other items

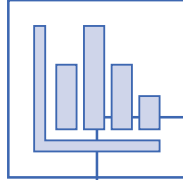


Groupings of the Science and Engineering Practices



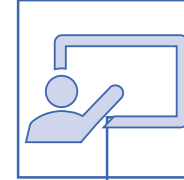
Investigating

- Asking questions and defining problems
- Planning and carrying out investigations
- Using mathematical and computational thinking



Sensemaking

- Developing and using models
- Analyzing and interpreting data
- Constructing explanations and defining solutions



Critiquing

- Engaging in argument from evidence
- Obtaining, evaluating, and communicating information



NJSLA-Science Assessment Time

| Grade Level Assessment | Number of units | Time per unit | Total testing time |
|-------------------------------|------------------------|----------------------|---------------------------|
| Grade 5 | 4 | 45 minutes | 3 hours |
| Grade 8 | 4 | 45 minutes | 3 hours |
| Grade 11 | 4 | 60 minutes | 4 hours |



NJSLA-Science Blueprint: Targeted Number of Items Per Test

| Reporting Groups | Grade 5: PBA | Grade 5: MSA | Grade 8: PBA | Grade 8: MSA | Grade 11: PBA | Grade 11: MSA |
|--|-----------------|-----------------|-----------------|-----------------|------------------|------------------|
| Physical Science: Investigating | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Physical Science: Sensemaking | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Physical Science: Critiquing | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Total Items for Physical Science | 3 to 5 | 11 to 13 | 3 to 5 | 14 to 18 | 3 to 5 | 15 to 21 |
| Life Science: Investigating | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Life Science: Sensemaking | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Life Science: Critiquing | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Total Items for Life Science | 3 to 5 | 11 to 13 | 3 to 5 | 14 to 18 | 3 to 5 | 15 to 21 |
| Earth & Science: Investigating | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Earth & Science: Sensemaking | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Earth & Science: Critiquing | 1 to 2 | 3 to 5 | 1 to 2 | 4 to 7 | 1 to 2 | 4 to 8 |
| Total Items for Earth & Science | 3 to 5 | 11 to 13 | 3 to 5 | 14 to 18 | 3 to 5 | 15 to 21 |

NJSLA-Science Item Development



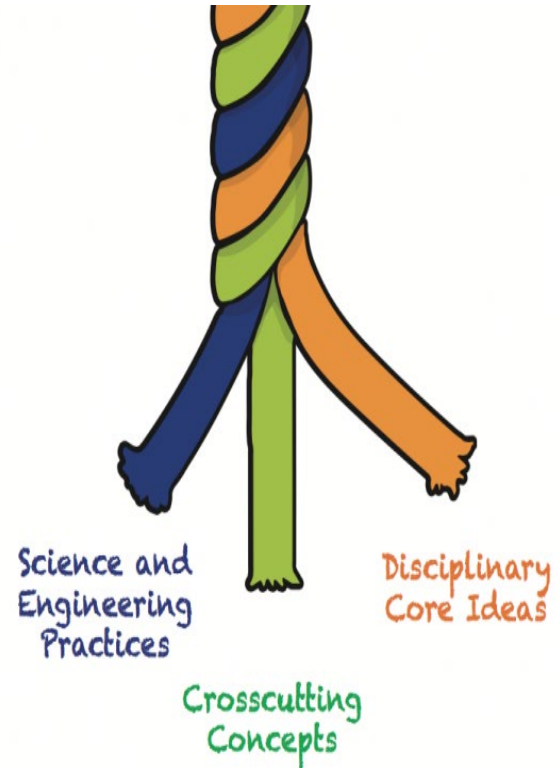
Item Development Cycle



Item Alignment

Each item is based on:

- One Element of a Disciplinary Core Idea (DCI),
- One Science and Engineering Practice (SEP), and
- One Cross Cutting Concept (CCC).





NJSLA-Science Item Types

The following are the types of items can expect to find on the NJSLA-Science:

- **Multiple Choice**
 - Students select the correct response from four (4) possible answer choices (A, B, C, or D)
- **Technology Enhanced Items (TEI)**
 - Alternative interaction items that are not open-ended
- **Constructed Response Items (CR)**
 - Open-ended items where students type their response





NJSLA-Science TEI Types

| Gap Match | Graphing | Multiple Select | Inline Drop Down | Short Answer | Order |
|---|------------------------------|--|--|--|--|
| Students drag and drop manipulatives to answer the question | Students graph data provided | Students select two (2) or more correct answer choices from a list | Students select the correct word or phrase of multiple drop-down boxes to complete the sentence(s) | Students enter a word, phrase, or numeric value to answer the question | Students order text or graphics to answer the question |

For sample items please visit the practice tests found at www.measinc.com/nj/science.





NJSLA-Science Item Scoring

The item types are scored as follows:

- Multiple choice and TEIs are computer scored based upon the key approved by the content committee.
- Constructed response items are scored on a multi-point rubric which is item-specific.
- Given the great variability and specificity of content in expected responses these items are scored by human scorers.



Frequently Asked Questions





Why did we need a new test?

- A new test was needed to measure the state's new, more rigorous science standards (NJSLS-Science) that are informing classroom instruction.
- The NJSLS-Science standards were adopted by the state in 2014. The timeline for transition to the new standards for districts required full implementation in grades 6 to 12 by September 2016 and full implementation in grades K to 5 by September 2017.



When will the NJSLA-Science scores be utilized in NJQSAC?

- NJQSAC for school year 2021-2022 will be the first year in which results from the NJSLA-Science will be factored into NJQSAC, utilizing the results from the 2020-2021 administration of the assessment.



Does a student have to pass the NJSLA-Science to graduate?



- The NJSLA-Science is not a state graduation assessment requirement.



Why do NJSLA-Science scores look different from those of the previous state science tests?

- The NJSLA-Science assessment reflects new expectations outlined in the new science standards, the NJSLS-Science, which focuses on the application of science knowledge and skills.
- The prior assessment, New Jersey Assessment of Skills and Knowledge (NJ ASK), emphasized the memorization of content.



How can schools and districts use data that assesses skills over multiple grades?

- The NJSLA-Science data should be used to evaluate the district's science curriculum and school and classroom instruction.
- This data, in combination with classroom level data collected through formative, summative, and benchmark assessments, can provide schools and districts feedback on students' strengths and weaknesses with particular skills.
- The reports can be used as a catalyst for conversation and exploration of questions such as, but not limited to;
 - What do the patterns in the data suggest about the effectiveness of our program for English Language Learners, students who receive special education services, gifted and talented, general education students, and/or students who qualify for free or reduced lunches?
 - What do the patterns in the data suggest about the allocation of time and resources to our science program?



What resources are available for further support?

- The NJDOE Office of Standards has a repository of various resources to help support educators and districts with the implementation of the [NJSLS-Science](#):
 - <https://www.nj.gov/education/aps/cccs/science/mc.htm>
- [NJSLA-Science practice tests](#) are also available online at the following site:
 - <https://measinc-nj-science.com/>
- The NJDOE plans to continue to develop additional resources, such as K to 12 instructional units based on the 2020 NJSLS-Science and connect educators with free resources and course materials.