DYNAMIC®
LEARNING MAPS

2024–2025 Technical Manual Update

Pennsylvania Science Supplement

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Acknowledgements

The publication of this technical manual update builds on the documentation presented in the *2015–2016 Technical Manual—Science* and annual technical manual updates. This document represents further contributions to a body of work in the service of supporting a meaningful assessment system designed to serve students with the most significant cognitive disabilities. Hundreds of people have contributed to this undertaking. We acknowledge them all for their contributions.

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W. Jake Thompson, Ph.D., *Assistant Director for Psychometrics*
Amy K. Clark, Ph.D., *Principal Research Scientist*
Brooke Nash, Ph.D., *Associate Director for Research & Psychometrics*

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Claudia Flowers, Ph.D., *University of North Carolina at Charlotte*
Robert Henson, Ph.D., *University of North Carolina at Greensboro*
Joan Herman, Ed.D., *University of California, Los Angeles*
Leslie Keng, Ph.D., *National Board of Medical Examiners*
Cara Laitusis, Ph.D., *Center for Assessment*
James Pellegrino, Ph.D., *University of Illinois Chicago*
Edward Roeber, Ph.D., *Michigan Assessment Consortium*
David Williamson, Ph.D., *Independent Consultant*

DLM TECHNICAL MANUAL PENNSYLVANIA SUPPLEMENT

FOREWORD INFORMATION

The Dynamic Learning Maps® (DLM®) Consortium is made up of 24 state departments of education that use and develop the DLM Alternate Assessment system. DLM assessments are computer-based and accessible to students with significant cognitive disabilities for whom general state assessments are not appropriate, even with accommodations. Decisions regarding the assessment and reporting are made at the consortium level. As a result, some counts in the technical manual must be rounded to protect the identity of students in smaller states.

DLM serves as the statewide alternate assessment for accountability in Pennsylvania. DLM provides a technical manual annually to include data representative of all students from the consortium states, as well as a state specific supplement. The following Pennsylvania supplement to the DLM technical manual is available to better examine state specific data.

The manual contains tables that are representative of all states in the consortium. Therefore, there may be some slight differences in the data represented in this report and Pennsylvania's final accountability reporting data and student score reporting. For example, Pennsylvania assesses students at grades 3-8 and 11 in English Language Arts and Mathematics, and grades 5, 8, and 11 in Science. If a student is assessed at a grade level outside of these testing grades, that assessment is invalidated in the state's final accountability and reporting process.

Questions on the data contained in this Pennsylvania Supplement can be directed to alternateassessment@pattankop.net.

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1. Overview

During the 2024–2025 academic year, the Dynamic Learning Maps® (DLM®) Alternate Assessment System offered assessments of student achievement in mathematics, English language arts (ELA), and science for students with the most significant cognitive disabilities in grades 3 through 8 and high school.

A complete technical manual was created for the first year of operational administration for science (Dynamic Learning Maps Consortium [DLM Consortium], 2017). Additionally, the 2024–2025 update to the science technical manual provides updated information for the 2024–2025 administration, including only sections with changes (DLM Consortium, 2025a). This volume provides state-specific information for two of those chapters. For a complete description of the DLM system for science, refer to the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

1.1. Data Suppression

In order to ensure that individual students cannot be identified, disaggregated counts have been randomly rounded to the nearest 10, the suppression threshold specified by Pennsylvania. Random rounding means that a single value could round up or down, with the probability equal to the distance to each rounded value (Matthews & Harel, 2011). For example, a value of 17 would have a 30% chance of rounding down to 10 and a 70% chance of rounding up to 20 (i.e., values are more likely to round to their nearest end point). This method ensures that all the data are properly de-identified, while providing the maximum amount of information. That is, when using simple data suppression, groups that are above the suppression threshold must often be complementarily suppressed in order to ensure that groups below the suppression threshold are properly de-identified. Random rounding allows for results to be reported for all groups, while preserving student confidentiality.

1.2. State-Specific Supplement Overview

Chapter 1 provides an overview of the contents of the Pennsylvania state-specific supplement.

Chapter 2 and Chapter 3 do not include data specific to a single state and are not included in the state-specific supplement.

Chapter 4 provides an update on assessment delivery for Pennsylvania during the 2024–2025 year. The chapter provides a summary of adaptive delivery, administration incidents, accessibility support selections, and test administrator survey results regarding user experience.

Chapter 5 and Chapter 6 do not include data specific to a single state and are not included in the state-specific supplement.

Chapter 7 reports the 2024–2025 operational results for Pennsylvania, including student participation data. The chapter details the percentage of students at each performance level; subgroup performance by gender, race, ethnicity, and English learner status; and the percentage of students who showed mastery at each linkage level.

Chapter 8, Chapter 9, and Chapter 10 do not include data specific to a single state and are not included in the state-specific supplement. For a complete summary, see the *2024–2025 Technical Manual Update—Science* (DLM Consortium, 2025a).

2. Content Structures

Essential Elements (EEs) are a key feature of the Dynamic Learning Maps® (DLM®) Alternate Assessment System, and serve as the conceptual and content basis for the DLM alternate assessment for science. For a description of the process used to develop the EEs, including the detailed work necessary to align them to the *Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* (National Research Council, 2012) and the Next Generation Science Standards (NGSS Lead States [NGSS], 2013), and to the needs of the student population, see Chapter 2 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

3. Assessment Design and Development

For a description of updates to the Dynamic Learning Maps® (DLM®) Alternate Assessment System's item and test development for the 2024–2025 academic year, including a summary of external reviews of items and testlets for content, bias, and accessibility; a description of the operational assessments; and a description of field tests, see Chapter 3 of the *2024–2025 Technical Manual Update—Science* (DLM Consortium, 2025a).

For a complete description of item and test development, including a summary of item and testlet information; external reviews of items and testlets for content, bias, and accessibility; a description of operational assessments; and a description of field tests, see the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

4. Assessment Delivery

Chapter 4 of the Dynamic Learning Maps® (DLM®) Alternate Assessment System *2015–2016 Technical Manual—Science* (DLM Consortium, 2017) describes general test administration and monitoring procedures. This chapter describes updated procedures and data collected in 2024–2025, including a summary of adaptive delivery, administration incidents, accessibility support selections, and test administrator survey responses regarding user experience and opportunity to learn, including new longitudinal analyses of response trends over time.

Overall, intended administration features remained consistent with the 2023–2024 implementation, including the availability of instructionally embedded testlets, spring operational administration of testlets, the use of adaptive delivery during the spring window, and the availability of accessibility supports.

For a complete description of test administration for DLM assessments—including information on the Kite® Suite used to assign and deliver assessments, testlet formats, accessibility features, the First Contact Survey used to recommend testlet linkage level, available administration resources and materials, and information on monitoring assessment administration—see the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

4.1. Overview of Key Features of the Science Assessment Model

This section describes DLM test administration for 2024–2025. For a complete description of key administration features, including information on assessment delivery, the Kite Suite, and linkage level assignment, see Chapter 4 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017). Additional information about changes in administration can also be found in the *Test Administration Manual* (DLM Consortium, 2025d) and the *Educator Portal User Guide* (DLM Consortium, 2025c).

4.1.1. Assessment Administration Windows

Assessments are administered in the spring assessment window for operational reporting. Optional assessments are available during the instructionally embedded assessment window for educators to administer for formative information. Additional descriptions of how Essential Elements (EEs) and linkage levels are assigned during the spring assessment window can be found in the Adaptive Delivery section later in this chapter.

4.1.1.1. Instructionally Embedded Assessment Window

During the instructionally embedded assessment window, testlets are optionally available for test administrators to assign to their students. When choosing to administer the optional testlets during the instructionally embedded assessment window, educators decide which Essential Elements (EEs) and linkage levels to assess for each student using the Instruction and Assessment Planner in Educator Portal. The assessment delivery system recommends a linkage level for each EE based on the educator's responses to the student's First Contact Survey, but educators can choose a different linkage level based on their own professional judgment. The dates for the instructionally embedded assessment window are determined by which assessment model each state participates in for English language arts (ELA) and mathematics (i.e., Instructionally Embedded or Year-End). States that only participate in the science assessments follow the dates for the Year-End model. In 2024–2025, the instructionally embedded

assessment window occurred between September 9, 2024, and February 21, 2025, for states that participate in the Year-End model and between September 9, 2024, and December 20, 2024, for states that participate in the Instructionally Embedded model. States were given the option of using the entire window or setting their own dates within the larger window. In Pennsylvania, the instructionally embedded assessment window occurred between September 9, 2024, and February 21, 2025.

4.1.1.2. Spring Assessment Window

During the spring assessment window, students are assessed on all of the EEs on the assessment blueprint in science. The linkage level for each EE is determined by the system. As with the instructionally embedded assessment window, dates for the spring assessment window are determined by which assessment model is used for ELA and mathematics. In 2024–2025, the spring assessment window occurred between March 10, 2025, and June 6, 2025, for states that participate in the Year-End model and between February 3, 2025, and May 16, 2026, for states that participate in the Instructionally Embedded model. States were given the option of using the entire window or setting their own dates within the larger window. In Pennsylvania, the spring assessment window occurred between March 10, 2025, and May 9, 2025.

4.2. Evidence From the DLM System

This section describes evidence collected by the DLM system during the 2024–2025 operational administration of the DLM alternate assessment. The categories of evidence include adaptive delivery, administration incidents, and accessibility support selections.

4.2.1. Adaptive Delivery

The science assessments are adaptive between testlets. In spring 2025, the same routing rules were applied as in prior years. That is, the linkage level associated with the next testlet a student received was based on the student's performance on the most recently administered testlet, with the specific goal of maximizing the match of student knowledge and skill to the appropriate linkage level content.

- The system adapted up one linkage level if the student responded correctly to at least 80% of the items measuring the previously tested EE. If the previous testlet was at the highest linkage level (i.e., Target), the student remained at that level.
- The system adapted down one linkage level if the student responded correctly to less than 35% of the items measuring the previously tested EE. If the previous testlet was at the lowest linkage level (i.e., Initial), the student remained at that level.
- Testlets remained at the same linkage level if the student responded correctly to between 35% and 80% of the items on the previously tested EE.

The linkage level of the first testlet assigned to a student was based on First Contact Survey responses.[1] Table 4.1 shows the correspondence between the First Contact complexity bands and first assigned linkage levels.

[1] See Chapter 4 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017) for more details.

Table 4.1

Correspondence of Complexity Bands and Linkage Levels

First Contact complexity band	Linkage level
Foundational	Initial
Band 1	Initial
Band 2	Precursor
Band 3	Target

Following the spring 2025 administration, analyses were conducted to determine the mean percentage of testlets that the system adapted from the first to second testlet administered for students within a grade or course and complexity band. Table 4.2 shows the aggregated results.

For the majority of students assigned to Band 3, the system did not adapt down to a lower linkage level after the first assigned testlet (ranging from 56% to 96%). In contrast, students assigned to Band 1 tend to adapt up to a higher linkage level after their first testlet (ranging from 71% to 75%). Consistent patterns were not as apparent for students who were assigned to Band 2. Results indicate that linkage levels of students assigned to higher complexity bands are more variable with respect to the direction in which students move between the first and second testlets. Several factors may help explain these results, including more variability in student characteristics within this group of students assigned to higher complexity bands and content-based differences across grades. For a description of previous findings, see Chapter 4 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017) and the subsequent technical manual updates (DLM Consortium, 2018a, 2018b, 2019, 2021, 2022, 2023, 2024).

Table 4.2

*Adaptation of Linkage Levels Between First and Second Science Testlets (*N = *6,447)*

Grade	Foundational		Band 1		Band 2			Band 3	
	Adapted up (%)	Did not adapt (%)	Adapted up (%)	Did not adapt (%)	Adapted up (%)	Did not adapt (%)	Adapted down (%)	Did not adapt (%)	Adapted down (%)
Grade 5	51.0	49.0	74.4	25.6	24.7	48.1	27.1	77.5	22.5
Grade 8	56.1	43.9	75.1	24.9	43.2	41.9	14.9	55.6	44.4
Grade 11	47.0	53.0	71.1	28.9	40.2	44.3	15.5	96.5	3.5

Note. Foundational and Band 1 correspond to the testlets at the lowest linkage level, so the system could not adapt testlets down a linkage level. Band 3 corresponds to testlets at the highest linkage level in science, so the system could not adapt testlets up a linkage level.

4.2.2. Administration Incidents

DLM staff annually evaluate testlet assignment to promote correct assignment of testlets to students. Administration incidents that have the potential to affect scoring are reported to state education agencies in a supplemental Incident File. No incidents were observed during the 2024–2025 operational assessment windows. Assignment of testlets will continue to be monitored in subsequent years to track any potential incidents and report them to state education agencies.

4.2.3. Accessibility Support Selections

Accessibility supports provided in 2024–2025 were the same as those available in previous years. The DLM *Accessibility Manual* (DLM Consortium, 2025b) distinguishes accessibility supports that are provided in Kite Student Portal via the Personal Needs and Preferences Profile, those that require additional tools or materials, and those that are provided by the test administrator outside the system. Table 4.3 shows selection rates for the three categories of accessibility supports. Multiple supports can be selected for each student. Overall, 6,753 students enrolled in the DLM system (95%) had at least one support selected. The most selected supports in 2024–2025 were human read aloud, spoken audio, and test administrator enters responses for student. For a complete description of the available accessibility supports, see Chapter 4 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

Table 4.3

*Accessibility Supports Selected for Pennsylvania Students (*N = *6,753)*

Support	*n*	%
Supports provided in Kite Student Portal		
Spoken audio	4,550	64.1
Magnification	1,130	15.9
Color contrast	750	10.6
Overlay color	230	3.2
Invert color choice	180	2.5
Supports requiring additional tools/materials		
Calculator	2,520	35.5
Individualized manipulatives	2,460	34.7
Single-switch system	250	3.5
Alternate form–visual impairment	180	2.5
Two-switch system	70	1.0
Uncontracted braille	10	0.1
Supports provided outside the system		
Human read aloud	6,000	84.6
Test administrator enters responses for student	3,910	55.1
Partner-assisted scanning	380	5.4
Sign interpretation of text	100	1.4
Language translation of text	80	1.1

Note. Counts were randomly rounded to the nearest 10.

4.3. Evidence From Test Administrators

This section describes evidence collected from the spring 2025 test administrator survey. Test administrators receive one survey per rostered DLM student, which annually collects information about that student's assessment experience. As in previous years, the survey was distributed to test administrators in Kite Student Portal, where students completed assessments. Instructions indicated the test administrator should complete the survey after administration of the spring assessment; however, users can complete the survey at any time. The survey consisted of three blocks. Blocks 1 and 3 were administered in every survey. Block 1 included questions about the test administrator's perceptions of the assessments and the student's interaction with the content. Block 3 included questions about the test administrator's background, to be completed once per administrator. Block 2 was spiraled, so test administrators received one randomly assigned section. In these sections, test administrators responded to questions about a single topic (e.g., relationship of the assessment to ELA, mathematics, or science instruction; science teacher ratings of student mastery).

4.3.1. User Experience With the DLM System

A total of 2,414 test administrators (79%) from Pennsylvania responded to the survey about 5,026 students' experiences. Test administrators are instructed to respond to the survey separately for each of their students. Participating Pennsylvania test administrators responded to surveys for between 1 and 29 students, with a median of 2 students. Pennsylvania test administrators most commonly reported having 11–20 years of experience in science and teaching students with significant cognitive disabilities. Most of the survey respondents (68%) were the student's primary teacher in the subject assessed, while other respondents included case managers (16%), other teachers (11%), and others (6%).

The following sections summarize responses regarding both educator and student experiences with the DLM system.

4.3.1.1. Educator Experience

Test administrators were asked to reflect on their own experience with the assessments as well as their comfort level and knowledge administering them. Most of the questions required test administrators to respond on a 4-point scale: *strongly disagree, disagree, agree,* or *strongly agree*. Table 4.4 summarizes responses.

Nearly all Pennsylvania test administrators (97%) agreed or strongly agreed that they were confident administering DLM testlets. Most respondents (94%) agreed or strongly agreed that Required Test Administrator Training prepared them for their responsibilities as test administrators. Most test administrators agreed or strongly agreed that they had access to curriculum aligned with the content that was measured by the assessments (88%) and that they used the manuals and the Educator Resource Page (89%).

Table 4.4

Test Administrator Responses Regarding Test Administration

Statement	SD		D		A		SA		A+SA	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
I was confident in my ability to deliver DLM testlets.	15	1.1	22	1.6	581	41.5	783	55.9	1,364	97.4
Required Test Administrator Training prepared me for the responsibilities of a test administrator.	20	1.4	65	4.6	662	47.3	652	46.6	1,314	93.9
I have access to curriculum aligned with the content measured by DLM assessments.	34	2.4	130	9.3	709	50.7	525	37.6	1,234	88.3
I used manuals and/or the DLM Educator Resource Page materials.	28	2.0	123	8.8	708	50.5	544	38.8	1,252	89.3

Note. SD = strongly disagree; D = disagree; A = agree; SA = strongly agree; A+SA = agree and strongly agree.

4.4. Conclusion

Delivery of DLM assessments was designed to align with instructional practice and be responsive to individual student needs. Assessment delivery options allow for flexibility to reflect student needs while also including constraints to maximize comparability and support valid interpretation of results. The flexible nature of DLM assessment administration is reflected in adaptive delivery between testlets. Evidence collected from the DLM system and test administrator survey indicates that test administrators are prepared and confident administering DLM assessments, that students are able to successfully interact with the system to demonstrate their knowledge, skills, and understandings, and that students have opportunity to learn the academic content measured by DLM assessments.

5. Modeling

The Dynamic Learning Maps® (DLM®) Alternate Assessment System draws upon a well-established research base in cognition and learning theory but relatively uncommon operational psychometric methods to provide feedback about student performance. The approach uses innovative operational psychometric methods to provide feedback about student mastery of skills. For a complete description of the psychometric model used to calibrate and score the DLM assessments, the psychometric background, the structure of the assessment system suitability for diagnostic modeling, and a detailed summary of the procedures used to calibrate and score DLM assessments, see Chapter 5 of the *2021–2022 Technical Manual Update—Science* (DLM Consortium, 2022).

6. Standard Setting

The standard setting process for the Dynamic Learning Maps® (DLM®) Alternate Assessment System in science derived cut points for assigning students to four performance levels based on results from the 2015–2016 DLM alternate assessments. For a description of the process, including the development of policy performance level descriptors, the 3-day standard setting meeting, follow-up evaluation of impact data and cut points, and specification of content-specific performance level descriptors, see Chapter 6 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

7. Reporting and Results

Chapter 7 of the Dynamic Learning Maps® (DLM®) Alternate Assessment System *2015–2016 Technical Manual—Science* (DLM Consortium, 2017) provides an overview of data files and score reports delivered to state education agencies and describes assessment results for the 2015–2016 academic year.

This chapter presents Pennsylvania-specific spring 2025 student participation data; the percentage of students achieving at each performance level; and subgroup performance by gender, race, ethnicity, and English learner status. This chapter also reports the distribution of students by the highest linkage level mastered during spring 2025.

For a complete description of score reports and interpretive guides, see Chapter 7 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

7.1. Student Participation

During spring 2025, assessments were administered to 6,447 students in Pennsylvania. The assessments were administered by 2,884 educators in 1,523 schools and 639 school districts. A total of 56,768 test sessions were administered during the spring assessment window. One test session is one testlet taken by one student. Only test sessions that were complete at the close of the spring assessment window counted toward the total sessions.

Table 7.1 summarizes the number of students assessed in each grade and course. More than 2,130 students participated in the DLM science assessment at each of the elementary and the middle school grade bands.[2] In high school, more than 1,900 students participated in the DLM assessment.

Table 7.1

*Student Participation by Grade or Course in 2024–2025 (*N *= 6,447)*

Grade	Students (*n*)
5	2,400
8	2,130
11	1,910

Note. Counts were randomly rounded to the nearest 10.

Table 7.2 summarizes the demographic characteristics of the students who participated in the spring 2025 administration. The majority of participants were male (67%) and non-Hispanic (84%), and the largest racial group was White (51%). About 7% of students were monitored or eligible for English learning services.

[2] In an effort to increase science instruction beyond the tested grades, several states promoted participation in the science assessment at all grade levels (i.e., did not restrict participation to the grade levels required for accountability purposes).

Table 7.2

*Demographic Characteristics of Participants in 2024–2025 (*N = *6,447)*

Subgroup	*n*	%
Gender		
Male	4,340	67.4
Female	2,100	32.6
Race		
White	3,300	51.2
African American	1,480	22.9
Two or more races	1,320	20.5
Asian	310	4.8
American Indian	20	0.3
Native Hawaiian or Pacific Islander	10	0.2
Alaska Native	10	0.2
Hispanic ethnicity		
Non-Hispanic	5,410	83.9
Hispanic	1,040	16.1
English learning (EL) participation		
Not EL eligible or monitored	5,990	93.0
EL eligible or monitored	450	7.0

Note. Counts were randomly rounded to the nearest 10.

In addition to the spring assessment window, instructionally embedded science assessments are also made available for educators to optionally administer to students during the year. Results from the instructionally embedded assessments do not contribute to final summative scoring but can be used to guide instructional decision-making. A total of 5 students in Pennsylvania took at least one instructionally embedded testlet during the 2024–2025 academic year.

Table 7.3 summarizes the number of instructionally embedded testlets taken in science. In Pennsylvania, students took 8 science testlets during the instructionally embedded window.

Table 7.3

*Number of Instructionally Embedded Science Testlets by Grade (*N = *8)*

Grade	Testlets (*n*)
5	2
8	3
11	3
Total	*8*

7.2. Student Performance

Student performance on DLM assessments is interpreted using cut points determined by a standard setting study.[3] Student achievement is described using four performance levels. A student's performance level is determined by the total number of linkage levels mastered across the assessed Essential Elements (EEs).

For the spring 2025 administration, student performance was reported using the same four performance levels approved by the DLM Governance Board for previous years:

- The student demonstrates *Emerging* understanding of and ability to apply content knowledge and skills represented by the EEs.
- The student's understanding of and ability to apply targeted content knowledge and skills represented by the EEs is *Approaching the Target*.
- The student's understanding of and ability to apply content knowledge and skills represented by the EEs is *At Target*. This performance level is considered meeting achievement expectations.
- The student demonstrates *Advanced* understanding of and ability to apply targeted content knowledge and skills represented by the EEs.

7.2.1. Overall Performance

Table 7.4 reports the percentage of Pennsylvania students achieving at each performance level on the spring 2025 science assessment by grade. At the elementary level, the percentage of students who achieved at the At Target or Advanced levels (i.e., proficient) was approximately 17%; in middle school, the percentage of students who achieved at the At Target or Advanced levels was approximately 24%; in high school, the percentage of students who achieved at the At Target or Advanced levels was approximately 21%.

Table 7.4

Percentage of Students Achieving at Each Performance Level by Grade

Grade	*n*	Emerging (%)	Approaching (%)	At Target (%)	Advanced (%)	At Target + Advanced (%)
5	2,400	60.4	22.5	16.7	0.4	17.1
8	2,130	53.7	22.0	19.6	4.7	24.3
11	1,910	49.7	28.8	16.8	4.7	21.5

Note. Counts were randomly rounded to the nearest 10.

7.2.2. Subgroup Performance

Data collection for DLM assessments includes demographic data on gender, race, ethnicity, and English learning status. Table 7.5 summarizes the Pennsylvania disaggregated frequency distributions for science performance levels, collapsed across all assessed grade levels.

[3] For a description of the standard setting process used to determine the cut points, see Chapter 6 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

Table 7.5

*Science Performance Level Distributions by Demographic Subgroup in 2024–2025 (*N = *6,447)*

Subgroup	Emerging		Approaching		At Target		Advanced		At Target + Advanced	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Gender										
Male	2,380	55.0	1,030	23.8	760	17.6	160	3.7	920	21.2
Female	1,170	55.5	530	25.1	370	17.5	40	1.9	410	19.4
Race										
White	1,730	52.4	810	24.5	620	18.8	140	4.2	760	23.0
African American	860	58.5	360	24.5	230	15.6	20	1.4	250	17.0
Two or more races	720	55.4	320	24.6	230	17.7	30	2.3	260	20.0
Asian	220	68.8	50	15.6	40	12.5	10	3.1	50	15.6
American Indian	20	40.0	10	20.0	10	20.0	10	20.0	20	40.0
Native Hawaiian or Pacific Islander	10	33.3	10	33.3	10	33.3	0	0.0	10	33.3
Alaska Native	0	0.0	10	>99.9	0	0.0	0	0.0	0	0.0
Hispanic ethnicity										
Non-Hispanic	2,980	54.9	1,310	24.1	950	17.5	190	3.5	1,140	21.0
Hispanic	570	55.3	250	24.3	190	18.4	20	1.9	210	20.4
English learning (EL) participation										
Not EL eligible or monitored	3,280	54.7	1,460	24.3	1,060	17.7	200	3.3	1,260	21.0
EL eligible or monitored	280	60.9	100	21.7	70	15.2	10	2.2	80	17.4

Note. Counts were randomly rounded to the nearest 10.

7.3. Mastery Results

As previously described, student performance levels are determined by applying cut points to the total number of linkage levels mastered. This section summarizes student mastery of assessed EEs and linkage levels.

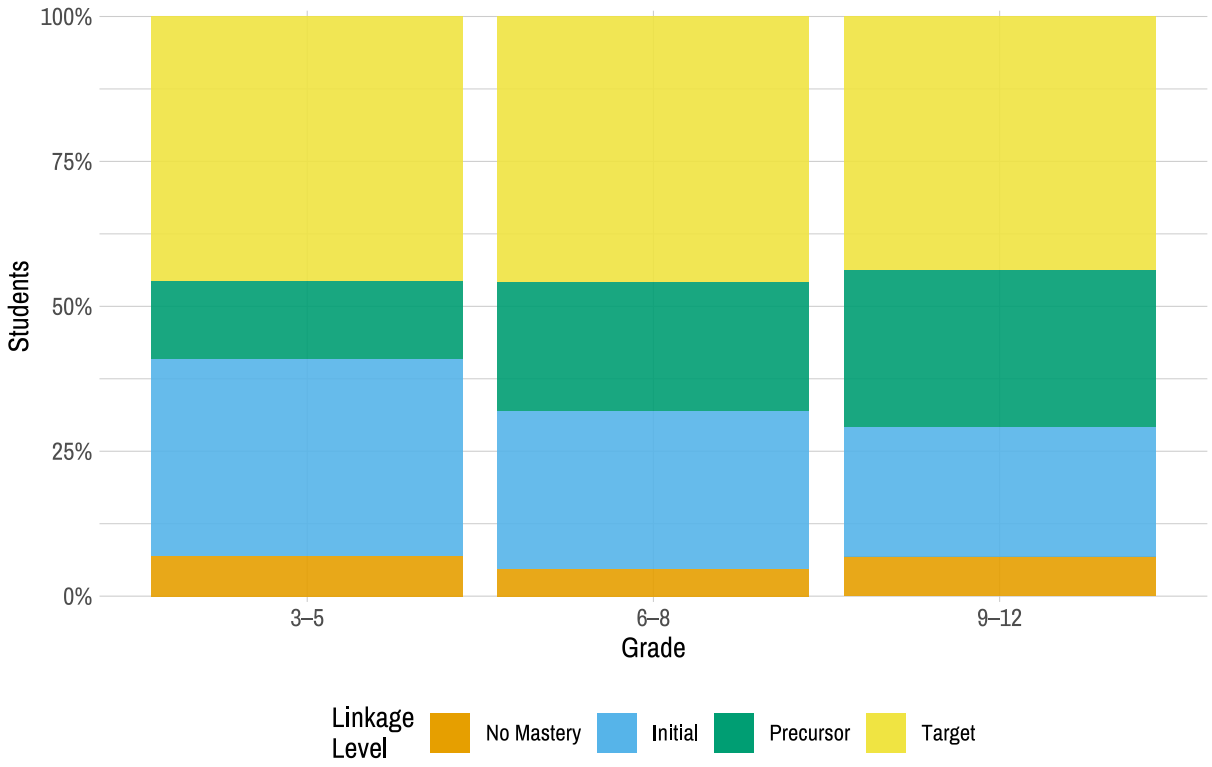
7.3.1. Linkage Level Mastery

Scoring for DLM assessments determines the highest linkage level mastered for each EE. This section summarizes the distribution of students by highest linkage level mastered across all EEs. For each student, the highest linkage level mastered across all tested EEs was calculated. Then, for each grade, the number of students with each linkage level as their highest mastered linkage level across all EEs was summed and then divided by the total number of students who tested in the grade. This resulted in the proportion of students for whom each level was the highest linkage level mastered.

Figure 7.1 displays the percentage of Pennsylvania students who mastered each linkage level as the highest linkage level across all assessed EEs in science. For example, across all Elementary science EEs, the Target level was the highest level that 46% of students mastered. The percentage of students who mastered as high as the Target linkage level ranged from approximately 44% to 46%.

Figure 7.1

Students' Highest Linkage Level Mastered Across Science Essential Elements by Grade in 2024–2025



7.4. Data Files

DLM assessment results were made available to DLM state education agencies following the spring 2025 administration. Similar to previous years, the General Research File (GRF) contained student results, including each student's highest linkage level mastered for each EE and final performance level for science for all students who completed any testlets. In addition to the GRF, the states received several supplemental files. Consistent with previous years, the special circumstances file provided information about which students and EEs were affected by extenuating circumstances (e.g., chronic absences), as defined by each state. State education agencies also received a supplemental file to identify exited students. The exited students file included all students who exited at any point during the academic year. In the event of observed incidents during assessment delivery, state education agencies are provided with an incident file describing students affected; however, no incidents occurred during 2024–2025.

Consistent with previous delivery cycles, state education agencies were provided with a 2-week window following data file delivery to review the files and invalidate student records in the GRF. Decisions about whether to invalidate student records are informed by individual state policy. If changes were made to the GRF, state education agencies submitted final GRFs via Educator Portal. The final GRF was used to generate score reports.

7.5. Score Reports

Assessment results were provided to state education agencies to distribute to parents/guardians, educators, and local education agencies. Individual Student Score Reports summarized student performance on the assessment. Several aggregated reports were provided to state and local education agencies, including reports for the classroom, school, district, and state.

While no changes were made to the structure of Individual Student Score Reports during spring 2025, the School and District Aggregate Reports underwent a full redesign. This redesign aimed to improve clarity and usability. For a complete description of all score reports, see Chapter 7 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

7.5.1. Individual Student Score Reports

Similar to previous years, Individual Student Score Reports included two sections: a Performance Profile, which describes student performance in the subject overall, and a Learning Profile, which provides detailed reporting of student mastery of individual skills. During 2024–2025, existing helplet videos continued to be available to support interpretation of score reports. Further information on evidence related to the development, interpretation, and use of Individual Student Score Reports and sample pages of the Performance Profile and Learning Profile can be found in Chapter 7 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

7.6. Quality-Control Procedures for Data Files and Score Reports

No changes were made to the quality-control procedures for data files and score reports for 2024–2025. For a complete description of quality-control procedures, see Chapter 7 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

7.7. Conclusion

Results for DLM assessments include students' overall performance levels and mastery decisions for each assessed EE and linkage level. During spring 2025, science assessments were administered to 6,447 students in Pennsylvania. Between 17% and 24% of Pennsylvania students achieved at the At Target or Advanced levels across all grades.

Following the spring 2025 administration, four data files were delivered to state education agencies: the GRF, the special circumstance code file, the exited students file, and an incident file. No changes were made to the structure of data files, individual student score reports, or quality-control procedures during 2024–2025.

8. Reliability

The Dynamic Learning Maps® (DLM®) Alternate Assessment System uses diagnostic classification models to produce student score reports. As such, evidence for the reliability of results is based on methods that are commensurate with the models used to produce score reports. For a complete description of the simulation-based methods used to calculate reliability for DLM assessments and the psychometric background for these methods, see Chapter 8 of the *2021–2022 Technical Manual Update—Science* (DLM Consortium, 2022).

9. Training and Professional Development

To support the instruction and the implementation of the Dynamic Learning Maps® (DLM®) Alternate Assessment System, training is offered for state and local education agency staff and test administrators. Additionally, optional professional development is provided for teachers and other staff.

For a complete description of facilitated and self-directed training for DLM assessments, including a description of training for state and local education agency staff, see Chapter 10 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

For a description of the optional professional development available for the Dynamic Learning Maps® (DLM®) Alternate Assessment System during 2024–2025, see Chapter 9 of the *2024–2025 Technical Manual Update—Science* (DLM Consortium, 2025a).

10. Validity Argument

The Dynamic Learning Maps® (DLM®) Alternate Assessment System is based on the core belief that all students should have access to challenging, grade-level academic content. Therefore, the DLM assessments provide students with the most significant cognitive disabilities the opportunity to demonstrate what they know and can do. It is designed to map students' learning after a full year of instruction.

The DLM system completed its tenth operational administration year in 2024–2025. The chapters of the *2024–2025 Technical Manual Update—Science* (DLM Consortium, 2025a) provide updated evidence from the 2024–2025 year to support the propositions and assumptions that undergird the assessment system as described at the onset of its design in the DLM theory of action. Chapter 10 of the *2024–2025 Technical Manual Update—Science* (DLM Consortium, 2025a) summarizes that manual's contents and describes plans for future studies. For a complete summary of evidence collected for the DLM theory of action, also see the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017).

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