Kansas Assessment Program
Technical Manual
2024

University of Kansas Achievement & Assessment Institute (AAI)

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I. Statewide System of Standards and Assessments

The Kansas Assessment Program (KAP), a program of the Kansas State Board of Education (hereafter "the State Board"), is mandated by the Kansas Legislature. In addition, the English language arts (ELA), mathematics, and science components of KAP also are used to comply with federal legislation on elementary and secondary education. The three main purposes of KAP, as stated in the *Kansas Assessment Examiner's Manual* are to:

- measure specific claims related to the Kansas Standards in grades 3–8 and high school.
- report individual student scores, along with each student's performance level.
- provide subscale and total scores that can be used with local assessment scores to assist in improving a building's or district's programs in ELA, mathematics, and science.

The state statutory authority behind KAP is Kan. Stat. Ann. §72-5170 (2022). According to this statute, the State Board is mandated, in part, to:

- design and adopt a school performance accreditation system based upon improvement in performance that reflects high academic standards and is measurable.
- establish curriculum standards that reflect high academic standards for the core academic areas of mathematics, science, reading, writing, and social studies.
- provide statewide assessments in the core academic areas of mathematics, science, reading, writing, and social studies, and determine performance levels on the statewide assessments.

KAP provides the summative assessment in ELA, mathematics, and science for all students in grades 3–8 and high school, except students with significant cognitive disabilities, who are eligible for alternate assessments.

The current technical manual provides psychometric information for ELA, mathematics, and science for the 2023–2024 school year. This includes technical-analysis results using Spring 2024 assessment data and a summary of validity evidence. All those results and evidence are to support the interpretation of test scores for intended test uses.

I.1. State Adoption of Academic Content Standards for All Students

For ELA and mathematics, the State Board adopted the Kansas Standards in 2010. The first administration of the operational KAP ELA and mathematics assessments aligned with the 2010 Kansas Standards occurred in 2015. More information about the 2010 Kansas Standards and KAP assessments can be found in the *2015 KAP Technical Manual* and the *2016 KAP Technical Manual.* In 2017, the State Board adopted the updated version of the 2010 Kansas Standards for ELA and mathematics. The current 2024 KAP ELA and mathematics assessments reflect the updated 2017 Kansas Standards.

The State Board adopted the Kansas Standards for Science in 2013. The first administration of the operational KAP science assessments aligned with the 2013 Kansas Standards occurred in 2017. In 2018, the Kansas science standards-review committee reviewed the 2013 Kansas science standards and concluded that no updates were needed for them.

I.2. Coherent and Rigorous Academic Content Standards

Committees of Kansas educators and stakeholders provided input on the Kansas Standards. These standards supported the vision of the Kansas State Department of Education: to lead the world in the success of each student (refer to the Kansas State Board of Education webpage). The standards help schools equip students with the academic, cognitive, metacognitive, technical, and employability skills required for postsecondary success, as well as the capacity to positively affect the world around them. The Kansas Standards are Kansas's coherent and rigorous academic content standards, which adhere to the State Board's mission. The mission of the
State Board is to prepare Kansas students for lifelong success through rigorous, quality academic instruction; career training; and character development according to each student's gifts and talents.

The detailed process and timeline of development of the 2010 Kansas ELA and mathematics standards can be found in the *2015 KAP Technical Manual* and the *2016 KAP Technical Manual*. The detailed process and timeline of review for the 2017 Kansas Standards for ELA and mathematics and the detailed process and timeline of the development of the 2013 Kansas Standards for Science can be found in the *2022 KAP Technical Manual*.

I.3. Required Assessments and Intended Population

The KAP assessment measures student achievement in the subject areas of ELA, mathematics, and science. The subject areas and grades tested are ELA in grades 3–8 and 10; mathematics in grades 3–8 and 10; and science in grades 5, 8, and 11.

Kansas is committed to including all students in the KAP assessment. Students enrolled in Kansas public schools must take one of three tests: the KAP assessment, the English language proficiency assessment, or the alternate assessment. In the first year entering the United States, English learners are required to take the KAP mathematics and science tests. They are not required to take the ELA assessment but must take the Kansas English Language Proficiency Assessment (KELPA). In their second year in United States schools, English learners are required to take all three KAP assessments. Eligible students with significant cognitive disabilities, typically no more than 1% of Kansas students, take the Dynamic Learning Maps® alternate assessment for ELA, mathematics, and science. Other students with Individualized Education Programs (IEP), 504 plans, or Student Intervention Team (SIT) plans take the KAP assessment but can use accommodations consistent with their personal needs profiles (PNP), which consist of their IEP, 504 plans or SIT plans. The PNP is a piece of information in a student's educational file that describes the accommodations provided to students during instruction. If an unapproved accommodation is used (e.g., reading aloud to a student on the KAP ELA test), the student's test record is considered invalid. A detailed summary of the accommodations for KAP can be found in chapter V. Inclusion of All Students.

Exemptions from KAP assessments are granted to students who, during the testing window:

- move to a different school.
- experience catastrophic illness or accident.
- are serving long-term suspension.
- are truant for more than two consecutive weeks.
- are incarcerated in an adult facility.
- are in a special detention center.

II. Assessment System Operations

The development of any test requires many critical decisions regarding, for example, the content and cognitive complexity, the appropriate scope of that content for particular subject areas, and the number and type of items associated with each test. These and other design decisions are not made in isolation but in consideration of what is necessary to support the intended interpretation and use of results within and across grades. Together, these decisions guide the process and products of test construction and evaluation.

II.1. Assessment Framework of the Assessed Grades

The assessment framework hierarchically categorizes the 2017 Kansas Standards for English language arts (ELA) and mathematics according to similar content. The categories used are classification, domain, and cluster. *Classification* is the largest category and consists of domains. *Domain* is the next category and consists of clusters. *Cluster* is the smallest category of multiple connected standards. A test item can be aligned to only one classification, one domain, and one cluster.

The ELA standards are grouped by domain and cluster. ELA has two domains: reading and writing. The reading domain has eight clusters, and the writing domain has two clusters. Each grade's assessment measures all domains and clusters. Mathematics standards are grouped by classification, domain, and cluster. Mathematics has two classifications: skills and concepts, and strategic thinking and reasoning. Each grade's assessment measures all classifications, but not all domains. The grade 10 mathematics assessment measures 11 domains, compared to three to five domains measured by other grades. Therefore, the domains within the classification of skills and concepts are grouped into conceptual categories for grade 10 mathematics to support subscore reporting. The assessment framework of 2017 Kansas Standards for ELA and mathematics can be found in Table II-1 and Table II-2 in the *2022 KAP Technical Manual*.

The 2013 Kansas Standards for Science follow a different hierarchal structure. Science standards are grouped by claims and targets for subscore-reporting purposes. Targets are sublevels of claims and groups of connected standards. Science has three claims: physical science, life science, and Earth and space science. In science, each grade's assessment assesses all claims, but not all targets. A test item can be aligned to only one claim and one target. The assessment framework of the 2013 Kansas Standards for Science can be found in Table II-3 in the *2022 KAP Technical Manual*.

II.2. Test Design and Development

KAP assessments are all computer based. The Achievement & Assessment Institute (AAI) worked with the Kansas State Department of Education (KSDE) to determine the content to be assessed by the KAP assessments for each subject area and grade level. The same operational forms used in 2022 were used again in 2024. These operational forms were developed using the updated Kansas Standards (i.e., the 2017 Kansas Standards for ELA and mathematics and the 2013 Kansas Standards for Science). Section II.2. Test Design and Development in the *2022 KAP Technical Manual* provides a detailed test-development timeline for the 2022 operational forms. Section II.2.3 Operational Test Construction in the *2022 KAP Technical Manual* provides a detailed description of test-construction procedures and guidelines.

II.2.1. Test Blueprints

The blueprints were developed through collaboration among the AAI content team, KSDE, and educators. The detailed test blueprint for the three subjects can be found in section II.2.1. Test Blueprints and Appendix A in the *2022 KAP Technical Manual*.

II.2.2. Test Design

In 2024, all three subjects used a fixed-form test design. Each subject has one operational form administered in two sessions. Each session offers two or three blocks of identical items in different orders to deter cheating. A block includes all operational items that will be administered together in one session. According to research, item order does not affect item performance (Hohensinn et al., 2011; Li et al., 2012), so blocks with items in a different order were still considered to be the same test form. Students are considered to have received the same operational form, even if the item order of the blocks is different.

Starting 2024, full-time virtual students can choose to take the KAP assessment remotely. For students taking the test remotely, a designated block of each session was assigned to them. Students taking tests in-person were randomly assigned to one block in each session, with a designated block for students who needed accommodations in each session. Table II-1 shows the test design of the KAP assessment for each session by subject.

Table II-1. Fixed-Form Test Design of the 2024 KAP Assessment by Subject and Session

Subject	Grade	Number of Items		
		Total	Session 1	Session 2
ELA	3–8, HS	47	22	25
Mathematics	3–8	55	25	30
Mathematics	HS	56	25	31
Science	5	35	18	17
Science	8, HS	40	20	20

Note. ELA = English language arts; HS = high school.

II.3. Item Development

Section II.3. Item Development in the *2022 KAP Technical Manual* describes the item-development processes for the 2024 KAP assessment (i.e., 2022 KAP forms). The 2024 KAP forms include field-test items, which are for future KAP assessments. The next sections describe the number of field-test items on 2024 KAP forms and the process for field-test data analysis.

II.3.1. Field Testing

For all three subjects, field-test items were embedded in the in-person operational test forms and field tested for future KAP assessments. All subjects and all grades have field-test items.

Table II-2 displays the number of field-test items by subject and grade. Each in-person student answered five to nine field-test items per grade, per subject. These field-test items were assigned to students randomly. Each field-test item was taken by approximately 1,500 students.

Table II-2. Number of Field-Test Items by Subject and Grade

Grade	English Language Arts	Mathematics	Science
3	133	40	—
4	212	24	—
5	112	29	28
6	242	37	—
7	171	49	—
8	198	30	33
10	173	43	—
11	—	—	69

II.3.2. Field-Test Data Analysis

Field-test item analyses included classical item analysis and differential item functioning analysis. Items that were too easy or too difficult, were inadequate at discriminating student ability, or through differential item functioning indicated potential gender or ethnic bias, were flagged according to predetermined criteria (see Appendix A: Item Statistics Flagging Criteria).

II.4. Test Administration

For all subjects and grades, students are administered the KAP assessment entirely on computer. Each session was designed to take approximately one class period (i.e., 45–60 minutes), and each test was designed to take approximately two class periods. KAP tests are untimed, and enough time should be given for all students to finish testing.

Starting in 2024, KAP allows full-time, virtual students to take the assessment remotely. For students taking the test in person, the 2024 KAP testing window opened on Monday, March 18, 2024, and closed on Friday, April 19, 2024. For students taking the test remotely, the 2024 KAP testing window opened on Monday, April 22, 2024, and closed on Friday, May 3, 2024. The two testing formats have different test-administration and monitoring procedures.

For students taking the test in person (not remotely), the 2024 KAP assessment implemented the same test-administration procedures as previous years to prevent the unintended effects of administration differences. The standardized test-administration procedures are described in the *Kansas Assessment Examiner's Manual* (*Examiner's Manual* hereafter). The test-administration and security training may be conducted in three ways: through online conference, with online training materials, or through in-person regional training with a district or building test coordinator. Kansas uses a train-the-trainer model. District test coordinators received training first from KSDE and then trained building-level personnel before the local test administration. The test-administration process was the same as in previous years. Detailed information about training procedures and test-administration procedures and guidance can be found in section II.4. Test Administration in the *2022 KAP Technical Manual.*

Students taking the KAP assessment remotely will have a parent or guardian train to serve as test administrator. To ensure test security, KAP uses a service provided by MonitorEDU, an online test-proctoring company, to have live proctoring for students taking the KAP test remotely. II.5. Monitoring Test Administration describes the live proctoring process in detail. The parent or guardian assisting with remote testing should ensure that the student:

- has testing time scheduled in advance.
- has a quiet and comfortable room with three blank walls.
- has two cameras: one camera looking at the test taker's face, and one looking at the test taker's screen.
- has a desk free of objects.
- has a Daily Access Code (needed to access KAP assessments) on testing day.

II.5. Monitoring Test Administration

Test-administration monitoring includes monitoring both testing and testing data. Testing monitoring also includes both local monitoring and KSDE visits for students taking tests in person. The local monitoring was the same in 2024 as in previous years, including monitoring test process, test status, and item status. The KSDE monitoring visits were held during the non-virtual testing window between March 18, 2024, and April 19, 2024. Twenty-three districts, including 45 buildings and 58 classes, were monitored in person. These districts include 10 districts that did not complete test-security training on time and 13 districts that volunteered to be monitored. Twenty-three observers, including KSDE staff and members of the Kansas Assessment Advisory Council, participated in in-person monitoring. All observers followed the KSDE test-security guidelines. No irregularities were found during in-person monitoring visits.

Virtual testing uses the live proctoring service provided by MonitorEDU to monitor the testing activities during administration. For each test session, a professionally trained proctor from MonitorEDU conducts a live proctoring using an online meeting tool. Before testing starts, the proctor does a 360° room scan through the camera and checks whether any smart devices, such as smart glasses or watches, are being used. Once testing starts, the proctor monitors the behavior of the student to detect any irregularities and provides immediate intervention if necessary.

The testing and data monitoring for non-virtual windows in 2024 was the same as in previous years, but virtual window was introduced for the first time in 2024 to monitor system usage and identify testing irregularities. During testing-data monitoring, no irregularities were found for the non-virtual window. However, for the virtual window, a group of students was flagged by KSDE based on information provided by MonitorEDU. These students were assigned a KSDE special-circumstance code in the database; this code is used for incidents such as cheating. Detailed information about standard procedures and protocols for test-administration monitoring can be found in section II.5. Monitoring Test Administration in the *2022 KAP Technical Manual*.

II.6. Test Security

The test-security procedures and protocols applied in 2023 were applied again in 2024. Detailed information about these procedures and protocols can be found in section II.6. Test Security in the *2022 KAP Technical Manual*. In addition, KAP used Caveon, a test-security company, to detect any exposure of test content on social media or elsewhere on the internet.

Caveon Web Patrol leverages both automated technologies and human analysis to find and track threats to the assessment program, such as illicit discussion, distribution, and sale of test content

online. It monitors various platforms, including “brain-dump” sites[1], test-prep sites, online auctions, and social media. Regular reports categorize threats by risk level and provide actionable recommendations. Caveon maintains a log of potential risks and uses a secure platform, Caveon Core, to notify clients of high-risk threats. They collaborate with state agencies to remove infringing content, starting with cease-and-desist letters and escalating as needed. Timely notifications and frequent client collaboration are key to their success.

In 2024, before the test window started, all test content was shared with Caveon. Then, Caveon monitored various websites and social-media sites during both virtual and non-virtual testing windows until one week after the virtual window closed.

[1] "Brain-dump" sites refer to websites or platforms that provide unauthorized or unethical access to exam questions and answers, often in the form of exact replicas or memorized content from real exams. These sites typically gather and share exam content that is meant to be confidential, allowing users to "dump" what they remember from an exam for others to use. Using brain-dump sites is considered cheating.

III. Technical Quality: Validity

According to the *Standards for Educational and Psychological Testing* (the *Standards* hereafter), *validity* refers to "the degree to which evidence and theory support the interpretation of test scores for proposed uses of tests" (American Psychological Association [APA] et al., 2014, p. 11).

The *Standards* provide a framework for describing the sources of evidence that should be considered when evaluating test-score validity. These sources include evidence based on test content, response processes, internal test structure, relationships among test scores and other variables, and the consequences of testing. The validation process involves the ongoing collection of evidence to support the proposed test-score interpretations and uses. This chapter mainly describes aspects of the Kansas Assessment Program (KAP) assessments that support KAP test-score interpretations and uses.

Because validity evidence supports the intended uses of test scores, it is necessary to identify the intended validity argument regarding test-score uses before providing evidence to support test validity. The KAP assessment is to provide valid scores for determining students' progress toward meeting state achievement standards and identifying students' relative strengths and limitations for each grade level in the three subject areas of English language arts (ELA), mathematics, and science.

The gathered evidence on test content, response process, and internal structure supports the use of the KAP assessment to measure the Kansas Standards as defined in the test blueprints. Information on test reliability, fairness, accessibility, scoring, and scaling justify the use of KAP test scores for reporting students' academic performance toward meeting state achievement standards. Validity evidence from other sources, such as comparing KAP results with National Assessment of Educational Progress (NAEP) results, uses additional data to validate the use of KAP test scores.

III.1. Validity Evidence Based on Test Content

Validity evidence based on test content refers to how well test content related to specific content domains matches what the test was intended to measure. Content evidence for KAP assessments comes from the alignment between KAP items and the Kansas Standards, from the congruence between the test and the test blueprint, and from the congruence between the test blueprint and the Kansas Standards (i.e., a balance of representation of standards). Content specialists at the Achievement and Assessment Institute (AAI) follow the following steps to evaluate the content validity of the KAP assessment:

1. Develop the test blueprint and specifications, and evaluate whether the blueprint represents the Kansas Standards and has enough items for subscore reporting.
2. Conduct content reviews of KAP items using a panel of content experts to see whether the items measure the intended construct or whether sources of construct-irrelevant variance exist.
3. Conduct fairness reviews of KAP items to avoid bias and sensitivity issues related to specific subpopulations.
4. Evaluate the alignment between KAP assessments and the Kansas Standards.

5. Evaluate the degree to which the assessment addresses the depth and breadth expectations of the Kansas Standards in terms of the blueprint.

Chapter II in the *2022 KAP Technical Manual* presented validity evidence related to the development of the test blueprint (section II.2.1. Test Blueprint in the *2022 KAP Technical Manual*), item and test development (sections II.2. Test Design and Development and II.3. Item Development in the *2022 KAP Technical Manual*), and item review (section II.3.4. Item Review in the *2022 KAP Technical Manual*) for the 2024 KAP assessment (i.e., 2022 KAP forms). This validity evidence was also summarized in section III.1. Validity Evidence Based on Test Content in the *2022 KAP Technical Manual*.

The validity evidence related to alignment between KAP items and the Kansas Standards, as well as the degree to which the assessment addresses the depth and breadth of the Kansas Standards in terms of the blueprint, comes from an alignment study conducted by an independent external vendor. Several alignment studies were conducted at different times to collect validity evidence related to alignment for the 2024 KAP assessment. The descriptions of those alignment studies can be found in section III.1.2. Alignment study recommendations in the *2016 KAP Technical Manual* and sections III.1.2. Grade-10 Mathematics Alignment and III.1.3. Science Alignment in the *2022 KAP Technical Manual*. All studies indicate strong or moderate alignment between KAP assessments and Kansas Standards.

III.2. Validity Evidence Based on Response Process

Response-process evidence examines the extent to which the cognitive skills and processes that students use to answer an item match those targeted by item writers. Section III.2. Validity Evidence Based on Response Process in the *2022 KAP Technical Manual* describes validity evidence related to how cognitive skills were considered by item writers and item reviewers for each item during item development. Also, during the development of performance-level descriptors, the expectations of students' cognitive processes were stated differently in different levels of performance-level descriptors. As performance levels rise, the expectations of students' proficiency or cognitive processes also rise. Appendix C in the *2022 KAP Technical Manual* includes the performance-level descriptors for each grade and subject.

III.3. Validity Evidence Based on Internal Structure

As described in the *Standards* (APA et al., 2014), internal-structure evidence refers to "the degree to which the relationships among test items and test components conform to the construct on which the proposed test score interpretations are based" (p. 13). Three sets of validity evidence about internal structure provide evidence that (a) the KAP assessment is essentially unidimensional, (b) the item response theory (IRT) model used for each subject showed good fit results, and (c) the test contains no or few items flagged for significant and large differential item functioning (DIF), which supports comparable measurement across groups.

For each subject and grade, the KAP assessment is fitted by an IRT unidimensional model. The evidence of all items measuring one primary construct—that is, unidimensionality—is one type of internal-structure validity evidence. Moreover, KAP dichotomous items are fitted by the two-parameter logistic (2PL) model, and the polytomous items are fitted by the graded-response model. The IRT model assumption evaluation, including model-fit, also can provide internal-

structure evidence. The evaluation of unidimensionality, as well as IRT assumptions of the KAP tests, are described in the *2022 KAP Technical Manual*. Finally, the internal structure of a test should be consistent for different student groups. DIF analysis identifies items that are performing differently for student groups. Thus, DIF analysis results are included as further internal-structure validity evidence.

III.3.1. Differential Item Functioning

DIF analysis evaluates items for potential bias and examines whether an item shows statistical differences between two groups of students, while controlling for student ability. Items identified with DIF during field testing would be reviewed during data review for bias and fairness issues, and items identified with DIF during operational testing would be reviewed for exclusion from scoring by content experts. We used logistic regression to detect items with uniform DIF (i.e., items that are consistently more difficult across all ability levels for one group of students than for another group). The detailed method for logistic regression DIF calculation can be found in section III.3.3. Differential Item Functioning in the *2022 KAP Technical Manual*.

For each subject and grade, we examined DIF across gender (i.e., female vs. male), race (i.e., black vs. white), and English learner (EL) status (i.e., EL vs. non-EL) using the current year's operational data. For all subjects and grades, 0 of 830 operational items in the three subjects were flagged for moderate or large gender-related DIF, race-related DIF, or EL-status-related DIF. All results suggested that the item-development process and procedures effectively addressed potential bias and sensitivity issues during the development phase.

III.4. Validity Evidence Based on Relations to Other Variables

As described in the *Standards*, "evidence based on relationships with other variables provides evidence about the degree to which these relationships are consistent with the construct underlying the proposed test score interpretations" (p. 16). To provide validity evidence based on relations to other variables, we calculated the correlations among different KAP subject scores and compared the KAP and NAEP performance.

III.4.1. Relationships Among KAP Subjects

Past studies showed high correlations among subjects, which indicates that subjects share common traits. Table III-1 shows the correlations and disattenuated correlations (correcting for measurement errors) among subjects of the same grade, with values that range from .68 to .78 for correlations, and from .75 to .88 for disattenuated correlations. The lowest correlations among subjects are between grade 10 ELA and mathematics. The highest correlations are between grade 3 ELA and mathematics and grade 5 ELA and science. After correcting for measurement error, the lowest disattenuated correlation is between grade 10 ELA and mathematics, and the highest disattenuated correlation is between grade 5 ELA and science. According to Cohen (1988), a correlation larger than .50 is considered a correlation with large effect size. All correlations among KAP subjects have large effect size, indicating that some common traits are shared across KAP subjects.

Table III-1. Correlations (C) and Disattenuated Correlations (DC) Among English Language Arts (ELA), Mathematics, and Science Scores

Grade	ELA vs. Mathematics		ELA vs. Science		Mathematics vs. Science	
	C	DC	C	DC	C	DC
3	.77	.83	—	—	—	—
4	.73	.80	—	—	—	—
5	.73	.80	.78	.88	.74	.82
6	.75	.82	—	—	—	—
7	.72	.80	—	—	—	—
8	.71	.77	.74	.85	.72	.81
10	.68	.75	—	—	—	—

III.4.2. Relationships Within a KAP Subject

The correlation between current-year and previous-year KAP scores of one subject for the same students should be high because similar constructs are measured across grades within a subject. Table III-2 shows the correlations and disattenuated correlations (i.e., correcting for measurement errors) between adjacent grades of the same subjects in 2024 and 2023. For the grades in which all students did not take KAP assessments in the previous year—that is, no KAP assessment for the adjacent grade in the previous year—the correlations are not calculated. Values range from .80 to .86 for correlations, and from .89 to .92 for disattenuated correlations. The correlations and disattenuated correlations between grades are very similar within each subject, and ELA correlations are slightly lower than correlations in mathematics. All correlations between adjacent grades within a subject are very high and have large effect size, indicating that similar constructs are measured within KAP subjects.

Table III-2. Correlations (C) and Disattenuated Correlations (DC) Between Adjacent Grades for English Language Arts and Mathematics

Grade	English Language Arts		Mathematics	
	C	DC	C	DC
4 vs. 3	.81	.89	.85	.90
5 vs. 4	.81	.91	.86	.92
6 vs. 5	.80	.90	.84	.90
7 vs. 6	.80	.90	.85	.92
8 vs. 7	.81	.92	.85	.92

III.4.3. Relationships Between KAP Assessment and NAEP

The state of Kansas participates in the National Assessment of Educational Progress, or NAEP, also known as the Nation's Report Card. NAEP is the largest nationally representative assessment of what American students know and can do, and it serves a different role than state assessments do. NAEP assessments allow each state to be compared to national results and to evaluate progress over time. The results inform the public about the academic achievement of

elementary (grade 4) and secondary (grade 8) students in Kansas and in the United States in ELA and mathematics.

Thus, the relationship between KAP and NAEP performance is expected to be strong. Because individual NAEP scores are not available, only the trend of proficiency rates across years is compared between the two assessments. KAP and NAEP assessments use different achievement standards to judge whether a student meets proficiency. Comparing proficiency rates within a year is not as meaningful as comparing trends of proficiency rates across years. The trends of the two assessments can indicate the actual performance of Kansas students based on the two assessments measuring a similar construct. KSDE provides more information about NAEP on the KSDE website.

KAP categorizes student performance by four performance levels: 1, 2, 3, and 4. The proficiency rate of KAP is the percentage of students in levels 3 and 4. NAEP categorizes student performance by three performance levels: NAEP Basic, NAEP Proficient, and NAEP Advanced. The proficiency rate of NAEP is the percentage of students in NAEP Proficient and NAEP Advanced levels. There was no NAEP administration in 2023.[2] Evidence for the relationship between KAP and NAEP from 2015 to 2022 can be found in section III.4.3. Relationships between KAP Assessment and NAEP in the *2022 KAP Technical Manual*. The results present a similar trend of proficiency rates among KAP, Kansas NAEP, and national NAEP, showing that performance on NAEP is similar to that on KAP.

III.5. Validity Evidence Based on Consequences of Testing

Validity evidence based on consequences refers to evidence supporting the intended uses and interpretation of test scores. A major purpose of KAP test scores is to complement local assessment scores and to assist in improving school and district programs as stated in the *Kansas Assessment Examiner's Manual*. IV.4. Scoring and Scaling summarizes how items and tests are scored. For a given test score, the performance level is determined by a set of established cut scores. VI. Academic Achievement Standards and Reporting summarizes the process of setting the cut scores and includes an example of a KAP student score report. To help educators and parents interpret KAP results, KAP also provides the KAP Educator Guide and the KAP Parent Guide.

[2] NAEP is administered every two years. NAEP was administrated in 2022, so there was no administration in 2023.

IV. Technical Quality: Other

This chapter describes evidence related to the technical quality of the Kansas Assessment Program (KAP) and summarizes results of the technical analysis. Most of the analysis described in this chapter is based on 2024 assessment data. Evidence for technical quality includes test reliability, fairness and accessibility, a test-analysis summary, and trend data.

IV.1. Reliability

Reliability is a test-score-consistency index that shows the degree of test-score consistency across repeated measures. Test scores that are stable across repeated measures indicate a more reliable test. Factors leading to unstable test scores are called *measurement errors*. Measurement errors include changes in testing conditions, changes in a student's knowledge, physical condition, or mental status, and changes in testing content across multiple test administrations. Measurement errors cannot be fully removed but can be reduced. For example, standardized testing procedures reduce measurement errors caused by changing testing conditions. KAP has standardized testing procedures, and the same procedures are applied to all students; specific accommodations are provided to students with special needs. The *Kansas Assessment Examiner's Manual* describes these testing-procedure specifications.

In the context of educational achievement tests, factors such as learning, fatigue, and motivation may affect test takers at different rates for repeated measures. It is impractical to test the same content area repeatedly, as test takers cannot maintain the same knowledge, physical condition, and mental status across test administrations. Therefore, the reliability for educational measures is typically estimated rather than calculated directly. Estimated reliability coefficients range from 0 to 1. Higher values indicate more reliable tests with less measurement error.

In this section, we present reliability estimates for overall scores and subscores reported for the KAP assessments. The overall score-reliability estimates are calculated for the full sample of tested students and student groups. We also include item response theory (IRT) information functions and conditional standard errors of measurement at each cut score, and estimates of classification consistency and accuracy for overall scores. Finally, we summarize reliability, classification consistency, and accuracy estimates for KAP subscores.

IV.1.1. Test Reliability

We used a marginal-reliability method (Green et al., 1984) to estimate test reliability. This method can estimate reliability for both fixed-form and adaptive tests. For the detailed method for marginal-reliability calculation, see section IV.1.1. Test Reliability in the *2022 KAP Technical Manual*. As shown in Table *IV-1*, mathematics reliability estimated by the marginal-reliability method is above .92. Reliability estimates for English language arts (ELA) are above .88. Science has lower reliability estimates because there are fewer test items (35 items for grades 5 and 8, and 40 items for grade 11) compared to ELA (47 items) and mathematics (55 items for grades 5–8, and 56 items for grade 10), but values are still greater than or equal to .85.

Table IV-1. Test-Reliability Estimate by Subject and Grade

Grade	English Language Arts	Mathematics	Science
3	.91	.94	—
4	.89	.94	—
5	.89	.93	.87
6	.89	.94	—
7	.88	.93	—
8	.90	.93	.85
10	.88	.92	.88

IV.1.1.1. Student-Group Reliability

We estimated reliabilities using the marginal reliability method, the same method based on full population, for gender groups, race groups, ethnicity groups, English learner (EL)–status groups, and disability-status groups.[3] Table *IV-2*, Table *IV-3*, and Table *IV-4* present student-group reliability estimates for ELA, mathematics, and science. For ELA and mathematics, the marginal reliabilities estimated for each group were close to or above .90 across grades, ranging from .86 to .92 for ELA, and from .89 to .95 for mathematics. Science had lower subgroup-reliability estimates because science had fewer test items compared to ELA and mathematics. Science subgroup-reliability estimates ranged from .83 to .89 across grades. For all three subjects, the variation in reliability estimates among different student groups was small.

[3] Economically disadvantaged status is not shared with ATS to protect the privacy of students, so this student group is not included in the comparison.

Table IV-2. Student-Group Reliability Estimates for English Language Arts

Subgroup	Grade						
	3	4	5	6	7	8	10
Gender							
Male	.91	.90	.89	.89	.88	.90	.88
Female	.91	.89	.89	.89	.88	.89	.88
Race							
NA	.92	.91	.90	.91	.89	.91	.89
Asian	.90	.88	.88	.88	.87	.88	.86
Black	.92	.90	.90	.90	.89	.91	.89
NHPI	.92	.91	.90	.90	.90	.91	.88
Other	.91	.90	.89	.90	.88	.90	.88
White	.91	.89	.89	.89	.88	.90	.88
Hispanic							
Yes	.92	.91	.90	.90	.89	.91	.89
No	.91	.89	.89	.89	.88	.89	.88
SWD							
Yes	.92	.91	.89	.90	.89	.91	.88
No	.91	.89	.89	.89	.88	.90	.88
EL							
Yes	.92	.91	.90	.91	.90	.91	.89
No	.91	.89	.89	.89	.88	.90	.88

Note. NA = Native American; NHPI = Native Hawaiian and Pacific Islander; SWD = student with disability; EL = English learner.

Table IV-3. Student-Group Reliability Estimates for Mathematics

Subgroup	Grade						
	3	4	5	6	7	8	10
Gender							
Male	.94	.94	.93	.93	.93	.93	.92
Female	.94	.94	.94	.94	.93	.93	.92
Race							
NA	.94	.95	.94	.94	.94	.93	.92
Asian	.93	.93	.90	.91	.90	.91	.89
Black	.94	.94	.94	.93	.93	.93	.92
NHPI	.94	.94	.94	.94	.94	.93	.92
Other	.94	.94	.94	.94	.93	.93	.92
White	.94	.94	.93	.94	.93	.93	.92
Hispanic							
Yes	.95	.94	.94	.94	.94	.93	.92
No	.94	.94	.93	.93	.93	.93	.92
SWD							
Yes	.94	.94	.93	.93	.93	.93	.91
No	.94	.94	.93	.94	.93	.93	.92
EL							
Yes	.94	.94	.94	.94	.93	.93	.92
No	.94	.94	.93	.94	.93	.93	.92

Note. NA = Native American; NHPI = Native Hawaiian and Pacific Islander; SWD = student with disability; EL = English learner.

Table IV-4. Student-Group Reliability Estimates for Science

Subgroup	Grade		
	5	8	11
Gender			
Male	.86	.84	.87
Female	.88	.85	.88
Race			
Native American	.89	.85	.89
Asian	.85	.83	.84
Black	.89	.85	.89
NHPI	.88	.85	.89
Other	.88	.85	.88
White	.87	.85	.87
Hispanic			
Yes	.88	.85	.89
No	.86	.84	.87
Student with disability			
Yes	.88	.84	.89
No	.87	.85	.87
English learner			
Yes	.89	.85	.89
No	.87	.85	.87

Note. NHPI = Native Hawaiian and Pacific Islander.

IV.1.2. Test Information

For KAP tests, we use IRT models to estimate students' latent ability (theta), which is then transformed to a scale score. Using IRT models, we can estimate test information functions (TIFs) for each theta value across the whole performance continuum. A TIF is computed as the sum of item-information functions of all operational items in a grade for each test. We use the TIF to estimate the amount of information the test provides at each theta; the TIF is conceptually parallel to the reliability coefficient in classical test theory. Since we used the 2022 test forms in 2024, and the IRT parameters remain unchanged, please refer to section IV.1.2. Test Information in the *2022 KAP Technical Manual* for the TIFs corresponding to theta values for the three subjects. The TIF values are high at the center of the theta distribution and gradually decrease toward the two ends of the theta scale, where thetas are very low or very high; this distribution results in a bell-shaped pattern. In general, among the three subjects, mathematics had the least difference between theta values with maximum TIFs and the level 3 theta cuts.

In IRT, we estimate a standard error for each value of theta, called the *conditional standard error of measurement* (CSEM). CSEMs are computed through their inverse relationship with TIFs. For reporting purposes, the CSEM is put on the scale-score metric and reported. Because we used the 2022 test forms in 2024 and the IRT parameters do not change, for the CSEMs at cut scores for levels 2, 3, and 4 of each subject and grade, see section IV.1.2. Test Information in the *2022 KAP Technical Manual*.

IV.1.3. Classification Consistency and Accuracy

Classification consistency and accuracy indicate how accurately students are classified into performance levels. Performance-level classification consistency and accuracy are of great interest for testing programs that serve accountability purposes. According to Livingston and Lewis (1995), *classification consistency* refers to "the agreement between the classifications based on two nonoverlapping, equally difficult forms of the test" (p. 180), and *classification accuracy* refers to "the extent to which the actual classifications of test takers on the basis of their single-form scores agree with those that would be made on the basis of their true scores, if their true scores could somehow be known" (p. 180). For the detailed calculation of both indices, see section IV.1.3 Classification Consistency and Accuracy in the *2022 KAP Technical Manual*. Indices for both classification consistency and accuracy range from 0 to 1, with 0 representing classifications that are not consistent or accurate, and 1 representing perfectly consistent or accurate classifications. The higher the indices, the more consistent and accurate the classifications are.

Table *IV-5* presents the results for overall classification consistency and accuracy across all four performance levels, as well as for the dichotomies created by the three cut scores. For the overall KAP classification, classification-consistency indices range from .47 to .66, and classification-accuracy indices range from .70 to .83 across all grades and subjects. Classification-consistency indices range from .51 to .82, and classification-accuracy indices range from .87 to .98 across all cuts, grades, and subjects. Classification consistency and accuracy for the KAP level 3 performance-level cut (i.e., 1, 2 vs. 3, 4) is most important because the level 3 cut is the proficiency-level cut. For all subjects and grades, the classification-consistency index for the level 3 cut is higher than the other two cuts' classification-consistency indices. Within the same grade, classification consistency and accuracy for the science tests are lower than for the other two subjects' tests because science tests have fewer items.

Table IV-5. Classification Consistency (C) and Accuracy (A)

Subject and Grade	Cut-Score Category							
	Overall		1 vs. 2, 3, 4		1, 2 vs. 3, 4		1, 2, 3 vs. 4	
	C	A	C	A	C	A	C	A
ELA								
3	.58	.78	.68	.91	.76	.92	.74	.96
4	.54	.77	.57	.91	.73	.90	.70	.96
5	.52	.74	.65	.90	.73	.91	.70	.95
6	.55	.77	.69	.90	.71	.90	.62	.97
7	.53	.76	.68	.89	.70	.91	.62	.96
8	.59	.81	.69	.90	.72	.93	.61	.98
10	.55	.78	.68	.90	.68	.91	.57	.97
Mathematics								
3	.63	.80	.72	.94	.80	.93	.78	.95
4	.64	.82	.66	.92	.81	.94	.78	.97
5	.59	.79	.63	.89	.81	.94	.81	.97
6	.66	.83	.75	.92	.82	.94	.79	.97
7	.58	.79	.50	.87	.81	.94	.77	.98
8	.64	.83	.74	.91	.82	.95	.78	.98
10	.57	.79	.63	.87	.82	.96	.81	.98
Science								
5	.47	.70	.55	.89	.71	.90	.71	.93
8	.48	.74	.63	.87	.69	.91	.65	.96
11	.53	.77	.67	.88	.75	.92	.72	.96

Note. ELA = English language arts.

IV.1.4. Subscore Reliability

In addition to the total test score, the scores of subsets of ELA, mathematics, and science items are reported as subscores for identifying students' relative strengths and limitations. The number of items in each subscore varies, and some items contribute to multiple subscores. Six is the minimum number of items reported for a subscore. ELA and science have the same subscores across grades respectively, but mathematics has different subscores across grades. These subscores are reported in three categories: below proficiency, meets proficiency, and exceeds proficiency. For detailed information about the subscores in each subject, as well as the scoring procedure and rules for determining subscore categories, see section IV.1.4. Subscore Reliability in the *2022 KAP Technical Manual*.

We computed reliability measures for reported subscores. Appendix B: Subscore Reliability includes estimates of the marginal reliability for different subscores for each subject and grade.

The number of items measuring each subscore affects the reliability of each subscore. The number of items contributing to each subscore varies significantly; it can be as few as six and as many as 48 items. We expect reliability estimates subscores with fewer items to be low.

IV.2. Accessibility and Fairness

During the development and administration of the KAP assessment, we considered accessibility for all students and fairness across student groups in every step. We used universal design (UD) as a guide during the development of items, test formats, and the online test-delivery interface to ensure fairness and accessibility for all students. All operational items pass a bias and sensitivity review to mitigate the likelihood of content bias toward any one student group. For detailed descriptions of applying universal design in the development and administration of the KAP assessment, as well as bias and sensitivity review, see section IV.2.2. Fairness and section II.3.4.2.3. Item Fairness-Review Process in the *2022 KAP Technical Manual*.

IV.2.1. Accessibility

According to the *Standards for Educational and Psychological Testing* (hereafter the *Standards*), "accessibility is the degree to which the items or tasks on a test enable as many test takers as possible to demonstrate their standing on the target construct without being impeded by characteristics of the item that are irrelevant to the construct being measured" (American Psychological Association [APA], 2014, p. 215). Evidence in support of an assessment's accessibility comprises inclusion, accommodations, and UD implementation in items and test development. For detailed accessibility evidence for KAP, see section IV.2.1. Accessibility in the *2022 KAP Technical Manual*.

IV.2.2. Fairness

According to the *Standards*, "the central idea of fairness in testing is to identify and remove construct-irrelevant barriers to maximal performance for any examinee" (p. 74). The *Standards* identifies fairness as an issue related to the validity of test-score inferences. Evidence supporting the assertion of fairness in an assessment comes from several stages, such as the item- and test-development stages before test administration and the differential item functioning (DIF) analysis stage after test administration. For detailed fairness evidence on applying UD during item and test development, see section IV.2.2. Fairness in the *2022 KAP Technical Manual.* For DIF results, see section III.3.1. Differential Item Functioning. DIF analyses conducted for the current administration indicate that no items were identified with significant DIF across gender (i.e., female vs. male), race (i.e. black vs. white), and EL status (i.e., EL vs. non-EL) for all three subjects. DIF analysis examines whether an item shows any statistical difference between two groups of students after controlling for student proficiency. A lack of items with significant DIF provides evidence in support of effective fairness practices during item writing and reviewing.

IV.3. Full Performance Continuum

KAP was designed and developed to produce a reasonably precise estimation of student proficiency across the full performance continuum in each subject area and grade. Section IV.1.2. Test Informationlists the TIFs across different ability levels and the CSEMs at the cut scoresIV.1.2. Test Informationtest precision across the full range of ability estimates. The CSEMs at cut scores range from 7 to 10 for both mathematics and ELA, and from 10 to 12 for science, with only three differences across cut scores. Results indicate that KAP tests can accurately estimate ability across the full theta scale, especially in the middle of the scale.

Another approach to cover the full performance continuum is to use items that cover different cognitive complexity levels and a wide range of difficulties. The Achievement and Assessment Institute (AAI) content team measures KAP items' cognitive complexity levels by the depth of knowledge (DOK) framework (Webb, 1997). The blueprint specifies the expected DOK ranges for each cluster, ranging from 1 to 3. When test items are written to each cluster, the items also have to reflect the expected DOK level as implied by the content to be measured. We emphasize this expectation throughout item writing and during both internal and external item reviews. Consequently, items selected for a test to meet the blueprint also meet the underlying DOK requirements. During test construction, we screen item quality through item difficulty, item total correlation, DIF, option analyses, and IRT parameters. This approach not only ensures the quality of items to be used on the test, but also provides the widest range possible for measuring student abilities. Additionally, we plot test-characteristic curves, test information, and CSEM during test construction to gauge the proficiency range of each test. Because we used the 2022 test forms in 2024, for the summary of DOK levels, classical test theory item statistics, and IRT item statistics, see section IV.3. Full Performance Continuum in the *2022 KAP Technical Manual*.

IV.4. Scoring and Scaling

This section introduces the procedures for scoring individual items, scoring the test as a whole, and scaling. We include test results and the performance-level distribution for 2024 KAP testing; we also present the KAP performance trend for the previous five years. Finally, this section describes the quality-control procedures used to ensure the accuracy of scoring and scaling.

IV.4.1. Scoring

Item and test scoring in the 2024 administration remained the same as in previous years. For a detailed description of item and test scoring, see section IV.4.1. Scoring in the *2022 KAP Technical Manual*.

IV.4.2. Scaling

Scaling is the process of transforming thetas or raw scores to a reporting scale. The purpose of scaling is to facilitate the use and interpretation of test scores. The scale is also the basis for reporting performance levels. We used the same scaling procedure and KAP reporting scale in 2024 as in previous years. For detailed information about scaling procedure, scale-transformation constants, and scale properties, see section IV.4.1. Scoring in the *2022 KAP Technical Manual*.

IV.4.3. Operational Test Results

This section presents the results of the 2024 administration of the KAP, including descriptive statistics representing the number of students tested by various subgroups; the 2024 scale-score summary for all students and by subgroup; the 2024 performance-level distribution for each subject by grade; and the 2024 participation data, scale-score summary, and proficiency rates compared to those of previous years. This report includes participation rates prominently because it is critical to account for variability in participation when interpreting KAP performance within and across years.

IV.4.3.1. Student Participation

In 2024, states administered the KAP operational test in ELA, mathematics, and science in grades 3–8 and high school. At the high school level, students completed ELA and mathematics assessments in grade 10 and science assessments in grade 11. As described in section I.3. Required Assessments and Intended Population, Kansas is committed to including all students in the KAP assessment.

Table IV-6 shows the number of enrolled students and tested students, as well as participation rate by subject and grade. The indicators use the following definitions:

- *Enrolled students* are students assigned to take a KAP test.
- *Tested students* are students receiving a score report. Students receive a score report when they were not exempt (exemption rules are described in section I.3. Required Assessments and Intended Population), they have completed at least five items in each of the two test sections, and they have logged out of the testing platform for the first section. This reporting rule has been used since 2015.
- *Participation rate* is calculated as the number of tested students divided by the number of enrolled students.

As shown in Table IV-6, more than 34,000 students were tested for each subject and grade (includes students tested in-person as well as remotely). Across all subjects and grades, the participation rates ranged from 96% to 99%. The participation rates in elementary and middle school grades were greater than 98%, especially at elementary grades (about 99%). High school grades had a lower participation rate, with 96% for ELA, 96% for mathematics, and 96% for science. Across all subjects and grades, the average participation rate was 98%.

Table IV-6. Number (N) and Participation Rate (PR) of Enrolled and Tested Students by Subject and Grade

Grade	English Language Arts			Math			Science		
	Enrolled (*N*)	Tested (*N*)	PR	Enrolled (*N*)	Tested (*N*)	PR	Enrolled (*N*)	Tested (*N*)	PR
3	34,583	34,084	99%	34,739	34,346	99%	—	—	—
4	35,522	35,015	99%	35,643	35,239	99%	—	—	—
5	35,701	35,238	99%	35,799	35,440	99%	35,815	35,444	99%
6	36,118	35,504	98%	36,213	35,666	98%	—	—	—
7	36,002	35,241	98%	36,087	35,407	98%	—	—	—
8	37,290	36,397	98%	37,399	36,583	98%	37,410	36,625	98%
10	38,072	36,736	96%	38,152	36,737	96%	—	—	—
11	—	—	—	—	—	—	37,236	35,653	96%

Table IV-7 shows participation rates by student group[4] and by State Board of Education (SBOE) district. The participation rates by student group and by SBOE district are not subject specific. If a student participated in one subject of the KAP assessment, the student is included in the calculation. The 286 school districts in Kansas are distributed among 10 SBOE districts. Some school districts appear in multiple SBOE districts when district boundaries extend to more than one SBOE district. The Kansas Unified School Districts document lists the school districts included in each SBOE district. Comparing participation rates of students within subject and grade by gender, ethnicity, race, EL status, and disability status, we note the following:

- Except for grade 7, no difference in participation rates between male and female groups
- Similar participation rates for different race groups, except in high schools:
  - Black students have lower participation rates than other race groups.
  - There is a slightly higher participation rate for non-Hispanic students than for Hispanic students.
  - Non-ELs have a higher participation rate than ELs.
- A higher participation rate for students without disabilities than for students with disabilities

The comparison of participation rates of different SBOE districts within each grade showed the following results:

- Participation rates in elementary schools are very similar across districts.
- Districts 5 and 9 have slightly higher participation rates in high schools.

SBOE districts 5 and 9 include a large number of school districts in the rural areas. Appendix C: School Board of Education District Demographic Distribution provides detailed demographic distribution of SBOE districts.

[4] Economically disadvantaged status is not shared with ATS to protect the privacy of students, so this student group is not included in the comparison.

Table IV-7. Participation Rate (%) by Demographic Characteristics and State Board of Education (SBOE) District

Characteristic	Grade							
	3	4	5	6	7	8	10	11
Gender								
Female	98	98	98	98	97	97	96	96
Male	98	98	98	98	98	97	96	96
Race								
Native American	97	98	97	98	97	96	95	96
Asian	98	98	98	99	98	99	97	98
Black	97	97	97	96	96	94	92	92
NHPI	98	100	100	99	95	99	96	94
Other	99	99	99	98	97	96	94	95
White	98	98	98	98	98	97	96	96
Hispanic								
No	99	99	99	98	98	97	96	96
Yes	97	97	97	97	96	96	95	95
SWD								
No	99	99	99	98	98	97	96	96
Yes	96	96	96	96	94	94	94	96
English learner								
No	99	99	98	98	98	97	96	96
Yes	97	97	97	97	96	95	94	93
SBOE district								
1	99	98	98	97	96	95	94	94
2	99	99	99	98	98	97	96	96
3	98	98	98	98	98	97	96	96
4	99	99	98	98	97	97	96	96
5	98	99	98	98	97	97	97	98
6	99	99	99	98	97	97	96	96
7	97	98	97	97	97	96	95	95
8	96	97	97	96	96	95	94	93
9	99	99	99	99	99	99	98	97
10	97	97	97	97	97	96	95	95

Note. NHPI = Native Hawaiian and Pacific Islander; SWD = student with disability.

For all tested students, Table IV-8 shows the percentage of students in each student group by grade. This summary is not subject specific. If a student tested in one subject of the KAP assessment, that student is included in the calculation. The student groups include gender, race, ethnicity, disability status, and EL status.[5] Each student group had similar numbers, except students with disabilities and ELs. There were approximately equal numbers of male and female students. The largest number tested by race group was white, and the largest number tested by ethnic group was non-Hispanic. More students without disabilities were tested than students with disabilities, and more non-ELs were tested than ELs. There was a decrease in the number of students with disabilities and ELs across grades. Lower grades had greater numbers of students with disabilities and ELs than did higher grades.

Table IV-8. Percentage of Tested Students by Demographic Characteristic and Grade

Characteristic	Grade							
	3	4	5	6	7	8	10	11
Gender								
Female	49.19	48.64	48.94	48.72	49.16	48.91	49.16	49.10
Male	50.81	51.36	51.06	51.28	50.84	51.09	50.84	50.90
Race								
Native American	1.91	1.76	1.94	1.93	2.07	2.16	2.55	2.51
Asian	2.87	3.03	3.04	2.97	2.96	2.94	2.98	3.26
Black	7.00	7.09	6.89	6.90	6.95	7.21	7.26	6.92
NHPI	0.32	0.38	0.30	0.32	0.36	0.36	0.28	0.25
Other	7.87	7.95	7.94	7.48	7.33	7.06	6.89	6.86
White	80.03	79.79	79.89	80.39	80.32	80.27	80.02	80.20
Hispanic								
No	77.89	77.91	77.97	78.16	77.88	77.91	77.63	78.71
Yes	22.11	22.09	22.03	21.84	22.12	22.09	22.37	21.29
SWD								
No	82.53	82.87	83.54	84.46	85.36	85.97	87.72	88.88
Yes	17.47	17.13	16.46	15.54	14.64	14.03	12.28	11.12
English learner								
No	85.57	86.26	87.14	88.13	89.59	90.85	92.38	92.95
Yes	14.43	13.74	12.86	11.87	10.41	9.15	7.62	7.05

Note. NHPI = Native Hawaiian and Pacific Islander; SWD = student with disability.

[5] Economically disadvantaged status is not shared with ATS to protect the privacy of students, so this student group is not included in the comparison.

IV.4.3.2. Operational Test Results

Table IV-9, Table IV-10, and

Table IV-11 present summaries of scale scores by grade for ELA, mathematics, and science. As noted previously, it is critical to consider variability in participation rates when interpreting KAP performance within and across years.

The minimum and maximum scale scores for each grade and subject were set at 220 and 380, respectively. As shown in tables IV-9 through IV-11, the mean scale scores were above 290 in lower grades (i.e., grades 3–5 in ELA and mathematics, and grade 5 in science) and approximately between 280 and 290 in higher grades. The standard deviations of scale scores were very similar across grades within each subject.

Table IV-9. Scale-Score Descriptive Statistics for English Language Arts

Grade	M[6]	SD	Min.	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max.
3	293.7	27.6	220	260	272	292	314	331	380
4	297.4	28.0	220	263	276	295	316	335	380
5	293.6	29.5	220	259	272	290	314	332	380
6	288.9	29.6	220	250	266	288	308	327	380
7	286.7	29.7	220	248	264	286	307	326	380
8	279.3	28.8	220	244	256	276	298	317	380
10	282.2	29.3	220	245	258	280	301	320	380

Note. M = mean; SD = standard deviation; P_{10}, P_{25}, P_{50}, P_{75}, and P_{90} = 10th, 25th, 50th, 75th, and 90th percentiles, respectively.

Table IV-10. Scale-Score Descriptive Statistics for Mathematics

Grade	M[4]	SD	Min.	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max.
3	302.0	31.7	220	261	280	300	324	342	380
4	292.5	30.0	220	257	268	288	314	335	380
5	291.3	30.0	220	257	268	285	309	335	380
6	287.9	30.0	220	254	266	284	308	328	380
7	288.3	29.0	220	258	267	283	306	329	380
8	283.8	29.6	220	253	262	278	302	325	380
10	282.6	27.5	220	255	264	276	296	320	380

Note. M = mean; SD = standard deviation; P_{10}, P_{25}, P_{50}, P_{75}, and P_{90} = 10th, 25th, 50th, 75th, and 90th percentiles, respectively.

[6] KAP does not have a vertical scale across grades. Thus cross-grade scale-score means are not comparable.

Table IV-11. Scale-Score Descriptive Statistics for Science

Grade	M[4]	SD	Min.	P_{10}	P_{25}	P_{50}	P_{75}	P_{90}	Max.
5	301.1	32.2	220	263	280	299	321	343	380
8	283.1	29.5	220	251	263	278	302	323	380
11	286.3	30.3	220	254	266	282	303	329	380

Note. M = mean; SD = standard deviation; P_{10}, P_{25}, P_{50}, P_{75}, and P_{90} = 10th, 25th, 50th, 75th, and 90th percentiles, respectively.

Table IV-12 provides the percentage of students achieving each performance level (i.e., levels 1 through 4) and the proficiency rate (i.e., percentage at level 3 and level 4) by subject and grade. Proficiency rates across all subjects and grades ranged from 22% to 51%. All three subjects tended to have lower proficiency rates in higher grades. A summary of the results across grades by subject follows.

- ELA
  - Level 1 percentages ranged from 18% to 37%.
  - Level 2 percentages ranged from 29% to 41%.
  - Level 3 percentages ranged from 20% to 34%.
  - Level 4 percentages ranged from 4% to 14%.
  - As grades increased, level 1 and level 2 percentages tended to increase, and level 3 and level 4 percentages tended to decrease.
- Mathematics
  - Level 1 percentages ranged from 19% to 46%.
  - Level 2 percentages ranged from 26% to 47%.
  - Level 3 percentages ranged from 14% to 31%.
  - Level 4 percentages ranged from 6% to 20%.
  - As grades increased, level 1 percentages tended to increase, and level 3 and level 4 percentages tended to decrease.
- Science
  - Level 1 percentages ranged from 25% to 46%.
  - Level 2 percentages ranged from 27% to 29%.
  - Level 3 percentages ranged from 17% to 26%.
  - Level 4 percentages ranged from 9% to 20%.
  - As grades increased, level 1 percentages tended to increase, and level 3 and level 4 percentages tended to decrease.

Table IV-12. Percentage of Students Achieving at Each Performance Level (PL) for English Language Arts (ELA), Mathematics, and Science

Grade	ELA PL					Mathematics PL					Science PL				
	1	2	3	4	**P**	1	2	3	4	**P**	1	2	3	4	**P**
3	31	30	26	14	**40**	22	26	31	20	**51**	—	—	—	—	—
4	18	38	34	11	**45**	19	43	26	12	**38**	—	—	—	—	—
5	31	29	26	14	**40**	33	33	20	13	**33**	25	29	26	20	**46**
6	37	29	28	7	**35**	35	34	21	10	**31**	—	—	—	—	—
7	36	31	26	7	**33**	23	47	24	6	**30**	—	—	—	—	—
8	35	41	20	4	**24**	46	29	18	7	**25**	46	29	17	9	**26**
10	35	37	23	5	**28**	45	33	14	8	**22**	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	—	45	27	17	11	**28**

Note. P = proficient (combination of performance levels 3 and 4). Column percentages may not total 100 because of rounding.

Table IV-13, Table IV-14, and Table IV-15 summarize the mean and standard deviation of the scale scores by demographic student group.[7]

[7] Economically disadvantaged status is not shared with ATS to protect the privacy of students, so this student group is not included in the comparison.

Table IV-13. English Language Arts Mean (M) and Standard Deviation (SD) of Scale Scores by Grade and Student Subgroup

Subgroup	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Gender														
Male	292.1	27.3	296.2	27.9	292.0	29.3	286.3	30.0	283.4	29.5	275.5	28.3	278.7	29.2
Female	295.3	27.8	298.7	28.0	295.2	29.6	291.5	29.0	290.2	29.6	283.3	28.9	285.8	29.0
Race														
NA	281.9	23.8	287.0	23.9	281.4	25.3	276.9	24.8	274.4	26.1	268.1	25.4	272.6	24.9
Asian	299.8	29.1	304.1	29.5	302.7	32.4	298.6	31.9	298.6	31.6	290.2	32.1	295.2	30.9
Black	279.9	23.1	283.6	25.7	279.0	25.5	272.3	27.4	272.4	26.4	264.1	24.1	267.1	25.4
NHPI	287.7	25.2	285.6	24.2	280.0	24.9	281.7	27.7	274.8	24.3	269.7	25.5	271.0	27.4
Other	290.8	26.8	294.6	28.2	290.1	29.2	285.8	28.4	284.5	30.4	276.1	28.0	280.3	28.1
White	295.2	27.6	298.9	27.8	295.1	29.4	290.5	29.4	288.1	29.5	280.8	28.7	283.5	29.2
Hispanic														
Yes	282.9	24.1	286.6	24.9	282.6	25.6	277.9	26.8	276.0	26.5	268.8	25.3	271.5	26.4
No	296.6	27.8	300.4	28.1	296.5	29.8	291.8	29.6	289.7	29.9	282.1	29.1	285.3	29.4
SWD														
Yes	277.7	23.9	279.3	24.5	273.6	26.0	266.2	25.4	263.8	24.4	256.7	22.4	258.0	23.4
No	297.0	27.1	301.1	27.2	297.5	28.6	293.0	28.5	290.6	28.8	282.9	28.1	285.5	28.5
EL														
Yes	278.0	21.6	281.0	22.0	274.8	21.8	267.9	23.2	263.7	21.1	255.2	18.1	255.7	20.0
No	296.1	27.6	299.8	28.0	296.1	29.5	291.4	29.3	289.1	29.5	281.5	28.6	284.3	28.9

Note. NA = Native American; NHPI = Native Hawaiian and Pacific Islander; SWD = student with disability; EL = English learner.

Table IV-14. Mathematics Mean (M) and Standard Deviation (SD) of Scale Scores by Grade and Student Subgroup

Subgroup	Grade 3		Grade 4		Grade 5		Grade 6		Grade 7		Grade 8		Grade 10	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Gender														
Male	304.5	33.3	296.1	31.3	294.7	31.9	289.2	30.9	290.5	30.5	284.7	30.8	283.4	28.7
Female	299.4	29.7	288.8	28.1	287.8	27.3	286.5	28.9	285.9	27.2	282.9	28.2	281.7	26.2
Race														
NA	287.8	28.0	282.4	24.9	280.6	24.5	276.2	24.6	277.3	22.1	272.5	24.3	272.5	21.2
Asian	313.7	35.2	304.3	34.5	307.0	35.4	304.0	36.6	307.0	37.2	303.7	39.3	302.9	38.1
Black	282.5	28.4	275.4	24.6	274.6	22.1	269.5	23.7	271.6	20.3	268.7	22.7	269.1	19.4
NHPI	295.0	32.6	282.8	27.6	279.1	24.8	279.2	28.4	276.9	20.5	274.7	25.1	272.5	24.2
Other	297.4	30.7	287.3	29.0	285.9	28.3	282.7	27.4	284.7	28.3	279.5	28.4	278.7	25.5
White	304.0	31.2	294.4	29.8	292.9	29.9	289.6	29.7	289.7	28.8	285.1	29.2	283.7	27.3
Hispanic														
Yes	288.7	28.0	280.6	25.3	280.0	24.0	275.4	24.6	276.8	23.1	272.6	24.2	272.1	21.0
No	305.7	31.7	295.9	30.3	294.4	30.7	291.3	30.4	291.5	29.7	287.0	30.2	285.6	28.4
SWD														
Yes	283.5	31.3	274.8	26.6	273.4	25.2	267.4	24.2	268.7	21.3	264.2	21.8	265.5	19.0
No	305.8	30.4	296.1	29.3	294.7	29.6	291.6	29.4	291.6	28.8	286.9	29.5	284.9	27.7
EL														
Yes	285.1	27.6	277.0	23.8	275.0	21.5	268.4	21.4	268.2	17.4	263.5	18.2	264.8	16.1
No	304.7	31.5	294.9	30.1	293.6	30.3	290.4	30.0	290.5	29.2	285.8	29.7	284.0	27.7

Note. NA = Native American; NHPI = Native Hawaiian and Pacific Islander; SWD = student with disability; EL = English learner.

Table IV-15. Science Mean (M) and Standard Deviation (SD) of Scale Scores by Grade and Student Group

Subgroup	Grade 5		Grade 8		Grade 10	
	M	SD	M	M	SD	M
Gender						
Male	303.4	33.7	285.4	31.2	287.2	32.2
Female	298.7	30.4	280.7	27.5	285.4	28.1
Race						
Native American	289.0	27.5	272.1	26.2	274.1	23.7
Asian	310.7	36.2	292.8	32.8	300.1	36.0
Black	283.0	26.5	266.7	22.7	269.2	21.9
NHPI	286.7	28.0	269.0	22.4	266.5	20.3
Others	296.3	31.1	279.3	28.6	283.6	28.8
White	303.1	32.1	284.8	29.5	287.9	30.3
Hispanic						
Yes	288.9	28.3	271.0	24.9	274.1	24.3
No	304.5	32.4	286.5	29.8	289.6	30.9
Student with disability						
Yes	284.1	30.5	265.9	24.9	268.4	24.1
No	304.4	31.5	285.8	29.3	288.5	30.2
English learner						
Yes	281.1	25.4	260.7	19.1	262.4	16.9
No	303.9	32.1	285.2	29.5	288.2	30.3

Note. NHPI = Native Hawaiian and Pacific Islander.

IV.4.3.3. Participation Trend

Table IV-16 presents enrollment trends for 2019–2024 for ELA, mathematics, and science.

There is a general downward trend in enrollments across most grades from 2019 to 2024, particularly noticeable in lower grades (e.g., grades 3–6). As grade levels increase, there is typically a slight increase or stabilization in enrollment numbers. The exception is in science, where enrollment decreases from grade 8 to grade 11. Despite these trends, enrollments are relatively stable across the years, with most changes within ±3%, indicating no drastic shifts in student numbers year over year.

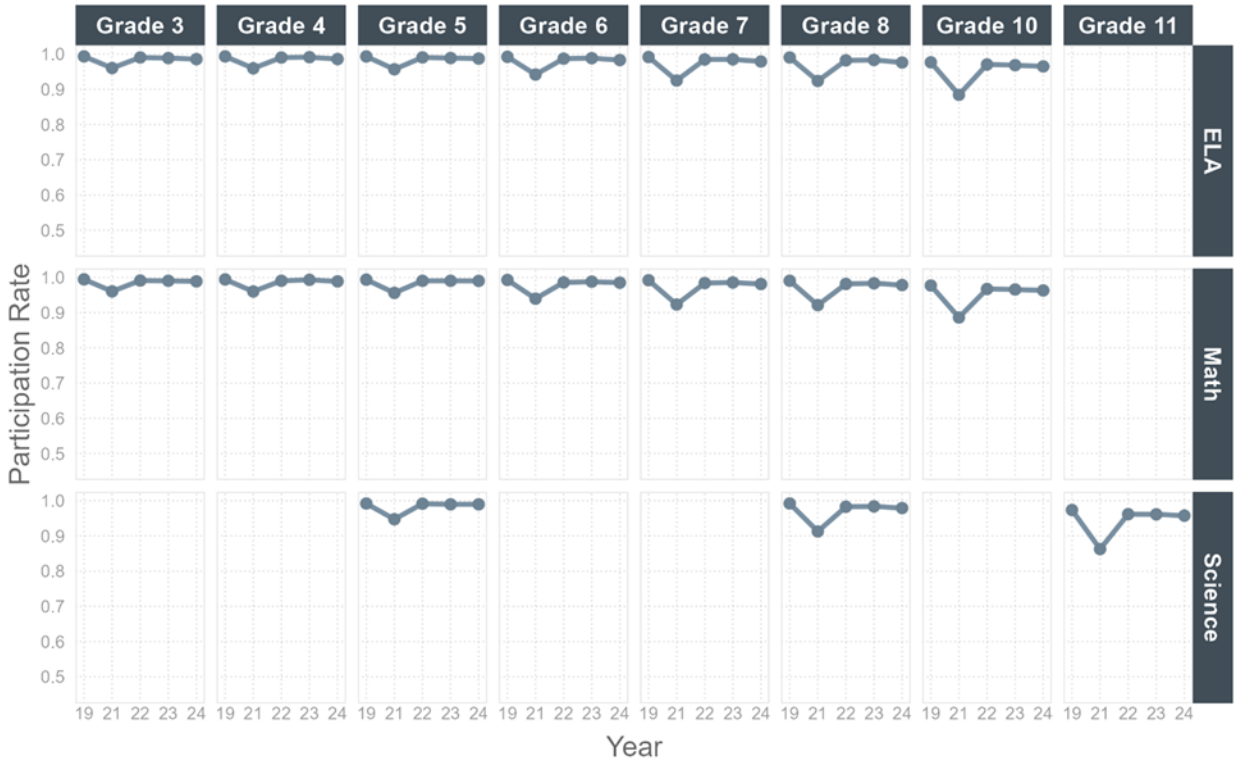
Table IV-16. Total Number of Enrolled Students by Subject and Grade for 2019–2024

Subject	Grade	2019	2021	2022	2023	2024
ELA	3	37,316	35,440	35,356	35,503	34,583
	4	37,920	35,547	35,878	35,595	35,522
	5	38,606	36,735	35,799	36,053	35,701
	6	38,537	37,225	36,953	35,899	36,118
	7	37,680	38,145	37,370	37,096	36,002
	8	37,065	38,275	38,173	37,579	37,290
	10	36,973	36,811	36,747	38,184	38,072
Mathematics	3	37,346	35,455	35,389	35,562	34,739
	4	37,950	35,557	35,907	35,648	35,643
	5	38,619	36,743	35,830	36,095	35,799
	6	38,561	37,224	36,968	35,946	36,213
	7	37,693	38,142	37,387	37,147	36,087
	8	37,076	38,286	38,191	37,645	37,399
	10	36,994	36,813	36,799	38,225	38,152
Science	5	38,632	36,756	35,849	36,104	35,815
	8	37,103	38,301	38,204	37,650	37,410
	11	34,938	35,527	35,259	35,754	37,236

Note. ELA = English language arts.

Figure IV-1 presents the participation rates (i.e., ratio of students receiving a score report out of students enrolled) for different subjects and grades by year from 2019–2024. From 2019, the participation rates were approximately 98% for all grades. There was a decrease in participation rates from 2019 to 2021,[8] from approximately 98% to 93% in lower grades and from approximately 98% to 88% in higher grades. Then, in 2022, the participation rates increased to 98% for all grades and subjects before staying equal or decreasing slightly in 2024.

Figure IV-1. Participation Rates for 2019–2024 by Subject and Grade



[8] The 2020–2021 academic school year and assessment were significantly affected by the COVID-19 pandemic. For more information about 2020–2021 assessment results and the impact of COVID-19, please refer to the KAP technical report on COVID-19 Effect in 2021.

IV.4.3.4. Performance Trend

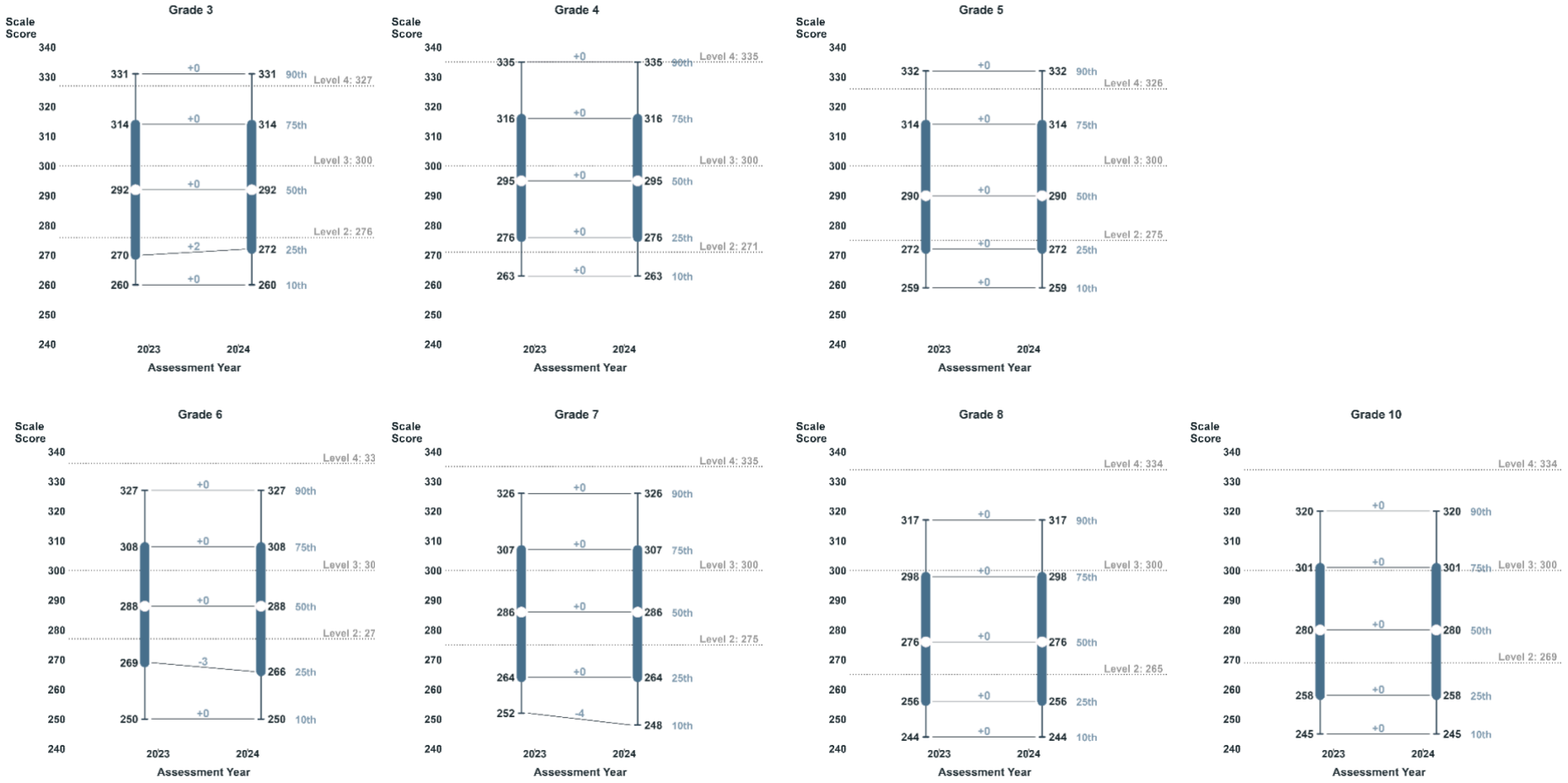
ELA, mathematics, and science scale-score trends from 2023–2024 are presented in Figure IV-2, Figure IV-3, and Figure IV-4. These trend graphs include percentiles (10th, 25th, 50th, 75th, and 90th percentiles) of scale scores in 2023 and 2024 and the changes of selected percentiles between these years. Also, three level cuts are in the graph as a reference.

For ELA, there is a slight increase in scale scores at the 25th percentile at grades 3 and a slight decrease in scale score at the 25th percentile at grade 6 and at the 10th percentile at grade 7.

In mathematics, there are slight changes in the scale scores at the 10th and 25th percentiles. In addition, grades 7 and 8 have increases in the scale score at the 50th percentile. Grade 8 also has a slight increase in the scale score at the 75th percentile.

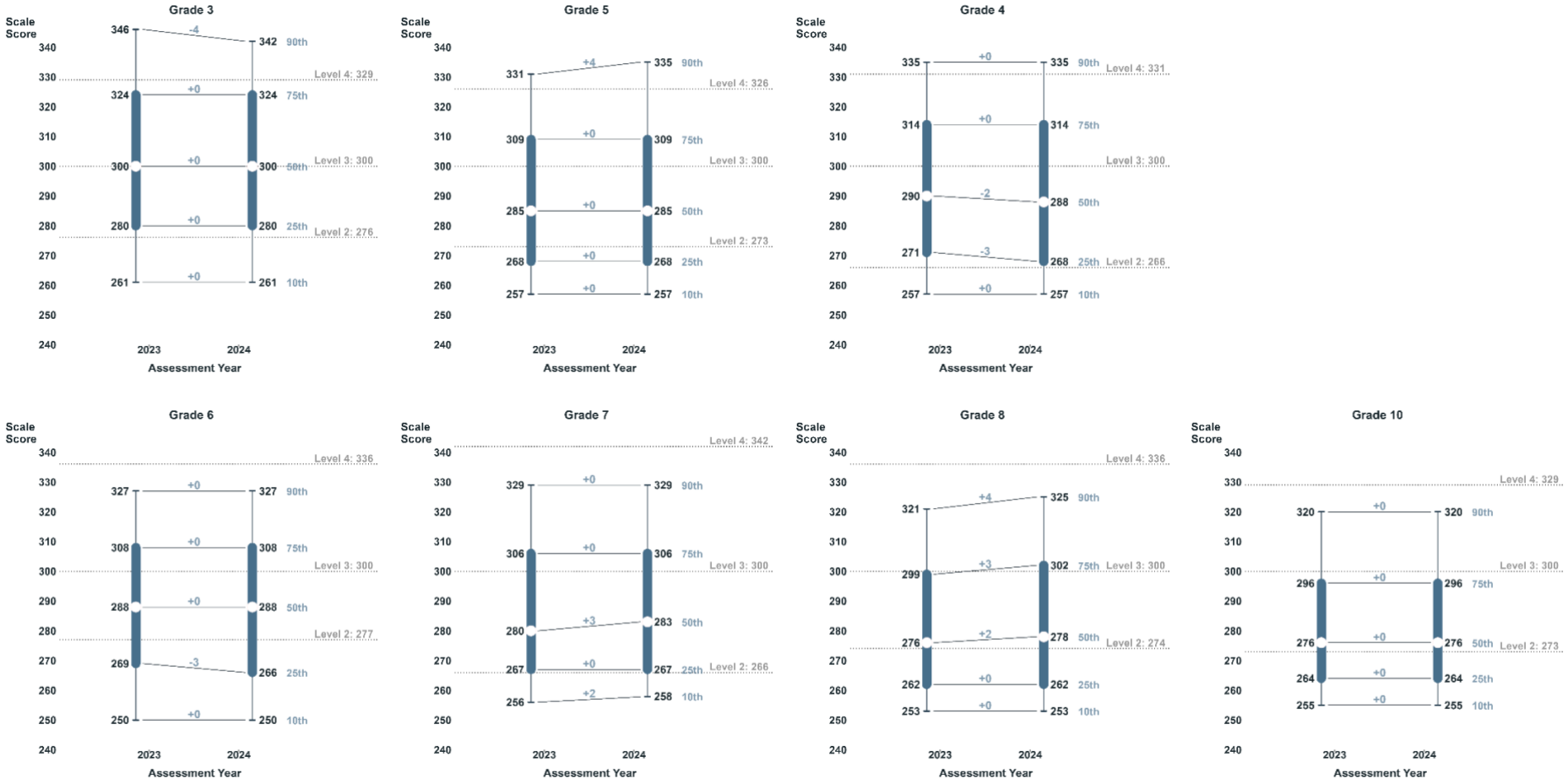
In science, grade 5 shows a slight increase in scale scores at the 25th and 50th percentiles, grade 8 shows a slight increase in scale scores at all but the 50th percentiles, and grade 11 shows a small decrease in scale scores at the 75th percentile.

Figure IV-2. English Language Arts (ELA) Scale-Score Percentile Trend by Grade Between 2023 and 2024



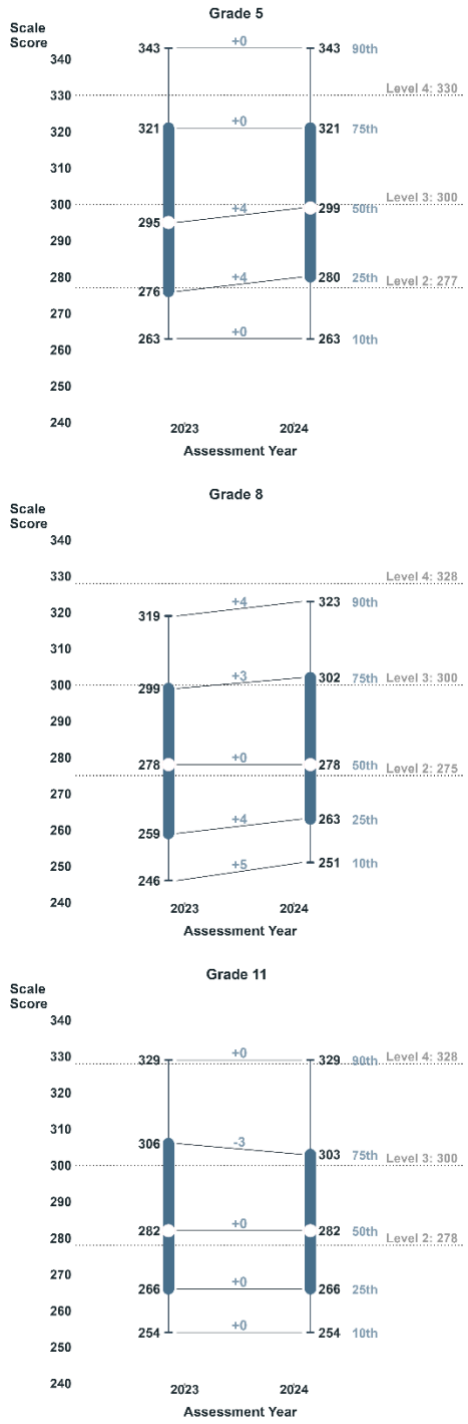
Note. P10, P25, P50, P75, and P90 = 10th, 25th, 50th, 75th, and 90th percentiles, respectively.

Figure IV-3. Mathematics Scale-Score Percentile Trend by Grade Between 2023 and 2024



Note. P10, P25, P50, P75, and P90 = 10th, 25th, 50th, 75th, and 90th percentiles, respectively.

Figure IV-4. Science Scale-Score Percentile Trend by Grade Between 2023 and 2024



Note. P10, P25, P50, P75, and P90 = 10th, 25th, 50th, 75th, and 90th percentiles, respectively.

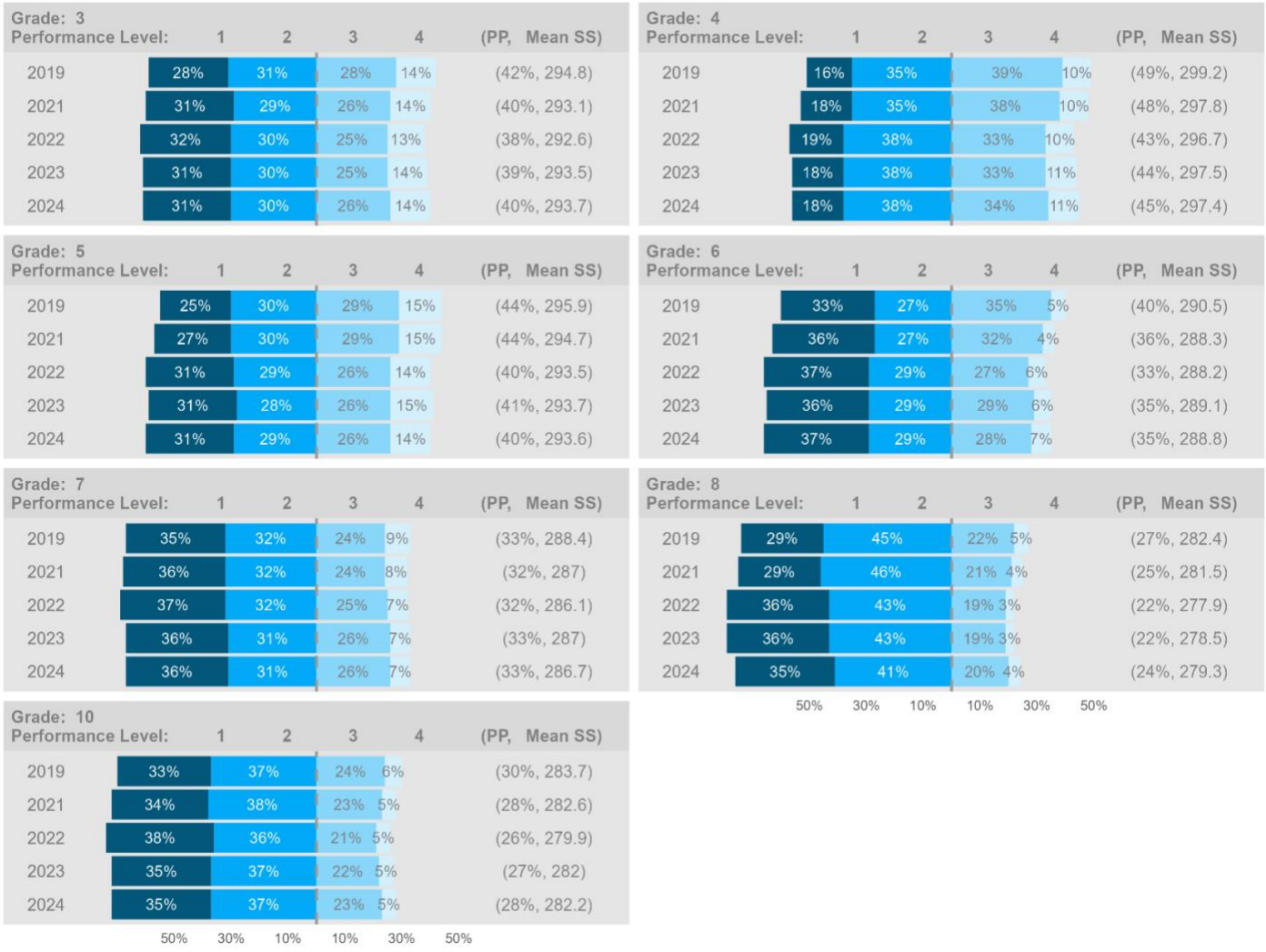
Figure IV-5, Figure *IV-6*, and Figure IV-7 present the performance-level distribution trends across years for ELA, mathematics, and science, as well as the proficiency-rate trends and average scale-score trends from 2019 to 2024. A new set of reporting-scale and performance standards were set for grade 10 mathematics in 2022; therefore, the trend starts from 2022 for grade 10 mathematics. A summary of the results across grades by subject follows.

- ELA
  - The mean scale scores generally decrease slightly across grades and years, with a few exceptions where scores remain stable. Examples of scores that decrease slightly include:
    - Grade 4 has a small decrease from 299 in 2019 to 297 by 2024.
    - The mean scale score of grade 5 drops from 296 in 2019 to 294 by 2024.
    - Grade 8 has a drop from 282 in 2019 to 279 in 2024, and grade 10 from 284 in 2019 to 282 in 2024.
  - The percentage of students in performance level 1 (PL1) generally increases across most grades, indicating a slight shift toward lower performance over time. For instance, grade 6 saw an increase from 33% in 2019 to 37% in 2024, and grade 8 increased from 29% to 35% during the same period.
  - The percentages in performance level 2 (PL2) remain relatively stable or show slight fluctuations. For example, in grade 4, the percentage fluctuates slightly between 35% and 38% from 2019 to 2024. The largest change in PL2 occurs at grade 8, with a drop from 45% in 2019 to 41% in 2024.
  - The percentages in performance level 3 (PL3) remain stable across years.
  - Performance level 4 (PL4) is mostly stable but with slight fluctuations. For example, grade 8 drops from 5% in 2019 to 4% in 2024, while grade 7 drops from 9% in 2019 to 8% in 2021, and then remains stable at 7% from 2022 to 2024.

- Mathematics
  - The mean scale scores for mathematics show minor fluctuations across grades and years, with most grades experiencing slight decreases or remaining unchanged over time. Specifically:
    - The grade 3 mean scale score remains stable, from 303 in 2019 to 302 in 2024.
    - The grade 4 mean scale score stays stable at 293, with minor fluctuations in PL2 and PL3.
    - Grade 6 shows a slight decrease in mean scale score, from 291 in 2019 to 288 in 2024.
    - Grades 6–10 show a general decrease or stabilization in mean scale scores.
  - The percentage of students in PL1 increases or remains stable for most grades. For instance, grade 6 sees an increase in PL1 from 29% in 2019 to 35% in 2024.
  - PL2 percentages remain stable or show slight fluctuations across the years. In grade 4, for example, the percentage in PL2 stays around 43–46% from 2019 to 2024.
  - PL3 generally shows a downward trend, with decreases in some grades. For example, grade 4 sees a decrease from 39% in 2019 to 33% in 2024.

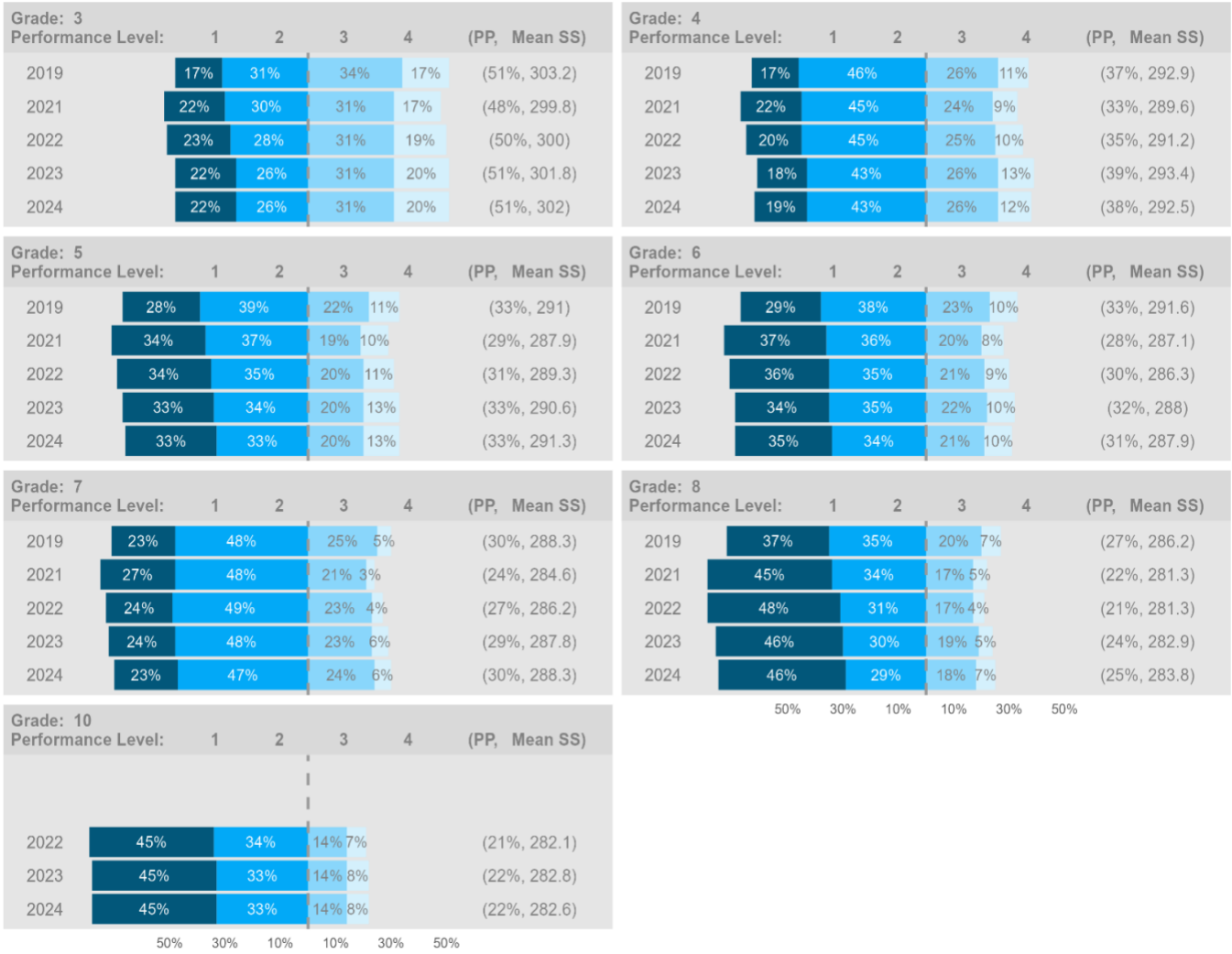
  - PL4 percentages remain stable with slight fluctuations across the years. For instance, grade 3 fluctuates around 17–20% from 2019 to 2024.
- Science
  - The mean scale scores for science remain relatively stable with some minor fluctuations. For example:
    - For grade 5, the mean scale score shows stability between 2019 and 2023 (around 299), with a slight increase to 301 in 2024.
    - For grade 8, the mean scale score shows a decrease from 287 in 2019 to 281 in 2023, followed by an increase to 283 in 2024.
    - For grade 11, the mean scale score decreases from 289 in 2019 to 286 in 2024.
  - PL1 at grade 5 is between 25% and 28%, with a slight decrease from 27% in 2023 to 25% in 2024. In grade 8, PL1 increases from 37% in 2019 to 48% in 2023. In grade 11, PL1 increases from 39% in 2019 to 45% in 2024.
  - PL2 remains relatively stable across most grades and years, with slight changes. For example, in grade 5, PL2 fluctuates between 28% and 30% across the years, Grade 8 remains around 29% in the years 2022–2024, and grade 11 is between 27% and 28% for all years.
  - PL3 at grade 5 shows a gradual decrease from 30% in 2019 to 26% in 2024. For grade 8, PL3 fluctuates between 22% in 2019 and 17% in 2024. In grade 11, PL3 decreases from 23% in 2019 to 17% in 2024.
  - PL4 at grade 5 increases from 14% in 2019 to 20% in 2024. In grade 8, PL4 decreases from 10% in 2019, to 7% in 2022, and to 9% in 2024. In grade 11, PL4 remains stable at 11% across the years.

Figure IV-5. Performance-Distribution, Proficiency-Rate, and Average Scale-Score Trend for English Language Arts for 2019–2024



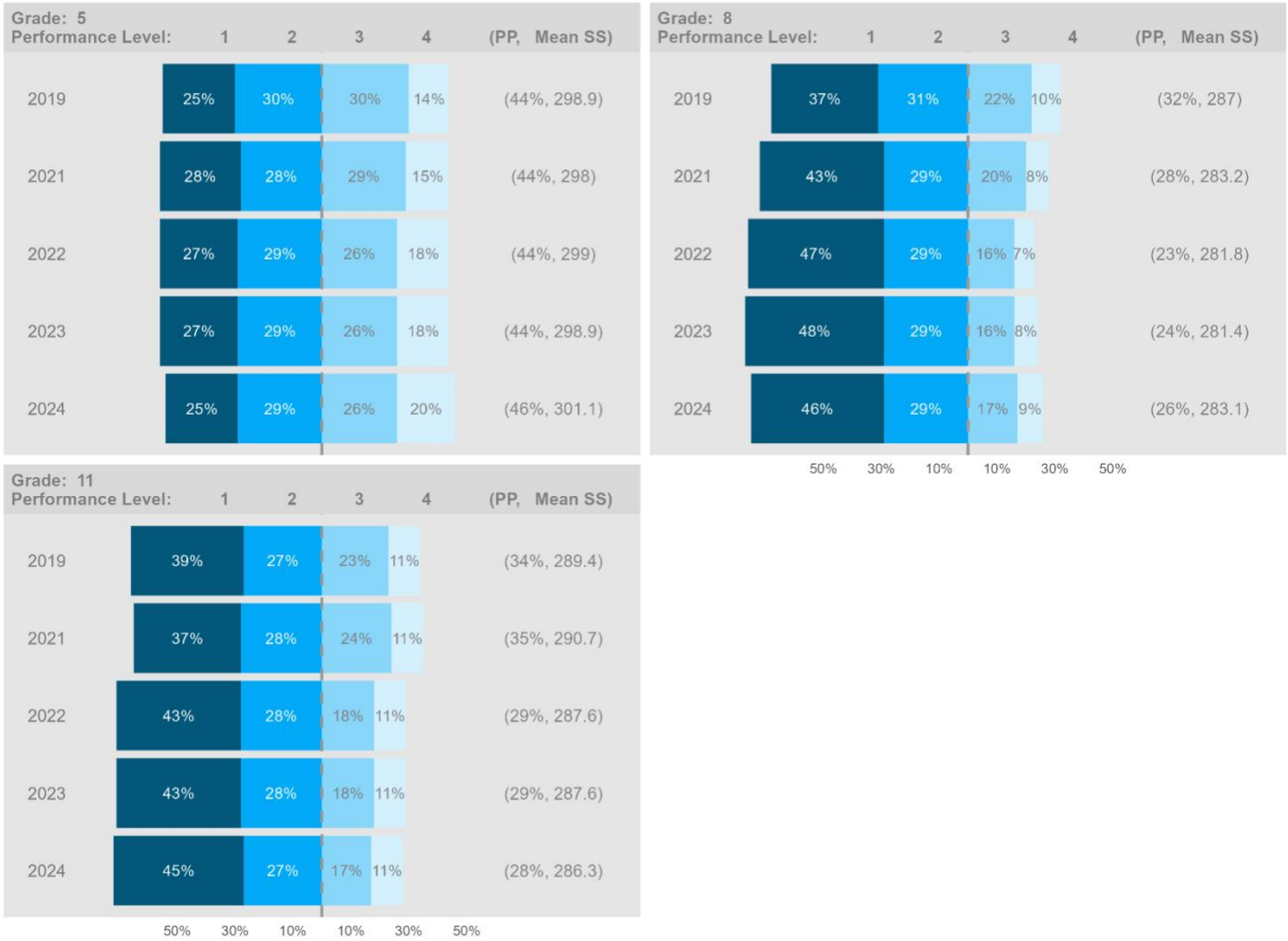
Note. PP = proficiency percentage; SS = scale score.

Figure IV-6. Performance-Distribution, Proficiency-Rate, and Average Scale-Score Trend for Mathematics for 2019–2024



Note. PP = proficiency percentage; SS = scale score.

Figure IV-7. Performance-Distribution, Proficiency-Rate, and Average Scale-Score Trend for Science for 2019–2024



Note. PP = proficiency percentage; SS = scale score.

IV.4.3.5. Quality-Control Checks

The scoring and reporting process of KAP test results had multiple quality-control steps. The 2024 scoring and reporting quality-control steps remained the same as in previous years. For a detailed description of quality-control checks, see section IV.4.3.5. Quality-Control Checks in the *2022 KAP Technical Manual*.

IV.5. Multiple Assessment Forms

In large-scale assessment programs, different item sets may be used on test forms within and across years. Linking the scores from these different test forms puts the form scores on a common scale and ensures that all forms for a given grade and subject area provide comparable scores. This outcome means that students will not have an unfair advantage or disadvantage simply because they took an easier or harder test form than other students did.

All three subject areas used one operational form in 2024, and those operational forms are same as forms used in 2022 and 2023, so no linking was conducted in 2024.

IV.6. Multiple Versions of an Assessment

KAP assessments are administered online via the Kite® platform, which can be used on Windows PCs, Macs, Chromebooks, iPads, and other tablets. All students who take KAP assessments must use Kite Student Portal (described in section II.4.2. Test-Administration Procedures in the *2022 KAP Technical Manual*). The Kite platform can provide various accommodations for students with special needs. For details about accommodations, refer to section V.4. Accommodations. Starting in 2024, students can take KAP assessments via the Kite platform remotely. II.4. Test Administration and II.5. Monitoring Test Administration describe the administration procedures for virtual testing. The one exception is that a paper-pencil braille form is provided to students who need it. In this section, we provide evidence of comparability among different devices, between non-virtual and virtual testing, and for the braille form.

IV.6.1. Comparability of Braille Form

No grade or subject-area test has more than 10 students taking the braille form.[9] The braille version has the same operational items as the online version, but no field-test items. When the American Printing House (APH) translated items to braille format, it modified some formats of items to provide adequate experience for students who are blind or visually impaired, without introducing construct-irrelevant variance. For example, the radio buttons of the selected-response items on the online version are changed to option labels (i.e., A, B, C, and D). Moreover, APH and the AAI content team collaborate to construct test-administration notes for the braille form, which add clarifying language so that students who are blind or visually impaired can access the same information as their sighted peers.

[9] The sample sizes of braille forms were too small to undertake a comparability study between the braille version and online version.

IV.7. Technical Analysis and Ongoing Maintenance

Every year, there are two to three KAP Technical Advisory Committee meetings. Independent national technical advisors came together to monitor, review, and advise on technical decisions for KAP. This technical manual also includes a series of technical analyses that use this year's testing data. These analyses include DIF analysis, relationships among different assessments, reliability analyses, analyses of classification consistency and accuracy, test-result summaries, and trend analyses.

In 2024–2025, a new summative assessment will be administrated with new achievement standards. Preparation work is underway, including item development, item review, field testing, psychometric-procedure planning, report design, and standard-setting planning.

V. Inclusion of All Students

This chapter presents information about the inclusion of all students in the Kansas Assessment Program (KAP), including students with disabilities and English learners (ELs). More information about accessibility supports and accommodations for KAP can be found in the *Kansas Accessibility Manual*, the Tools and Accommodations for the Kansas Assessment Program document, and the *Kansas Assessment Examiner's Manual*.

The Kansas State Department of Education (KSDE) complies with the Elementary and Secondary Education Act (ESEA) and the Individuals with Disabilities Education Act (IDEA), both of which require all students, including students with disabilities and ELs, to participate in assessments used for accountability purposes. One of the principles of ESEA is strong accountability for educational achievement results for all students. Through this federal legislation, assessments that aim to increase accountability provide important information regarding (a) schools' success in including all students in standards-based education, (b) students' achievement of standards, and (c) improvements needed for specific groups of students. IDEA explicitly governs services provided to students with disabilities. Accountability at the individual level is provided through the Individualized Education Program (IEP), Section 504 plan,
or individual learning plan (ILP). All of these plans are developed to address each student's unique needs.

V.1. Procedures for Including Students With Disabilities

Accessibility tools and accommodations that are available either within or outside the Kite® system allow students with disabilities to take KAP assessments. Details about different tools and accommodations are in section V.3. Accessibility Tools and V.4. Accommodations. Inclusion of students with disabilities is achieved by providing clear guidelines for educators, so they can register their students with different needs. The *Kansas Assessment Examiner's Manual* describes step-by-step registration procedures for students who need accommodations.

V.2. Procedures for Including English Learners

As described in section I.3. Required Assessments and Intended Population, ELs are required to take the KAP assessments, although they do not have to take the English language arts (ELA) test in the first year they enter the United States. Accessibility tools and accommodations that are available either within or outside the Kite system allow ELs to take KAP assessments. Specific accessibility tools and accommodations for ELs include directions read aloud by a synthetic voice, electronic translators and word-to-word translators (not for ELA passages), translation dictionaries, and Spanish keyword translation for mathematics and science assessments. Details about different tools and accommodations are in section V.3. Accessibility Tools and V.4. Accommodations. Inclusion of ELs is achieved by providing clear guidelines for educators, so they can register their students with different needs. The *Kansas Assessment Examiner's Manual* describes step-by-step registration procedures for students who need accommodations.

V.3. Accessibility Tools

Accessibility tools are available for all students taking KAP assessments. In 2024, there was no change in available tools. For the descriptions of accessibility tools and recommendations for use, see section V.3. Accessibility Tools in the *2022 KAP Technical Manual*.

V.4. Accommodations

Assessment accommodations are practices and procedures that provide equitable access during instruction and assessments for students with special needs. These accommodations may not alter the assessment's validity, score interpretation, reliability, or security. They are designed to reduce or eliminate the effects of a student's disability or English proficiency; however, they do not alter learning expectations. The KAP administration implements the same rules for using accommodations on the assessments across years. For the detailed rules and descriptions for all available KAP accommodations, see section V.4. Accommodations in the *2022 KAP Technical Manual*.

V.4.1. Frequency of Accommodation Use

Table V-1 provides a summary of the number of students for whom each accommodation was requested for the 2024 test administration. The table shows that text-to-speech at the item level (TTS: items) is the most requested accommodation option. A text-to-speech accommodation provides audio readings of test items while visually presenting an item's text on a screen. Note that students may receive multiple types of accommodations.

Table V-1. Frequency of Accommodation Requests by Grade

Accommodation	Grade							
	3	4	5	6	7	8	10	11
American Sign Language (ASL)	13	14	14	11	22	23	16	8
Auditory calming	69	86	90	105	207	220	212	230
Braille form	2	3	1	2	0	2	5	3
Color contrast	5	9	10	17	18	22	16	21
Color overlay	4	15	14	14	25	22	27	28
Key word translation	335	401	405	454	475	502	536	514
Masking	4	7	5	3	8	5	16	16
Reverse contrast	5	1	2	7	3	1	7	10
Switches	7	5	8	7	2	5	3	3
TTS: items	4,858	5,451	5,583	4,909	4,582	4,406	3,559	2,991
TTS: items and passages	410	453	394	238	165	121	33	0
Whole-screen magnification	24	36	56	65	34	60	96	65
Total	**5,736**	**6,481**	**6,582**	**5,832**	**5,541**	**5,389**	**4,526**	**3,889**

Note: TTS = text-to-speech audio.

VI. Academic Achievement Standards and Reporting

This chapter describes updates related to achievement standards (cut scores) and reporting for the Kansas Assessment Program (KAP). For the subjects of English language arts (ELA) and mathematics (except for grade 10 mathematics), the KAP assessment uses the same achievement standards that were set in 2015; grade 10 mathematics uses new achievement standards that were set in 2022. For science, the assessment uses the same achievement standards that were set in 2017. The format of score reports and available resources remains unchanged from 2015 for ELA and mathematics and from 2017 for science.

VI.1. State Adoption of Academic Achievement Standards for All Students

Policy performance level descriptors (PLDs) define the KAP academic achievement standards. Although the KAP assessment is based on content standards, the assessment evaluates student performance using academic achievement standards. PLDs describe the expected academic achievement at each performance level.

Classifying student assessment performance into a given performance level means that the student meets the minimum expected knowledge and skills of that performance level. This interpretation applies to all students who participate in the KAP assessment. The policy PLDs have four levels: 1, 2, 3, and 4. Students who achieve levels 3 and 4 are considered to have met the academic expectations of postsecondary readiness; that is, they are proficient. The state adopted the new academic achievement standards defined by the policy PLDs[10] for ELA and mathematics in grades 3–8 in 2015, for grade 10 mathematics in 2022, and for science in 2017.

VI.2. Achievement Standard Setting

For the KAP assessment, standard setting occurred in 2015 for ELA and mathematics, in 2022 for grade 10 mathematics again, and in 2017 for science. The 2024 KAP assessment continues to use the achievement standards that were set in 2015 for ELA and mathematics in grades 3–8, in 2022 for grade 10 mathematics, and in 2017 for science. For the procedures and outcomes for the 2015 ELA and mathematics standard setting, see chapter 3, Standard Setting, in the *2015 KAP Technical Manual*. For the procedures and outcomes for the 2022 grade 10 mathematics standard setting, see section VI.2. Achievement Standard Setting in the *2022 KAP Technical Manual*. For the procedures and outcomes for the science standard setting that occurred in 2017, see section VI.2. Achievement Standard Setting in the *2017 KAP Technical Manual*.

VI.3. Challenging and Aligned Academic Achievement Standards

Educators set the KAP's academic achievement standards to align with the state content standards (i.e., the Kansas Standards). Section VI.3. Challenging and Aligned Academic Achievement Standards in the *2022 KAP Technical Manual* describes the process of developing those challenging academic achievement standards aligned to content standards.

[10] A minor language change was implemented in 2022 on policy PLDs. The language was changed from "college and career readiness" to "postsecondary readiness," but the expectation for each achievement level remains the same.

VI.4. Reporting

For each tested subject, the KAP assessment provides separate score reports to students, schools, and districts. The information on the report includes the following:

- Student reports: overall scale score, standard error of measurement, performance level, PLDs, and subscore
- School reports: school medium scale score, school performance-level distribution, and school aggregated subscore rating
- District reports: district medium scale score, district performance-level distribution, and district aggregated subscore rating

Examples of a KAP student score report and KAP school/district report are included in Appendix D: Sample KAP ReportsThese reports include students' overall and subscore performances. For a
detailed description of KAP score reports, see section VI.4. Reporting in the *2022 KAP Technical Manual*.

To help educators and parents interpret KAP results, the KAP Educator Guide and the KAP Parent Guide are also published on the KAP website so that educators and parents can access them easily. Both guides include a letter from Dr. Randy Watson, Kansas Commissioner of Education; an overview of test purposes, content, and format; descriptions of the KAP scoring process; suggestions for how to use test scores and how to improve KAP scores; and an explanation of the information presented on the score reports.

The KAP in-person testing window started on March 18, 2024, and ended on April 19, 2024. Virtual school remote testing started on April 22, 2024, and ended on May 3, 2024. One week after the closing of the testing window, KAP ELA, mathematics, and science score reports were available for KSDE review. After KSDE approved the score reports, these reports were made available to districts and then to the parents.

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Appendix A: Item Statistics Flagging Criteria

Table A-1. Item Statistics Flagging Criteria

Statistic	Criteria	Rationale for Flagging
Omit	Omit correlation > .10 Omit percentage > .05	Items with a high omission rate may indicate potential issues with the item that are causing students to skip it.
Differential item functioning (DIF)	Gender R^2 change > 0.035 Race R^2 change > 0.035 Ethnicity R^2 change > 0.035 EL R^2 change > 0.035	Items exhibiting DIF may indicate potential fairness issues.
Item-total correlation	Item-total correlation ≤ .25	Items with low item-total correlation may indicate that the item is not effectively distinguishing between students at different performance levels.
p value	*p* value < 0.2 *p* value > 0.9	Items that are either too difficult or too easy may indicate issues that prevent most students from answering them correctly or incorrectly.
Distractors for selected-response items	Correlation of distractors > –0.05 Percentage of students who select a distractor > percentage of students who select the key	Items with attractive distractors can introduce construct-irrelevant variance and may not effectively differentiate between students with varying performance levels.

Note. EL = English learner.

Appendix B: Subscore Reliability

Table B-1. English Language Arts Subscore Reliability by Grade

Grade	Subscore Name	Reliability
3	Overall Reading	.71
	Reading: Key Ideas & Details	.64
	Reading: Craft, Structure, & Language in Reading	.65
	Overall Writing	.62
	Writing: Text Types and Purposes	.55
	Writing: Language in Writing	.59
4	Overall Reading	.70
	Reading: Key Ideas & Details	.65
	Reading: Craft, Structure, & Language in Reading	.64
	Overall Writing	.60
	Writing: Text Types and Purposes	.54
	Writing: Language in Writing	.61
5	Overall Reading	.71
	Reading: Key Ideas & Details	.67
	Reading: Craft, Structure, & Language in Reading	.61
	Overall Writing	.61
	Writing: Text Types and Purposes	.55
	Writing: Language in Writing	.63
6	Overall Reading	.71
	Reading: Key Ideas & Details	.69
	Reading: Craft, Structure, & Language in Reading	.59
	Overall Writing	.60
	Writing: Text Types and Purposes	.55
	Writing: Language in Writing	.59
7	Overall Reading	.69
	Reading: Key Ideas & Details	.63
	Reading: Craft, Structure, & Language in Reading	.62
	Overall Writing	.61
	Writing: Text Types and Purposes	.61
	Writing: Language in Writing	.52
8	Overall Reading	.68
	Reading: Key Ideas & Details	.61
	Reading: Craft, Structure, & Language in Reading	.61
	Overall Writing	.68
	Writing: Text Types and Purposes	.63
	Writing: Language in Writing	.64

Grade	Subscore Name	Reliability
10	Overall Reading	.68
	Reading: Key Ideas & Details	.65
	Reading: Craft, Structure, & Language in Reading	.57
	Overall Writing	.61
	Writing: Text Types and Purposes	.59
	Writing: Language in Writing	.56

Table B-2. Mathematics Subscore Reliability by Grade

Grade	Subscore Name	Reliability
3	Skills and Concepts	.81
	Operations and Algebraic Thinking	.72
	Geometry	.69
	Number and Operations with Fractions	.63
	Measurement and Data	.71
	Strategic Thinking and Reasoning	.55
4	Skills and Concepts	.80
	Operations and Algebraic Thinking	.65
	Number and Operations in Base Ten	.66
	Number and Operations with Fractions	.74
	Measurement and Data	.55
	Strategic Thinking and Reasoning	.56
5	Skills and Concepts	.79
	Number and Operations in Base Ten	.69
	Number and Operations with Fractions	.68
	Measurement and Data	.67
	Strategic Thinking and Reasoning	.56
6	Skills and Concepts	.79
	Geometry	.61
	Statistics and Probability	.60
	Ratios and Proportional Relationships	.62
	The Number System	.68
	Expressions and Equations	.69
	Strategic Thinking and Reasoning	.60
7	Skills and Concepts	.77
	Geometry	.61
	Statistics and Probability	.62
	Ratios and Proportional Relationships	.58
	The Number System	.67
	Expressions and Equations	.67
	Strategic Thinking and Reasoning	.53
8	Skills and Concepts	.76
	Geometry	.64
	Expressions and Equations	.67
	Functions	.65
	Strategic Thinking and Reasoning	.62

Grade	Subscore Name	Reliability
10	Skills and Concepts	.74
	Geometry	.68
	Statistics and Probability	.59
	Algebra	.65
	Functions	.51
	Strategic Thinking and Reasoning	.50

Table B-3. Science Subscore Reliability by Grade

Grade	Subscore Name	Reliability
5	Physical and Chemical Sciences	.64
5	Life Sciences	.58
5	Earth and Space Sciences	.66
8	Physical and Chemical Sciences	.58
8	Life Sciences	.61
8	Earth and Space Sciences	.55
11	Physical and Chemical Sciences	.61
11	Life Sciences	.65
11	Earth and Space Sciences	.60

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Appendix C: School Board of Education District Demographic Distribution

Table C-1. Number of Students Enrolled and Their Demographic Distribution by State Board of Education (SBOE) District

SBOE District	*N*	% of District Student Population													
		Gender		Race						Hispanic		SWD		EL	
		Female	Male	AI	Asian	Black	NHPI	Other	White	No	Yes	No	Yes	No	Yes
1	63,730	49	51	3	3	11	1	9	73	77	23	84	16	87	13
2	63,266	49	51	2	7	11	0	6	74	74	26	88	12	84	16
3	59,773	49	51	1	6	6	0	6	81	85	15	88	12	92	8
4	83,185	49	51	2	3	10	0	8	77	77	23	86	14	87	13
5	32,606	49	51	4	1	2	0	4	89	61	39	86	14	79	21
6	37,471	49	51	2	2	9	1	12	75	81	19	82	18	93	7
7	62,388	49	51	2	3	10	0	8	76	75	25	83	17	88	12
8	39,462	49	51	2	5	16	0	10	68	70	30	84	16	84	16
9	35,615	49	51	2	1	2	0	7	88	91	9	83	17	98	2
10	58,294	49	51	1	3	11	0	9	75	76	24	83	17	88	12

Note. AI = American Indian; NHPI = Native Hawaiian and Pacific Islander; SWD = student with disability; EL = English learner.

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Appendix D: Sample KAP Reports

Figure D-1. Sample KAP Student Report

STUDENT REPORT: Smith, Sean
GRADE: 10 English Language Arts / STATE ID: 123456789
SCHOOL: Meadowlark School
DISTRICT: Sunflower District / #D1001

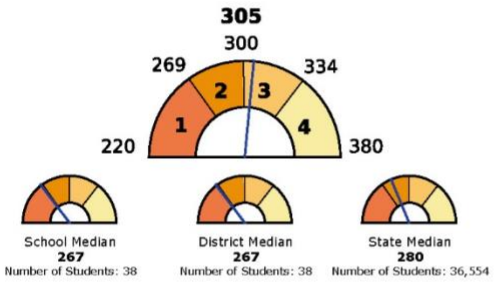
2023—2024 KAP

The KAP assessments measure students' understanding of the Kansas Standards at each grade. The English language arts assessment asks students to read and answer questions about literary passages, informational texts, and writing samples. Students demonstrate their knowledge and skills related to reading and writing by selecting the right answer and sorting, matching, labeling, and ordering information.

English Language Arts Score: Level 3

1 2 **3** 4

Your student's performance level from last year is not available.



Students who score at this level can typically

- read and understand moderately complex grade-level texts
- summarize themes
- identify implied or clear details to support an idea
- determine meanings of more difficult words and complex figurative language
- identify literary elements and text structures and their impact on meaning
- determine point of view or purpose
- revise or edit a text to use academic language and correct grammar and punctuation
- organize a text using sequence and logic
- determine if information is relevant
- use strategies to elaborate on ideas and structure texts

Standard error of measurement for this report:
Student — 10.3 | School — 5.5 | District — 5.5 | State — 0.2
The standard error indicates how much a student's score might vary if the student took many equivalent versions of the test (tests with different items but covering the same knowledge and skills).

Performance Level Descriptions

Level 1: A student at Level 1 shows a limited ability to understand and use the skills and knowledge needed for postsecondary readiness.

Level 2: A student at Level 2 shows a basic ability to understand and use the skills and knowledge needed for postsecondary readiness.

Level 3: A student at Level 3 shows an effective ability to understand and use the skills and knowledge needed for postsecondary readiness.

Level 4: A student at Level 4 shows an excellent ability to understand and use the skills and knowledge needed for postsecondary readiness.

For more details about how your student performed on specific types of test questions, see the back of this report. →

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STUDENT REPORT | STUDENT: Smith, Sean | STATE ID: 123456789 | GRADE: 10 English Language Arts

Your Student's Performance

(+) Exceeds (=) Meets (−) Below (×) Insufficient Data

OVERALL READING

(=) **In this area, your students typically performed as well as students who received the minimum Level 3 score.** The reading portion requires students to read and analyze literary and informational texts and answer questions related to main ideas, text structure, language use, word meanings, and making and supporting conclusions.

Key Ideas & Details

(+) **In this area, your students typically performed better than students who received the minimum Level 3 score.** These questions require students to read literary and informational texts and then determine central ideas, key events, and topics and identify and use supporting details and evidence.

Craft, Structure, & Language in Reading

(−) **In this area, your students typically performed below students who received the minimum Level 3 score.** These questions require students to read literary and informational texts and then analyze text structure, point of view, author's purpose, and language use and determine and analyze word meaning.

OVERALL WRITING

(−) **In this area, your students typically performed below students who received the minimum Level 3 score.** The writing portion requires students to read short writing samples and answer questions related to revising, editing, vocabulary, and language use.

Text Types and Purposes

(−) **In this area, your students typically performed below students who received the minimum Level 3 score.** These questions require students to revise provided texts by applying writing skills (including genre- and purpose-specific strategies), revising text into logical order, adding context and detail, and identifying words or phrases that strengthen the text.

Language in Writing

(+) **In this area, your students typically performed better than students who received the minimum Level 3 score.** These questions require students to clarify messages in a variety of texts by following grade-appropriate grammar, capitalization, and punctuation rules.

Additional Resources
For information about the Kansas Standards, visit **ksde.org**.
To learn about the Kansas Assessment Program, visit **ksassessments.org**.

ACT Scoring To get an idea of how your high school student may perform on the ACT based on this KAP score, refer to this chart. For more information, go to **ksassessments.org/act-scores**.	Student's actual KAP grade 10 ELA score	Student's projected ACT Reading score	Student's projected ACT English score
	Level 1:220-268	1-17	1-16
	Level 2:269-299	18-23	16-22
	Level 3:300-333	23-29	22-28
	Level 4:334-380	29-36	28-36

Lexile® Measure

Your student's score: **1295L**

The Lexile measure provides a score that describes the level at which your child can comfortably read challenging text and also describes the complexity of texts, taking into account such features as vocabulary and sentence complexity. This measure, along with consideration of your child's interests and experiences, is helpful in finding texts for independent reading.

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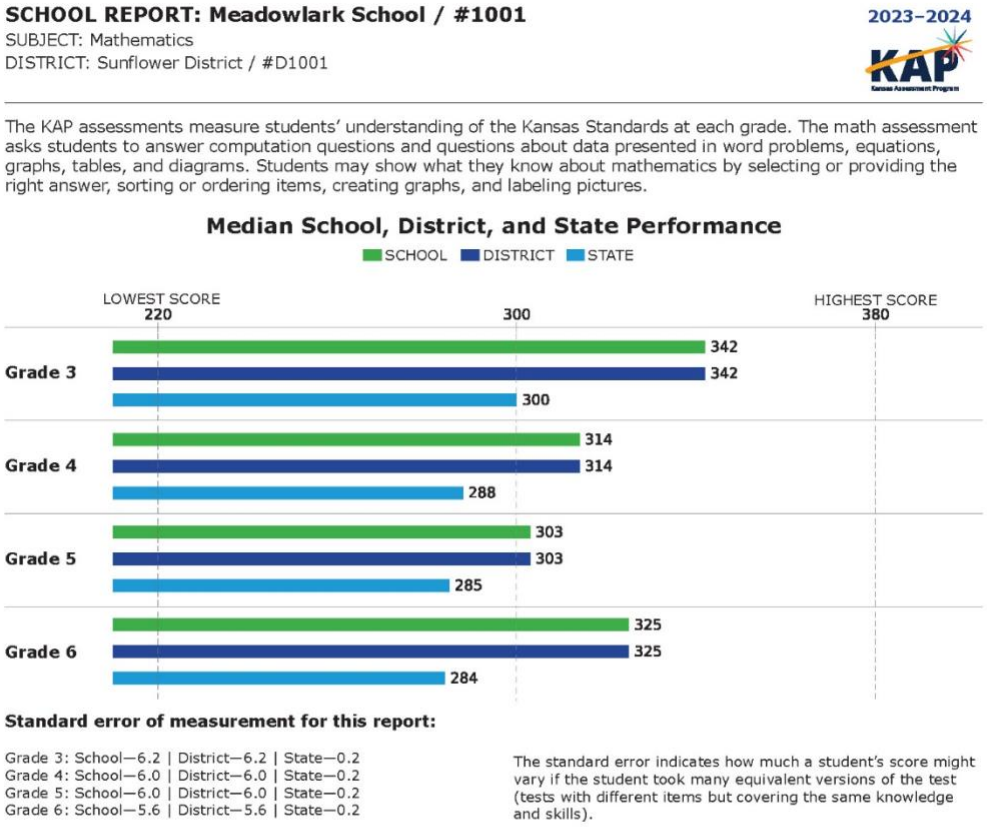
Figure D-2. Sample KAP School Report



SCHOOL REPORT: Meadowlark School / #1001
SUBJECT: Mathematics
DISTRICT: Sunflower District / #D1001

2023–2024 KAP Kansas Assessment Program

The KAP assessments measure students' understanding of the Kansas Standards at each grade. The math assessment asks students to answer computation questions and questions about data presented in word problems, equations, graphs, tables, and diagrams. Students may show what they know about mathematics by selecting or providing the right answer, sorting or ordering items, creating graphs, and labeling pictures.

Median School, District, and State Performance

Standard error of measurement for this report:

Grade 3: School—6.2 | District—6.2 | State—0.2
Grade 4: School—6.0 | District—6.0 | State—0.2
Grade 5: School—6.0 | District—6.0 | State—0.2
Grade 6: School—5.6 | District—5.6 | State—0.2

The standard error indicates how much a student's score might vary if the student took many equivalent versions of the test (tests with different items but covering the same knowledge and skills).

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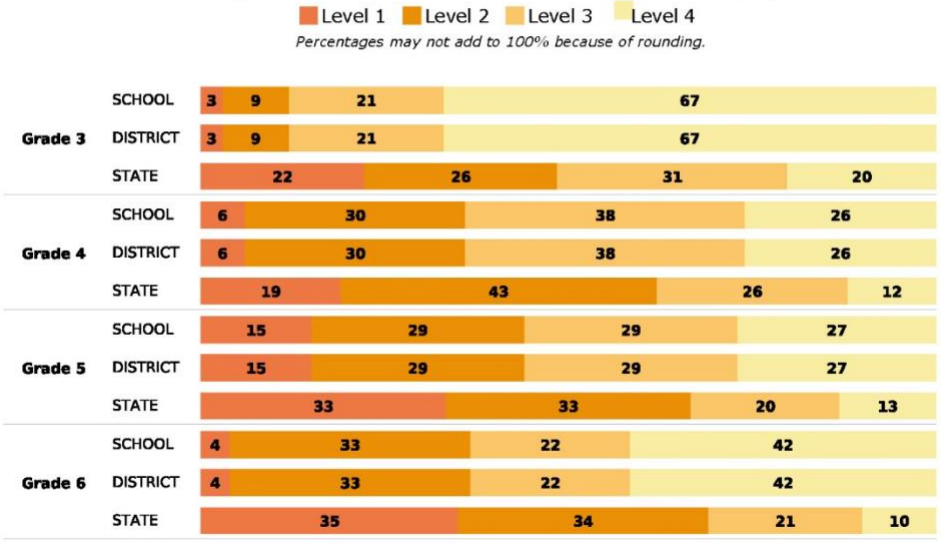
Percentage of Students in Each Performance Level, by Grade



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SCHOOL REPORT SCHOOL: MEADOWLARK SCHOOL

Your School's Performance

(+) Exceeds (=) Meets (−) Below (×) Insufficient Data

Grade	3	4	5	6
SKILLS AND CONCEPTS	+	=	=	=
Operations and Algebraic Thinking	+	=		
Number and Operations in Base Ten		=	=	
Number and Operations with Fractions	=	=	−	
Measurement and Data	+	=	=	
Ratios and Proportional Relationships				+
The Number System				+
Expressions and Equations				=
Geometry	+			=
Statistics and Probability				=
STRATEGIC THINKING AND REASONING	+	=	=	=

SKILLS AND CONCEPTS
These questions require students to apply mathematical skills and concepts and interpret and carry out mathematical procedures with precision and fluency.

Operations and Algebraic Thinking
These questions require students to represent and solve problems with addition, subtraction, multiplication, and division; perform these operations with multidigit numbers; and explain patterns.

Number and Operations in Base Ten
These questions require students to demonstrate their understanding of place value by solving problems with multidigit numbers and decimals.

Number and Operations with Fractions
These questions require students to demonstrate their understanding that fractions represent parts of a whole, recognize that fractions can be written as decimals, and solve problems with fractions by applying their knowledge about working with whole numbers and decimals.

Measurement and Data
These questions require students to calculate time, volume, perimeter, area, and mass; measure angle size; convert measurements within a measurement system; represent and interpret measurement data; and use measurement skills to solve real-world problems.

Ratios and Proportional Relationships
These questions require students to use ratio reasoning and analyze proportional relationships to solve real-world and mathematical problems.

The Number System
These questions require students to divide fractions, find common factors and multiples, and perform operations with rational numbers.

Expressions and Equations
These questions require students to solve equations that have variables and exponents, analyze relationships between dependent and independent variables and between proportional relationships, and use equations to model relationships and solve real-world problems.

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Geometry
These questions require students to describe the features of geometric figures, compare figures, apply geometric theorems, and solve real-world problems by applying formulas to figures.

Statistics and Probability
These questions require students to compare and draw inferences from data sets and to calculate probability of simple and compound events.

STRATEGIC THINKING AND REASONING
These questions require students to solve complex problems using problem-solving strategies and mathematical tools; explain their reasoning, defend their answers, and critique the reasoning of others; and analyze complex, real-world situations to construct and use mathematical models to solve problems, and to interpret results in the context of a situation.

Your School's Performance

Exceeds
In this area, your students typically performed better than students who received the minimum Level 3 score.

Meets
In this area, your students typically performed as well as students who received the minimum Level 3 score.

Below
In this area, your students typically performed below students who received the minimum Level 3 score.

Insufficient Data
In this area, your students did not answer enough questions for accurate reporting.

Additional Resources
For information about the Kansas Standards, visit **ksde.org**.
To learn about the Kansas Assessment Program, visit **ksassessments.org**.

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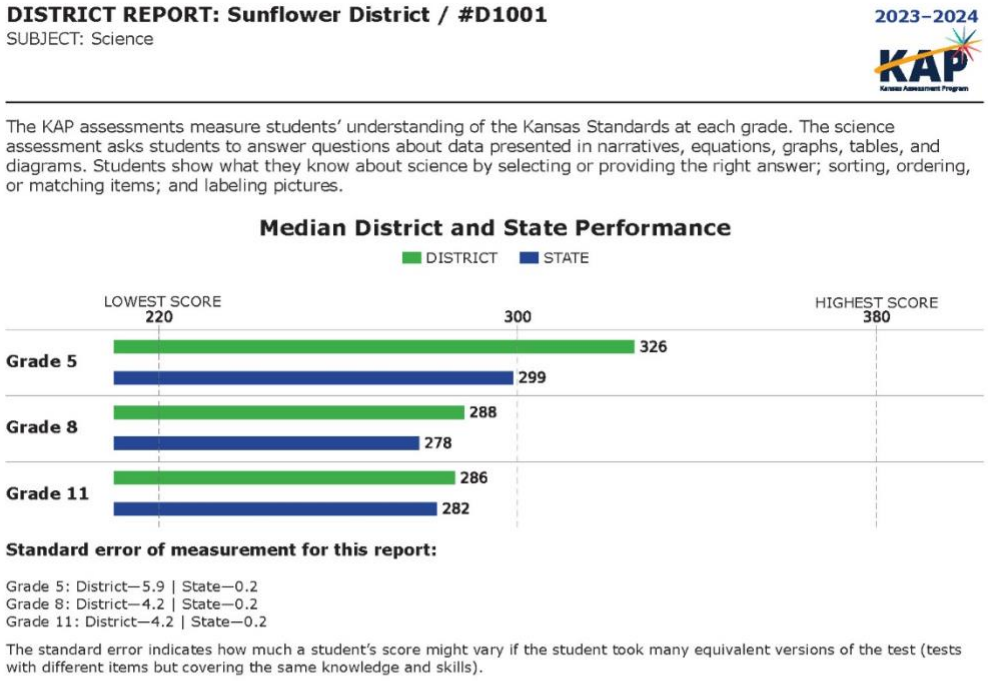
Figure D-3. Sample KAP District Report



DISTRICT REPORT: Sunflower District / #D1001
SUBJECT: Science

2023–2024

The KAP assessments measure students' understanding of the Kansas Standards at each grade. The science assessment asks students to answer questions about data presented in narratives, equations, graphs, tables, and diagrams. Students show what they know about science by selecting or providing the right answer; sorting, ordering, or matching items; and labeling pictures.

Median District and State Performance

Standard error of measurement for this report:

Grade 5: District—5.9 | State—0.2
Grade 8: District—4.2 | State—0.2
Grade 11: District—4.2 | State—0.2

The standard error indicates how much a student's score might vary if the student took many equivalent versions of the test (tests with different items but covering the same knowledge and skills).

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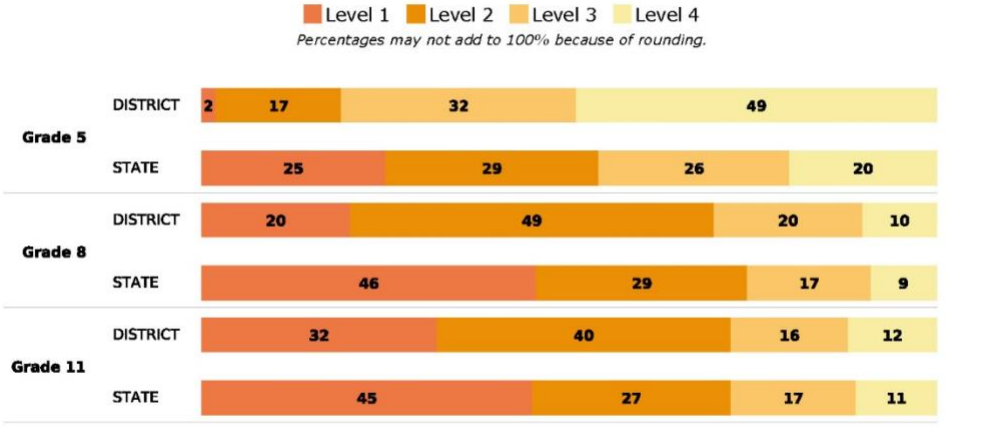
DISTRICT REPORT SUBJECT: Science

Percentage of Students in Each Performance Level, by Grade



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DISTRICT REPORT SUBJECT: Science

Your District's Performance

Exceeds Meets Below Insufficient Data

Grade	5	8	11
PHYSICAL AND CHEMICAL SCIENCES	+	−	−
LIFE SCIENCES	+	−	−
EARTH AND SPACE SCIENCES	=	−	−

PHYSICAL AND CHEMICAL SCIENCES
These 3-dimensional questions about phenomena require students to understand and apply (1) practices in science and engineering (ex. Analyzing and Interpreting Data), (2) their core ideas (ex. Chemical Reactions), and (3) concepts that crosscut science disciplines (ex. Stability and Change).

LIFE SCIENCES
These 3-dimensional questions about phenomena require students to understand and apply (1) practices in science and engineering (ex. Engaging in Argument from Evidence), (2) their core ideas (ex. Ecosystem Relationships), and (3) concepts that crosscut science disciplines (ex. Energy and Matter).

EARTH AND SPACE SCIENCES
These 3-dimensional questions about phenomena require students to understand and apply (1) practices in science and engineering (ex. Developing and Using Models), (2) their core ideas (ex. Earth Systems), and (3) concepts that crosscut science disciplines (ex. Systems and System Models).

Your District's Performance

Exceeds
In this area, your students typically performed better than students who received the minimum Level 3 score.

Meets
In this area, your students typically performed as well as students who received the minimum Level 3 score.

Below
In this area, your students typically performed below students who received the minimum Level 3 score.

Insufficient Data
In this area, your students did not answer enough questions for accurate reporting.

Additional Resources
For information about the Kansas Standards, visit **ksde.org**.
To learn about the Kansas Assessment Program, visit **ksassessments.org**.

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