

Introductory Guide

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Introduction

aimswebPlus® is an assessment, data management, and reporting system that provides national and local performance and growth norms for the screening and progress monitoring of math and reading skills for all students in Kindergarten through Grade 8. aimswebPlus uses two types of measures: *curriculum-based measures* (CBMs)—brief, timed measures of fluency on essential basic skills—and *standards-based assessments* (SBAs), which are comprehensive measures aligned to current learning standards. By combining these two types of measures, aimswebPlus provides the data that schools need for program planning and evaluation and for tiered assessment (multi-tiered system of supports [MTSS], also known as response to intervention [RTI]). Furthermore, aimswebPlus data provides teachers with the information needed to differentiate instruction and determine who will benefit from intensive intervention.

When assessing Kindergarten and Grade 1 students, aimswebPlus uses digital record forms (DRFs) in combination with print stimulus materials. Students are administered test content individually and respond to items presented in stimulus books, while the teacher records student responses via the DRF on a computer or touch screen tablet. For Grades 2 through 8, aimswebPlus assesses students via DRF and stimulus book for Oral Reading Fluency and exclusive online testing for all other measures.

Summary or detailed reports for students, classrooms, and districts can be generated immediately once testing is complete, with the resulting math and reading composite scores helping to estimate the risk to students and classes for meeting end-of-year goals. aimswebPlus reports also offer score interpretation information based on Common Core State Standards and other guidelines, Lexile® and Quantile® information, and recommendations for appropriate teaching resources.

aimswebPlus incorporates a responsive, user-centered design that provides a positive experience regardless of device used. Easy account management and customization features include third-party authentication, which bypasses the aimswebPlus password security rules and verifies the user through the system of record; automated batch imports for nightly uploads of student data; custom interventions; and custom groups for reporting a subset of students' progress.

In the following sections, an overview of aimswebPlus revision principles and goals is first presented, followed by discussions of aimswebPlus uses (universal screen and interim assessment, progress monitoring, and program evaluation), materials and accommodations, content, and structure.

Revision

The assessment approach of aimswebPlus is based on two principles. The first principle is to provide highly reliable and valid measurement of the automaticity of critical basic skills and short-term skill growth using CBM (i.e., fluency measures). Demonstrating automaticity of the skills measured in brief CBM tests is often a prerequisite for mastering more complex and higher-order skills. The second principle is the practical incorporation of content representing the breadth and depth of current grade-level expectations into assessments that can be completed within a single class period. Standards-based tests for Kindergarten and Grade 1 students enable the measurement of additional foundational skills shown to predict future performance; for Grades 2 through 8, these standards-based tests facilitate measurement of higher-order thinking skills and concepts.

With these principles in mind, development of aimswebPlus began with a review of published CBM research and consultations with CBM experts. Through this effort, published empirical studies of curriculum-based measures that provide predictive validity evidence as well as sensitivity to growth were identified. CBM expert consultants aided in the review and identification of the math and reading skills with the greatest measurement potential that were also highly valued by teachers. Additionally, current aimsweb measures were evaluated based on their psychometric properties (e.g., adequacy of floor/ceiling, reliability and validity data) and ease of administration and scoring.

Based on this research, revision goals were identified that sought to enhance:

- measurement of essential skills across the full range of abilities at each grade level,
- instructional planning data for students and classrooms,
- predictive capability, and
- alignment to current learning standards.

In addition to these goals, the following guiding ideals were established: keep what's working, measure what's important, and keep testing brief and developmentally appropriate. Adhering to these revision goals and guiding ideals, the final aimswebPlus measures were identified, revisions made to those measures carried over, and content written for new measures.

In Early Numeracy (Kindergarten and Grade 1), significant content revisions were made to improve the utility of the Number Naming Fluency and Number Comparison Fluency–Pairs measures, and several new measures were developed to assess the automaticity of set enumeration, set difference comparison, addition, subtraction, and other foundational math skills: Quantity Total Fluency, Quantity Difference Fluency, Concepts & Applications, Math Facts Fluency–1 Digit, and Math Facts Fluency–Tens.

For Early Literacy (Kindergarten and Grade 1), significant content revisions were made to improve the utility of the Grade 1 Oral Reading Fluency stories and the Phoneme Segmentation measure was also revised. In addition, new measures were developed to assess foundational reading skills and the automaticity of letter sounds, word parts, and word reading: Print Concepts, Initial Sounds, Auditory Vocabulary, Letter Word Sounds Fluency, and Word Reading Fluency.

In Math (Grades 2–8), two new measures were developed to assess number sense and computational fluency: Number Comparison Fluency–Triads and Mental Computation Fluency. A third new measure was also developed: Concepts & Applications, a standards-based measure of higher-order thinking skills and concepts. For Reading (Grades 2–8), minor revisions were made to improve the content and interest level of the Oral Reading Fluency stories. Moreover, two new measures were developed to assess vocabulary and reading comprehension skills, as well as an additional measure designed to assess silent reading rate with comprehension: Vocabulary, Reading Comprehension, and Silent Reading Fluency.

The implementation of the aforementioned principles, revision goals, and guiding ideals can be effective only if sound data defend them *and* guidance is provided for interpreting student and classroom scores in a way that directly informs instruction. In support, each aimswebPlus measure, revised or new, was put through multiple rounds of field testing, with refinements made as needed based on the results of this testing.

aimswebPlus field testing comprised the following research studies, with each study type spanning the Kindergarten through Grade 8 range:

- Pilot studies: multiple studies, 1,000+ students tested
- National tryout study: 14,000+ students tested
- National norms study: 16,000+ students tested
- Progress monitoring form equivalency studies: multiple studies, 15,000+ students tested

These new normative, reliability, and validity data were collected based on a representative sample of U.S. students. Additionally, the psychometric properties of all the aimswebPlus measures were evaluated to meet Pearson's and industry standards during the field testing process.

Analyses confirmed that using a multi-test battery approach provides stronger predictive data for student performance and risk status, as well as additional information about specific skills or knowledge areas that can be useful when interpreting student test scores. The combined information about automaticity of foundational skills and standards-based assessment of skills required for classroom success allow aimswebPlus to provide a more complete picture of what each student knows and can do.

Multi-Tiered System of Supports

Multi-tiered system of supports (MTSS) are driven by data from three activities:

- Universal screening (i.e., benchmarking): Assessing all students to identify those who need additional instruction to succeed.
- Progress monitoring: Tracking the effectiveness of instructional interventions.
- Program evaluation: Evaluating the efficacy of core instruction in relation to student progress.

Each of these components are discussed in more detail in the following sections.

Universal Screening and Interim Assessment

Universal screening is the process of assessing all students in a given grade on measures benchmarked to a performance target. Interim assessment refers to the universal screening of students three times per school year (Fall, Winter, and Spring). aimswebPlus, designed for universal screening three times per year (i.e., interim assessment), defines the following screening periods for each season (recommended testing windows in parentheses):

- Fall: August 1 through November 30 (September 1–October 15)
- Winter: December 1 through March 15 (January 1–January 30)
- Spring: March 16 through July 31 (May 1–May 31)

Although administration is permitted at any time during a given season, administrations within the recommended testing window maximizes the accuracy of the national norms.

Test assignments and group testing sessions are setup in the aimswebPlus system and individual assessments are launched directly from the system. As students complete assessments, their results are automatically scored and available immediately in the system. Results are reported as total scores by measure and composite using either national or local percentiles; these results can be interpreted using both *norm-referenced* and *criterion-referenced* methods.

A norm-referenced interpretation involves the comparison of a student's score with the scores from a local or national reference group of students in the same grade who were tested on the same content during the same timeframe of the school year. aimswebPlus provides norm-referenced information in the form of *percentiles*, which represent the percentage of students in the nationally representative sample who scored at or below a given score. For example, a score at the 35th percentile means that 35% of the norm sample achieved a score equal to or lower than this level.

Ranging from 1 to 99, percentiles provide a common reference point for interpreting student performance and for comparing groups. aimswebPlus identifies the following performance levels using this scale:

- Well-Below Average: 1st–10th percentiles
- Below Average: 11th–25th percentiles
- Average: 26th–74th percentiles
- Above Average: 75th–89th percentiles
- Well-Above Average: 90th–99th percentiles

These performance levels enable an at-a-glance evaluation of the instructional needs of students, classrooms, and schools. Note that both national and local (i.e., at the school and/or district level) percentile norms are available in the aimswebPlus system.

A criterion-referenced interpretation involves the comparison of a student's score with performance targets/benchmarks that designate proficiency or academic success. The performance target may be based on expert judgment, historical data, or percentiles and typically references end-of-grade expectations. Because universal screening occurs in the Fall and Winter (in addition to the Spring), it is important to have targets in each of those seasons to help indicate who is or is not on track to meet the end-of-year target.

What is considered proficient varies across grades and states. For example, the percentage of students achieving the proficient level on state tests has historically ranged from about 30% to as high as 85%. Benchmarks have been defined for oral reading rates that indicate an independent or instructional level by grade. While not explicitly tied to norms, the reading rates that define these levels take normative results into consideration. Typically, independent levels approximate the 50th percentile.

Because state assessments do not cover Kindergarten through Grade 2, different criteria must be provided for those grades. Furthermore, schools need to consider the available resources and current performance levels when defining performance targets for their students. Setting a target too low can lead to under-identification of students needing additional support. Conversely, setting a target too high will result in over-identifying students as at risk, which may overwhelm the resource capacity of the school.

The aimswebPlus system provides a range of scores for defining Spring performance targets. Users can select from 12 targets ranging from the 15th to the 70th national percentiles, provided in increments of five percentiles. National percentiles can be used to approximate proficiency on state tests by aligning the Spring percentile with the percentage of students below proficient because percentiles represent the percentage of students at or below a given score. For example, if 40% of students are proficient, the corresponding percentile is 60.

aimswebPlus defines seasonal *cut scores* that indicate who is unlikely to meet the Spring target. In each season, two cut scores are defined that represent the break points between the tiers. The lower cut score is associated with a high probability of failing to meet the Spring target, while the other is associated with a moderate probability of failing to meet the Spring target.

Students with scores below the lower cut score are considered at *high risk* because they have a low probability of meeting the Spring performance target without intensive intervention. Students with scores between the two cut scores are considered at *moderate risk* and will likely need additional instruction to meet the target. Students with scores above the upper cut score are considered at *low risk* and will likely remain on track with the core instructional program (i.e., without additional instruction). Once the Spring target percentile has been selected, the Fall and Winter cut scores are automatically computed by the aimswebPlus system and each student's risk level is immediately updated.

aimswebPlus uses this same procedure for defining tiers. In a tiered assessment and instruction system, tiers are used to define the level of instruction needed for the students within each tier. aimswebPlus follows the traditional model of three instructional tiers, defined as follows:

- Tier 1 = Low Risk (about 75%–95% of students in this group **will** meet the target): Students are on track to meet the end-of-year target and are least likely to need intervention. These students should continue to receive the general instructional program. Typically, the majority of students fall into this category.
- Tier 2 = Moderate Risk (about 25%–65% of students in this group **will not** meet the target): Students are not on track and have a moderate risk of not meeting the end-of-year target. These students require some type of intervention, often taking the form of supplemental small-group instruction.
- Tier 3 = High Risk (about 50%–90% of students in this group **will not** meet the target): Students are not on track and are typically well-below grade level. These students have a high risk of not meeting the end-of-year target without intensive, individualized instructional intervention.

Local norms can also be used to guide the selection of Spring targets. The rationale for using local norms is that instruction in a given school or district is geared to the average level of performance specific to that school or district, so students who are within the average range relative to their classmates (as indicated by local norms) should be well served by the general instructional program. A practical rationale is that the use of local norms leads to a reasonable and consistent allocation of resources across the tiers.

Progress Monitoring

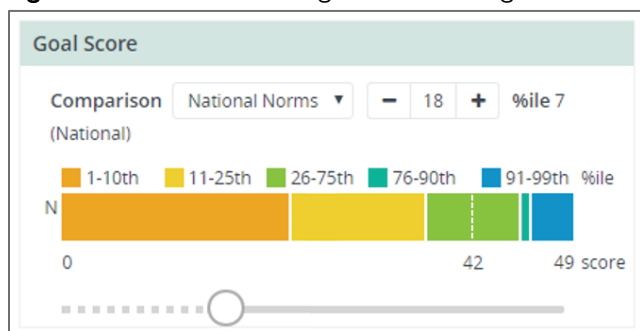
When additional instruction is being provided (e.g., to students in Tier 2 or Tier 3), the effectiveness of the instructional intervention(s) should be monitored to ensure that it is helping students make sufficient educational gains. This is accomplished through progress monitoring, a central component of multi-tiered system of supports. Progress monitoring is the frequent and ongoing collection of information regarding student performance. In aimswebPlus, this means the administration of test forms that are parallel in content and difficulty to the screening forms. Depending on the intensity of the intervention, the sensitivity of the measure to improvement, and other factors, progress can be monitored as often as once a week or as infrequently as once a month.

Typically within aimswebPlus, an end-of-year goal is set for a student and progress monitoring continues over the duration of the school year or until the student reaches the goal. If it becomes clear that the student is not improving at a sufficient rate to reach his or her goal, a different instructional approach or intervention may be warranted. Overall, progress monitoring is a dynamic, data-based method of carefully tracking a student's growth and allows users to effectively and continually evaluate interventions to help each student perform at his or her highest level. Progress monitoring within aimswebPlus has a number of key components, which are outlined in the following sections.

Setting a Goal

The first step in progress monitoring is setting the goal, which is the score level on a given aimswebPlus measure that you want the student to reach by a particular date. Goal setting is a matter of judgment, rather than an automatic process. To set goals, the aimswebPlus system uses a *goal slider*. Found on the goal-setting screen, the goal slider can be moved horizontally along the continuum of possible scores for that measure (see Figure 1). As the slider is moved, the system shows the raw score, corresponding national percentile, and the rate of improvement (ROI; i.e., the student growth percentile [SGP]). The system also indicates the ambitiousness of the goal based on national normative growth rates.

Figure 1 aimswebPlus Progress Monitoring Goal Slider



Users can select a goal based on:

- a benchmark national percentile;
- a raw score that has intrinsic value, independent of norms (e.g., a score that is associated with a high probability of passing end-of-year state tests);
- a rate of improvement (or, SGP);
- the ambitiousness of the goal.

Four levels are used to define the ambitiousness of the goal, defined as follows:

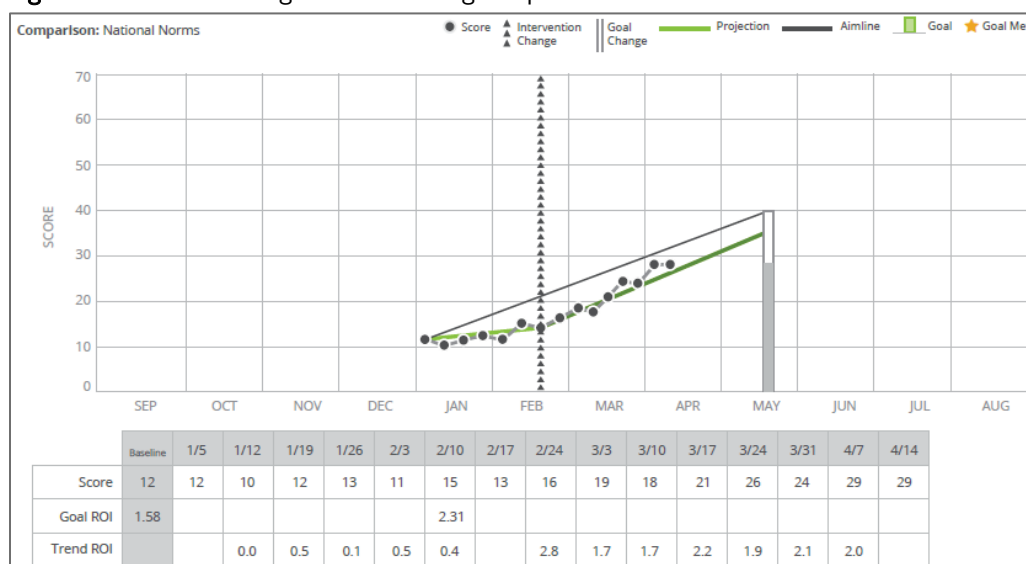
- **Insufficient:** A goal that requires a rate of improvement that is lower than the national average (i.e., $SGP < 50$). This level of performance typically does not close the gap between a student's current score and the goal score.
- **Closes the Gap:** A goal that exceeds the national average rate of improvement ($50 < SGP \leq 85$). This level of performance will close the gap; however, it may not reflect the potential growth rate that can be achieved with a high quality intensive intervention.
- **Ambitious:** A goal that exceeds the rate of improvement of 85% of the national norm population ($85 < SGP \leq 97$).
- **Extremely Ambitious:** A goal that exceeds the rate of improvement of 97% of the national norm population ($97 < SGP$).

In addition to setting the goal, users also select the baseline score (usually the most recent benchmark score), goal date, and frequency of testing. The testing frequency selected can vary by student and can range from once a week to once a month, depending on such factors as the intensity of the intervention and the variability of available scores.

Tracking Progress Toward a Goal

The aimsweb system automatically plots progress monitoring scores, displaying these scores in graphical form (see Figure 2). This graph includes an aimline, which connects the baseline score to the goal score, and a vertical bar at the goal date extending from zero to the goal score. When four data points have been collected and plotted, the graph will show the student's growth trend (i.e., projection line) projected out to the goal date.

Figure 2 Individual Progress Monitoring Graph With Goal Line and Trend Line



Visual inspection of the difference between the aimline and the projection line can give an early indication of whether the student is on track to meet the goal score. Upon reaching the sixth week of the intervention, assuming at least four scores have been collected, the system provides specific feedback regarding whether the student is on track to meet the goal. The features provided by the aimswebPlus system's progress monitoring component are discussed further in the following sections.

Projection Line

As progress monitoring forms are administered to a given student, the scores appear as points on the progress monitoring graph (see Figure 2), enabling the user to determine if the rate of growth is as rapid as needed. With this in mind, the aimswebPlus system provides a projection line indicating future progress based on the student's scores, when at least four forms have been administered. This projection represents the average rate of growth across all data points and its projection is used to indicate whether the student is on track to reach his or her goal score.

Rate of Improvement

The rate of improvement (ROI) is the student's rate of change, expressed in terms of the average number of score points gained per week. A student's *actual* ROI is reflected in the slope of the projection line

through his or her actual score points, while the *goal*/ROI is reflected in the slope of the aimline. The goal ROI is the average increase in a student's raw score that he or she needs to attain each week in order to reach the established goal score. When a goal is set, the aimswebPlus system automatically calculates the goal ROI and resulting aimline.

Student Growth Percentiles

The aimswebPlus system provides ROI growth norms called student growth percentiles (SGPs) that indicate the percentage of students in the national norm sample who had ROIs equal to or smaller than a given ROI. These SGPs convey information about the reasonableness of a goal by comparing the growth rate needed to achieve the goal to the growth rates achieved by students in the norm sample. In other words, SGPs can help users avoid setting goals that are too easy or too difficult for students to achieve.

Evaluating Instructional Interventions

Progress monitoring allows users to track the effectiveness of instructional interventions and to quickly make changes when interventions are not working. Errors of measurement and true fluctuation in a student's ability over time can produce variability in the progress monitoring scores, which can make it difficult to predict the student's performance at the goal date. While the projection line provides a good estimate, it is just that—an estimate. As such, the aimswebPlus system provides additional feedback regarding student progress toward the goal that is based on the projection line and takes into account error of measurement.

The system calculates the score range within which a student's actual score will likely be at the goal date, assuming the current rate of growth. This range is called a confidence interval. When at least four scores are available and at least six weeks have elapsed from the baseline date, the following feedback is provided:

- Not projected to meet goal: The projected score and confidence interval fall below the goal score. With this feedback, an intervention change should be considered.
- Projected to be near goal: The goal score lies within the confidence interval around the projected score. With this feedback, it is recommended that the current intervention be continued.
- Projected to meet or exceed goal: The projected score and confidence interval are above the goal score. This feedback indicates that the intervention is having the desired effect on the student's rate of improvement and should be continued.
- Indeterminate: Not enough data are available to provide meaningful feedback (i.e., fewer than four scores or less than six weeks have elapsed from baseline).
- Goal met: The student has three progress monitoring scores at or above the goal score.

Adjusting the Intervention or the Goal

If the student is unlikely to reach the goal using the current intervention or is improving much faster than expected, users have the option of changing the intervention or changing the level and/or date of the goal. While the aimswebPlus goal setting and progress monitoring system offers many statistically sound and scientifically based methods to guide decision making, this does not replace the sound clinical judgement of an educator familiar with a student's needs, the events that may be occurring in his or her life, and the fidelity with which an intervention has been implemented. Such factors must be considered when making decisions about setting or adjusting goals and selecting or changing interventions.

Program Evaluation

The universal screening component of aimswebPlus has several features that make it a valuable source of data for evaluating an overall instructional program. First, aimswebPlus combines comprehensive standards-based assessments with reliable and valid CBMs to provide accurate and trustworthy data about student proficiency and instructional need that reflect important core aspects of grade-level curricula. Second, aimswebPlus uses parallel fixed forms that assess on-grade level skills consistently throughout the school year, making it easy to evaluate progress, compare performance against benchmarks, evaluate programs, and interpret results. Third, aimswebPlus provides national percentiles and national growth percentiles that provide a stable and representative comparison group against which performance and growth rates can be benchmarked. Fourth, aimswebPlus provides easy access to group reports at multiple levels: class, grade, school, and district. Additionally, these reports can be filtered by demographic subgroups or any other group defined by the user. Fifth, the new aimswebPlus reading and math vertical scales allow users to monitor trends of performance across grades and over time.

Materials and Accommodations

Test Materials

Two formats for test administration are utilized for the aimswebPlus measures:

- Individual administration, for all Kindergarten and Grade 1 measures (math and reading) and Grades 2 through 8 Oral Reading Fluency
- Online administration, for all other Grades 2 through 8 measures (math and reading)

For both administration types, users assign students to the assessments via the aimswebPlus system. In addition, users can schedule test sessions, launch an assessment (individual administration via DRF), obtain usernames and passcodes for students to access the online testing site (online administration), and access reports in the aimswebPlus system, among other features and capabilities.

The two testing formats—individual and online—are discussed in more detail in the following sections.

Individual Administration

Student test materials are required for *all* aimswebPlus Kindergarten and Grade 1 math and reading measures, as well as for the administration of Oral Reading Fluency in Grades 2 through 8. For these individually administered measures, stimulus books (for screening) and booklets (for progress monitoring) can be downloaded from the aimswebPlus system and printed; in addition, print editions of all digital materials are available at an additional cost for customers who prefer that option (please visit aimswebPlus.com for more information about printing alternatives).

Individual administration has several advantages over group administration. First, individual administration is more ecologically valid; that is, it more closely mirrors how teachers evaluate students in the classroom. Furthermore, when a teacher guides a student through the test, young learners are more likely to stay focused and motivated to do their best work. Teachers often make valuable observations about student behavior during individual test administrations, observations which provide valuable context about student performance and may inform instructional practices. Finally, this format makes it possible for the item tasks

to be productive (e.g., open-ended, verbal responses such as verbalizing the sound of each phoneme in Phoneme Segmentation) as opposed to receptive (e.g., fixed, multiple-choice responses).

Each student's performance on individually administered measures is recorded on a digital record form (DRF) using a computer or touch screen tablet (see Figures 3 and 4 for sample Oral Reading Fluency and Concepts & Applications DRF screens, respectively). The DRFs include a built-in timer (for all timed measures) and all the instructions needed for administering these measures to students—including what to say to the student and correct/incorrect response information. Aside from the printed stimulus pages for the student, examiners will not need any print materials to administer and record a test session.

Figure 3 Sample Oral Reading Fluency DRF Screen

The screenshot shows the aimswebPLUS interface for Oral Reading Fluency (ORF). The header includes the logo, the student's name 'Ella Yang', the measure 'ORF, Grade 5, Form 8', and a timer showing 58 seconds. The main content area displays a passage with four lines, each preceded by a square icon with the letter 'S':

- S Alex loved to visit his Great Aunt Heidi because she had a library filled with
- S books. The library's shelves held books on every subject. There were books on
- S rocks and books on clocks. There were books on mountains and books on
- S fountains. But the one thing that made Aunt Heidi's library really special was the

Figure 4 Sample Concepts & Applications DRF Screen

The screenshot shows the aimswebPLUS interface for Concepts & Applications (CA). The header includes the logo, the student's name 'Sammy Jones', the measure 'CA, Grade K, Form 1, Fall '17', and a timer showing 58 seconds. The main content area displays two questions, each with a number in a circle and instructions:

- 1 **Point to each circle and count out loud how many circles in all.** *Counts aloud from 1 to 6, pointing to a different circle for each number* [✓] [✗]
- 2 **Which tree is the tallest?** *B (states or points to correct option)* [✓] [✗]

Depending on the student's grade and the testing season, the aimswebPlus DRF will guide examiners through the appropriate individually administered measure(s). After administering each measure, examiners will be able to review student responses and make any changes needed before submitting the responses (e.g., due to self-corrections). Each measure's score is then automatically generated when the student's responses are submitted to the aimswebPlus system via the DRF. This same process holds true for progress monitoring test sessions involving individually administered measures.

Online Administration

For students in Grades 2 through 8, all aimswebPlus Math measures and most of the Reading measures—Vocabulary, Reading Comprehension, and Silent Reading Fluency—are administered online. As such, the only test materials needed are the computer stations at which students complete test forms. Examiners present and then supervise test sessions, ensuring that students are on task and that any student questions are answered, with all test directions and content for each measure being presented to the students via the online testing platform.

Test Accommodations

While similar in their intent, test accommodations and test modifications differ in their impact on test scores. *Accommodations* are changes made in the test setting, timing, presentation format, or response format that minimize obstacles to perceiving or responding to test content *without* changing the test content itself. As such, the meaning of test scores and the valid application of norms is preserved. *Modifications*, on the other hand, are changes made to the testing process or content or provisions made for certain adaptive technologies or services that change the meaning of test scores. Modifications invalidate norms and should be avoided with the aimswebPlus measures.

Testing accommodations that are documented in a student's Individual Education Plan (IEP) or 504 plan are permitted with aimswebPlus. However, because speed plays an important role in timed CBMs, certain typical accommodations cannot be used without invalidating the norms. For example, a valid accommodation may not be possible for a student who is unable to orally respond to test items that require an oral response. If a student uses sign language or adaptive technology when responding to test items, his or her response rate will be slowed and comparison to the national norms would not be appropriate.

Finally, note that while corrective feedback is allowed for each individually administered measure's *practice* items, hints and corrective feedback are *never* permitted for test items.

All ***individually administered fluency measures*** employ strict time limits that are designed to keep testing brief and to generate rate-based scores (e.g., numbers named per minute). As such, valid interpretation of national norms, which are an essential aspect of decision-making during benchmark testing, depend on adherence to the standard administration procedures. The following accommodations are allowed for individually administered fluency measures:

- Enlarging test forms
- Modifying the environment (e.g., special lighting, adaptive furniture)

For all ***individually administered untimed measures***, any test accommodations allowed in statewide testing programs (e.g., using large print, using sign language to administer and respond to items, eliminating answer options for multiple choice items by covering them) and documented in the student's IEP or 504 plan are permitted.

For ***online administered Reading measures***, aimswebPlus uses a test delivery platform (TestNav) that offers a menu of special accommodations tools and features for students with disabilities. Accommodating students through modifying the testing environment (e.g., special lighting, adaptive furniture) is allowed for the online Reading measures. In addition, the following TestNav accommodation tools are available for these measures:

- Contrast settings: Allows students to select alternate color combinations for text and background.
- Magnifier/Zoom: Allows students to enlarge content, while preserving clarity, contrast, and color.
- Answer Masking: Allows students to cover (mask) one or more answers.
- Show/Hide Line Reader: Allows students to hide all but a selected portion of the screen.

The *online administered Math measures*, delivered via the TestNav platform, consist of Concepts & Applications, Number Comparison Fluency–Triads, and Mental Computation Fluency. Please note that students are *not* allowed to use calculators for any of the math measures.

CA is an *untimed* test in which students respond to multiple-choice math problems. Used only for screening, students are allowed scratch paper and pencils while taking this measure. In addition, CA allows students to take as much time as needed to complete the test items and audio is available for students who would prefer to have items read to them. These two features, traditionally considered accommodations, are built into the CA measure for all students. Finally, accommodating students through modifying the testing environment (e.g., special lighting, adaptive furniture) is also allowed for this measure.

NCF–T and MCF are fluency measures that employ strict time limits and depend on adherence to the standard administration procedures for valid interpretation of student scores. Accommodating students through modifying the testing environment (e.g., special lighting, adaptive furniture) is allowed for both math fluency measures.

Content and Structure

The aimswebPlus assessment system is a set of standardized math and reading measures for students in Kindergarten through Grade 8. These measures, a mix of SBAs and CBMs, are designed for the universal screening (i.e., benchmarking) of entire student classrooms at the beginning, middle, and end of the school year. In addition, the aimswebPlus CBMs can also be used for the frequent progress monitoring of students identified as at risk.

For universal screening, each aimswebPlus measure has three alternate forms. Each alternate form for a given measure has the same number of items, uses the same task types and content, and are statistically equivalent. These properties make it possible to measure growth across the school year.

aimswebPlus combines scores from multiple benchmark measures (varies by grade) to generate composite scores. Composite scores are used to assess each student’s level of risk and to provide a robust and accurate estimate of overall math and reading proficiency. Each composite is a combination (i.e., sum) of SBA and CBM scores. To ensure comparability of the data and to maximize the utility of the scores, aimswebPlus requires scores from designated measures to generate each composite. Some Early Literacy measures are not included in the composite and are considered optional. These measures were developed specifically to provide a deeper analysis of instructional need for students who have had little to no exposure to English reading materials or instruction in foundational English reading skills.

For progress monitoring, each CBM (i.e., fluency) measure typically has 20 additional alternate forms that are statistically equivalent and can be used to accurately measure growth on a weekly basis throughout the school year. A few measures have 10 alternate forms because they are intended for intensive progress monitoring over half of the school year.

The following sections provide an overview of the measures available in each content area, by grade level.

Early Numeracy

aimswebPlus Early Numeracy comprises the individually administered math measures developed for students in Kindergarten and Grade 1. Note that these measures are also available in Spanish. The grades and seasons available, tasks, and administration times for these measures are found in Table 1.

Table 1 Early Numeracy Measure Descriptions

Measure	Grade	Season	Required?	What students do	Admin time
Number Naming Fluency (NNF)	K	F, W, S	Yes	Verbally name numbers up to 20.	1 minute
Quantity Total Fluency (QTF)	K	F, W, S	Yes	Boxes containing blue dots are presented. Students state the total number of dots within each box or each pair of boxes.	1 minute
Quantity Difference Fluency (QDF)	K	W, S	Yes	Pairs of boxes containing dots (one with blue dots, one with red dots) are presented. Students state how many more blue dots are needed to match the number of red dots.	1 minute
Concepts & Applications (CA)	K, 1	F, W, S	Yes	Mentally solve various types of math problems and state the correct answers.	~7–12 minutes
Number Comparison Fluency–Pairs (NCF–P)	1	F, W, S	Yes	Pairs of numbers are presented. Students identify which of two numbers is larger for each pair.	1 minute
Math Facts Fluency–1 Digit (MFF–1D)	1	F, W, S	Yes	Mentally solve simple addition and subtraction problems involving numbers 0 through 10 and state the correct answers.	1 minute
Math Facts Fluency–Tens (MFF–T)	1	W, S	Yes	Mentally add or subtract 10 to/from given numbers and state the correct answers.	1 minute

NNF, QTF, and QDF (Kindergarten) and NCF–P, MFF–1D, and MFF–T (Grade 1) are timed measures that assess fluency of foundational math skills. CA is an untimed, standards-based measure of math concepts and problem solving that is given in both Kindergarten and Grade 1. Total testing time is brief: approximately 10–15 minutes for screening, depending on grade and season, and approximately 1–3 minutes for progress monitoring, depending on which measure(s) are being monitored for a given student. Note that all Early Numeracy fluency measures are available for progress monitoring, while CA is administered only during screening.

The Early Numeracy measures report performance on the raw number correct score. The scores for CA and each fluency measure administered are then combined into an overall Early Numeracy composite score (varies by grade and season, as shown Table 2), which is the weighted sum of the scores. This composite score is the basis for defining benchmarks and generating RTI tiers.

Table 2 Early Numeracy Composite Score Measures, by Grade and Season

Grade	Season	Composite score measures
K	Fall	NNF, QTF, CA
K	Winter	NNF, QTF, CA, QDF
K	Spring	NNF, QTF, CA, QDF
I	Fall	NCF-P, MFF-ID, CA
I	Winter	NCF-P, MFF-ID, CA, MFF-T
I	Spring	NCF-P, MFF-ID, CA, MFF-T

Measures

Note. Any visual stimuli shown to students are printed on paper. The examiner records the student responses on a digital record form (DRF) during the test session.

Number Naming Fluency (NNF)

- Grade: Kindergarten
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student points to and names visually presented numbers for 1 minute. Each form contains 80 items (see Figure 5 for sample student test page).
- Scoring: 1 point for each correctly named number
- Time Limit: 1 minute

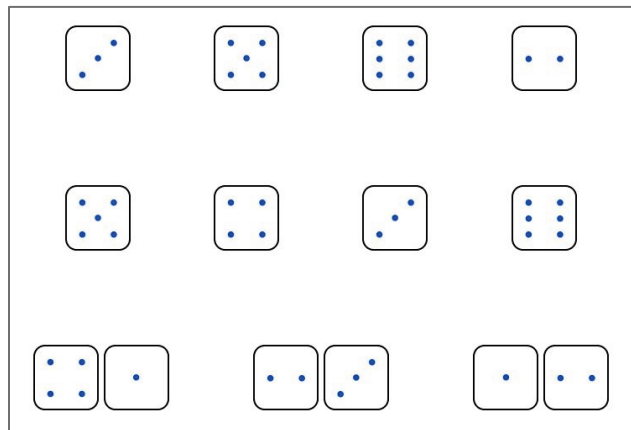
Figure 5 NNF Sample Student Test Page

2	5	7	8	1	9	6	0
4	3	5	0	9	2	7	1
3	8	6	14	4	11	5	2
16	1	3	10	12	4	15	18
0	13	19	17	20	16	8	11

Quantity Total Fluency (QTF)

- Grade: Kindergarten
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student states the total number of dots in each box or pair of boxes for 1 minute. Each form contains 38 items (see Figure 6 for sample student test page).
- Scoring: 1 point for each correctly answered item
- Time Limit: 1 minute

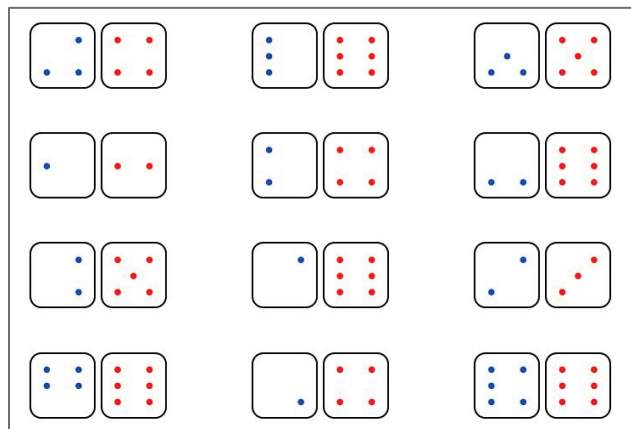
Figure 6 QTF Sample Student Test Page



Quantity Difference Fluency (QDF)

- Grade: Kindergarten
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student states how many more blue dots are needed to match the number of red dots for each box pair for 1 minute. Each form contains 24 items (see Figure 7 for sample student test page).
- Scoring: 1 point for each correctly answered item
- Time Limit: 1 minute

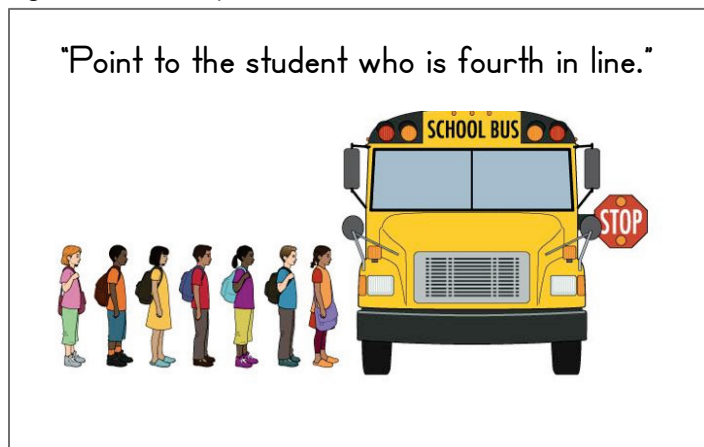
Figure 7 QDF Sample Student Test Page



Concepts & Applications (CA)

- Grades: Kindergarten and Grade 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), untimed
- Test Content: The student solves one- and two-step math word problems, each addressing an aspect of grade-appropriate CCSS domains. The examiner reads each item to the student and the student states the correct answer, using the corresponding visual stimulus to solve the problem. The student attempts all 25 items in a given form (see Figure 8 for sample student item).
- Scoring: 1 point for each correctly answered item
- Administration Time: 7–12 minutes (approximate)

Figure 8 CA Sample Item



Number Comparison Fluency–Pairs (NCF–P)

- Grade: 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student points to and names the larger number in each pair for 1 minute. Each form contains 50 items (see Figure 9 for sample student test page).
- Scoring: 1 point for each correctly answered item
- Time Limit: 1 minute

Figure 9 NCF–P Sample Student Test Page

3	8	6	4	0	7	9	1	5	24
7	11	5	9	13	6	20	8	2	0
25	15	4	14	16	21	8	3	10	9
7	14	20	12	11	18	19	30	35	27
2	10	46	34	17	22	38	33	7	8

Math Facts Fluency–1 Digit (MFF–1D)

- Grade: 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student solves addition and subtraction problems involving numbers 0 through 10 for 1 minute. Each form contains 40 items (see Figure 10 for sample student test page).
- Scoring: 1 point for each correctly answered item
- Time Limit: 1 minute

Figure 10 MFF–ID Sample Student Test Page

$2 + 2 =$	$1 + 2 =$	$0 + 4 =$	$3 + 3 =$	$5 + 1 =$
$1 + 0 =$	$4 - 1 =$	$6 + 1 =$	$3 + 0 =$	$2 - 2 =$
$3 + 5 =$	$3 - 1 =$	$6 - 0 =$	$1 + 5 =$	$6 + 3 =$
$5 - 0 =$	$4 + 4 =$	$5 - 3 =$	$8 + 1 =$	$4 - 2 =$

Math Facts Fluency–Tens (MFF–T)

- Grade: 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student solves problems involving the addition and subtraction of 10 for 1 minute. Each form contains 32 items (see Figure 11 for sample student test page).
- Scoring: 1 point for each correctly answered item
- Time Limit: 1 minute

Figure 11 MFF–T Sample Student Test Page

$60 + 10 =$	$40 + 10 =$	$15 + 10 =$	$20 - 10 =$
$35 + 10 =$	$50 - 10 =$	$75 + 10 =$	$90 - 10 =$
$40 - 10 =$	$64 + 10 =$	$85 - 10 =$	$7 + 10 =$
$72 - 10 =$	$26 + 10 =$	$13 - 10 =$	$59 + 10 =$

Early Literacy

aimswebPlus Early Literacy comprises the individually administered measures developed for students in Kindergarten and Grade 1. The grades and seasons available, tasks, and administration times for these measures are found in Table 3.

Table 3 Early Literacy Measure Descriptions

Measure	Grade	Season	Required?	What students do	Admin time
Print Concepts (PC)	K	F	No	Show understanding of purpose, use, and contents (letters, pictures) of a book.	~2–3 minutes
Letter Naming Fluency (LNF)	K	F, W, S	Yes	Say the names of visually presented letters.	1 minute
Initial Sounds (IS)	K	F, W	No	Look at four pictures and either point to the one that begins with a given letter sound or make the sound that begins the word.	~2–3 minutes
Auditory Vocabulary (AV)	K, I	F, W, S	No	Point to the one of four pictures that matches an orally presented word.	~2–4 minutes
Letter Word Sounds Fluency (LWSF)	K I	F, W, S F	Yes No	Say the sounds of visually presented letters, syllables, and words.	1 minute
Phoneme Segmentation (PS)	K I	W, S F	No	Say the phonemes in orally presented words.	~2–3 minutes
Word Reading Fluency (WRF)	K I	S F, W, S	No	Read a word list aloud.	1 minute
Oral Reading Fluency* (ORF)	I	F, W, S	Yes	Read two stories aloud, each for 1 minute.	2 minutes

*Note. The ORF information in this table applies to the screening seasons of Fall, Winter, and Spring. When using ORF to progress monitor, students read *one* story aloud for 1 minute per testing session and the reported score is the number of words read correctly for that single story.

Typically, not all the Early Literacy measures are administered at each season for each grade. Table 3 lists the grade and season for which each measure is recommended and national norms are available. Some measures are introduced midway through Kindergarten. This approach is used to account for the large developmental differences among young learners, to minimize frustration, and to reflect the dependency of early literacy skills, some of which are prerequisites for others. Total testing time is brief: approximately 1–5 minutes for required screening measures, depending on grade and season, and approximately 1–2 minutes for progress monitoring, depending on which measure(s) are being monitored for a given student.

Note that the Early Literacy measures LNF, IS, LWSF, PS, WRF, and ORF are available for progress monitoring with students from any grade. Conversely, the measures PC and AV are administered only during screening (see Table 3).

As noted above, while some measures are optional, the required measure(s) become the basis for an overall Early Literacy composite score (varies by grade and season, as shown in Table 4). When two or more measures are included, the composite is a weighted sum of the scores. The Early Literacy composite score is the basis for defining benchmarks and generating RTI tiers.

Table 4 Early Literacy Composite Score Measures, by Grade and Season

Grade	Season	Composite score measures
K	Fall	LNF, LWSF
K	Winter	LNF, LWSF
K	Spring	LNF, LWSF
I	Fall	ORF
I	Winter	ORF
I	Spring	ORF

Measures

Note. Any visual stimuli shown to students are printed on paper (except for Print Concepts, which is presented using a real storybook). The examiner records the student responses on a digital record form (DRF) during the test session.

Print Concepts (PC)

- Grade: Kindergarten
- Test Format: Individual, student storybook and examiner digital record form (online), untimed
- Test Content: The student shows understanding of the purpose, use, and contents (letters, pictures) of a book (specific criteria for selecting appropriate books are provided in the *aimswebPlus Early Literacy Administration and Scoring Guide*). The student attempts all 9 items.
- Scoring: 1 point for each correctly answered item
- Administration Time: 2–3 minutes (approximate)

Letter Naming Fluency (LNF)

- Grade: Kindergarten
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student says the names of visually presented letters for 1 minute. Each form contains 100 letters (mix of upper- and lower-case) presented in a student-friendly font (see Figure 12 for sample student test page).
- Scoring: 1 point for each correctly named letter
- Time Limit: 1 minute

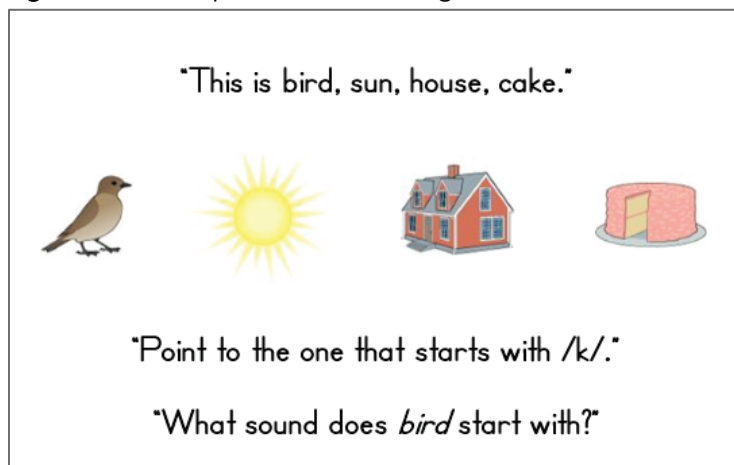
Figure 12 LNF Sample Student Test Page

u	D	P	S	R	A	X	y	I	n
C	V	g	W	A	G	J	z	c	E
r	W	Z	F	M	c	L	t	u	f
g	c	T	Y	U	b	d	p	S	o
c	G	S	U	J	d	a	T	K	m
R	T	G	I	k	S	q	n	u	A
R	k	L	K	s	j	f	E	h	q
K	h	b	U	T	I	D	s	I	a
N	K	k	v	L	z	a	u	A	F
k	X	O	T	e	h	g	M	B	W

Initial Sounds (IS)

- Grade: Kindergarten
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), untimed
- Test Content: The student looks at four pictures and either points to the one that begins with a given letter sound or makes the sound that begins the word. The student attempts all 12 items in a given form (see Figure 13 for sample student test page).
- Scoring: 1 point for each correctly answered item
- Administration Time: 2–3 minutes (approximate)

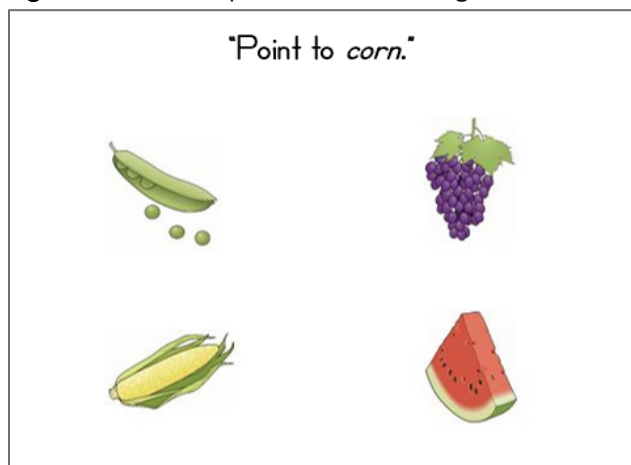
Figure 13 IS Sample Student Test Page



Auditory Vocabulary (AV)

- Grades: Kindergarten and Grade 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), untimed; all items have four response options
- Test Content: The student looks at four pictures and points to the picture that matches an orally presented word. The student attempts all 25 items in a given form (see Figure 14 for sample student test page).
- Scoring: 1 point for each correctly answered item
- Administration Time: 2–4 minutes (approximate)

Figure 14 AV Sample Student Test Page



Letter Word Sounds Fluency (LWSF)

- Grades: Kindergarten and Grade 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student says the sounds of visually presented letters, syllables, and words for 1 minute. Each form contains 45 letters and 10 three-letter words (see Figure 15 for sample student test page).
- Scoring: 1 point for each letter or word sound correctly made
- Time Limit: 1 minute

Figure 15 LWSF Sample Student Test Page

m	t	z	m	d
s	b	f	v	p
p	h	n	k	w

d	c	b	w	t
og	ap	us	ig	en
dog	cap	bus	wig	ten

Phoneme Segmentation (PS)

- Grades: Kindergarten and Grade 1
- Test Format: Individual, examiner digital record form (online), untimed
- Test Content: The student says the phonemes of orally presented words that consist of up to four phonemes. The student attempts all 15 items in a given form (see Figure 16 for sample DRF test screen).
- Scoring: 1 point for each phoneme correctly made
- Administration Time: 2–3 minutes (approximate)

Figure 16 PS Sample DRF Test Screen

PSF, Grade K, Form 2, Winter '16

dad	/d/ /a/ /d/	W
bit	/b/ /i/ /t/	W
top	/t/ /o/ /p/	W

Word Reading Fluency (WRF)

- Grades: Kindergarten and Grade 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student reads words aloud for 1 minute. Each form contains two pages of word lists, totaling 99 words (see Figure 17 for sample student test page).
- Scoring: 1 point for each word correctly read
- Time Limit: 1 minute

Figure 17 WRF Sample Student Test Page

the	out	most
it	made	which
and	no	see
on	after	down
a	through	even
with	into	any
but	him	great

Oral Reading Fluency (ORF)

- Grade: 1
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student reads one or two stories aloud, each for 1 minute. Each screening form contains two stories, while each progress monitoring form contains one story (see Figure 18 for sample student test page).
- Scoring: Mean number of words read correctly in the two stories (screening) or words read correctly in one story (progress monitoring)
- Time Limit: 1 minute per story

Figure 18 ORF Sample Student Test Page

Bob is a big dog. He is a big lab mix. He plays tag with the cat. In the hot sun, he digs pits to sit in the mud. If I rub his hip, his leg jumps up and down.

The dog had bones. He hid his bones in the yard. He hid them in the pits he dug in the mud.

The dog was always happy. He was never without a bone. The dog's teeth were very sharp and white, but he never bit anyone. He only chewed on bones.

One day the dog was sleeping. A rat came into his yard.

"I will take this dog's bones," said the rat. "He is sleeping. He will never know that I have taken them."

Math

The aimswebPlus Math assessment system comprises the measures developed for students in Grades 2 through 8. Note that these measures are also available in Spanish. The grades and seasons available, tasks, and administration times for these measures are found in Table 5.

Table 5 Math Measure Descriptions

Measure	Grade	Season	Required?	What students do	Admin time
Number Comparison Fluency–Triads (NCF–T)	2–8	F, W, S	Yes	Compare three numbers within and across number systems to determine the relative distance between each number.	3 minutes
Mental Computation Fluency (MCF)	2–8	F, W, S	Yes	Solve multiple-choice math computation problems.	4 minutes
Concepts & Applications (CA)	2–8	F, W, S	Yes	Solve multiple-choice math word problems.	~15–25 minutes

NCF–T and MCF are timed measures that assess fluency through number comparison and solving 1- and 2-step computation problems, respectively. CA is an untimed, standards-based measure of math concepts and problem solving. Total testing time is brief: approximately 25–35 minutes for screening and

approximately 7 minutes for progress monitoring. Note that NCF–T and MCF are available for progress monitoring and are *always* given together, while CA is administered only during screening.

CA reports performance on the raw number correct score, which is then converted to a vertical scale score called the *Growth Scale Value*. This vertical scale spans the full performance continuum for Grades 2 through 8. The remaining two math measures—NCF–T and MCF—employ a correction for guessing when calculating the total score because research on this scoring approach demonstrates that it improves predictive validity and sensitivity to growth. This corrected total score is computed as:

$$NC - \frac{NW}{2}$$

Where NC is the number of items correctly answered and NW is the number of items answered incorrectly. Resulting scores are then rounded to the nearest whole number. Corrected total scores can range from 0 to 40 (NCF–T) or 42 (MCF). Note that items not attempted and items not reached are ignored in the calculation of the corrected total score. Together, these measures combine into a Number Sense Fluency (NSF) score, which is the simple sum of the NCF–T and MCF corrected scores.

The CA and NSF scores are then combined into an overall Math composite score (see Table 6), which is the weighted sum of the scores. This composite score is the basis for defining benchmarks and generating RTI tiers, while the NSF score is the basis for all progress monitoring decisions.

Table 6 Math Composite Score Measures, by Grade and Season

Grade	Season	Composite score measures
2–8	Fall	NSF, CA
2–8	Winter	NSF, CA
2–8	Spring	NSF, CA

Measures

Note. All measures are presented via online computer administration.

Number Comparison Fluency–Triads (NCF–T)

- Grades: 2–8
- Test Format: Group, online, timed
- Test Content: The student answers multiple-choice math items, comparing numbers within and across number systems, for 3 minutes. Each item is presented as a triad of numbers, with the student determining whether the top number in the triad is closer in value to the bottom left number, the bottom right number, or exactly between the two numbers. Each form contains 40 items (see Figure 19 for sample student test screen).
- Scoring: 1 point for each correctly answered item, total score then adjusted for guessing
- Time Limit: 3 minutes

Figure 19 NCF–T Sample Student Test Screen

$6,900$ $6,000$ $7,000$ <input type="radio"/> <input type="radio"/> <input type="radio"/>	400 0 800 <input type="radio"/> <input type="radio"/> <input type="radio"/>
$\frac{3}{4}$ 0 1 <input type="radio"/> <input type="radio"/> <input type="radio"/>	$1,800$ 0 $5,000$ <input type="radio"/> <input type="radio"/> <input type="radio"/>

Mental Computation Fluency (MCF)

- Grades: 2–8
- Test Format: Group, online, timed
- Test Content: The student answers multiple-choice math items, each requiring one- or two-step mental computation of a math expression, for 4 minutes. The use of friendly (e.g., round) numbers facilitates the mental computation of answers. Each form contains 42 items (see Figure 20 for sample student test screen).
- Scoring: 1 point for each correctly answered item, total score then adjusted for guessing
- Time Limit: 4 minutes

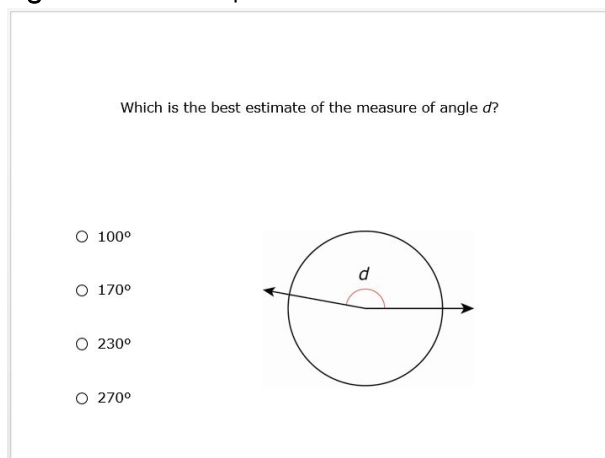
Figure 20 MCF Sample Student Test Screen

$240 \div 3$ 80 85 90 <input type="radio"/> <input type="radio"/> <input type="radio"/>
$2,100 + 3,600$ $4,600$ $5,300$ $5,700$ <input type="radio"/> <input type="radio"/> <input type="radio"/>

Concepts & Applications (CA)

- Grades: 2–8
- Test Format: Group, online, untimed; audio is available for all students at all grade levels
- Test Content: The student answers multiple-choice math word problems, each addressing an aspect of grade-appropriate CCSS domains. Each form contains between 29 and 31 items, depending on grade and season. The student attempts all items in a given form (see Figure 21 for sample student test screen).
- Scoring: 1 point for each correctly answered item, total score then converted to a developmental scale score
- Administration Time: 15–25 minutes (approximate)

Figure 21 CA Sample Student Test Screen



Reading

The aimswebPlus Reading assessment system comprises the measures developed for students in Grades 2 through 8. The grades and seasons available, tasks, and administration times for these measures are found in Table 7.

Table 7 Reading Measure Descriptions

Measure	Grade	Season	Required?	What students do	Admin time
Vocabulary (VO)	2–8	F, W, S	Yes	Identify the meanings of target words by selecting from multiple-choice options.	~4–7 minutes
Reading Comprehension (RC)	2–8	F, W, S	Yes	Read six passages of text and answer multiple-choice questions about each passage.	~15–25 minutes
Silent Reading Fluency (SRF)	4–8	F, W, S	Yes	Read three stories divided into brief sections and answer multiple-choice questions about each story.	~4–6 minutes
Oral Reading Fluency* (ORF)	2–8	F, W, S	Yes (2–3) No (4–8)	Read two stories aloud, each for 1 minute.	2 minutes

*Note. The ORF information in this table applies to the screening seasons of Fall, Winter, and Spring. When using ORF to progress monitor, students read *one* story aloud for 1 minute per testing session and the reported score is the number of words read correctly for that single story.

VO and RC are both standards-based, untimed measures, whereas ORF and SRF are timed measures designed to assess fluency of oral reading and silent reading with comprehension, respectively. Total testing time is brief: approximately 20–40 minutes for required screening measures, depending on grade and season, and approximately 2–7 minutes for progress monitoring, depending on which measure(s) are being monitored for a given student. Note that ORF and SRF are available for progress monitoring, while VO and RC are administered only during screening.

The two standards-based reading measures—VO and RC—report performance on the raw number correct score, which is then converted to a vertical scale called the Growth Scale Value. This vertical scale spans the full performance continuum for Grades 2 through 8. ORF reports performance in words read correctly per minute, while SRF reports on words read per minute. The scores for the administered measures are then combined into an overall Reading composite score (varies by grade and season, as shown in Table 8), which is the weighted sum of the scores. This composite score is the basis for defining benchmarks and generating RTI tiers.

Table 8 Reading Composite Score Measures, by Grade and Season

Grade	Season	Composite score measures
2–3	Fall	VO, RC, ORF
2–3	Winter	VO, RC, ORF
2–3	Spring	VO, RC, ORF
4–8	Fall	VO, RC, SRF*
4–8	Winter	VO, RC, SRF*
4–8	Spring	VO, RC, SRF*

*Note. If a student's SRF performance is not measurable, ORF *must* be administered so that a composite score that includes a reading fluency measure can be computed. In these cases, the Reading composite score would comprise VO, RC, and ORF.

Measures

Note. ORF stories are presented to the students on paper, with the examiner recording the student responses on a digital record form (DRF) during the test session. The remaining three measures are presented via online computer administration.

Vocabulary

- Grades: 2–8
- Test Format: Group, online, untimed; audio is available for all students at all grade levels
- Test Content: The student answers multiple-choice vocabulary items, choosing the response that best matches the meaning of a target word. Each form contains 16 (Grade 2) or 22 items (Grades 3–8), presented one per screen. The student attempts all items in a given form (see Figure 22 for sample student test screen).
- Scoring: 1 point for each correctly answered item
- Administration Time: 4–7 minutes (approximate)

Figure 22 VO Sample Student Test Screen

Someone who has courage is

- ☐ brave
- ☐ cheerful
- ☐ handsome
- ☐ honest

BACK NEXT

Reading Comprehension (RC)

- Grades: 2–8
- Test Format: Group, online, untimed
- Test Content: The student reads passages (three literary and three informational) and answers multiple-choice questions about each passage to demonstrate comprehension of the text. The student attempts all 24 items in a given form (see Figure 23 for sample student test screen).
- Scoring: 1 point for each correctly answered item
- Administration Time: 15–25 minutes (approximate)

Figure 23 RC Sample Student Test Screen

Story 1 of 6

You hear a loud crack. It's a home run, and you see the baseball heading for the stands. If you're lucky enough to catch it, you'll have a first-rate baseball in your hand. They have been made the same way for ages—one layer at a time.

J. deBeer & Son, Inc., of Albany, New York, started making baseballs this way in 1889. First, the middle is made of cork. It is covered with two layers of rubber to make the ball bounce. It also makes the cracking sound when the ball is hit. Next, wool yarn is wrapped around the rubber until the ball is the right size. Then a layer of smooth cotton yarn is added. Each ball is dipped in glue to keep the yarn in place. Finally, eight

Which layer of the baseball makes the cracking sound when hit?

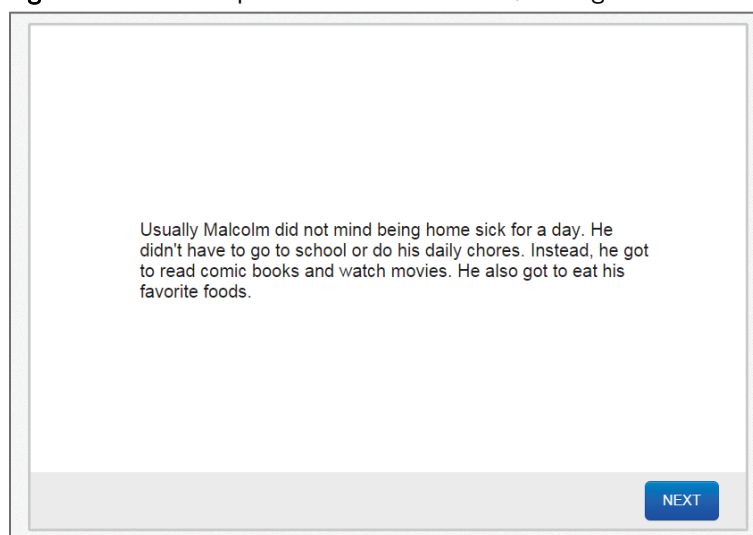
- ☐ leather
- ☐ glue
- ☐ cork
- ☐ rubber

BACK NEXT

Silent Reading Fluency (SRF)

- Grades: 4–8
- Test Format: Group, online, untimed
- Test Content: The student reads story segments and answers multiple-choice questions about each segment, receiving immediate correct/incorrect feedback after each question before moving on to the next segment and question. The time spent reading each passage is captured to compute the student's reading rate for each story. Each form contains three stories broken into four segment/question pairs, resulting in 12 questions per form. The student attempts all items in a given form (see Figures 24 and 25 for sample student passage and question screens, respectively).
- Scoring: Median reading rate of three stories, if sufficient comprehension demonstrated (i.e., at least three of four questions correctly answered on at least two stories)
- Administration Time: 4–6 minutes (approximate)

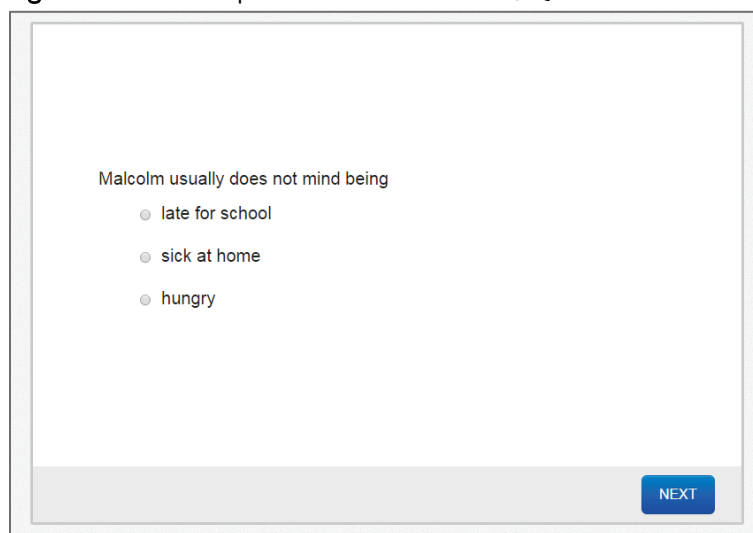
Figure 24 SRF Sample Student Test Screen, Passage



Usually Malcolm did not mind being home sick for a day. He didn't have to go to school or do his daily chores. Instead, he got to read comic books and watch movies. He also got to eat his favorite foods.

NEXT

Figure 25 SRF Sample Student Test Screen, Question



Malcolm usually does not mind being

- ☐ late for school
- ☐ sick at home
- ☐ hungry

NEXT

Oral Reading Fluency (ORF)

- Grades: 2–8
- Test Format: Individual, student stimulus book (print) and examiner digital record form (online), timed
- Test Content: The student reads one or two stories aloud, each for 1 minute. Each screening form contains two stories, while each progress monitoring forms contains one story (see Figure 26 for sample student test page).
- Scoring: Mean number of words read correctly in the two stories (screening) or words read correctly in one story (progress monitoring)
- Time Limit: 1 minute per story

Figure 26 ORF Sample Student Test Page

Dad and Rob went fishing.
"We will catch fish to eat for lunch," said Dad.
They loaded their fishing things into the boat: poles, bait, life jackets, and a net.
"Let's catch a fish!" said Rob.
Dad made the boat go fast over the water. Rob liked feeling the wind in his hair. He liked feeling the cold water splash his face.
Soon they arrived at Dad's secret fishing spot. Dad took a minnow to put it on the hook.

Administration and Scoring

For detailed information regarding the administration and scoring of each aimswebPlus measures, please see the appropriate guide for the grade level in question: *aimswebPlus Early Literacy Administration and Scoring Guide*, *aimswebPlus Early Numeracy Administration and Scoring Guide*, *aimswebPlus Spanish Early Numeracy Administration and Scoring Guide*, *aimswebPlus Reading Administration and Scoring Guide (Grades 2–8)*, or *aimswebPlus Math Administration and Scoring Guide (Grades 2–8)*.



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