

## 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.