# AIMSweb®

## The Relation of AIMSweb®, Curriculum-Based Measurement, and the Common Core Standards: All Parts of Meaningful School Improvement

**WHITE PAPER**

**BIG IDEAS:**

1. The Common Core State Standards (CCSS) provide sets of end of high school outcomes and end-of-year annual benchmarks to guide what students should learn.

2. The assessment implications of CCSS are clearly related to summative evaluation and accountability.

3. No single test is sufficient for all the data-based decisions, screening, intervention planning/diagnosis, progress monitoring, accountability/program evaluation that schools make.

4. Assessment of CCSS need not be separate items or tests for each standard, but may include "rich tasks" that address a number of separate standards.

5. AIMSweb's Curriculum-Based Measurement (CBM) tests typically are based on these rich tasks that are validated as "vital signs" or "indicators" of general basic skill outcomes like general reading ability or writing ability.

6. AIMSweb's CBM tests are **consistent** with the CCSS, especially with the K–5 Reading and Writing Standards. They are content valid.

7. AIMSweb's CBM tests are **complementary** with the assessment requirements to attain the CCSS. The tests have consequential validity for making **screening** decisions to facilitate early intervention and critically, for **frequent progress monitoring**, one of the most powerful tools to increase achievement.

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ALWAYS LEARNING

PEARSON

# Introduction

For more than 30 years, our nation's schools use of Curriculum-Based Measurement (CBM), a set of simple, time efficient, and scientifically sound assessment tools, has increased rapidly for *frequent basic skills progress monitoring and screening students for risk.* CBM is the primary set of testing tools used by AIMSweb in a General Outcome Measurement (GOM) approach to data-based decision making. Most often, AIMSweb is used in the context of delivery of Multi-Tier System of Supports (MTSS), also known as Response to Intervention (RtI).

The past 2 years has seen some confusion about the role of CBM in contemporary assessment practice, largely due to the 2010 publication of *Common Core State Standards (CCSS) for English Language Arts and Literacy in History/Social Studies and Science* and the *Common Core State Standards for Mathematics (K–12)* by the Council of Chief State School Officers (CCSSO) and the National Governors Association (NGA). In many schools, little has changed with respect to assessment practices. CBM remains a cornerstone of data-based decision making for frequent progress monitoring and screening in MTSS/RtI. However, in other school districts, CBM's use, like other assessment tools currently in use, has been questioned because of concerns about their relation to the CCSS. Given the intense pressure to adopt and use the CCSS, the questioning of what is appropriate assessment is legitimate. This white paper is intended to contribute to understanding the assessment implications of the CCSS and the use of CBM. By understanding what CCSS and CBM is and isn't, the paper contends that the use of CBM for formative, frequent progress monitoring, one of education's most powerful tools to increase achievement (Hattie, 2009; Yeh, 2007), is a critical component to achieve the CCSS. Frequent progress monitoring is especially important for students who are at risk and CBM use in *proactive universal screening* enables schools to intervene as early as Kindergarten entry to provide appropriately intensive intervention. Thus, I will argue that CBM is *consistent* with, and *complementary* to, the CCSS.

By *consistent*, I mean that there is a clear relation between what is assessed when schools use CBM and what academic skills are deemed important to gauge in the CCSS. This can be judged largely by an evaluation of *content validity*. By *complementary*, I mean that the use of CBM *supports decisions that are related to essential judgments* regarding attainment of the CCSS, but using testing tools and practices that answer *different* questions than one would expect with respect to assessment of the CCSS that emphasizes summative evaluation and accountability. No single test can be valid for all decision-making purposes (i.e., screening, instructional planning/diagnosis, frequent formative progress monitoring, summative progress monitoring, accountability/program evaluation) unless testing time and resources are unlimited. This lack of a "Swiss Army knife" assessment instrument is compounded from a practical perspective by the current lack of a national test of the CCSS. Evaluating AIMSweb's ability to complement *proposed* CCSS assessment is a *construct validity* and *consequential validity* question (Barton, 1999; Messick, 1986).

I will present a brief background of CBM test development and use and its relation to the academic standards movement in general. I also will present a brief review of what the CCSS is and isn't and conclude with how CBM forms one of the "single rich tasks" consistent with the CCSS (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2012; p. 5) assessment process. In this paper, I will examine consistency with, and complementarity to, the *Common Core State Standards for English Language Arts and Literacy in History/Social Studies and Science*, but the concepts apply as well to the *CCSS for Mathematics*.

## A Brief History of CBM Use and Interfaces with Assessment of State Academic Standards

The most commonly used CBM test is *Reading-CBM (R-CBM)*. Students read graded passages of controlled difficulty aloud for a brief (i.e., 1 minute) period of time and the number of words read correctly (WRC) is counted. However, there are CBM tests of *Mathematics Computation (M-COMP), Mathematics Concepts and Applications (M-CAP)*, spelling *(S-CBM)* and written expression *(WE-CBM)*, and early literacy and numeracy. CBM provides a set of standard tools that are used in General Outcome Measurement (GOM). Instead of testing students on a variety of ever-changing, different tests as in Mastery Monitoring (MM), GOM is intended to provide a consistent scale for decision making within and across years, working like other disciplines' general outcome measures (e.g., thermometers for medicine, *Dow Jones Industrial Index* for the economy). For more detail on GOM and MM, see Fuchs and Deno (1991) and Shinn (2012).

All CBM tests were created empirically, with careful attention to construct validity with the intent of identifying simple *"indicators"* or "vital *signs*" of more broad academic domains such as general reading achievement, mathematics achievement, etc. The goal of CBM test construction was to find a single measure that was robust in information in each basic skills domain (e.g., reading, mathematics computation, written language) that correlated to other accepted measures of the same construct (i.e., criterion related validity) that would allow valid decisions about overall student progress and relative standing (i.e., construct validity, consequential validity). For examples of how these details were developed and validated, see Deno (1992) or Fuchs, Fuchs, and Maxwell (1988). As a result of research programs, we have learned that when students read aloud for 1 minute and WRC is counted, what is assessed is much more than behaviors like oral reading fluency or even oral reading skills. What is assessed is general reading achievement, incorporating a variety of skills. For example, students with rich vocabulary read more words correctly in a fixed period of time than students who do not have a rich vocabulary. Students who comprehend what they read, read more words correctly in a fixed period of time than students who do not comprehend what they read. Students who can decode unfamiliar words read more words correctly in a fixed period of time than students who cannot decode unfamiliar words. AIMSweb provides these field-tested, validated, and independently reviewed CBM test materials in the basic skills areas and organizes and reports the data for educators and parents.

Emerging out of the special education research community in the late 1970s, where CBM was used for writing IEP goals and supporting frequent progress monitoring toward those goals, CBM use expanded in the early 1980s as it became recognized that these were efficient and effective tools for all students when making decisions about basic skills (Deno, Marston, Shinn, & Tindal, 1983; Deno, Mirkin, & Wesson, 1984). Schools saw the importance of not only monitoring special education students' IEP progress, but the progress of all students. Schools also began to use CBM progress monitoring tools for universal screening to support early intervention, in part, to prevent the need for special education (Deno, 1986). Use of CBM continued to grow, but expanded exponentially nationwide at the end of the 20th century with accumulated scientific knowledge and examples of successful school practices that dovetailed as critical components in the *National Reading Panel Report* (2000), *No Child Left Behind (NCLB)*, and *Reading First*. Use of CBM for progress monitoring and screening became even more prevalent with passage of the *Individuals with Disabilities Education Act (IDEA)* of 2004 that reinforced NCLB efforts to support early identification of at risk students through screening and regular reporting of standardized measures of academic progress to parents for all students and as integral to evaluating response to intervention (RtI)(Shinn, 2002, 2008). Further coalescence occurred as RtI expanded into a more comprehensive service delivery system, *Multi-tier System of Supports (MTSS)*. Foundational to RtI and MTSS is a seamless data system where simple time and cost efficient screening can lead directly to simple and cost efficient progress monitoring for all students that leads to even more frequent progress monitoring for students at risk (Shinn, 2010).

Coinciding with these school improvement efforts, for more than 20 years, states have been actively engaged in identifying and assessing their own state standards. With passage of NCLB, the role of state standards reached its zenith. School district and school accountability and consequences was mandated to be tied to performance on state standards tests (SSTs) that were required to begin at Grade 3 and, with few exceptions, were completed at the end of the academic year.

The myriad national school reform efforts and CBM and state standards assessment strategies typically were not in conflict, but consistent and complementary. SST was seen as valid for purposes of *summative* progress monitoring for individual students to determine what students *had learned* and for school and school district *accountability*. In contrast, CBM was seen as valid for purposes of frequent formative evaluation to judge progress and facilitate any necessary modifications of intervention programs, and to enable very frequent (e.g., weekly) formative evaluation for at risk students, with the added capacity for beginning of the year universal screening. Importantly, CBM allowed for early identification through universal screening as early as the beginning of kindergarten, avoiding a "wait-to-fail" approach that would result if the first point of decision making was the end of Grade 3. In fact, it was possible to use CBM to predict long-term performance of individual students on SSTs (Silberglitt & Hintze, 2005; Stage & Jacobsen, 2001). For example, a student who earned an R-CBM WRC score of 60 at the end of Grade 1 would be predicted to be highly likely to pass the end-of-Grade 3 *Illinois Standards Achievement Test (ISAT)*. In contrast, a student who earned an R-CBM score of less than 40 WRC at the end of Grade 1 would be predicted to be highly unlikely to pass the end-of-Grade 3 ISAT.

Despite more than two decades of implementation effort, state standards proved to be unsatisfactory. Each state was permitted to write their own standards for learning outcomes in language arts, including reading, and mathematics, and some states added specific content area (e.g., science) standards. No uniform process was used to create these standards and each state separately contracted for their own assessments and criterion scores for judging success.

Although the need to identify expected learning outcomes was well accepted, the operationalization of the state standards was subjected to almost universal criticism for the variability in rigor among states. In 2006, Finn, Julian, and Petrilli reviewed their ratings of state standards since 2000 and changes through 2006. They gave the collective state standards a rating of C-minus in 2000 and concluded in 2006 that "two-thirds of the nation's K–12 students attend schools in states with C-, D-, or F-rated standards" (p. 9). Few meaningful changes in state standards occurred in the subsequent intervening period. A 2010 comprehensive review of state standards by Carmichael, Martino, et al., (2010) concluded that "the vast majority of states have failed even to adopt rigorous standards" (p.1).

The identified problem was not just the standards, but also the basis of judging their attainment. By creating individual SSTs, content and criteria for success varied resulting in such state-to-state differences that "in some states, students could score below the 10th percentile nationally and still be considered proficient. In other states… they had to reach the 77th percentile to wear the same label" (Finn, et al., 2006; p. 2). In my own state of Illinois, students who read at or around the 30th percentile nationally would be judged as proficient on the ISAT. Thirty miles north of my sons' schools, students in the state of Wisconsin can read as poorly as the 14th percentile nationally (Grades 2 and 8) and be judged as proficient by their SST, the *Wisconsin Knowledge and Concepts Examination-Criterion Referenced Test (WKCSE-CRT)*.

## A Brief Overview of the Common Core State Standards (CCSS) and Assessment Implications

Because of these concerns in state-to-state standards rigor and differences in state standard tests' criteria and outcomes, an effort to develop national standards began almost a decade ago. This effort by the Council of Chief State School Officers (CCSSO) and the National Governors Association (NGA) was an extension of their previous work to develop College and Career Readiness (CCR) reading, writing, speaking, listening, language, and mathematics standards. The *Common Core State Standards (CCSS)* were released for feedback in 2009 and published in 2010. As of August 2012, 45 states and the District of Columbia have adopted the *English and Language Arts and Mathematics CCSS*.

The CCSS represent the "***what***" in terms of students' learning. According to the authors:

> …*standards are the foundation upon which almost everything else rests—or should rest. They should **guide state assessments and accountability systems**; inform teacher preparation, licensure, and professional development; and give shape to curricula, textbooks, software programs, and more. Choose your metaphor: Standards are targets, or blueprints, or roadmaps. They set the destination: what we want our students to know and be able to do by **the end of their K–12 experience**, and the **benchmarks they should reach along the way*** (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2012; p. 1) (emphasis added)

Within this brief introductory paragraph are three implications for assessment. First, the standards "should guide *state assessments and accountability systems*." Consistent with previous state standards' efforts, this statement narrows the scope of CCSS assessment decisions from "every decision" (e.g., formative assessment, summative assessment, accountability/program evaluation, instructional planning, screening) and "everyone's assessments" (e.g., states, school districts, schools, classrooms) to two major decisions (1) summative assessment, and (2) accountability/program evaluation, and one assessment system, a state's and its capacity to make these two decisions. Second, the statement is a clear intent to focus assessment on *long-term outcomes*, at the *end* of K–12. Third, the paragraph communicates the need to include other outcomes along the way through the establishment of "benchmarks" toward these long-term outcomes, implicitly by summative assessment at *the end of each grade*.

These end-of-the year summative benchmarks are elaborated on later in the CCSS document and identified explicitly by clarifying paragraphs in the section on *Key Design Considerations*

> The K–12 grade-specific standards define **end-of-year expectations and a cumulative progression** designed to enable students to meet college and career readiness expectations no later than the end of high school (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2012 p. 4) (emphasis added).

In summary, the implications of CCSS are authors' judgments about two important decisions, summative evaluation and accountability/program evaluation. Therefore, schools will continue to need assessment instruments and practices for two equally important decisions to support achieving the CCSS, identifying at risk students and conducting formative evaluation, especially frequent formative evaluation.

The CCSS are also explicit in identifying what they are ***not***. It is clear that the authors did not intend that the CCSS determine the ***how*** of instruction and assessment nor were they intended to be de-limiting. In other words, they are the *ends*, not the *means* to achieve them. Importantly, the CCSS authors express awareness of the interrelatedness of the standards and the corresponding implications for assessment.

> …*each standard need not be a separate focus for instruction and assessment. Often, several standards can be addressed by a **single rich task*** (emphasis added).

This last narrative is critical to understanding how the AIMSweb's CBM tests are consistent with and complement the CCSS. As noted earlier (see page 2), the specific CBM measures were designed exactly in line with the CCSS concept of "rich tasks." They allow for making statements about several standards.

## Organization of the CCSS and How CBM is Consistent with, and Complements, the Standards

The CCSS are divided into two documents, the *Common Core State Standards for English Language Arts and Literacy in History/Social Studies and Science* that I will abbreviate as *CCSS-ELA* and *Common Core State Standards for Mathematics (K–12)* that I will abbreviate as *CCSS-M*. Both sets of standards are regarded as a step forward in terms of logical coherence, developmental progression across grades, and specificity (Carmichael, Wilson, et al., 2010). As I stated earlier, I will focus on the CCSS-ELA in this white paper.

The CCSS-ELA is divided into three sections, (1) *Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects K–5*; (2) *Standards for English Language Arts 6–12*; and (3) *Literacy in History/Social Studies, Science, and Technical Subjects 6–12*. Within the K–5 and 6–12 English Language Arts sections are strands:

(1) *Reading: Text Complexity and the Growth of Comprehension*

(2) *Writing: Text Types, Responding to Reading, and Research*

(3) *Speaking and Listening: Flexible Communication and Collaboration*

(4) *Language: Conventions, Effective Use, and Vocabulary*

The *Literacy in History/Social Studies, Science, and Technical Subjects 6–12* section includes only the Reading and Writing strands.

## Common Core State Standards K–5 Reading

The *K–5 Reading Standards* are designed to ensure that all students get off to a healthy academic start and become competent readers, essential for understanding and using narrative and informational text. Basic skills are necessary, albeit insufficient to attain the CCSS. Given AIMSweb CBM's focus on basic skills assessment, and in particular, reading, it is not surprising that R-CBM is highly (and most) consistent with *CCSS K–5 Reading Standards*. R-CBM is a "rich task" where students read aloud for 1 minute, serving as a holistic test that can contribute to understanding student performance relative to a number of reading standards. For older students (e.g., Grade 5 and above) *AIMSweb Maze*, a silent 3-minute reading test, also is consistent with the *CCSS Reading Standards*. AIMSweb early literacy measures, Letter Naming, Phonemic Segmentation, Letter Sounds, and Nonsense Words are also consistent (i.e., content valid) with a number of *CCSS Reading Standards*.

The *K–5 Reading Standards* are divided into two main sections, Anchor Standards that are consistent across grades but operationalized developmentally, and Foundational Standards that are critical components of general reading skill.

### K–5 Anchor Standards

The *K–5 Reading Standards* include 10 identical *Anchor Standards* across grades, divided into four areas:

(1) *Key Ideas and Details*

(2) *Craft and Structure*

(3) *Integration of Knowledge and Ideas*

(4) *Range of Reading and Level of Text Complexity*

These areas and the *Anchor Standards* are detailed separately by *types of text*: (1) *Reading Standards for Literature K–5*, and (2) *Reading Standards for Informational Text K–5*. Each area contains specific standards that are operationalized with different features and content across the grades and the types of text.

*Reading Standards for Literature K–5*. AIMSweb's R-CBM is highly consistent with the *Range of Reading and Level of Text Complexity Anchor*, that requires students to:

10. *Read and comprehend complex literary and informational texts independently and proficiently.*

Developmental differences are noted. For example, the summative expected outcome for Grade 1 Literature is:

10. *With prompting and support, read prose and poetry of appropriate complexity for grade 1.*

In contrast, the expected summative expected outcome for Grade 5 Literature is:

10. *By the end of the year, read and comprehend literature, including stories, dramas, and poetry at the high end of grades 4–5 text complexity band independently and proficiently.*

AIMSweb's R-CBM is *consistent* (i.e., content valid) with this *Literature Anchor Standard*. Students are tested by having them read grade-level passages of suitable difficulty (e.g., Grade 5 passages for Grade 5 standards). The passages are not representative of all text types (e.g., poetry), but form the basis for judging students' skill in general reading in terms of independence and proficiency consistent with this standard.

Most importantly, AIMSweb's R-CBM is *complementary* to CCSS assessment strategies. It has demonstrated *consequential validity* as a general reading test to identify students at risk (Shinn, 1989; 2007). The test can be used for universal screening early in an academic year to identify students at risk for failing to attain the CCSS grade-level, end-of-year standards. R-CBM is time and cost efficient, ensuring that sizable amounts of school resources are not diverted away from instruction. And because it has been validated as a frequent, formative assessment instrument (Fuchs & Fuchs, 1999; 2008), R-CBM can be used to monitor progress regularly to ensure students are acquiring the skills necessary to meet CCSS standards. In short, early screening and formative, frequent progress monitoring complements the CCSS testing strategies that are summative and emphasize accountability and program evaluation.

*Reading Standards for Informational Text K–5*. It should be noted that AIMSweb's R-CBM is less consistent (i.e., content valid) with the Reading Standards for Informational Text K–5. Across grades, students are expected to:

10. **Read** and comprehend complex literary and informational texts independently and proficiently (p. 5) (emphasis added)

*Less* consistent is not the same as *inconsistent*. This judgment is based on the type of text material students would be expected to read to be judged on these informational texts. This requirement is clear in examining these *Anchor Standards*.

For example, the Grade 2 *Anchor Standard* end-of-the-year outcome is:

10. *By the end of year, **read** and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 2–3 text complexity band proficiently, with scaffolding as needed at the high end of the range. (emphasis added)*

The Grade 5 *Anchor Standard* end-of-the-year outcome is similar, but requires successful navigation of Grade 4–5 material:

10. *By the end of year, **read** and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4–5 text complexity band proficiently, with scaffolding as needed at the high end of the range. (emphasis added)*

As noted earlier, AIMSweb reading tests are based on passages that are narrative or literature text largely due to their intended purpose, to serve as vital signs or indicators of *general* reading ability. As the CCSS themselves imply, reading literature is different from reading informational text. Skill in reading informational text relies much more on specific content knowledge, vocabulary, and interest, than reading more narrative or literature text. Of course, general reading ability is directly correlated (i.e., construct-related validity) to being able to *read and comprehend informational texts,* but in terms of content validity, AIMSweb's reading tests would be less valid.

However, as I have tried to emphasize throughout the white paper, the primary value of AIMSweb is not to serve as content valid measures of the CCSS. Consistency is important, but the primary usefulness of AIMSweb is to *complement* attainment of the CCSS by facilitating early intervention for those students at risk by time and cost efficient universal screening and frequent progress monitoring.

**K–5 Foundational Skills Standards**

The K–5 Reading Standards also include four Foundational Skills that span literature and informational reading that are: *necessary and important components of an effective comprehensive reading program designed to develop proficient readers*" (CCSS, p. 15):

> *(1) Print Concepts*
>
> *(2) Phonological Awareness*
>
> *(3) Phonics and Word Recognition*
>
> *(4) Fluency*

AIMSweb's R-CBM test is most obviously highly *consistent* with the *CCSS Foundational Skills of Fluency.* With the exception of an end-of-Kindergarten standard that students will "*read emergent reader texts* with purpose and understanding," the Fluency standard is the same at each grade:

> *4.* **Read** *with sufficient* **accuracy** *and* **fluency** *to support comprehension.*
>
> *a.* **Read on-level** *text with purpose and understanding.*
>
> *b. Read on-level prose and poetry orally with accuracy, appropriate rate, and expression on successive readings.*
>
> *c. Use context to* **confirm** *or* **self-correct word recognition** *and understanding, rereading as necessary.*

Assessing general reading skill, including fluency and accuracy, with AIMSweb's R-CBM is clearly consistent with the *CCSS Foundational Skills* of *Fluency.* With respect to content validity, students read CCSS recommended "on-level text" using passages that have been field tested for equivalent difficulty and subjected to readability evaluations, including use of *Lexile* ratings (Howe & Shinn, 2002). Results are scored quantitatively in terms of WRC *and* accuracy, the number of words read *correctly* divided by the total number of words read. Qualitative ratings of "appropriate rate and expression on successive readings" as well as "self correct word recognition and understanding, rereading as necessary" is accomplished quickly and efficiently through the *AIMSweb Qualitative Features* Checklist (QFC) as part of Benchmark Assessment.

Although AIMSweb's CBM test content is consistent (i.e., content validity) with respect to the CCSS, the primary contribution of AIMSweb is its *consequential validity*; it complements the CCSS summative and accountability assessment focus. It enables schools to engage in early screening and intervention practices and frequent and formative evaluation to ensure students are benefiting so they may attain the CCSS.

Unlike the *Foundational Skills of Fluency*, which emphasize broad outcomes that can be assessed readily for screening and progress monitoring using AIMSweb's R-CBM, the *Print Concepts* and *Phonological Awareness Foundational Skills* include more narrow specific outcomes and discrete skills. Not unexpectedly given these foundational skills and their relation to overall reading success, the greatest consistency is at Kindergarten and Grade 1.

*Kindergarten Print Concepts Standards are:*

> *1. Demonstrate understanding of the organization and basic features of print.*
>
> *a. Follow words from left to right, top to bottom, and page by page.*

*b. Recognize that spoken words are represented in written language by specific sequences of letters.*

*c. Understand that words are separated by spaces in print.*

*d. **Recognize and name all upper- and lowercase letters of the alphabet.***

*AIMSweb's Letter Naming (LN)* test requires students to name randomly ordered upper and lower case letters. The number of correct letters named in 1 minute is the score of interest and is most obviously consistent with the discrete skills of (d). It has high content validity.

The primary advantage of AIMSweb LN is that it is complementary and is especially useful as an extremely time and cost efficient K entry screener. AIMSweb uses LN not just as a content valid measure of the discrete skill of naming letters, but as a "vital sign" or "indicator" of the Print Concepts *construct*. That is, entry Kindergarten students who do poorly on LN typically have little "print awareness." Thus, they are likely to perform poorly on all the *Print Concepts Standards* 1a through 1d. Although summative assessment and accountability may require end-of-the-year testing on all four K standards, *screening* for risk in attaining these standards can be accomplished economically by testing students for 1 minute on AIMSweb LN. Because each of these four standards represents a very discrete and short-term instructional skill focus (e.g., 1–4 weeks), frequent progress monitoring may be conducted best within the curriculum used to teach students these skills.

*Kindergarten Phonological Awareness Standards* are:

2. *Demonstrate understanding of spoken words, syllables, and sounds (phonemes).*

   *a. Recognize and produce rhyming words.*

   *b. Count, pronounce, blend, and segment syllables in spoken words.*

   *c. Blend and segment onsets and rimes of single-syllable spoken words.*

   *d. **Isolate and pronounce the initial, medial vowel, and final sounds (phonemes)** in three-phoneme (consonant-vowel-consonant, or CVC) words.\* (This does not include CVCs ending with /l/, /r/, or /x/.)*

   *e. Add or substitute individual sounds (phonemes) in simple, one-syllable words to make new words.*

*Grade 1 Phonological Awareness Standards* are:

2. *Demonstrate understanding of spoken words, syllables, and sounds (phonemes).*

   *a. Distinguish long from short vowel sounds in spoken single-syllable words.*

   *b. Orally produce single-syllable words by blending sounds (phonemes), including consonant blends.*

   *c. **Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.***

   *d. **Segment spoken single-syllable words into their complete sequence of individual sounds (phonemes).***

*AIMSweb's Phonemic Segmentation Fluency* test *(PSF)* requires students to parse orally presented single and multi-syllable words into phonemes. The number of correct phonemes segmented in 1 minute is the score of interest and is most obviously consistent (i.e., content valid) with the discrete skills of K 2b, 2c, and 2d and Grade 1 2c and 2d.

AIMSweb PSF is complementary when the test is used not as a measure of these discrete skills, but as a "vital sign" or correlate of the phonological awareness *construct*. Kindergarten and Grade 1 students who do poorly on PSF typically have a variety of phonological awareness deficits and if they are to attain the end-of-year standards, early screening allows

early identification and early intervention. Although summative assessment and accountability may require end-of-the-year testing on all five K standards and all four Grade 1 standards, screening for risk in attaining these standards can be accomplished economically by testing students for 1 minute on AIMSweb PSF. This test is especially important for screening when students are failing to acquire kindergarten reading skills.

## Phonics and Word Recognition Standard

This CCSS Foundational Skill is unique in that it requires both reading and spelling assessment. A single foundational skill standard is specified across Grades K–5 that is operationalized developmentally.

> 3. Know and apply grade-level phonics and word analysis skills in decoding words.

Grades 4 and 5 operationalize this Foundational Skill the same way.

> a. Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.

The other grades require different and more developmentally relevant skills. For example, at Kindergarten, the *Foundational Skills for Phonics and Word Recognition* include:

> Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the primary sound or many of the most frequent sounds for each consonant.

> Associate the long and short sounds with common spellings (graphemes) for the five major vowels.

These spelling related skills can be assessed by using *AIMSweb Letter Sounds (LS),* a content valid test where students are required to produce as many common letter sounds as they can in 1 minute, given a series of upper and lower case letters. AIMSweb LS also has *consequential* validity as a Kindergarten and early Grade 1 screener and progress monitoring tool for students who are at risk for or receiving intervention for Phonics concerns (Hintze & Silberglitt, 2005; Silberglitt, 2007).

*Spelling Curriculum-Based Measurement (S-CBM)* also has content validity for drawing conclusions about some of the *Phonics and Word Recognition Foundational Standards.* The S-CBM test requires students to write orally dictated grade-level phonetically regular and irregular words for 2 minutes. Results are scored by the number of correct letter sequences (CLS) and words spelled correctly. CLS scoring allows for identifying the correct and incorrect phonics spelling patterns. The strong relation between early reading and spelling skills has been long noted (Adams, 1990) and this relation is identified in a number of standards.

For example, at Grade 1, students are expected to:

> a. Know the spelling-sound correspondences for common consonant digraphs.

> b. Decode regularly spelled one-syllable words.

> c. Know final -e and common vowel team conventions for representing long vowel sounds.

> d. Use knowledge that every syllable must have a vowel sound to determine the number of syllables in a printed word.

> e. Decode two-syllable words following basic patterns by breaking the words into syllables.

> f. Read words with inflectional endings.

> g. Recognize and read grade-appropriate irregularly spelled words.

Grade 1 standards a, c, d, and e clearly are components of *AIMSweb's S-CBM*. Similar examples of content validity can be seen in other grades. At Grade 3, the *Foundational Standards* also include the following end-of-year skills that may best be assessed through a spelling test rather than a reading test alone.

a. *Distinguish long and short vowels when reading regularly spelled one-syllable words.*

b. *Know spelling-sound correspondences for additional common vowel teams.*

c. *Decode regularly spelled two-syllable words with long vowels.*

d. *Decode words with common prefixes and suffixes.*

e. *Identify words with inconsistent but common spelling-sound correspondences.*

Like the other AIMSweb measures, S-CBM complements CCSS decision making; it has evidence of consequential validity for screening and progress monitoring decisions (Fuchs, Allinder, Hamlett, & Fuchs, 1990; Fuchs, Fuchs, Hamlett, & Allinder, 1991).

Finally, it should be noted that *AIMSweb R-CBM* has content validity for many of the *Phonics and Word Recognition Standards*. However, this consistency would be addressed through a qualitative analysis of the specific words read aloud correctly and incorrectly.

## Common Core State Standards K–5 Writing

The *K–5 Writing Standards* have the following goal:

*To build a foundation for college and career readiness, students need to learn to use writing as a way of offering and supporting opinions, demonstrating understanding of the subjects they are studying, and conveying real and imagined experiences and events* (p. 18).

Like the *K–5 Reading Standards*, the *Writing Standards* include 10 identical *Anchor Standards* across grades, divided into four areas:

(1) *Text Types and Purposes*

(2) *Production and Distribution of Writing*

(3) *Research to Build and Present Knowledge*

(4) *Range of Writing*

Of these four areas, *AIMSweb* CBM Written Expression (WE-CBM) is most consistent with one of the three *Anchor Standards for Text Types and Purposes* at Grades 1–5.

For example, at Grade 2, students are expected to:

3. *Write **narratives** in which they recount two or more appropriately sequenced events, include some details regarding what happened, use temporal words to signal event order, and provide some sense of closure. (emphasis added)*

At Grade 4, students are expected to:

3. *Write **narratives** to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences. (emphasis added)*

a. *Orient the reader by establishing a situation and introducing a narrator and/or characters; organize an event sequence that unfolds naturally.*

b. *Use dialogue and description to develop experiences and events or show the responses of characters to situations.*

c. *Use a variety of transitional words and phrases to manage the sequence of events.*

d. *Use concrete words and phrases and sensory details to convey experiences and events precisely.*

e. *Provide a conclusion that follows from the narrated experiences or events.*

WE-CBM requires students to write short narratives for 3 minutes, given a topic story starter. Therefore, WE-CBM is consistent with portions of the *CCSS K–5 Writing Standards*. Like the *CCSS Reading Standards*, however, AIMSweb's WE-CBM task is valuable more with respect to its complementary assessment and contribution to decision-making practices. The test has been validated as a measure of *general beginning writing skills* (McMaster & Espin, 2007). Student writing narratives are scored by production (counting the total number of words written, TWW) and by correct sequences of writing judged by mechanics, syntax, and semantics (i.e., correct writing sequences, CWS). As a vital sign or indicator of general written expression skills, it can be used as a time and cost efficient screener to enable early intervention and as a frequent progress monitoring instrument as long as students show writing deficits.

## Other K–5 Common Core State Standards

AIMSweb's CBM tests are not as directly related to the other two K–5 CCSS sections, *Speaking and Listening: Flexible Communication and Collaboration*, and *Language: Conventions, Effective Use, and Vocabulary*. Content validity may be considered to be lower. Most of the *Speaking and Listening* as well as *Language* standards are very specific and discrete skills that are short-term instructional outcomes and reflect Mastery Monitoring (MM) more than the general outcomes assessed by CBM. For example, in the area of *Language Standards K–5, Conventions of Standard English*, at the end of Grade 1, students are expected to:

2. *Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.*

   a. *Capitalize dates and names of people.*

   b. *Use end punctuation for sentences.*

   c. *Use commas in dates and to separate single words in a series.*

   d. *Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words.*

   e. *Spell untaught words phonetically, drawing on phonemic awareness and spelling conventions.*

These specific outcomes are *components* of strong general outcomes, but they are not CBM's *primary* assessment focus. Again, it is not that AIMSweb CBM is inconsistent with or irrelevant to these standards. These skills *can* be assessed qualitatively in AIMSweb's WE CBM narrative writing test and counted quantitatively as part of the Correct Word Sequence (CSW) scoring system.

## Common Core State Standards Grades 6–12

The *CCSS Standards English Language Arts 6–12* and *Literacy in History/Social Studies, Science, and Technical Subjects 6–12* clearly represent students' use of reading and language arts skills to navigate, understand and use complex text. Some of the Standards are related to AIMSweb CBM tests. But this relation is one of consequential validity (e.g., how AIMSweb complements CCSS) rather than content validity (i.e., how consistent AIMSweb is with CCSS).

The *Reading Standards 6–12* are constructed similarly to the *K–5 Reading Standards*. There are *Anchor Standards* and a strong emphasis of success on levels of text complexity. Additionally, the *Reading Standards* distinguish between reading and understanding literature and informational text.

Similar to many of the other standards in the document, AIMSweb's CBM tests are less consistent with the 6–12 standards. CBM's emphasis on assessing general basic skill outcomes through rich tasks that are valid vital signs or indicators of more complex constructs, however, has a critical role for complementing the CCSS summative and

accountability emphasis. That is, AIMSweb can be used to *screen* for those students whose lack of basic reading skills are contributing to a failure to attain the 6-12 *Reading Standards*. A different level of intensive intervention would be required for students with these severe basic skill deficits than for students who have basic reading skills, but who are failing to acquire specific *CCSS 6–12 Standards*. But equally, if not *more importantly*, AIMSweb's CBM tests serve as the best available technology to monitor progress frequently for formative evaluation.

## Summary

It is important that instructional and assessment practices align with the *CCSS*. For assessment, it is important that testing practices are consistent (i.e., content valid) with the CCSS. AIMSweb's CBM tests are consistent, especially with their intended audience, *typically developing* students acquiring basic skills. AIMSweb's tests are especially consistent with the *K–5 Reading Standards*, including but not limited to the *Anchor Standards* and reading literature, *Foundational Skills*, especially *Fluency*, and *K–5 Writing Anchor Standards*.

But content validity, assessing the elements of *specific achievement*, is not the strength nor the primary purpose of *AIMSweb*. Its strengths are how it *complements* summative evaluation and accountability. Good assessment supports important decision making and the most common ones in America's schools are (a) *Screening*, the process of identifying students at risk so that intervention can be provided as early as possible; (b) *Diagnosis/Instructional Planning*, where the instructional content that needs to be taught is identified; (c) *Progress Monitoring*, judging whether students are benefiting from instruction; and (d) *Accountability and Program Evaluation*, a summative decision where critical decisions are made about the effectiveness of schools, of teaching and teachers, and of the instructional programs delivered to groups of students.

One of this white paper's *Big Ideas* was that, for a variety of technical reasons, *no single test* can contribute to all these decisions equally well. A summative test used to assess attainment of the CCSS for accountability purposes is unlikely to make a good screener. It makes little sense to screen students at the beginning of the year on outcomes they are intended to achieve at the end of the year. One would and should expect many beginning-of-the-school-year students to not have yet reached those grade-level standards. *Screening* needs to be *accurate* in differentiating individual students who need additional assessment or intervention from those students who do not. It needs to be proven to be *technically sound*. Screening also needs to be *time* and *cost efficient*. Spending lots of time testing all students with a corresponding loss of instructional time can make screening very expensive, and thus, impractical. AIMSweb's CBM tests can *accurately* and *efficiently find the students* who need more intensive intervention to attain the CCSS.

Another *Big Idea* of this paper is that frequent progress monitoring for formative assessment is one of the most powerful tools to support student learning and attain the CCSS. Frequent progress monitoring for formative assessment requires that a different set of test characteristics be considered. Like screening, progress monitoring also needs to be *time* and *cost efficient*. In contrast to screening where all students are screened at a single point in time, progress may also be monitored for *all* students at regular, infrequent intervals (e.g., 3–4 times per year), or for some students with more severe needs more frequently, up to 1–2 times per week. Spending lots of time completing progress monitoring testing with sizable numbers of students with a corresponding loss of instructional time can make it very expensive, and thus, impractical. The bottom line for progress monitoring is *finding out which students* are not benefiting from intervention and need changes in instruction. AIMSweb is uniquely suited for use in *basic skills progress monitoring*, especially frequent progress monitoring with students at risk.

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