Spanish MAP Reading Fluency Technical Report

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1. Introduction

This document details the test design and specifications for Spanish MAP® Reading Fluency™, an adaptive assessment that supports students on their path to reading comprehension by assessing and helping to improve both oral reading fluency and foundational reading skills. It is designed for students who do not yet read with solid fluency and understanding and adapts to accommodate pre-readers, early readers, and independent readers in Pre-K to grade 4 with the goal of helping all students be able to read with comprehension. MAP Reading Fluency is available in both English and Spanish.[1] Spanish MAP Reading Fluency is designed to support biliteracy programs and emergent bilinguals in multiple educational contexts. NWEA is continually exploring ways to refine Spanish MAP Reading Fluency to best reflect how students learn to read in Spanish and the skills they need to support Spanish reading fluency.

It is important to note that reading fluency is comprised of three parts: accuracy, rate, and expression (sometimes referred to as prosody). Although all three components can be measured, most oral reading fluency assessments focus on the predictable skill of automaticity. Automaticity, in turn, is made up of the most predictive two components correlated with later reading success: reading accuracy (the percentage of words read correctly out of the number of total words attempted) and reading rate (the number of words correct per minute).

1.1. Spanish MAP Reading Fluency Overview

Students take a 20-minute benchmark assessment up to three times a year in fall, winter, and spring that is automatically scored and generates actionable data about their reading skills and instructional needs. Spanish MAP Reading Fluency can be administered in a group setting rather than one-on-one, which saves teachers valuable classroom instructional time. Administration procedures can vary to accommodate a variety of student and educator needs. Students wear headsets with microphones and read the test content out loud into the microphone. The audio is recorded and scored automatically by the speech scoring engine rather than relying on human judgment and individual administration.

While teachers can choose from various test forms, the Adaptive Oral Reading form is the default. To start, an avatar greets the students and confirms that they understand the directions. Each student reads a picture-supported story in either a picture-book or graphic-novel format aloud. Then they read sentences silently and identify a matching picture, which gauges if the student is ready to read passages. If so, they read two passages out loud. After reading, students answer selected-response items to demonstrate their comprehension. If the student is not ready to read passages, they are presented with a series of measures that assess foundational reading skills, including phonological awareness, early phonics and word-recognition skills, listening comprehension, and picture vocabulary. The assessment is automatically scored, with most results appearing in reports immediately and all results provided within 24 hours. For each student, reports provide proficiency determinations relative to grade-level expectations, an individualized literacy profile, and recommended next steps.

For students who are not ready for passages, the Foundational Skills layout for the Individual Student Report shows their proficiency in decoding skills and in oral language comprehension. Proficiencies in Phonological Awareness and Phonics & Word Recognition are each reported in the context of a learning progression. Student performance on these early literacy skills is compared with grade-level expectations and reported as *Exceeds Expectations*, *Meets Expectations*, *Approaching Expectations*, or *Below Expectations*. For students who read the passages, the report shows the scaled words correct per minute (SWCPM), decoding accuracy, and passage

[1] Details of English MAP Reading Fluency are available in a separate technical report.

comprehension scores. Teachers can also play back the audio recording for further evaluation or manual scoring to consider dialect or pronunciation nuances. Student oral reading fluency performance is also compared with grade-level expectations and is reported as *Exceeds Expectations*, *Meets Expectations*, *Approaching Expectations*, or *Below Expectations*. Grade-level expectations exist for Pre-K–grade 3; students above grade 3 will be compared with grade 3 expectations.

1.2. Background

MAP Reading Fluency in English was piloted in 2016–2017, with an early adopter program released in 2017–2018. It became available to the general public in 2018–2019. The general release of Spanish MAP Reading Fluency followed shortly thereafter, with scores becoming operational in Fall 2019.

Development of MAP Reading Fluency began with the desire to help all students be able to read and comprehend complex texts, which is a primary goal of early literacy instruction. In Pre-K to grade 5, research demonstrates that development of foundational reading skills supports reading fluency, which, in turn, is necessary for reading with comprehension (Jenkins et al., 2003; Shanahan & Lonigan, 2010). MAP Reading Fluency focuses on early literacy skills, including foundational skills and the development of strong oral reading fluency. Spanish MAP Reading Fluency Foundational Skills measures were developed with the orthographic differences between English and Spanish in mind. For example, Spanish has a highly transparent orthography (i.e., consistent, one-to-one correspondence between sounds and letters), whereas English orthography is much more opaque (i.e., less consistent sound-to-letter correspondences). Consequently, Foundational Skills measures for Spanish include both phoneme–grapheme mapping and syllable-level processing, which together support efficient decoding. There are, however, also measures that address both letter knowledge and phoneme identification, in alignment with Spanish language arts standards, and recognizing the fact that many students are learning both English and Spanish simultaneously in the classroom contexts for which this assessment was designed.

In an alphabetic language, automatic word reading, which is the key foundational reading skill, begins with the ability to map written letters and letter patterns to the sounds they make (i.e., decoding; Ehri, 2005). Development of strong word decoding is supported by the precursor skills of alphabet knowledge and phonological awareness and is moderately to strongly supported by both print concepts and oral language comprehension (Shanahan & Lonigan, 2010). For Spanish, syllabic knowledge plays a strong role. As students begin to read connected text, these skills work together. In Gough and Tunmer's Simple View of Reading model (1986), this relationship is captured by the idea that passage comprehension is the product of decoding and language comprehension. As students move to reading connected text, gauging automaticity with word reading becomes an element of oral reading fluency.

Oral reading fluency assessment has become largely ubiquitous in U.S. primary grades, with many schools using a one-minute reading sample from grade-level text, scored as words correct per minute (WCPM). This approach has a substantial research base showing its value for screening and indicating growth for students at risk of underachievement in reading (Jenkins et al., 2007; Wayman et al., 2007). Particularly among students still building their passage comprehension skills, changes in oral reading fluency offer a valuable indicator of overall growth in reading proficiency (Fuchs et al., 2001). However, research has also shown that while accuracy scores are useful in instructional decisions, this use is lost when they are subsumed into the WCPM score alone (García & Cain, 2014; Valencia et al., 2010). Researchers have long warned about the possible instructional implications of assessing WCPM without comprehension (e.g., Deno, 1985). For example, some pointed to evidence that educators were beginning to equate faster oral reading with better reading (Deeney, 2010; Newman, 2009).

Many researchers assert that the construct of oral reading fluency includes prosody (i.e., a student's phrasing and expression in support of meaning; Kuhn et al., 2010; Rasinski et al., 2011; Samuels, 2006). In this case, faster reading can even be at odds with better, more prosodic reading (Daane et al., 2005; Paige et al., 2014). Still, reading that has sufficient rate, accuracy, and prosody is not the end goal. The real goal is improving comprehension of text, which is harder when either the text or the comprehension task is more complex, per contemporary models (e.g., Common Core State Standards en español, 2013; Common Core State Standards Initiative, 2010; RAND Reading Study Group, 2002). With oral reading, complex comprehension tasks are typically a poor fit since they often require revisiting the text for analysis. Instead, raising the text complexity offers a way to gauge growth in reading with comprehension.

Critics of one-minute WCPM measures argue that a more robust approach to assessing oral reading fluency allows students to read a complete passage aloud and then answer comprehension questions about it (Lipson & Wixson, 2012; Samuels, 2007). From such an administration, Valencia et al. (2010) provide evidence that four types of scores each contribute to a best prediction of general passage comprehension: rate, accuracy, prosody, and comprehension. These four data points, they argue, are also those that best enable individualizing instruction. MAP Reading Fluency is modeled according to this more robust approach.

1.3. Design Rationale

The adaptive and group-administered approach of MAP Reading Fluency is designed to relieve teachers of lengthy assessment procedures so they can maximize instructional time. It is also designed to help tailor instruction to students' needs through effective data-based differentiation. Specifically, one purpose of MAP Reading Fluency is to point Foundational Skills and Oral Reading Fluency data at immediate instructional decisions such as finding appropriate instructional emphases for sets of students; gauging the need for scaffolding and support in classroom-wide, grade-level instruction; and screening for students who are most likely to benefit from allocation of additional instructional resources. When instructional resources are allocated in the context of tailored instruction, intended outcomes are supported; when all students have strong foundational skills, fluency is supported; when all students have strong reading fluency, reading with comprehension is supported. MAP Reading Fluency results are designed to achieve these outcomes.

The goal of MAP Reading Fluency is to bring rich information from oral reading, automatically scored, to the task of individualizing reading instruction. MAP Reading Fluency is also designed to offer one source of data for comparing a student's reading fluency with a general grade-level expectation. While having all students reading with fluency is the direct goal of MAP Reading Fluency, the design decision was to gauge growth in the foundational skills that support future reading fluency for students not yet able to read passages. MAP Reading Fluency accomplishes, but is not limited to, the following: (1) gauges student readiness for oral reading from passages, (2) informs instruction for students who cannot yet read passages, and (3) assesses oral reading proficiency and improvement.

1.3.1. Gauging Student Readiness for Oral Reading from Passages

Reading a sentence silently with sufficient speed, accuracy, and literal comprehension indicates a level of proficiency with connected text that word reading alone cannot. In MAP Reading Fluency, silent sentence fluency measures are presented to all students to help discern possible readiness for oral passage reading. Research supports the value of a measure wherein students read isolated sentences quickly and silently and then mark a quick semantic judgement. Examples include the Woodcock-Johnson reading fluency task (Schrank et al., 2004) and the Test of Silent Reading Efficiency and Comprehension (Wagner et al., 2010). Stronger readers' comprehension is highly correlated to sentence-level silent fluency: students who do well on silent sentence fluency are

likely to read with good phrasing when reading aloud (Klauda & Guthrie, 2008). While word reading is a stronger predictor of passage comprehension for weaker readers, silent sentence reading fluency has a tighter relationship to comprehension for stronger readers (Kim et al., 2011).

1.3.2. Informing Instruction for Students Who Cannot Yet Read Passages

Consider a student who reads 18 WCPM and is at an exciting beginning point in learning to read connected text. However, this student's reading fluency is not at a point where they would be expected to understand what was read. In fact, reading more than a sentence at a time still presents a significant challenge. For a student at this level, reading aloud from passages is not the best use of time for informing instruction. Valuable information for instruction for these early readers comes from data on two broad components that feed future reading with comprehension: (1) foundational decoding skills and (2) language comprehension.

Decoding refers to phonological awareness, early phonics, and word recognition. Language comprehension refers to receptive oral vocabulary and sentence-level oral language comprehension. Some students have enough language comprehension that the appropriate instructional emphasis is decoding, while others may need more emphasis on language development. Even within these broad categories, students will differ. For some students, challenges with phonemic awareness hold back word reading. For others, vocabulary may be sufficient but syntax at the sentence level can still introduce confusion.

For students who are not ready to read aloud from passages, MAP Reading Fluency collects data more useful to instruction to provide a profile of the student's foundational decoding and language comprehension skills. For example, two critical Foundational Skills domains (i.e., Phonological Awareness and Phonics & Word Recognition) each offer within-domain adaptivity. This allows the reported data to point toward a zone of proximal development (ZPD) level within a progression of skills within the domain and to offer instructional resources tightly aligned to this level. Each skill assessed aligns to the Common Core State Standards en Español (CCSS en Español, 2013). Within the Foundational Skills standards, Spanish MAP Reading Fluency assesses letter identification, phonological awareness standards, and phonics standards through grade 2. Each step in the Phonological Awareness and Phonics & Word Recognition progressions is mapped to best practice instructional materials made available by a variety of research-based institutions.

1.3.3. Gauging Improvements in Oral Reading

As students get better at reading texts, they improve their oral reading rate, accuracy, prosody, and passage comprehension. Often, meaningful growth is not best captured by increases in rate on the same level of material. It is unfortunate when a student who reads 130 WCPM is compelled to read faster to demonstrate growth. If students focus on reading quickly, they jeopardize their ability to make meaning from the text. When students can read passages well at a given level (i.e., showing sufficient rate, accuracy, and comprehension), faster reading does not necessarily correlate with better reading. Instead, better reading means becoming successful with harder texts and/or deeper comprehension. In MAP Reading Fluency, a student who understands what they read aloud is challenged to read from passages at a higher level of text complexity.

For students reading aloud from passages, SWCPM, accuracy, and low-level comprehension are scored automatically, and prosody can be rated by a teacher using audio playback. Spanish MAP Reading Fluency also adjusts the level of text complexity across multiple passages presented, adapting based on comprehension to find a maximum text level at which a student is showing understanding of what they read.

2. Test Design

The MAP Reading Fluency test design is based on the Simple View of Reading model (Gough & Tunmer, 1986), a research-validated model of reading development that proposes two broad factors that enable or limit passage comprehension: decoding and language comprehension. MAP Reading Fluency was developed to assess oral reading fluency as well as the foundational skills in both decoding and language comprehension that lead to reading fluency. In alphabetic languages, when decoding is weak, even students with strong oral language comprehension cannot fully understand text. In Spanish, because of its relatively transparent orthography, decoding accuracy is typically established earlier; once this occurs, decoding rate (fluency) often becomes a more sensitive predictor of passage comprehension (Tapia, 2016).

Spanish MAP Reading Fluency aligns all the decoding, language comprehension, and fluency measures to the Estándares estatales comunes para las artes del lenguaje en español y para la lecto-escritura en historia y estudios sociales, ciencias y materias técnicas (CCSS en español, 2013). In the CCSS en español, the Foundational Skills strand includes decoding and fluency components, while language comprehension skills are distributed in other strands. Each measure's alignment to the CCSS en español is presented in this report.

2.1. Domains and Measures

MAP Reading Fluency includes a set of measures focusing on knowledge and skills with print or sounds and the process of mapping print to sound (i.e., decoding). Decoding measures fall into two domains, Phonological Awareness and Phonics & Word Recognition. Measures in these domains range from letter knowledge, phoneme and syllable recognition and manipulation, and phonemic awareness to word- and sentence-level reading. For students at a stage where they are not ready to read full passages, MAP Reading Fluency instead administers an adaptively selected subset of these foundational print, sound, and print/sound decoding measures.

Specifically, as shown in Table 2.1, Spanish MAP Reading Fluency assesses oral reading fluency, including the ability to read aloud with good rate, accuracy, and comprehension; foundational decoding skills, including early print concepts, phonological awareness, and phonics and word recognition; and foundational language comprehension skills, including vocabulary and sentence-level listening comprehension. These measures are ordered from lowest zone of proximal development (ZPD) level (i.e., the first developing skills) to highest.

Table 2.1. Assessed Domains and Measure of Spanish MAP Reading Fluency

Domain	Measure	Code	Duration
Phonological Awareness	Rhyme Completion	130	2 minutes
	Counting Syllables	117	1 minute
	Syllable Blending	118	1 minute
	Initial Sound Matching	101	2 minutes
	Phoneme Blending	119	1 minute
	Segment & Count Phonemes	120	1 minute
	Syllable Addition/Deletion	121	2 minutes
	Phoneme Substitution	122	2 minutes
Phonics & Word Recognition	Letter Knowledge	102	1 minute
	Letter-Sound Fluency	103	1 minute
	Words' Initial Letters	123	1 minute
	Building Words: One Syllable Missing	124	1 minute

Domain	Measure	Code	Duration
	Decoding: Beginning Words	107	1 minute
	Building Words: Two Syllables Missing	125	2 minutes
	Decoding: Multi-Syllable Words	127	1 minute
	Building Words: All Syllables Missing	126	2 minutes
	Sentence Reading Fluency	108	2 minutes
Language Comprehension	Picture Vocabulary	105	Up to 30 seconds per item
	Listening Comprehension	104	Up to 30 seconds per item
Print Concepts	Print Concepts	131–136	Up to 45 seconds per item
Oral Reading [a]	Oral Reading: Picture Book/Graphic Novel	113/140	Up to 5 minutes
	Oral Reading: Passages	111	Up to 5 minutes
	Oral Reading: Passage Comprehension Quiz	114	Up to 90 seconds per item

[a] Oral Reading: Passages and Oral Reading: Passage Comprehension Quiz are administered as a set (e.g., students read a passage and then answer items about it) and are collectively known as Passage Comprehension.

In Spanish, once basic decoding accuracy is established, fluency (rate and efficiency) becomes a more sensitive indicator of reading development and passage-level performance; however, decoding accuracy remains foundational, particularly for early readers and those still developing automaticity.

- **Multilingual Considerations.** Oral language development in both Spanish and English is essential for reading development and is not merely supportive. Cross-linguistic transfer is skill-specific rather than automatic. Foundational skills such as phonological awareness and print concepts are more likely to transfer across languages, whereas vocabulary and comprehension are more language-dependent and should be interpreted within each language context.
- **Interpretation Guidance.** Differences in performance across domains or languages should be interpreted in the context of instructional exposure. Strong phonological skills may support cross-language reading development, whereas vocabulary and comprehension are more language-dependent and should not be interpreted as deficits without considering language experience.

2.2. Test Forms

As shown in Table 2.2, Spanish MAP Reading Fluency provides different forms to meet the varied needs of users.[2] The default MAP Reading Fluency test form is Adaptive Oral Reading, which routes students in grades K–3 to the Oral Reading Fluency track if they are ready to read passages or to the Foundational Skills track if they are not; students in grades 4+ will always route to Oral Reading Fluency. Teachers can also assign a specific form, such as Foundational Skills or Adaptive Oral Reading–Passages Only. These forms largely draw from the same operational item pool. For example, Foundational Skills—Beginner is an entry-level form for younger readers that includes a subset of the measures within the Phonological Awareness and Phonics & Word Recognition domains. It also includes the full Language Comprehension domain. The beginner form also assesses Print Concepts, including word concepts and text directionality. The number of items administered per measure is indicated in the specifications tables in the following sections.

[2] Please refer to the *MAP Reading Fluency Administration Guidance Document* for more details on which test form to administer and how to leverage MAP Reading Fluency and MAP Growth Reading together to get a more complete picture of early literacy and development (NWEA, 2021).

On the passage track of the Adaptive Oral Reading form and on the Passages Only form, students receive two passages, each with six comprehension items. The test pulls items randomly from the measure's item pool for all Foundational Skills measures. Most measures are timed on the Foundational Skills track. Students see as many items as their rate allows in the allotted time of either one or two minutes depending on the measure. These measures are timed because, in some Foundational Skills, gains in proficiency are captured both by accurate responding and by rate of responding. Students typically move from accurate but slower responding to a faster rate of responding, which indicates increasing automaticity with the skill. Termination of a speeded subtest is based on a fixed duration (i.e., one or two minutes) rather than on a fixed number of items. The exception is the Language Comprehension domain, which is not timed. In this domain, accuracy is relevant but rate is not, so the measures in this domain (Picture Vocabulary and Listening Comprehension) use a fixed number of items (i.e., 15 items) rather than a fixed duration.

Table 2.2. Spanish MAP Reading Fluency Test Forms

Form	Description	Adaptive?
Adaptive Oral Reading	Assigned by default. Directs students into either Oral Reading Fluency and Comprehension or Foundational Skills, depending on each student's performance on Sentence Reading Fluency. Content is presented according to adaptive test logic based on student performance within the test session.	Yes
Foundational Skills	Assesses Phonological Awareness, Phonics & Word Recognition, and Language Comprehension. This form does not route any students into oral reading passages.	Yes
Foundational Skills—Beginner	Assesses both the Decoding and Language Comprehension Foundational Skills, but it includes only the first four measures (Levels 1 and 2 found in Table 2.3) in the skill progressions for Phonics & Word Recognition and Phonological Awareness, plus Print Concepts. This test is intended for pre-kindergarten (Pre-K) students and for fall testing of kindergarteners who have not been to Pre-K.	Yes
Passages Only	Contains reading passages and comprehension questions and does not measure any foundational skills. This form is an option for students who can read connected text and for students who have tested into the oral reading pathway on previous administrations. Picture Book/Graphic Novel and Sentence Reading Fluency are included in this format, but there is no sentence reading threshold score required to move on to passage reading.	Yes

In the Adaptive Oral Reading form, students are routed either to Oral Reading Fluency with passages or to Foundational Skills based on their performance at the beginning of the assessment (with the exception of students in grade 4+, who will always route to Oral Reading Fluency). The Foundational Skills section of the Adaptive Oral Reading form mirrors the Foundational Skills form, and all forms present content adaptively.

The Adaptive Oral Reading assessment begins with a picture book or graphic novel to ease the student into the test and allow them to practice reading out loud. They then complete the Sentence Reading Fluency measure, which is used to route students to either Oral Reading or Foundational Skills. A threshold raw score (11 or more) and accuracy rate (75% or more) for Sentence Reading Fluency must be obtained to proceed to Oral Reading. This helps ensure that students who route to Oral Reading will be able to read the passages presented well enough to provide valuable feedback/results.

Students routed to the passage track receive two passages, each with six associated comprehension items. For students in Pre-K to grade 1 routed to the passage track, if the student did not pass the basic comprehension quiz for either of the first two passages (≤ 66% correct), then the language comprehension measures are administered as well. No student who takes Foundational Skills takes all the Foundational Skills measures. Each Foundational Skills domain includes multiple measures. In the Phonological Awareness and Phonics & Word Recognition domains, a subset of measures is selected adaptively during each test event based on student performance within a progression of skills. In the Language Comprehension domain, both Picture Vocabulary and Listening Comprehension measures are administered to all students.

Students may also receive field test items during their test events. These may include field test items within a measure, field test oral reading passages, or other field test measures. This field testing process is important to the ongoing development and improvement of the product.

2.3. Phonological Awareness

Phonological awareness, which works with larger units of sentences and words (e.g. syllables, rhymes) encompasses phonemic awareness, which deals with the isolation of individual phonemes. Early learners' phonological awareness is among the strongest predictors of future decoding proficiency (Gillon, 2004; Melby-Lervåg et al., 2012) and literacy development in Spanish (Denton et al., 2000; Signorini & Borzone de Manrique, 2003). The skills children use in working with larger units of sound and eventually individual phonemes feed their growing ability to decode unfamiliar words by sounding words out (Adams, 1990). Research has converged on a general sequence of development in phonological awareness, one that holds true across languages even as its rapidity is influenced by linguistic and educational contexts (Anthony & Francis, 2005). The sequence moves from large units of sound, such as words, to syllables to the smallest units of sound, or phonemes (Goikoetxea, 2005).

In English, children develop sensitivity to whole words as sounds before parts of words, such as syllables. Next, they hear and work with parts of syllables, such as onsets and rimes. Finally, children develop the ability to distinguish and work with individual phonemes. For any unit of sound, blending typically develops before segmenting (Anthony & Francis, 2005). Last to fully develop is the ability to manipulate phonemes, including phoneme addition, deletion, and substitution (Anthony & Francis, 2005; Gillon, 2017; Moats & Tolman, 2009).

In Spanish, the progression is similar, but phonological awareness, including both syllable awareness and phoneme awareness, supports early literacy development. While syllables are a salient structural feature of Spanish, phoneme-level awareness and phoneme–grapheme mapping are also critical for accurate and efficient decoding (De la Calle et al., 2018; Durant, 2023; González & González, 2000). Spanish-speaking children also start by learning vowel sounds before consonants, whereas their English-speaking counterparts learn the consonant phonemes first (Escamilla et al., 2013). Strength at discriminating individual phonemes, combined with the one-to-one sound-letter correspondence and syllabic nature of Spanish, appears to be the most closely correlated to word decoding (Pollard-Durodola & Simmons, 2009). For Spanish, this strength has been shown to be a differentiating factor between good and average readers (Carrillo, 1994). Additionally, two-way language transfer and cross-linguistic effects play a beneficial role in predicting Spanish and English literacy development (Denton et al., 2000; Manis et al., 2004; Páez et al., 2007; Pollard-Durodola & Simmons, 2009; Siegel, 2004).

The Phonological Awareness measures are designed to fit this research-based progression, with two measures at each of four levels, as shown in Table 2.3. Reports for MAP Reading Fluency also include a Level 0, which indicates the student is ready to be introduced to Level 1 concepts, and a Level 5, which indicates that Level 4 concepts can be reinforced.

Table 2.3. Phonological Awareness Progression

Level 1: Rhymes and Syllables	Level 2: Syllable Blending and Initial Sounds [a]	Level 3: Phoneme Blending and Segmenting	Level 4: Syllable and Phoneme Manipulation
Rhyme Completion *Measures phonological rhyme identification skills*	**Syllable Blending** *Measures syllable blending skills*	**Phoneme Blending** *Measures phoneme blending skills*	**Syllable Addition/ Deletion** *Measures syllable manipulation skills*
Counting Syllables *Measures phonological syllable segmenting skills*	**Initial Sound Matching** *Measures initial phoneme identification skills*	**Segment & Count Phonemes** *Measures phoneme segmenting skills*	**Phoneme Substitution** *Measures phoneme manipulation skills*

[a] Transitional level. The progression moves from tasks that are often more accessible for young learners (such as rhyme and syllable awareness) to more complex phoneme-level manipulation tasks. This serves as an indicator for teachers to determine whether students are ready to move on to phoneme blending and segmentation.

2.3.1. Level 1: Rhymes and Syllables

At the earliest stages of phonological awareness, children are still developing the ability to distinguish between whole words and syllables. Mesmer and Williams (2015) found that until children have good awareness of syllables, mastery of the concept of “word” remains precarious. Children who can clap out or count the syllables in a word are demonstrating their ability to segment (Gillon, 2004).

Research into the importance of syllabic versus phonemic awareness in predicting success in Spanish reading development has yielded mixed findings; however, evidence consistently supports the central role of syllable awareness as an early and robust foundation for decoding. Sensitivity to rhyme also develops early in the progression of phonological awareness (Denton et al., 2000; Moats & Tolman, 2009), though it plays a more limited role in Spanish reading development than syllable- and phoneme-level skills. Spanish-speaking children who have had instruction on the alphabet typically progress from syllable awareness to onset and rime awareness and then to phoneme awareness (Denton et al., 2000).

One-syllable rhyming words differ in their initial consonant or consonant cluster but have a shared vowel nucleus (e.g., *col, sol*). Multi-syllable rhyming words share similar ending sounds (e.g., *queso*, *yeso*; *botella*, *estrella*). Recognizing rhyming words may support attention to sound patterns and serve as an early step toward more advanced skills such as syllable blending and phoneme segmentation.

However, in Spanish, rhyme sensitivity is not a sole predictor of later reading success and does not reliably distinguish between stronger and weaker readers beyond the earliest stages of development. For Spanish-speaking children, these abilities typically emerge early in development and may precede or coincide with early reading instruction. As a result, they tend to show reduced differentiation among readers by grade 1 and beyond (Carrillo, 1994). In bilingual populations, rhyme performance may also reflect cross-linguistic influence from English and should be interpreted as an additional indicator rather than as a core component of Spanish reading development.

While rhyme awareness is included as an early phonological skill, research in Spanish literacy indicates that syllable and phoneme awareness are more central and durable drivers of decoding development. Rhyme sensitivity may reflect cross-linguistic influence from English and is therefore understood as an additional indicator within Spanish reading development. In bilingual populations, rhyme awareness may provide additional insight into cross-linguistic phonological processing; however, it should be interpreted alongside more predictive skills such as syllable and phoneme awareness and not considered in isolation when evaluating reading development.

Table 2.4. Specifications—Seleccionar Palabras que Riman (Rhyme Completion)

Code	130
Specifications	Students are given the first two words and must choose the third word, completing a trio of rhyming words. Replayable audio gives the names of the four onscreen pictures. No text is onscreen. Words included in the measure are required to be words commonly familiar to kindergarteners. Any that were not clearly depictable by a simple illustration are rejected. Score is correct selections over 2 minutes.
Item Pool	Up to 35 items presented in random order
Duration	2 minutes, speeded
CCSS en español Alignment	LF.K.2.a – Reconocen y producen palabras que riman.

Figure 2.1. Sample Item—Seleccionar Palabras que Riman (Rhyme Completion)

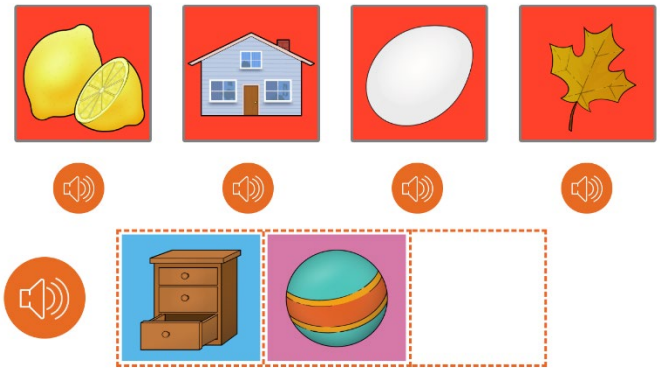
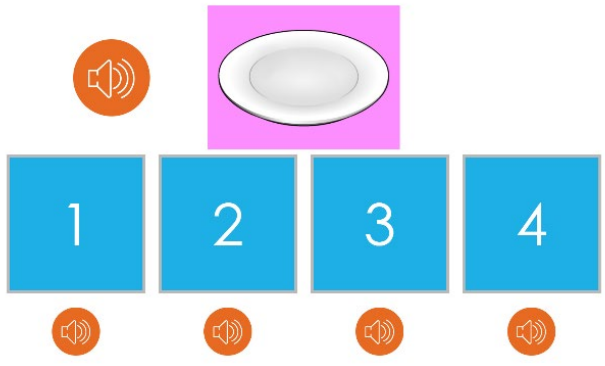
Seleccionar Palabras que Riman **(Rhyme Completion)**	Listen to two words that rhyme. Choose the third word that completes the rhyme.	

Table 2.5. Specifications—Contar Sílabas (Counting Syllables)

Code	117
Specifications	Students choose the number of syllables in a spoken word. The word is given in audio and supported with a picture. The student then segments and counts the syllables, choosing a numeral from 1 to 4 as a response. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 50 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.K.2.b – Cuentan, pronuncian, combinan y segmentan en sílabas las palabras habladas.

Figure 2.2. Sample Item—Contar Sílabas (Counting Syllables)

Contar Sílabas **(Counting Syllables)**	Listen to a word. Count the syllables and choose the number that corresponds.	

2.3.2. Level 2: Syllable Blending and Initial Sounds

In English, as children move to smaller sound units than the syllable, they begin by working with the two parts of a syllable: the onset (i.e., the initial sound or sounds before the vowel) and the remaining rime. When children can distinguish and work with initial sounds, they have progressed from processing larger phonological chunks (i.e., whole words or syllables) to the beginning of phoneme-level awareness, or distinguishing individual sounds. For children learning to read in English, development of phoneme-level understanding and flexibility both supports and benefits from skills with letter sounds (Perfetti, 1997; Shanahan & Lonigan, 2010).

In Spanish, syllables represent a highly salient early unit of phonological awareness, and research has shown that syllable sensitivity is a strong predictor of early reading development, particularly prior to formal instruction (Fumagalli & Jaichenco, 2009). Spanish-speaking children typically progress from the larger word unit to syllables and then to smaller sound units. Research in Spanish has shown that syllable-level phonological tasks are often more accessible to young learners than phoneme-level tasks (Goikoetxea, 2005). For this reason, early literacy assessments in Spanish commonly include syllable-level measures. Phoneme awareness and grapheme–phoneme correspondences are essential for decoding development in Spanish's transparent orthography, which is why Spanish MAP Reading Fluency includes both syllable- and phoneme-level measures.

Blending is often an easier task than segmenting, and syllabification is seen as a strong predictor of reading development in Spanish (Escamilla, et al, 2013; Goikoetxea, 2005). In Spanish, the number of one-syllable consonant-vowel-consonant (CVC) words is considerably less than in English, and onset-rime–blending tasks, which may be useful for preparing children to read in English, may be less central in Spanish (Gorman & Gillam, 2003). In English, it is easier to blend the onset and rime than to blend individual phonemes. While phoneme-level awareness is a stronger predictor of reading proficiency, onset-rime–level awareness constitutes a step toward phonemes (Cassady & Smith, 2004). Moreover, learning to blend gives children a tool they eventually use directly in decoding, especially when decoding by analogy to other words with the same rime (Goswami & Mead, 1992). As the syllable is a particularly salient unit for Spanish reading development, Spanish MAP Reading Fluency assesses syllable blending in phonological awareness.

In some measures requiring students to orally produce the initial sound in a word, scoring reliability has been difficult to achieve (see Cummings et al., 2011). Similarly, speech scoring is not sufficiently reliable for single phoneme production in isolation. Because of this, Spanish MAP Reading Fluency assesses initial sound understanding through selected-response items.

Table 2.6. Specifications—Combinar Sílabas (Syllable Blending)

Code	118
Specifications	Students blend the given syllables into a word and choose the image that depicts that word. The syllables are given in audio, separated by a pause. Words used are familiar, two-syllable words that can be depicted clearly in a simple image. Distractors include at least one syllable in common with the correct word. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 30 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.K.2.c – Combinan y segmentan los sonidos (fonemas) consonánticos y vocálicos de una sílaba.

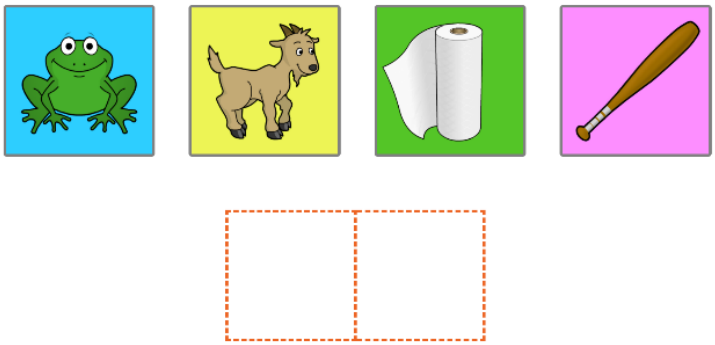
Figure 2.3. Sample Item—Combinar Sílabas (Syllable Blending)

Combinar Sílabas **(Syllable Blending)**	Listen to a set of syllables that comprise a word. Blend the syllables together and choose the image.	

Table 2.7. Specifications—Reconocer Sonido Inicial (Initial Sound Matching)

Code	101
Specifications	Students select the two words with the same initial sound. Audio gives the names of the four onscreen pictures, each beginning with a simple consonant or digraph representing a single phoneme. No text is onscreen. Words included in the measure are required to be two-syllable words commonly familiar to kindergarten students. Any that are not clearly depictable by a simple illustration have been rejected. Score is correct pair selections over 2 minutes.
Item Pool	Up to 15 items presented in random order
Duration	2 minutes, speeded
CCSS en español Alignment	LF.K.2 – Demuestran comprensión de las palabras habladas, las sílabas y los sonidos (fonemas).

Figure 2.4. Sample Item—Reconocer Sonido Inicial (Initial Sound Matching)

Reconocer Sonido Inicial **(Initial Sound Matching)**	Listen to four words. Choose the two that begin with the same sound.	

2.3.3. Level 3: Phoneme Blending and Segmenting

When children move from broader phonological awareness to phonemic awareness, they are demonstrating the skills that most directly support and predict decoding in alphabetic languages. It is at this phoneme level that sound awareness offers the strongest concurrent and longitudinal prediction of reading proficiency (Hulme et al., 2002; Melby-Lervåg et al., 2012). Moreover, instruction in phonemic awareness has demonstrated significant positive effects on later reading proficiency in English and Spanish (Denton et al., 2000; Ehri et al., 2001).

Phonemic blending typically develops before phoneme segmenting (Gillon, 2004; Moats & Tolman, 2009; Paulson, 2004). Phoneme-level awareness is facilitated by development of letter-sound knowledge (Anthony & Francis, 2005), and both have a reciprocal relationship to the development of word decoding (Perfetti et al., 1987). Because the reliability of human scorers is challenged when measures require students to produce a single phoneme orally (Cummings et al., 2011), and because automatic speech scoring is not sufficiently reliable for phonemes in isolation, Spanish MAP Reading Fluency assesses phoneme segmentation through selected-response items: when students count phonemes, they demonstrate segmentation skills.

Table 2.8. Specifications—Combinar Fonemas (Phoneme Blending)

Code	119
Specifications	Students blend a given set of four phonemes into a word and choose the image that depicts that word. The phonemes are given in audio, separated by a pause. Words used include only two-syllable, four-phoneme words, some with a digraph representing a single phoneme. All words must be clearly depictable in a simple image. Distractors include at least one phoneme in common with the correct word. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 45 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.1.2.b – Cuentan, pronuncian, combinan y segmentan en sílabas las palabras habladas.

Figure 2.5. Sample Item—Combinar Fonemas (Phoneme Blending)

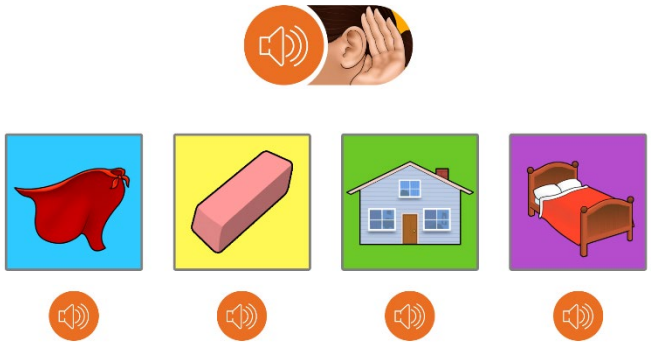
Combinar Fonemas **(Phoneme Blending)**	Listen to four separated phonemes. Blend the sounds together and choose the image of the word.	

Table 2.9. Specifications—Segmentar y Contar Fonemas (Segment & Count Phonemes)

Code	120
Specifications	Students choose the number of phonemes in a spoken word. The word is given in audio and supported with a picture. The student then segments and counts the phonemes, choosing a numeral from 1 to 5 as a response. Phonemes with regional variants, such as /ll/, have been excluded. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 50 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.K.2.c – Combinan y segmentan los sonidos (fonemas) consonánticos y vocálicos de una sílaba.

Figure 2.6. Sample Item—Segmentar y Contar Fonemas (Segment & Count Phonemes)

Segmentar y Contar Fonemas **(Segment & Count Phonemes)**	Listen to a word. Isolate the phonemes, count them, and choose the number that corresponds.	

2.3.4. Level 4: Syllable and Phoneme Manipulation

Strong phonemic awareness goes beyond segmenting and blending phonemes. Syllable and phoneme manipulation include some of the skills that develop later in the progression of phonological awareness: phoneme addition, phoneme deletion, phoneme substitution (Anthony & Francis, 2005; Gillon, 2017), and syllable deletion (Adrián et al., 1995; Denton et al., 2000). For children to delete or substitute a phoneme in a word, they must tap into skills in both phoneme blending and segmentation (Kilpatrick, 2012a). This flexibility with phonemes supports the decoding of unfamiliar words using analogy and sounding-out strategies (Ehri, 2005).

Researchers have found that tasks requiring these kinds of phoneme manipulation are among the strongest correlates of decoding proficiency in English (Catts et al., 2001; Kilpatrick, 2012b; Kroese et al., 2000; Lenchner et al., 1990). Phonemic skills at this level are developed, reciprocally, by practice with decoding words (Shanahan & Lonigan, 2010).

Although syllables are the foundation for Spanish decoding, knowledge of phonemes and the ability to manipulate phonemes is explicitly called out in the Common Core State Standards en español (as well as other state standards), so this skill, in addition to syllable manipulation measures, is included in the assessments for educators to measure. Additionally, phonemes are taught in bilingual classrooms because of their importance in the development of English literacy (Goldenberg et al., 2014; Gorman & Gillam, 2003; Jiménez et al., 2000).

Spanish MAP Reading Fluency is commonly used alongside English MAP Reading Fluency, and a parallel testing experience across both languages via the inclusion of these measures provides educators with meaningful data in a multilingual classroom environment. For example, if native Spanish-speaking students are given both the Spanish form and the English form, and they are able to manipulate phonemes in their native language of Spanish but not in English, this is useful information for the instructor to have. It would allow the teacher to differentiate those students from native Spanish-speaking students who, after taking both forms, are unable to manipulate phonemes in either Spanish or English; the former group having demonstrated that when language is removed as a barrier, they can understand and complete the task, while the latter group has not.

Table 2.10. Specifications—Agregar/Sustraer Sílabas (Syllable Addition/Deletion)

Code	121
Specifications	Students find the new word formed by adding or deleting a syllable from a given initial word. In audio, a two- or three-syllable word is given with an instruction about adding or deleting a particular syllable. Each item specifies whether to add or delete the specific syllable, as well as either the beginning, middle, or ending of the word as the location of the syllable changes. These directions are visually supported by boxes showing the position of the changed syllable. The four answer options are picture words, with available audio naming the picture. Students form the new word mentally and then select the image that depicts it. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 50 items presented in random order
Duration	2 minutes, speeded
CCSS en español Alignment	LF.K.2.b – Cuentan, pronuncian, combinan y segmentan en sílabas las palabras habladas.

Figure 2.7. Sample Item—Agregar/Sustraer Sílabas (Syllable Addition/Deletion)

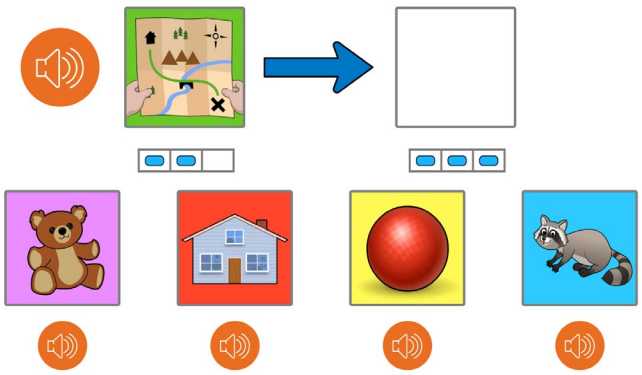
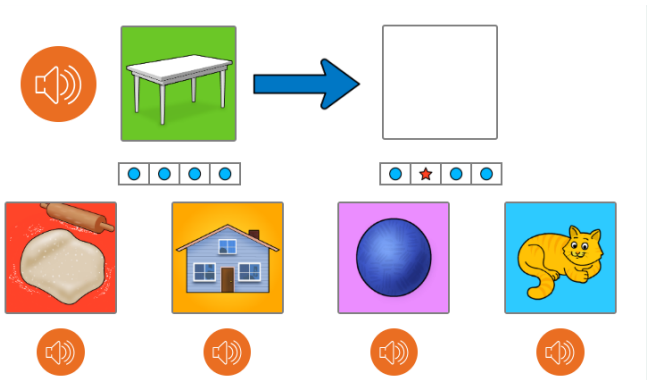
Agregar / Sustraer Sílabas **(Syllable Addition/Deletion)**	Listen to a word and add or subtract a syllable. Choose the image for the new word.	

Table 2.11. Specifications—Sustituir Fonemas (Phoneme Substitution)

Code	122
Specifications	Students find the new word formed by substituting a phoneme into a given initial word. In audio, a four-phoneme word is given with instructions about which particular phoneme to substitute into the word and where. These directions are visually supported by Elkonin boxes showing the position of the changed phoneme. Four answer options are picture words, with available audio naming the picture. A consonant or a vowel is the target of substitution. Students form the new word mentally and then select the image that depicts it. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 50 items presented in random order
Duration	2 minutes, speeded
CCSS en español Alignment	LF.K.2 – Demuestran comprensión de las palabras habladas, las sílabas y los sonidos (fonemas).

Figure 2.8. Sample Item—Sustituir Fonemas (Phoneme Substitution)

Sustituir Fonemas **(Phoneme Substitution)**	Listen to a word. Change the specified sound and choose the new word.	

2.4. Phonics & Word Recognition

Learning to decode is a complex undertaking. Beginning with letter sounds and moving to word reading, decoding is the task of turning sets of letters on the page into the sounds and syllables they represent. Broadly, the youngest children begin to approach word identification logographically, where they are in a pre-alphabetic phase: they recognize how a particular word looks without attending to letter sounds at all (Ehri, 1998; Frith, 1985). Next, after understanding the alphabetic principle, they shift to a partial alphabetic phase, where they attend more to initial sounds in words than to medial or final sounds (Ehri, 1998; Guthrie & Seifert, 1977).

In Spanish, children gradually use letter sounds and phonics patterns to move from syllables to the onset and rimes within a syllable to individual phonemes (Denton et al., 2000). The abundance of consonant-vowel (CV) syllables in Spanish, the finite set of possible consonant combinations at the start and end of closed syllables, and the shallow orthography all suggest that syllable-level decoding is central to reading development in Spanish (Martínez & Goikoetxea, 2020). Children then move on to read multi-syllabic words (Guthrie & Siefert, 1977; Pirani-McGurl, 2009). The notions of “onset” and “rime” do exist in Spanish, but research has suggested that they are not as relevant to Spanish literacy development. They are taught in bilingual classrooms because of their importance to English literacy development (Goldenberg et al., 2014; Gorman & Gillam, 2003; Jiménez et al., 2000).

As children learn to *decode* words, they must also learn to *encode* words—that is, to spell and write them. After children learn letter sounds, they typically begin in a semi-phonetic stage of writing, characterized by use of invented spellings: they use a letter for each sound they hear in a word, sometimes skipping vowels or substituting letters as they develop their sense of the speech to print connection (Gentry, 1982; Read, 1971; Richgels, 1995). Children move from a phonetic stage into correct spelling as they gain experience with words in print (Gentry, 1982). Spelling-recognition skills help predict eventual reading proficiency, even after the contributions of word reading (Katzir et al., 2006).

The Phonics & Word Recognition measures tap both decoding and encoding abilities. They are designed as a research-based progression, with two measures at each of four levels, as shown in Table 2.12. Reports for MAP Reading Fluency also include a Level 0, which indicates the student is ready to be introduced to Level 1 concepts, and a Level 5, which indicates that Level 4 concepts can be reinforced.

Table 2.12. Phonics & Word Recognition Progression

Level 1: Letters and Sounds	Level 2: Initial Letters and Syllables	Level 3: Beginning Words	Level 4: Multi-Syllable Words
Letter Knowledge *Measures letter identification knowledge*	**Words' Initial Letters** *Measures letter-sound decoding skills*	**Decoding: Beginning Words** *Measures early word-decoding skills*	**Decoding: Multi-Syllable Words** *Measures more complex word-decoding skills*
Letter-Sound Fluency *Measures letter-sound correspondence knowledge*	**Building Words: One Syllable Missing** *Measures early word-encoding skills*	**Building Words: Two Syllables Missing** *Measures intermediate word-encoding skills*	**Building Words: All Syllables Missing** *Measures complex word-encoding skills*

2.4.1. Level 1: Letters and Sounds

For English, a student who can name a presented letter of the alphabet quickly and accurately is likely on a better literacy trajectory than a student who cannot (Speece et al., 2003). Because letter names are less directly applicable than letter sounds in decoding, the value of a screener using only fluency in letter naming has been questioned (e.g., in Jenkins et al., 2007). However, as a proxy, letter naming offers an important window into a student's literacy experiences before schooling. The literature on screening for risk of reading failure indicates that the value of letter knowledge is strongest as one among a broader set of measures for both English and Spanish languages (Bravo et al., 2004, Foorman et al., 1998; O'Connor & Jenkins, 1999).

While children may know that letters have names, the understanding that each makes a sound in reading is a separate and important step. Research evidence points to the utility of letter-sound fluency in screening for risk of reading failure, both alone (Speece, 2005; Speece & Case, 2001) and in combination with other brief measures (O'Connor & Jenkins, 1999).

Children learning Spanish develop literacy in a different progression than children learning English do, starting first with vowels and consonants before learning letter names (Beeman & Urow, 2013; Bravo et al., 2003; Defior, 1996; Jiménez & Ortiz, 2007) and then combining vowels and consonants to form syllables (Escamilla et al., 2013). These differences in sequence have implications for classroom instruction. Because both languages are present in a bilingual classroom, cross-linguistic transfer is a factor in children's literacy development, instruction, and metalinguistic knowledge (Bialystok, 2002).

Table 2.13. Specifications—Reconocer Letras (Letter Knowledge)

Code	102
Specifications	Each item presents in audio the name of a letter, and eight uppercase letters are presented onscreen. Incorrect options do not include letters that rhyme or sound similar (e.g., for letter F, the letter S is not presented as an option). Some items include letters that look similar in the pool of incorrect options. Only uppercase letters are assessed to distinguish the task clearly from the Letter-Sound Fluency task that uses lowercase letters. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 25 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.K.1.d – Reconocen y nombran todas las letras mayúsculas y minúsculas del alfabeto.

Figure 2.9. Sample Item—Reconocer Letras (Letter Knowledge)

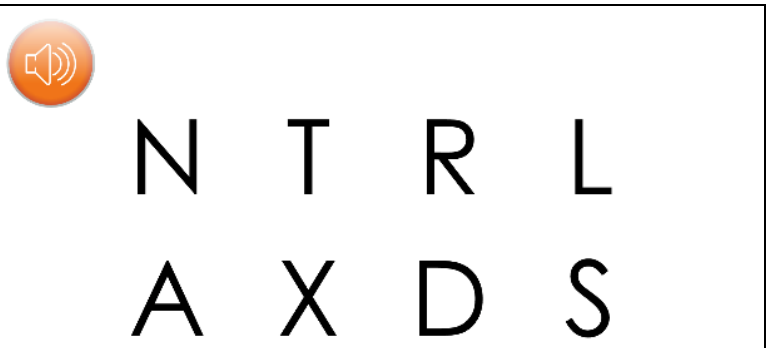
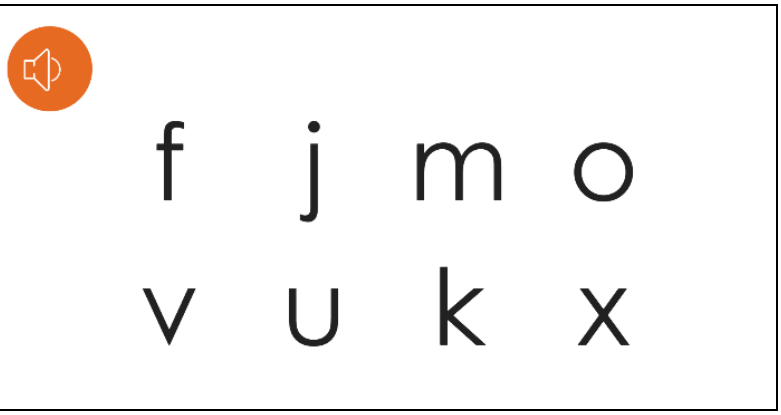
Reconocer Letras **(Letter Knowledge)**	Choose the named letter.	

Table 2.14. Fluidez de Asociación Letra-Sonido (Letter-Sound Fluency)

Code	103
Specifications	Each item presents in audio the sound of a letter and an example word beginning with that sound (e.g., /f/, as in *familia*). Eight lowercase letters are presented onscreen. Incorrect options include letters that are both close and far in terms of articulation (e.g., other stops but also fricatives or liquids). Only lowercase letters are assessed to distinguish the task clearly from the Letter Knowledge task that uses uppercase letters. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 25 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.K.3.a – Demuestran el conocimiento básico de la correspondencia entre letra y sonido (de una en una) al producir el sonido principal o los sonidos más frecuentes que representa cada consonante. LF.K.3.b – Asocian los sonidos (fonemas) con la ortografía común (grafemas) para las cinco vocales incluyendo el uso de la ye (y) como equivalente de la vocal i.

Figure 2.10. Sample Item—Fluidez de Asociación Letra-Sonido (Letter-Sound Fluency)

Fluidez de Asociación Letra-Sonido **(Letter-Sound Fluency)**	Listen to an isolated sound and a word that starts with it. Choose the letter that makes the sound.	

2.4.2. Level 2: Initial Letters and Syllables

The alphabetic principle (i.e., the realization that each letter conveys a sound *in text* in the order in which they are presented) is the central realization upon which decoding in English rests. Children do not make this realization until they have learned to recognize some letters and name them (Adams, 1990; Ehri, 2002). Children can then work with letter sounds in the context of whole words. As they tackle words, children begin in a partial alphabetic phase where they use any phoneme they can distinguish but may not use all phonemes present in a word (Ehri, 1998). In English, children typically first attend more to initial letter sounds in words than to any other sounds, and they use final consonants more readily than medial vowels (Guthrie & Seifert, 1977; Morris et al., 2003). Additionally, English words with the same rime (sometimes called "word families") offer an analogy-based route to early whole-word decoding (Treiman et al., 1995; Walton & Walton, 2002).

Since Spanish has a shallow orthography in which letter-sound correspondence is more consistent than in English, there is a one-to-one correspondence between letter (grapheme) and sound (phoneme). Researchers have found that some Spanish-speaking children do well on decoding tasks despite poor performance on phonemic awareness measures (Carrillo, 1994), while letter knowledge seems to play a role alongside syllable recognition in learning to read (Casillas & Goikoetxea, 2007). In terms of decoding and letter knowledge in Spanish, De la Calle et al. (2018) found that Spanish-speaking children's grapheme knowledge develops independently from the phonological development of those phonemes. The grapheme development sequence starts with vowels and a set of five consonant graphemes and then progresses through the remaining consonants (De la Calle et al., 2018). Because Spanish syllables can only have a maximum of two consonants at the start or end of the syllable, letter knowledge is an important predictor of literacy (Martínez & Goikoetxea, 2020).

Syllable knowledge plays a central role in learning to read in Spanish, which is an important departure from the English emphasis on individual letter sounds as building blocks. In Spanish, the syllable structure is simple, with the ratio of open syllables being far higher than that of closed syllables (Martínez & Goikoetxea, 2020), whereas closed syllables are far more common in English. When closed syllables are combined, the break between syllables is far less straightforward. In Spanish, children can perceive syllables as important units of the visual word-recognition process early on in learning to read (Jiménez et al., 2010).

Table 2.15. Specifications—Letras Iniciales de la Palabra (Words' Initial Letters)

Code	123
Specifications	Students hear and see an example word, supported by a picture. A second word is shown onscreen for them to read, without audio or picture. The two words share all their letters except for the first consonant, consonant blend, or digraph. The student reads the second word, perhaps by analogy to the given first word, and selects the picture that matches that second word. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 45 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.K.3.d – Distinguen entre palabras de ortografía similar mediante la identificación de los sonidos de las letras que son diferentes (con/son; niño/niña; masa/mesa).

Figure 2.11. Sample Item—Letras Iniciales de la Palabra (Words' Initial Letters)

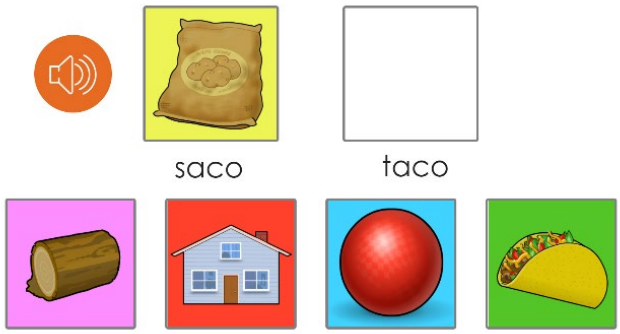
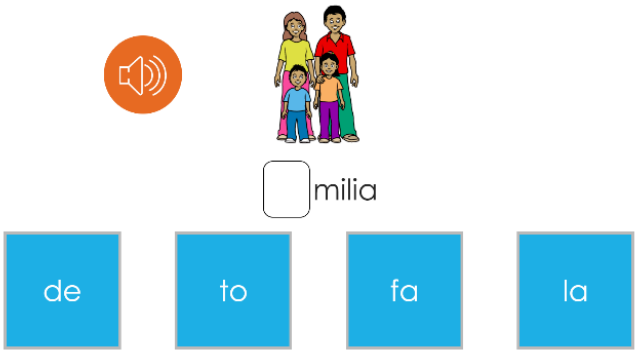
Letras Iniciales de la Palabra **(Words' Initial Letters)**	Look at two words, one paired with a picture. Decode the word and identify the correct image of the unpaired word.	

Table 2.16. Specifications—Construir Palabras: Completar Una Sílaba (Building Words: One Syllable Missing)

Code	124
Specifications	Students hear a word and see an accompanying picture. The onscreen text shows the word with one syllable missing. Students choose the missing syllable, which pops into the word and completes it. Words in this measure are all three-syllable words and must be depictable enough that the audio for the word is supported by the picture for clear discernment. The next item is only presented after a selection is made. Score is correct selections per minute.
Item Pool	Up to 50 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.2.3.c – Decodifican palabras multisilábicas.

Figure 2.12. Sample Item—Construir Palabras: Completar Una Sílaba (Building Words: One Syllable Missing)

Construir Palabras: Completar Una Sílaba **(Building Words: One Syllable Missing)**	Listen to a word and complete its spelling by choosing a syllable.	

2.4.3. Level 3: Beginning Words

In English, words with the consonant-vowel-consonant (CVC) structure are highly regular, representing three phonemes, with the middle being a short vowel sound. For these words, letter-sound knowledge and phoneme blending come together as word decoding (Adams, 1990). Assessments of word-level decoding fluency in English have included both real-word reading and "nonsense word" reading, although Fuchs et al. (2004) found that real-word reading had superior concurrent validity.

As children begin to decode the letter sounds in words, they also begin to encode (i.e., form their own words with letters). Snow et al. (1998) demonstrate that in English, phonemic skills and letter knowledge collaborate to form word encoding, first with invented and then with conventional spelling. Spelling shares much with decoding in that both processes map sound and print together (Nunes et al., 2012; Robbins et al., 2010). In Spanish, the individual letter sound and the phoneme are less central than the syllable unit (Jiménez et al., 2010; Martínez & Goikoetxea, 2020). In mapping sound and print together in Spanish, the syllable becomes an important tool in both decoding and encoding.

Table 2.17. Specifications—Lectura Silenciosa de Palabras: Palabras Básicas (Decoding: Beginning Words)

Code	107
Specifications	Silent measure. The task is to read the onscreen word and choose the onscreen picture that depicts the word from among four onscreen pictures total. The pool of words includes words that share at least a full syllable with the keyword. Each word is required to be clearly depicted in a simple illustration. The illustration for each word in the pool appears onscreen with three other illustrations, each designed as much as possible to depict a feasible misreading of the onscreen word. For example, where the word is *casa*, other illustrations might show *capa* or *caja*. A selection must be made for the student to go on to the next item. Score is correct selections per minute.
Item Pool	Up to 50 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.1.3.e – Decodifican palabras de dos y tres sílabas siguiendo patrones básicos al dividir las palabras en sílabas.

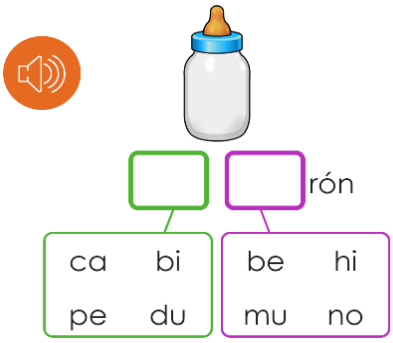
Figure 2.13. Sample Item—Lectura Silenciosa de Palabras: Palabras Básicas (Decoding: Beginning Words)

Lectura Silenciosa de Palabras: Palabras Básicas **(Decoding: Beginning Words)**	Decode the onscreen word and choose the picture that matches.	

Table 2.18. Specifications—Construir Palabras: Completar Dos Sílabas (Building Words: Two Syllables Missing)

Code	125
Specifications	Students build a given word using a set of syllable options for each position in the word. The word is given in audio and shown in a picture, and two empty boxes are shown into which students will pop one syllable apiece to form the word. A set of four syllables is given as answer options for each box. Score is correct pair selections over 2 minutes.
Item Pool	Up to 50 items presented in random order
Duration	2 minutes, speeded
CCSS en español Alignment	LF.1.3 – Conocen y aplican la fonética y las destrezas de análisis de palabras al nivel de grado, en la decodificación de palabras.

Figure 2.14. Sample Item—Construir Palabras: Completar Dos Sílabas (Building Words: Two Syllables Missing)

Construir Palabras: Completar Dos Sílabas **(Building Words: Two Syllables Missing)**	Listen to a word and complete its spelling by choosing a syllable for each box.	

2.4.4. Level 4: Multi-Syllable Words

Typically, children can read and build words in Spanish with the CV open syllable and CVC closed syllable structure at an early age, suggesting that the syllable becomes a recognizable unit early in the reading process (Jiménez et al., 2010). Open syllables comprise more than half of Spanish syllables, while closed syllables have a finite set of consonant combination possibilities at the beginning and end of any given syllable, so research points to the need to take depth of orthography into account. Good readers often develop multi-syllabic word decoding skills based on letter knowledge and the ability to identify syllables (Martínez & Goikoetxea, 2020).

Table 2.19. Specifications—Lectura Silenciosa de Palabras: Palabras multisilábicas (Decoding: Multi-Syllable Words)

Code	127
Specifications	Silent measure. The task is to read the onscreen word and choose the image that depicts the word. The pool of words is composed of three- and four-syllable words with open and closed syllables. Each word is required to be clearly depicted in a simple illustration, and the illustration for each word in the pool appears onscreen with three other illustrations. Each incorrect choice is designed as much as possible to depict a feasible misreading of the onscreen word. A selection must be made for the student to go on to the next item. Score is correct selections per minute.
Item Pool	Up to 45 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.2.3.c – Decodifican palabras multisilábicas.

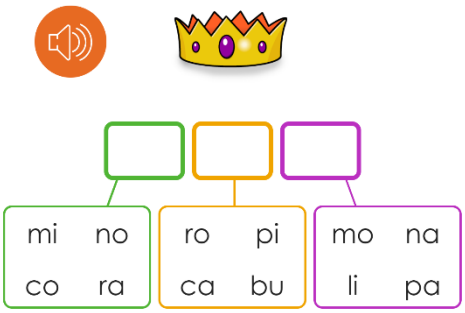
Figure 2.15. Sample Item—Lectura Silenciosa de Palabras: Palabras multisilábicas (Decoding: Multi-Syllable Words)

Lectura Silenciosa de Palabras: Palabras Multi-Silábicas **(Decoding: Multi-Syllable Words)**	Decode the onscreen word and choose the picture that matches.	

Table 2.20. Specifications—Construir Palabras: Completar Todas las Sílabas (Building Words: All Syllables Missing)

Code	126
Specifications	Students build a given word using a set of syllable options for each position in the word. The three-syllable word is given in audio and shown in a picture, and three empty boxes are shown into which students will pop a syllable to spell the complete word. Because spelling is not the target of measurement, phonetically reasonable alternate spellings are not made feasible by the answer options. Consonant digraphs and blends are preserved intact. For each box, a set of four syllables is included that are reasonable distractors. Score is correct box completions per minute.
Item Pool	Up to 50 items presented in random order, each with three scorable boxes
Duration	2 minutes, speeded
CCSS en español Alignment	LF.1.3 – Conocen y aplican la fonética y las destrezas de análisis de palabras al nivel de grado, en la decodificación de palabras.

Figure 2.16. Sample Item—Construir Palabras: Completar Todas las Sílabas (Building Words: All Syllables Missing)

Construir Palabras: Completar Todas las Sílabas **(Building Words: All Syllables Missing)**	Listen to a word and complete its spelling by choosing a syllable for each box.	

2.5. Sentence Reading Fluency

When students can read a sentence silently with sufficient speed, accuracy, and literal comprehension, this indicates a level of proficiency with connected text beyond that indicated by isolated word reading. Several high-quality clinical assessments of reading include a measure in which students read isolated sentences quickly and silently and then mark a quick semantic judgement (such as the Woodcock-Muñoz reading fluency task in Spanish and its English counterpart, the Woodcock-Johnson test battery [Schrank et al., 2004; Schrank et al., 2005]). Such a measure draws from research indicating that stronger readers' comprehension is highly correlated to sentence-level silent reading fluency: when students do well on silent sentence reading, they are likely to read with good phrasing when reading aloud (Klauda & Guthrie, 2008). While word reading strongly predicts passage comprehension for weaker readers, silent sentence reading fluency has a tighter relationship to comprehension for stronger readers (Kim et al., 2011). In MAP Reading Fluency, the Sentence Reading Fluency measure is presented to all students to help discern possible readiness for oral passage reading, with the exception of students who take the Foundational Skills—Beginner test.

Sentence Reading Fluency is a measure that students take at the beginning of the Adaptive Oral Reading test form. Their scores on this measure determine whether they route to Oral Reading Fluency (i.e., passages) or Foundational Skills. Other test forms are more constrained and dictate that all students assigned to that form will route to the same content track (e.g., everyone to Oral Reading Fluency or everyone to Foundational Skills). In that case, Sentence Reading Fluency may still be presented (along with Foundational Skills content), but it is not operating as the route

determiner. It is just reported as a score, with NWEA guidance being that it is a great place to look to determine readiness for assigning passages.

Table 2.21. Specifications—Lectura Silenciosa de Oraciones: Reconocer la Imagen (Sentence Reading Fluency)

Code	108
Specifications	Students read an onscreen sentence silently and choose the simple illustration that depicts its meaning from among four choices. Readability for single sentences cannot be scored by most readability formulae. Instead, educators with primary grade expertise reviewed sentences in item development to ensure that the included words were short and high frequency. The target level of reading challenge is grade 1, with word counts ranging from 3–7 words. Score is correct selections over 2 minutes.
Item Pool	Up to 35 items presented in random order
Duration	2 minutes
CCSS en español Alignment	LF.1.4.a – Leen textos a nivel de grado, con propósito y comprensión.

Note. Sentence-level performance reflects both decoding and language comprehension. For Spanish multilingual learners, comprehension components may vary by language exposure.

Figure 2.17. Sample Item—Lectura Silenciosa de Oraciones: Reconocer la Imagen (Sentence Reading Fluency)

Lectura Silenciosa de Oraciones: Reconocer la Imagen **(Sentence Reading Fluency)**	Choose the picture that matches the onscreen sentence.	La abeja está en la taza. 

2.6. Language Comprehension

In the Simple View of Reading model (Gough & Tunmer, 1986), reading with comprehension is the product of decoding proficiency and language comprehension. Even if students' decoding skills are perfect, a weakness in understanding language—its vocabulary, structure, and syntax, as well as the ability to listen and make inferences based on what is heard—will suppress passage comprehension as students mature (Foorman et al., 2015; Lepola et al., 2016). While it is possible to assess passage comprehension directly once students can read connected text, it is critical to assess and build the language comprehension of students not yet reading independently. In MAP Reading Fluency, language comprehension is assessed without a decoding demand for two groups: (1) students not reading passages orally and (2) students showing poor literal comprehension on lowest-level passages.

2.6.1. Picture Vocabulary

One aspect of a student's language comprehension is vocabulary knowledge. When a student produces a word in response to a picture, as in assessments such as the Test de Vocabulario en Imágenes Peabody (Dunn et al.,1986), expressive vocabulary is assessed. In MAP Reading Fluency, the focus is instead on receptive or listening vocabulary, which is critically important for

reading proficiency. When decoding an unfamiliar word, students who do not have the word in their listening vocabulary will not be able to determine if the decoded word makes sense in the context of the sentence or understand the author's intent (Biemiller, 2006). Research has shown that oral vocabulary from Pre-K to grade 1 strongly predicts passage comprehension by grade 4 (Cunningham & Stanovich, 1997; Scarborough, 1998; Sénéchal et al., 2006).

Table 2.22. Specifications—(Encontrar) Vocabulario en Imágenes (Picture Vocabulary)

Code	105
Specifications	Students choose the picture that matches the word given in audio only, with no onscreen text. Four pictures are presented onscreen. Vocabulary words are selected from a broad sample of curricular guides for kindergarten and grade 1 vocabulary. Those not easily depicted in a simple illustration were rejected. On a culled list, feedback was elicited in two cycles from educators with kindergarten and grade 1 expertise and emergent bilingual expertise. Numerically equal word lists were established for K and grade 1 separately and then combined. Score is the number of correct selections, with rate not being a factor.
Item Pool	15 items presented in random order, from a pool of 45
Duration	Untimed
CCSS en español Alignment	L.K.6 – Usan las palabras y las frases que han aprendido a través de conversaciones, al leer, y al escuchar cuando se les lee, o al responder a los textos.

Note. Vocabulary knowledge is language-specific and may not transfer directly across Spanish and English. Scores should be interpreted in relation to language exposure and instruction.

Figure 2.18. Sample Item—(Encontrar) Vocabulario en Imágenes (Picture Vocabulary)

(Encontrar) Vocabulario en Imágenes **(Picture Vocabulary)**	Find the picture that matches (word provided via audio, no text on screen)	

2.6.2. Listening Comprehension

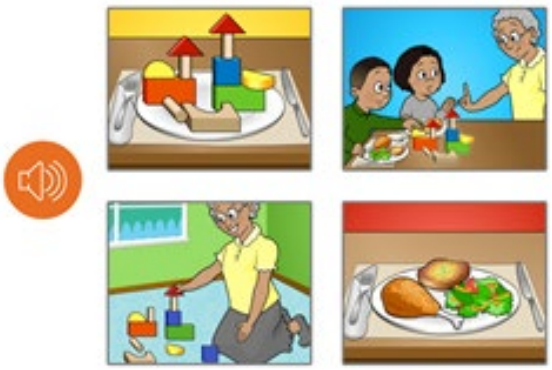
Language comprehension has been found to play a bigger role in later literacy achievement when it is measured using more complex measures that include grammar, the ability to define words, and listening comprehension than when measured using only simple vocabulary knowledge (Shanahan & Lonigan, 2010). MAP Reading Fluency includes both word- and sentence-level language comprehension in tandem. However, for many children taking Spanish MAP Reading Fluency, their linguistic development is occurring across more than one language.

Understanding the meaning of a sentence requires syntactic awareness. This involves understanding sentence structure (e.g., the use of grammatical rules) to ascertain meaning. Just as unfamiliar vocabulary will undermine fluent, automatic reading, so will unfamiliar syntactic structures in the text that students read. Research has shown that syntactic awareness in Spanish predicts reading comprehension (Rodríguez-Ortiz et al., 2021) and is related to key reading processes such as prosody and fluency that contribute to comprehension (Rodríguez et al., 2024).

Table 2.23. Specifications—Comprensión Oral: Oraciones (Listening Comprehension)

Code	104
Specifications	Students choose the picture that matches the sentence given in audio only, without onscreen text. Four pictures are presented onscreen, with incorrect options including some semantic connection to the sentence (e.g., one of the nouns in the picture) but that is clearly incorrect for a student comprehending the sentence. Audio playback is available. Two sets of sentences were developed, one for a kindergarten level and one for a Grade 1 level, then combined to form the measure. Each kindergarten sentence includes one or two grammatical constructions that can tax oral language comprehension in young students: prepositional and adverbial phrases, modifying clauses, verb modals, infinitives, and gerunds. In Grade 1 sentences, difficulty was increased by additional use of conceptual connectors (e.g., porque, si), verbals and modals (e.g., gerunds, participles), more complex modifier structures (e.g., both direct and indirect objects; prepositional objects preceding verbs), and more difficult vocabulary, including homonyms requiring context. A significant constraint was that the sentence must be easily depicted by a simple illustration. Feedback was elicited in two cycles from educators with kindergarten/Grade 1 expertise and emergent bilingual expertise.
Item Pool	15 items presented in random order from a pool of 45
Duration	Untimed
CCSS en español Alignment	AE.K.2 – Confirman la comprensión de un texto leído en voz alta o la información presentada oralmente o a través de otros medios de comunicación, al hacer y contestar preguntas sobre detalles clave y solicitar aclaraciones si algo no se entiende.

Figure 2.19. Sample Item—Comprensión Oral: Oraciones (Listening Comprehension)

Comprensión Oral: Oraciones **(Listening Comprehension)**	Find the picture that matches (sentence provided via audio, no text on screen)	

2.7. Print Concepts

For the youngest beginning readers, an understanding of how print works may be important to gauge. Research indicates that students from lower socio-economic status enter school with weaker print awareness (Justice & Ezell, 2002). This matters: the National Early Literacy Panel found at least moderate correlations between knowledge about print conventions and concepts and later achievement in literacy (Shanahan & Lonigan, 2010). The CCSS en español frame these skills as "*comprensión de la organización y características básicas de los materiales impresos*" (Common Core State Standards en español, 2013, Kindergarten, p. 7).[3] Included are basic book skills such as knowing where the cover is; concepts of word, including the understanding that print

[3] The CCSS in English frame these skills as "understanding of the organization and basic features of print" (Common Core State Standards Initiative, 2010, p. 15).

rather than pictures carry the language and how words are separated by spaces; and understanding of text directionality (page to page, left to right, top to bottom).

In MAP Reading Fluency, these print concepts are assessed within an interactive, multi-page electronic storybook format. A back and forth between student tasks and read-aloud by the narrator emulate the storybook context of traditional assessments of print concepts (Clay, 1989). Questions for the student are presented. After the student answers by touching part of the page (e.g., after being asked, “Where should I start reading the words?”), the narrator reads the page aloud. A rolling highlight of the text being read reinforces the focus on print (Liao et al., 2020). Intervention research has shown that practices that increase attention to print can positively impact longer-term literacy outcomes (Justice & Ezell, 2002, 2004; Piasta et al., 2012).

Table 2.24. Specifications—Conceptos de Material Impreso (Print Concepts)

Code	131–136
Specifications	Students choose the front cover of a book and then answer questions about the inside text interspersed with a read aloud of the story text itself. Each storybook includes assessment of page-by-page reading, top-to-bottom reading, left-to-right directionality, return sweep across two lines of text, and differentiation of words by spaces. Each page includes both text and a picture. Responses are made by touching or clicking a location (e.g., the first word) on the two-page spread.
Item Pool	6 items within one storybook; 6 storybooks in pool
Duration	Untimed
CCSS en español Alignments	K.LF.1.a – a. Siguen las palabras de izquierda a derecha, de arriba hacia abajo y página por página. K.LF.1.b – Reconocen que el lenguaje oral (palabras habladas) se representa en el lenguaje escrito mediante secuencias específicas de letras. K.LF.1.c – Entienden que las palabras se separan por espacios en blanco en los materiales impresos.

Figure 2.20. Sample Item—Conceptos de Material Impreso (Print Concepts)

Conceptos de Material Impreso **(Print Concepts)**	Click within the open book to answer questions about print directionality and concept of word. Narrator reads the text aloud between tasks, using accompanying rolling highlight.	

2.8. Oral Reading

When students begin to read from connected text, fluency (or smooth and accurate reading) is introduced (National Reading Panel, 2000), which is a key focus for both instruction and assessment. Early focus on fluency sprang from the understanding that as students read words with more automaticity, they devote less mental processing to the decoding task and more on the task of producing meaning (LaBerge & Samuels,1974). Fluency in connected text pulls together the relationship described in the Simple View of Reading model (Gough & Tunmer, 1986) by enabling

accurate word decoding to engage with language comprehension so that a student can integrate the two into meaning (Klauda & Guthrie, 2008).

Researchers have shown that WCPM scores can predict later success in reading, gauge students' responses to instructional interventions, and indicate broader reading proficiency (Fuchs et al., 2001; Jenkins et al., 2007; Wayman et al., 2007). For Spanish, the rate of fluency can explain more variance in later reading outcomes relative to decoding accuracy. The tradition in curriculum-based measurement is to limit reading to one minute (Deno, 1985; Wayman et al., 2007), a practice that has also been applied in Spanish literacy assessment. However, many have argued for assessments that include several key features from the more time-intensive approach of informal reading inventories. Such an approach includes reading whole short passages at varying levels, with word-level accuracy explicitly scored instead of just rate (e.g., Leslie & Caldwell, 2006). The latter approach also allows for asking students comprehension questions after the passage, a design feature that many literacy scholars argue is essential to activating students' strongest reading behaviors (Samuels, 2007). Spanish reading assessments also reflect the integration of decoding and comprehension as core components of reading proficiency (Jiménez et al., 2014). Moreover, researchers have shown that supplementing reading-rate scores with both accuracy and comprehension scores provides instructionally valuable diagnostic information and improved predictive validity (Valencia et al., 2010). In MAP Reading Fluency, all oral reading is scored for both rate and accuracy. For full oral reading passages, students are also scored on low-inference comprehension questions that follow the passage.

2.8.1. Oral Reading: Picture Book or Graphic Novel

All students taking the Adaptive Oral Reading form interact with a story in an onscreen "picture book" or "graphic novel" format, reading it aloud. For students in Pre-K to grade 2, a picture book format is used. Six pages are presented, with two side-by-side pages onscreen at one time. Each page has one or two sentences of text and a large picture supportive of meaning. This adopts the traditional book format used in research on shared book reading with younger children (e.g., Hargrave & Sénéchal, 2000; Mol et al., 2008). These relationships have been shown to apply across alphabetic languages, including Spanish.

For students in grade 3 and above, the graphic novel format is used. Three pages are presented, each with four cells of pictures supportive of the story's meaning. Words to read aloud are presented in a text box above the image within a cell. Use of this format for older students is designed to keep pace with the tremendous growth in the children's graphic novel market (Middaugh, 2019) and the growing research base on the increased engagement this format offers for older readers (Boerman-Cornell, 2016; Cornelius, 2020). In both formats, students choose when to use the button to proceed to the next page or indicate that they are finished with the last page. For students who cannot read connected text independently, audio that is captured might include decoding attempts at some words on the page or might include an invented "reading" of the pictures. No comprehension questions are associated with the picture book/graphic novel formats, and all are narrative stories.

Table 2.25. Specifications—Libro Ilustrado–Grados Primarios (Oral Reading: Picture Book)

Code	113
Specifications	Each picture book was designed to be engaging for students across the primary grades and readable by beginning readers of connected text. They were developed to target low levels of text complexity, as measured by El Sistema Lexile® para Leer, but also to provide significant picture support for students struggling to decode text independently. About 5–12 words appear on each page, along with a supportive illustration. Text and pictures were reviewed by experts in primary-grades literacy assessment for quality and age-appropriate content, form, and tone. Oral reading samples from the picture books are automatically scored for SWCPM and accuracy. Human scoring for prosody is available via audio playback.

Table 2.26. Specifications—Libro Ilustrado–Grados Intermedios (Oral Reading: Graphic Novel)

Code	140
Specifications	Each graphic novel–formatted story was designed to be engaging for students across the intermediate grades and readable by beginning readers of connected text. They were developed to target low levels of text complexity, as measured by El Sistema Lexile® para Leer, but also to provide significant picture support for students struggling to decode text independently. About 5–15 words appear in each text box, appearing above a supportive illustration in the cell. Text and pictures were reviewed by experts in intermediate-grades literacy assessment for quality and age-appropriate content, form, and tone. Oral reading samples from the graphic novel–formatted stories are automatically scored for SWCPM and accuracy. Human scoring for prosody is available via audio playback.

Figure 2.21. Sample Item—Libro Ilustrado–Grados Primarios (Oral Reading: Picture Book)

Figure 2.22. Sample Item—Libro Ilustrado–Grados Intermedios (Oral Reading: Graphic Novel)

Table 2.27 presents the traditional text El Sistema Lexile® para Leer (i.e., Lexile Framework® for Reading) readability measure and word count for each separate picture book or graphic novel format. El Sistema Lexile para Leer provides a common scale for measuring text difficulty. A Lexile measure is a number followed by an "L." The scale typically ranges from 0L to 1700L, although actual Lexile measures can be lower or higher. For example, a simple picture book might have a Lexile measure of 100L, while a college textbook might be measured at 1700L or higher (Lennon & Burdick, 2014). The Lexile of picture book or graphic novel formats in Spanish MAP Reading Fluency was evaluated alongside qualitative evaluation of the degree of picture support to ensure that the experience would be appropriate for all levels of reader.

Table 2.27. Readability Measures and Word Count for Picture Book and Graphic Novel Formats

Passage Title	Lexile	Word Count
Picture Book		
La ensalada	160L	32
Mateo pierde un diente	160L	52
Ramiro y la tormenta	180L	56
El robot de Roberto	180L	58
Los primos y las carreras	240L	43
Graphic Novel		
Una casa para Pelu	340L	75
Los héroes	390L	81
Toca madera	390L	86

2.8.2. Oral Reading: Passages and Comprehension Quiz

Students who have shown evidence of likely readiness for connected text reading are given passages, each with approximately 150–250 words, to read aloud followed by a series of six questions presented in a fixed order designed to require only literal or low-inference comprehension of the passage. Each set requires that no question is cued by a previous question, which necessitates a fixed order. For engagement, each set was also required to incorporate pictures into at least two questions, either as supplemental to the question stem or as answer options.

Table 2.28. Specifications—Oral Reading: Passages and Comprehension Quiz

Code	111, 114
Specifications	Students read the passage aloud and are alerted that questions about the passage will follow. The full text of the passage is presented onscreen, without the need for scrolling or page turning. Students use a button to indicate that they are finished. Each selected-response comprehension question appears and is read aloud by the narrator. Audio is available on answer options. Automatic scores for the oral reading include SWCPM and accuracy. Comprehension is reported as percent correct.

Figure 2.23. Sample Passage

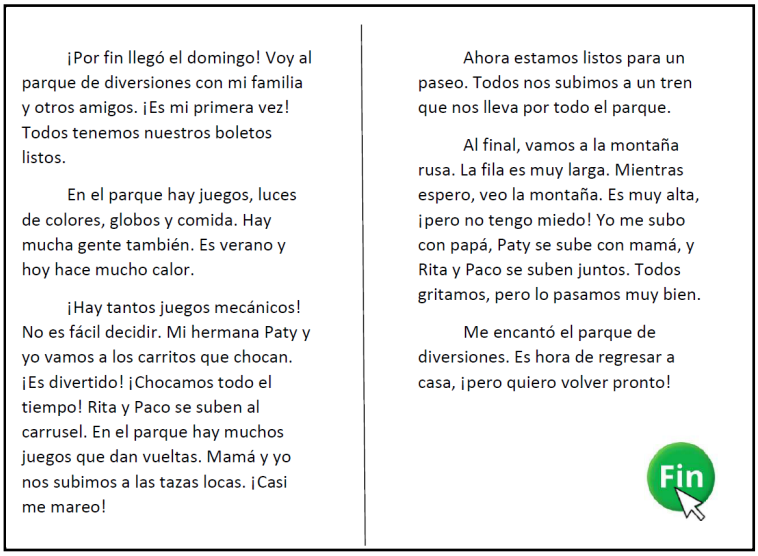
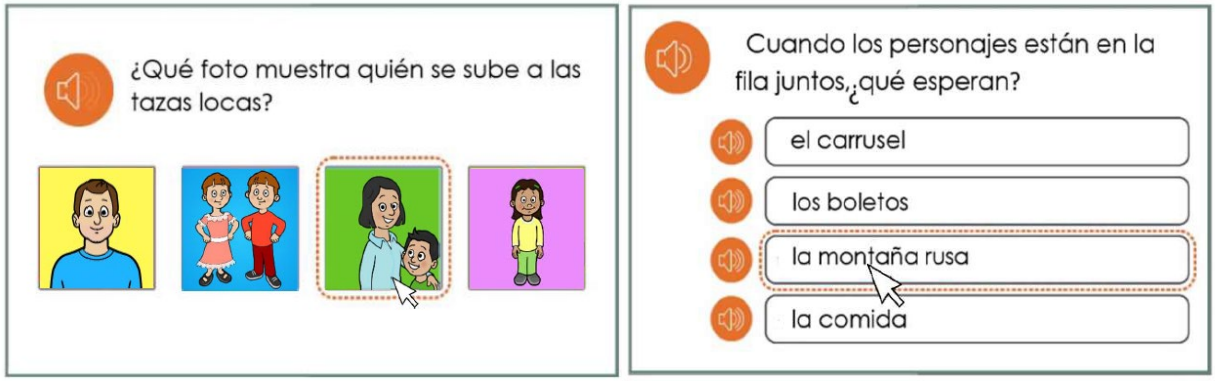


Figure 2.24. Sample Item—Comprensión de Texto (Oral Reading: Passage Comprehension Quiz)



2.8.3. Passage Development

Passages were developed at varying levels of text complexity, as gauged by El Sistema Lexile para Leer. Length could vary by grade level but was constrained by screen real estate; no passages requiring scrolling or page turning were included. Passages were reviewed in two stages by experts in primary-grades literacy assessment for quality and age-appropriate language, content, form, and tone. They were reviewed separately for any issues with bias or sensitivity. In the first stage, passages were selected by NWEA content specialists according to the specific qualitative and quantitative criteria listed below:

1. The passage is well written and engaging.
2. The passage is age appropriate.
3. The passage is free of bias, sensitivity, and fairness concerns.
4. The passage fits at the selected grade level when qualitative criteria are considered (e.g., levels of meaning or purpose; structure; language conventionality and clarity; knowledge demands).
5. The passage fits onscreen, without necessitating scrolling, with sufficient font size.
6. The passage fits within a target Lexile measure.
7. The passages focus on a variety of topics, including narrative and informational.

In the second stage of passage review, NWEA publishing professionals reviewed passages for: errors in grammar, usage, and mechanics; issues of bias, sensitivity, and fairness; and to make sure the passages represent original material that does not infringe on any copyrights. Table 2.29 presents descriptive data for each passage used in Spanish MAP Reading Fluency.

Table 2.29. Descriptive Metadata for Oral Reading Passages

Passage Title	Lexile	Word Count
El jardín de Lola	140	117
Un día perfecto	160	129
El café de la tía Nora	180	145
La bomba	180	154
Haciendo tamales	200	134
Las tortugas del mar	210	157
El gato Cato	250	147
El coco	250	142
Una mascota para Lili	260	192
En la cocina con papá	280	150
Vamos a la playa	290	150
Nuestro fuerte	300	179
Una tarde de deportes	360	189
La clase de arte	360	152
Milena y las ballenas	360	215
Objetos perdidos	380	185
El mercado de pulgas	390	177
La cobija	390	205
Mauricio anda en bici	400	186
Cómo se forman las perlas	430	193
El canto del grillo	430	173
El títere de Adi	430	237
El quetzal	480	226
Día de Nieve	500	212
Trato hecho	520	203
El unicornio del mar	520	187
El maíz	520	237
Las ardillas	540	222
La lluvia de meteoritos	540	247
La niñera	560	221
La piñata	570	223
El gallo pinto	610	166
La lotería	630	266
El mono tití	640	249

Passage Title	Lexile	Word Count
Las culebras de collar	660	205
Mi mascota, León	680	183
Primer vuelo	680	244
Los altos saguaros	690	166
Limonada	700	180
Botero y yo	740	261
La ocarina	750	249
La Noche de Rábanos	760	181
Los pulpos	780	173
Puebla y sus maravillas	800	241
El chocolate	870	261

3. Scoring and Reporting

All student responses are scored automatically by the MAP Reading Fluency software. The reported outcomes of each measure are presented in Table 3.1. The Oral Reading measures that yield scaled words correct per minute (SWCPM) scores are scored by the LanguaMetrics software embedded in the test engine. All other measures use selected response and are scored dichotomously, either correct or incorrect, at the item level by the test engine. Raw scores and number of items attempted are reported in the reporting site. A performance level is also assigned in each domain: *Exceeds Expectations*, *Meets Expectations*, *Approaching Expectations*, and *Below Expectations*.

Students can obtain Foundational Skills scores in one of two ways: (1) they are routed to the Foundational Skills track if they are not yet ready to independently read passages aloud or (2) their teacher assigns them to take a Foundational Skills form. In contrast, students can obtain Oral Reading Fluency scores in one of two ways: (1) they are routed to the Oral Reading Fluency track if they pass the Sentence Reading Fluency measure and progress to independent passage reading or (2) their teacher assigns them to take the Passages Only form.

Table 3.1. Scoring Method and Reported Outcomes by Measure

Domain	Measure	Code	Scoring Method	Reported Outcomes
Phonological Awareness	Rhyme Completion	130	Dichotomously scored at the item level	Number correct, number attempted, and scaled domain score
	Counting Syllables	117		
	Syllable Blending	118		
	Initial Sound Matching	101		
	Phoneme Blending	119		
	Segment & Count Phonemes	120		
	Syllable Addition/Deletion	121		
	Phoneme Substitution	122		
Phonics & Word Recognition	Letter Knowledge	102	Dichotomously scored at the item level	Number correct, number attempted, and scaled domain score
	Letter-Sound Fluency	103		
	Words' Initial Letters	123		
	Building Words: One Syllable Missing	124		
	Decoding: Beginning Words	107		
	Build Words: Two Syllables Missing	125		
	Decoding: Multi-Syllable Words	127		
	Building Words: All Syllables Missing	126		
	Sentence Reading Fluency	108		
Language Comprehension	Picture Vocabulary	105	Dichotomously scored at the item level	Number correct, number attempted (typically all 15 are attempted), and scaled domain score
	Listening Comprehension	104		
Print Concepts	Print Concepts	131–136	Dichotomously scored at the item level	Number correct and number attempted

Domain	Measure	Code	Scoring Method	Reported Outcomes
				(typically all 6 are attempted)
Oral Reading	Oral Reading: Picture Book/Graphic Novel	113/140	LanguaMetrics speech-scoring software	SWCPM; percent accuracy
	Oral Reading: Passages	111		
	Oral Reading: Passage Comprehension Quiz	114	Dichotomously scored at the item level	Percent correct out of 6 for each quiz

3.1. Foundational Skills

Foundational Skills includes measures in the Phonological Awareness, Phonics & Word Recognition, and Language Comprehension domains. Phonological Awareness and Phonics & Word Recognition are assessed with a series of discrete, timed measures focusing on a single skill. Zone of proximal development (ZPD) levels are achievable from a series of related measures administered from each domain progression, as shown in Table 3.2. Students move through each progression based on their demonstrated ability, receiving 3–6 measures based on adaptive branching criteria in the test.

A ZPD level and accompanying performance level are outlined in Table 3.3. Performance levels are color-coded as blue, green, yellow, or red (i.e., *Exceeds Expectations* = blue, *Meets Expectations* = green, *Approaching Expectations* = yellow, and *Below Expectations* = red). Performance levels are assigned at the domain level (i.e., at the level of the entire progression) by comparing the observed ZPD with grade-level expectations. Grade-level expectation is set at Level 1 in fall for kindergarten and Level 5 in spring for grade 1, at which point students are generally expected to be moving out of Foundational Skills and into Oral Reading Fluency.

Table 3.2. ZPD Levels for Phonological Awareness and Phonics & Word Recognition

Phonological Awareness					
Level 0: Rhymes and Syllables (Introduce)	**Level 1: Rhymes and Syllables**	**Level 2: Syllable Blending and Initial Sounds**	**Level 3: Phoneme Blending and Segmenting**	**Level 4: Syllable and Phoneme Manipulation**	**Level 5: Syllable and Phoneme Manipulation (Reinforce)**
Rhyme Completion *Measures phonological rhyme identification skills*		**Syllable Blending** *Measures syllable blending skills*	**Phoneme Blending** *Measures phoneme blending skills*	**Syllable Addition/Deletion** *Measures syllable manipulation skills*	
Counting Syllables *Measures phonological syllable segmenting skills*		**Initial Sound Matching** *Measures initial phoneme identification skills*	**Segment & Count Phonemes** *Measures phoneme segmenting skills*	**Phoneme Substitution** *Measures phoneme manipulation skills*	
Phonics & Word Recognition					
Level 0: Letters and Sounds (Introduce)	**Level 1: Letters and Sounds**	**Level 2: Initial Letters and Syllables**	**Level 3: Beginning Words**	**Level 4: Multi-Syllable words**	**Level 5: Multi-Syllable words (Reinforce)**
Letter Knowledge *Measures letter identification knowledge*		**Words' Initial Letters** *Measures letter-sound decoding skills*	**Decoding: Beginning Words** *Measures early word decoding skills*	**Decoding: Multi-Syllable Words** *Measures more complex word decoding skills*	
Letter-Sound Fluency *Measures letter-sound correspondence knowledge*		**Building Words: One Syllable Missing** *Measures early word-encoding skills*	**Building Words: Two Syllables Missing** *Measures intermediate word-encoding skills*	**Build Words: All Syllables Missing** *Measures complex word-encoding skills*	

Table 3.3. Performance Expectations by ZPD Level

Term	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
Pre-K						
Fall	*No Expectation**	*Exceeds*				
Winter	*No Expectation**	*Exceeds*				
Spring	*Approaching*	*Meets*	*Exceeds*			
Kindergarten						
Fall	*Approaching*	*Meets*	*Exceeds*			
Winter	*Below*	*Approaching*	*Meets*	*Exceeds*		
Spring	*Below*		*Approaching*	*Meets*	*Exceeds*	
Grade 1						
Fall	*Below*		*Approaching*	*Meets*	*Exceeds*	
Winter	*Below*			*Approaching*	*Meets*	
Spring	*Below*				*Approaching*	*Meets*
Grade 2+						
Fall	*Below*				*Approaching*	*Meets*
Winter	*Below*				*Approaching*	*Meets*
Spring	*Below*				*Approaching*	*Meets*

The Language Comprehension domain includes the Picture Vocabulary and Listening Comprehension measures. It is assessed within the Foundational Skills section of the test and for students who proceed to passages but struggle to understand passages at the lowest Lexile levels. Each measure presents 15 items to the student, drawn randomly from a larger pool. Performance on each measure is assigned a performance level based on the number correct out of 15, as shown in Table 3.4.

Table 3.4. Performance Expectations for Language Comprehension Domain

Grade	Number Correct of 15 Items			
	Below Expectations	***Approaching Expectations***	***Meets Expectations***	***Exceed Expectations***
K	6 or less	7--8	9–11	12+
1	8 or less	9–11	12+	–
2	8 or less	9–11	12+	–
3	8 or less	9–11	12+	–

3.1.1. IRT Calibration of Foundational Skills Measures

Item response theory (IRT) is a statistical modeling technique that places items and persons onto the same scale in a manner that, given particular assumptions, is sample-independent. IRT allows student scores to be readily compared even when students have taken different sets of items on the same scale. For example, a student taking measures on the lower branches of the Foundational Skills lattices might have the same raw score as a student taking measures on the higher branches of the lattices, but the IRT ability estimate will be higher for the student taking the more-difficult items. Separate Rasch IRT calibrations were conducted for each Foundational Skills domain: Phonological Awareness, Phonics & Word Recognition, and Language Comprehension.

3.1.2. Item Bank Construction

The IRT calibrations are intended to provide an item bank for future scoring of students, support the creation of scaled scores for each domain, and provide an historical, longitudinal dataset to support statistical modeling of student risk for reading difficulties, including dyslexia. The Rasch model was used for all item calibrations and student scoring. The model—which remains popular given its theoretical parsimony, ease of estimation, and usability, even with small samples—expresses the probability of a student of a particular ability providing a correct answer to an item of a particular difficulty (Equation 3.1; adapted from Wright & Stone, 1979):

$$P(\theta_i) = \frac{\exp(\theta_i - b_j)}{1 + \exp(\theta_i - b_j)} \tag{3.1}$$

where θ is the ability of student i, and b is the difficulty of item j.

NWEA psychometricians conducted initial item calibrations using operational data from Spanish MAP Reading Fluency operational Foundational Skills measures collected in Fall 2021, Winter 2022, and Spring 2022. Data from these test windows were combined to create a robust sample (N > 36,300 students) supporting the stability of the established scales. Subsequently, as new items were continuously developed and field tested, they were calibrated to the same difficulty scale within each domain. Items were only considered eligible for calibration when at least 500 student responses were available per item within a test term. All item calibrations were conducted with the Winsteps® Rasch measurement computer program (Linacre, 2021). Separate calibrations were conducted for each domain.

Table 3.5 presents the minimum and maximum number of responses for each item, the point-biserial correlations, and the weighted item fit statistics. The point-biserial represents the correlation between how well students did on an item and how well they did on the domain. An item with a high positive point-biserial correlation distinguishes between low-performing and high-performing students better than an item with a point-biserial correlation near zero. The infit mean square statistic indicates how well the item difficulty estimate corresponds to the response pattern observed in the data. It has an expected value of 1.00 and is sensitive to unexpected responses when the item is targeted at respondents' ability level. The table also presents summary statistics for the item difficulty estimates. The mean item difficulty estimates for each domain were offset from zero because more calibrated items were added to the item pool after the initial calibration.

Table 3.5. Foundational Skills Item Bank Statistics—Spring 2026

Domain [a]	N Items	N Students		Point-Biserial Correlation		Infit Mean Square		Item Difficulty Estimates			
		Min.	Max.	Min.	Max.	Min.	Max.	Mean	SD	Min.	Max.
PA	334	500	5,140	0.211	0.338	0.814	1.400	0.050	1.325	-4.265	2.842
PWR	379	500	7,412	0.206	0.665	0.704	1.417	-0.021	0.977	-4.272	2.557
LC	92	500	10,207	0.200	0.561	0.807	1.215	-0.042	0.853	-1.949	1.374

[a] PA = Phonological Awareness; PWR = Phonics & Word Recognition; LC = Language Comprehension.

3.1.3. Student Scoring

Item difficulty estimates from the established item bank were used to obtain maximum-likelihood ability estimates for each student by domain and term. Extreme scores were handled through fencing to assist the maximum-likelihood ability estimates. Namely, students obtaining a perfect minimum or maximum score were assigned two fictitious items, one very easy and scored as correct and the other very difficult and scored as incorrect. When adding a ghost item response for

an extreme score, the optimizer of the ability estimation can find a boundary of the student ability and complete the estimation. Such fencing has no effect on a student's ability estimate and establishes a finite likelihood function for estimation (Han, 2016).

Standard errors for each ability estimate were estimated as the reciprocal of the square root of the test information function at that ability estimate. The test information function is the sum of the item information functions for the items presented to a student for a particular domain in a particular term. The item information function for the Rasch model is the probability of a student with a particular estimated ability answering an item correctly multiplied by the probability of answering the item incorrectly (Equations 3.2–3.4; adapted from Wright & Stone, 1979):

$$I_j = P_j\left(\hat{\theta}_i\right)\left[1 - P_j\left(\hat{\theta}_i\right)\right], \tag{3.2}$$

$$I_T = \sum_{j=1}^{m} I_j, \tag{3.3}$$

$$S_\theta = \frac{1}{\sqrt{I_T}}, \tag{3.4}$$

where I_j is the information function for item *j*, $P_j\left(\hat{\theta}_i\right)$ is the probability of a correct response to item *j* from person *i* with estimated ability, and $\hat{\theta}$, I_T is the test information function for test *T*.

3.2. Oral Reading Fluency

A summary of student performance across all oral passage reading attempts is provided across three instructionally important dimensions of oral reading: oral reading rate (i.e., SWCPM), decoding accuracy, and passage comprehension. Valencia et al. (2010) have shown that providing data on each of these components offers greater predictive validity than the use of SWCPM alone. Moreover, the student profiles of at-risk readers vary across these dimensions in ways that make a one-size-fits-all instructional approach ineffective: some students struggle with accuracy only, while others have a high rate of accuracy but low comprehension. Each profile calls for a different set of instructional emphases (Valencia & Buly, 2004). For each permutation of strengths and difficulties, MAP Reading Fluency refers teachers to an individually assigned recommendation for instructional focus and strategies.

3.2.1. Oral Reading Rate

Equated WCPM scores were introduced in Fall 2022. Equating is a statistical procedure that makes the WCPM scores of different passages comparable. Since the WCPM scores are affected by passage difficulty, they are equated to SWCPM scores so that the equated scores can be used interchangeably and can be compared across students. Each passage was equated to an anchor passage to allow the conversion of WCPM scores to equated scores.

Oral reading rate, using the metric of SWCPM, is considered based on the expectation levels in Table 3.6. Specifically, based on published norms for WCPM scores (Hasbrouck & Tindal, 2017), the table presents the minimum thresholds (i.e., minimum WCPM) for reaching the *Meets Expectations* performance level relative to grade-level text. Table 3.7 presents the ranges for all performance levels. Students meet expectations if their overall SWCPM exceeds the minimum WCPM for a given grade and term. If students struggle to understand a grade-level passage, they will get an easier (lower Lexile) passage. If their fluency level on the easier passage surpasses a performance-level boundary by 10 WCPM, the higher performance level will be achieved. Increased instructional intensity is suggested for students reading at a rate significantly below expected levels.

Table 3.6. Minimum Thresholds for *Meets Expectations*

Grade	Minimum Scaled WCPM for *Meets Expectations*		
	Fall	Winter	Spring
K	N/A		
1	N/A	29	60
2	50	84	100
3	83	97	112

Note. N/A = not applicable; no oral reading expected.

Table 3.7. Performance Levels by SWCPM Range

Grade	Performance Level	SWCPM Range		
		Fall	Winter	Spring
K	*Exceeds Expectations*	Any oral reading		
	Meets Expectations	0 (no expectation)	0 (no expectation)	0 (no expectation)
	Approaching Expectations	–	–	–
	Below Expectations	–	–	–
1	*Exceeds Expectations*	9+	59+	91+
	Meets Expectations	0 (no expectation)	29–58	60–90
	Approaching Expectations	–	16–28	34–59
	Below Expectations	–	0–15	0–33
2	*Exceeds Expectations*	84+	109+	124+
	Meets Expectations	50–83	84–108	100–123
	Approaching Expectations	36–49	59–83	72–99
	Below Expectations	0–35	0–58	0–71
3+	*Exceeds Expectations*	104+	137+	139+
	Meets Expectations	83–103	97–136	112–138
	Approaching Expectations	59–82	79–96	91–111
	Below Expectations	0–58	0–78	0–90

Note. *Exceeds* is not reported if above-grade-level passages are not provided.

3.2.2. Decoding Accuracy

Across all passages, a threshold of 95% is used to highlight students whose decoding accuracy may be limiting fluency and understanding. In a comprehensive review of how reading accuracy interacts with instructional text leveling, Allington et al. (2015) find that a minimum of 95% accuracy predicted significant increases in both engagement and comprehension. Specifically, Table 3.8 presents the boundaries for performance levels for decoding accuracy, which is classified according to ranges of percent accuracy on grade-level text. *Exceeds Expectations* is only achievable on grade-level text or higher. For below-grade-level text, *Exceeds Expectations* is replaced with *Meets Expectations* for students achieving 98% accuracy or higher.

Table 3.8. Performance Levels for Decoding Accuracy Based on Percent Accuracy

Performance Level	Decoding Accuracy
Exceeds Expectations	98–100%
Meets Expectations	95–97%
Approaching Expectations	90–94%
Below Expectations	0–89%

3.2.3. Passage Comprehension

Across all passages, answering five of the six passage comprehension quiz items correctly is used as a threshold for demonstrating basic understanding of the passage. Passage comprehension performance levels are assigned based on the most difficult text for which a student demonstrated understanding by answering at least five of the six items correctly. Above-grade text produces *Exceeds Expectations* designations, and below-grade results in *Approaching* or *Below* depending on the discrepancy from the grade level.

3.2.4. Lexile Oral Reading Measure

MAP Reading Fluency also reports a Lexile Framework for an Oral Reading score (MetaMetrics, 2022). The student Lexile oral reading measure is generated using a combination of three factors: the student's oral reading rate, the student's oral reading accuracy, and the text's oral readability. The student's score is presented in the context of typical oral readability for grade-level texts to allow comparison between the student's oral reading proficiency and grade-level demands.

In the Common Core era, elementary students are often asked to read increasingly complex texts, including challenging grade-level texts, regardless of a "best match" level. As Shanahan et al. (2016) note, readers "build muscle" in reading by working with more-challenging texts. Given this context, the possible gap between the Lexile oral readability of typical grade-level text and the student Lexile oral reading measure indicates the degree of instructional support required to help students work with grade-level text. Research indicates that where significant support is designed into instruction, all students can benefit from experiences with texts that might otherwise be characterized as "too hard" (Stahl & Heubach, 2005; Allington et al., 2015).

3.3. Individual Student Reports

The Individual Student Report shows all scores achieved on a given assessment, including profile statements that are linked to suggested instructional next steps. Each completed test can be reviewed by choosing the test date from the drop-down on the individual's page, which is accessed by selecting a student from the class list on the Student Matrix. All other MAP Reading Fluency reports are based on the data in the Individual Student Report.

Figure 3.1 presents the report layout for a student who has read passages aloud and answered the associated comprehension questions, and Figure 3.2 presents the layout for students who have taken Foundational Skills measures within the Adaptive Oral Reading test format. Both examples show data of a student who has been flagged as likely experiencing reading difficulty. Students who read passages receive a summary of their performance across the three subscores of oral reading rate, decoding accuracy, and passage comprehension, along with links to instructional recommendations. For students with Foundational Skills results who did not attempt oral reading, an analogous summary of student performance and instructional readiness is provided with linked suggestions for instructional focus based on the observed ZPD and oral language levels.

Figure 3.1. Sample Individual Student Report—Oral Reading

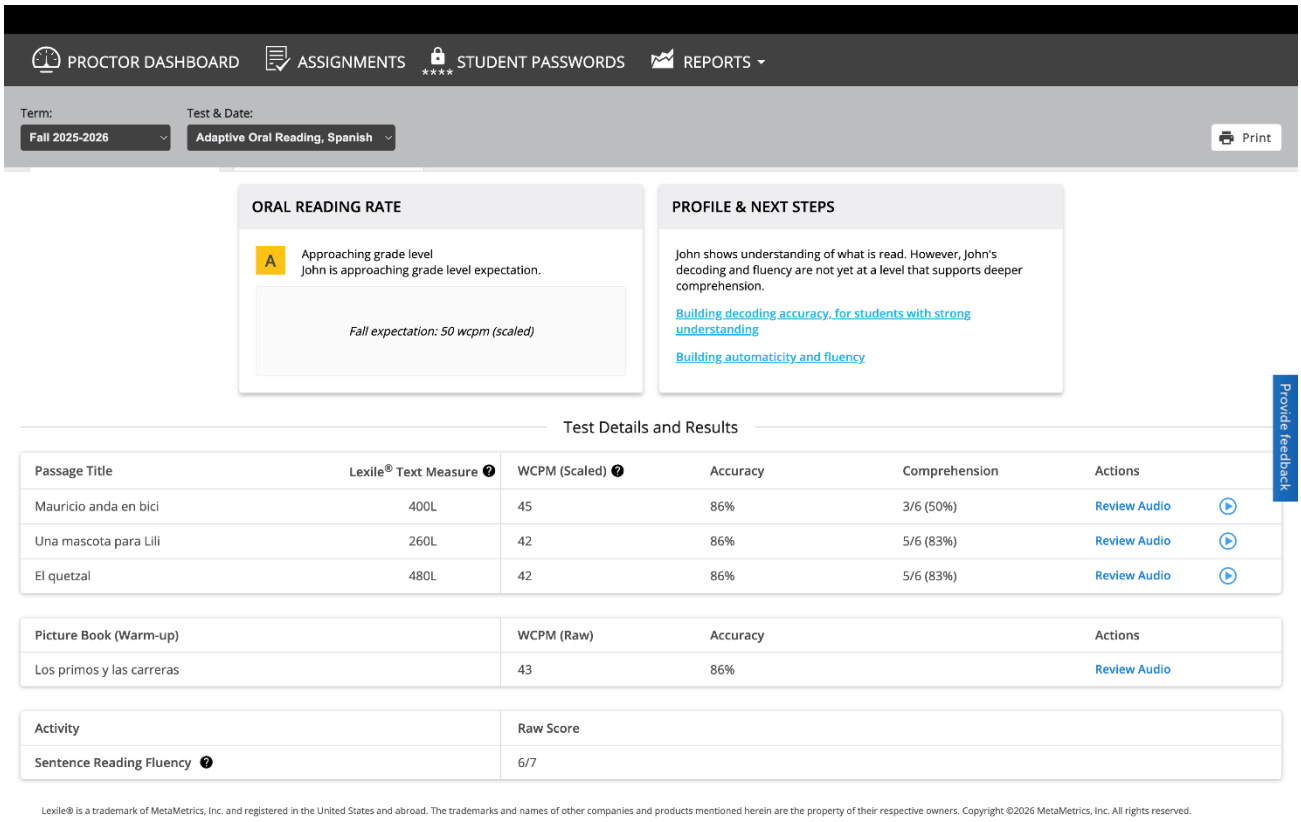
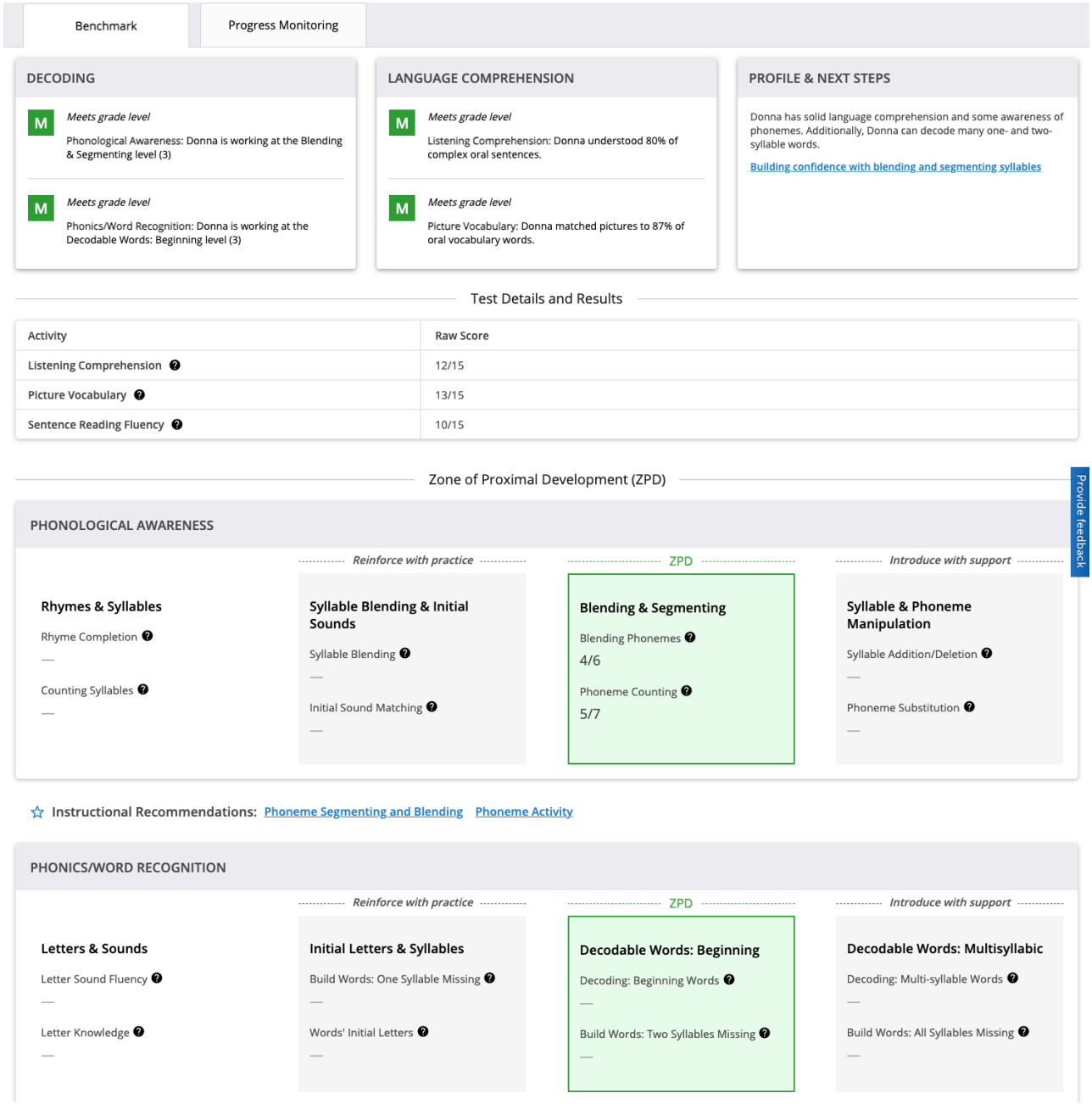


Figure 3.2. Sample Individual Student Report—Foundational Skills



3.4. LanguaMetrics's Speech-Scoring Technology

NWEA partnered with LanguaMetrics to develop the speech-scoring engine that scores the Oral Reading measures with WCPM-reported outcomes (i.e., Oral Reading: Picture Book and Oral Reading: Passages). LanguaMetrics's team of scientists and engineers has pioneered the application of speech-scoring science to education technology. The speech-scoring technology includes complex components, such as acoustical models and speech recognizers. Acoustical models combine with a data dictionary and the speech recognizer to score speech. These models are based on thousands of speech samples that are run through modeling and optimization tools to produce the resulting statistical representation of all the details of speech associated with the population of samples used. The broader the population, the less accurate the model. Therefore, the population was defined as narrowly as feasible to produce the most accurate acoustical model

possible. This is a key factor in the accuracy of the MAP Reading Fluency scoring mechanism because it uses an acoustical model created specifically for young students' voices.

The science within these components relies on a concept from Bayesian statistics known as hidden Markov models (HMMs) that are used in speech science to better understand the audio signal being recognized and scored. Every language has observable and discrete patterns based on the rules of the language. With HMMs, these rules are leveraged to lower the possibility of errors in recognition. For example, in Spanish, words do not begin with an "s" followed directly by another consonant such as "p" or "t" without an initial vowel sound (e.g., "*escuela*"), although such "s + consonant" clusters can occur within words (e.g., "*transporte*" or "*isla*"). Therefore, a speech recognizer paired with the acoustical model is better equipped to return results that make sense for the targeted language. Additional data elements are returned by the speech recognizer, including confidence levels for both sentences and words and various phoneme-level scores. These data are analyzed to create algorithms at the application level that are used to evaluate the reading of connected text.

Measuring and scoring the speech of young readers is far more challenging than typical speech-recognition applications and requires the software to be able to accommodate young readers' wide degree of decoding skills and oral reading fluency development. Therefore, many of the words that need to be scored are not at the same level of articulation quality that speech recognizers would normally require to score with sufficient accuracy. Young readers may also skip words, repeat words, skip sentences, pause or remain silent for periods, and restart themselves at seemingly random positions in the text.

MAP Reading Fluency algorithms leverage statistical output from the reading grammar and speech recognizer. These algorithms form the basis for the WCPM calculation and require calibration to achieve the desired level of precision and accuracy, which is for the software to return an oral reading evaluation that is in line with that of a typical teacher.

4. Reliability

Reliability refers to the consistency of scores obtained from the assessment. It reflects the absence of random measurement error. When the measurement error is small, reliability is large, and vice versa. Increasing reliability by minimizing error is an important goal for any test. Different sources of measurement error affect scores. The effect of each particular source of error has a corresponding reliability coefficient that describes the influence of that source on scores. One source of measurement error is time, or the instability of a construct over time, as measured by test-retest reliability. If this source of error is low, the test-retest reliability coefficient will be high. Another source of measurement error is the items selected for a test. Internal consistency, or marginal reliability, will be high if measurement error due to items is low.

It is important to report multiple reliability coefficients to describe the influence of different sources of error. Therefore, the reliability of the Spanish MAP Reading Fluency assessments was examined in the following ways:

- **Marginal reliability** that examines a test's consistency across items. The question being answered with this type of reliability is "To what extent do items in the test measure the test's construct(s) in a consistent manner?"

- **Test-retest reliability** that demonstrates the consistency of MAP Reading Fluency measures across time by administering it to a group of students twice separated by a reasonable period of time. The question being answered with this type of reliability is "To what extent does the test administered to the same students twice yield the same results from one administration to the next?"

Data included in these analyses were drawn from the test administrations during the 2022–2023, 2023–2024, and 2024–2025 school years.

4.1. Marginal Reliability (Internal Consistency)

Internal consistency measures how well the items on a test that reflect the same construct yield similar results. Determining the internal consistency of MAP Reading Fluency tests is challenging because traditional methods depend on all test takers taking a common test consisting of the same items. Application of these methods to adaptive tests is statistically cumbersome and inaccurate. Fortunately, an equally valid alternative is available in the marginal reliability coefficient (Samejima, 1977, 1994) that incorporates measurement error as a function of the test score. The calculations are based on the definition of reliability as the proportion of total variance that is considered true-score variance (Equation 4.1). The standard errors of individual students are averaged across observations within the reporting group (e.g., grade, term).

$$\rho_\theta = \frac{\hat{\sigma}_\theta^2 - \hat{\mu}_{S_\theta^2}}{\hat{\sigma}_\theta^2} \tag{4.1}$$

where $\hat{\sigma}_\theta^2$ is the observed variance of the ability estimates, θ, and $\hat{\mu}_{S_\theta^2}$ is the observed mean of the score's conditional error variances at each value of θ. Tests are considered of sound reliability when their marginal reliability coefficients range from 0.80 and above according to the National Center on Intensive Intervention (NCII, 2025).

Table 4.1 presents the median marginal reliability coefficient with a 95% confidence interval for 1,000 bootstrapped samples stratified on student grade and term. The bootstrap sampling method allows inference of the population marginal reliability coefficient from the observed data.

The lower limit of the confidence intervals exceeded 0.80 for all Foundational Skills domains in nearly all grades and terms, indicating strong score consistency. The sole exception was the Language Comprehension domain in kindergarten for fall, for which the value was slightly lower at 0.78. This likely reflects reduced true-score variability and less differentiated student performance in Language Comprehension at the beginning of kindergarten, which can lower reliability by increasing the relative contribution of measurement error. Even so, all lower bounds of reliability estimates exceed NCII's criterion of 0.70 for convincing evidence of reliability across domains, grades, and test terms.

The appendix presents bootstrapped marginal reliability estimates for student subgroups defined by gender, race/ethnicity, and English Language Learner (ELL) status. Across grades and administrations, subgroup patterns are generally consistent with the full-sample results. The Phonological Awareness and Phonics & Word Recognition domains show the greatest stability, with subgroup median estimates remaining strong and closely aligned with the overall coefficients with values consistently at or above 0.80. The Language Comprehension domain shows a similar pattern for the largest subgroups with adequate sample sizes, with estimates generally near or above 0.80. More noticeable differences appear primarily in certain race/ethnicity subgroups with smaller sample sizes ($N < 150$), where the confidence intervals are wider and the estimates are less stable. Overall, the results suggest broad consistency across subgroups, with only a small number of localized departures rather than a systematic subgroup reliability concern.

This pattern is not unexpected because marginal reliability is distribution dependent. Reliability may vary across subgroups for reasons beyond sample size alone. It can also be affected by whether subgroup scores are concentrated in parts of the scale where the test provides greater or less precision. Additional analyses confirmed that the specific subgroups with lower reliability than the full-sample estimates also had narrower observed score ranges and less score variability. Therefore, these lower reliability estimates are best interpreted as reflecting smaller subgroup sample sizes and more limited score variation within those groups rather than as evidence of bias or lack of score consistency.

Table 4.1. Bootstrapped Marginal Reliability Coefficients (2022–2025 School Years)

Grade	Fall				Winter				Spring			
	N	Median	95% CI		N	Median	95% CI		N	Median	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Phonological Awareness												
K	36,177	0.866	0.865	0.868	36,178	0.881	0.880	0.883	47,455	0.889	0.888	0.890
1	46,857	0.888	0.887	0.889	47,724	0.886	0.885	0.888	33,649	0.880	0.878	0.881
2	31,236	0.881	0.879	0.882	22,905	0.876	0.874	0.878	16,836	0.881	0.879	0.883
3	10,015	0.873	0.869	0.875	5,272	0.878	0.874	0.882	4,619	0.883	0.878	0.887
Phonics & Word Recognition												
K	36,178	0.901	0.898	0.903	36,178	0.935	0.934	0.936	47,455	0.939	0.938	0.939
1	46,858	0.946	0.946	0.946	47,724	0.934	0.933	0.934	33,649	0.925	0.924	0.926
2	31,236	0.928	0.927	0.929	22,906	0.924	0.923	0.926	16,836	0.923	0.921	0.925
3	10,015	0.916	0.914	0.919	5,272	0.921	0.918	0.924	4,619	0.924	0.922	0.927
Language Comprehension												
K	36,178	0.785	0.782	0.787	36,178	0.824	0.822	0.826	47,455	0.831	0.829	0.832
1	46,858	0.836	0.835	0.838	47,724	0.819	0.817	0.821	33,649	0.815	0.813	0.817
2	31,236	0.821	0.819	0.823	22,906	0.805	0.803	0.808	16,836	0.813	0.810	0.816
3	10,015	0.815	0.811	0.819	5,272	0.813	0.808	0.819	4,619	0.828	0.823	0.833

4.2. Test-Retest Reliability

MAP Reading Fluency assesses students on multiple occasions (e.g., fall, winter, and spring) throughout the school year. Typically, a student takes one benchmark assessment in each test term. Thus, test-retest reliability provides insight into the consistency of scores across time. Because of the adaptive nature of the assessment, each student receives different items/passages based on their performance. The retest is therefore not identical to the initial test, but it is designed to be comparable in content and structure and is scored using items calibrated, or passages equated, to a common scale within each domain. For this reason, the test-retest reliability of MAP Reading Fluency must be evaluated using a nontraditional approach. The reliability estimates presented in Table 4.2 are better characterized as a combination of test-retest reliability and alternate-forms reliability, with a period of several months between administrations rather than the more typical two to three weeks. In other words, test-retest with alternate forms (Crocker & Algina, 1986) describes the influence of two sources of measurement error: time and item selection. Data from the 2022–2023, 2023–2024, and 2024–2025 school years were used for this analysis.

The test-retest results indicate moderate to strong score stability across test terms. Across domains and grades, correlations were generally higher for the winter-to-spring interval than for the fall-to-winter interval, suggesting greater score consistency later in the school year. This pattern is consistent with the expectation that scores become more stable as student performance becomes more established over the course of the year. Phonics & Word Recognition showed the strongest stability overall, with correlations ranging from 0.64 to 0.82 across grades and term pairs. Language Comprehension and Phonological Awareness showed moderate stability, with lower correlations, particularly in kindergarten fall to winter. Oral Reading Fluency demonstrated strong stability as well, especially in grades 1 and 2. Overall, these findings support the cross-term consistency of MAP Reading Fluency scores while also reflecting expected variation associated with student growth, time between administrations, and alternate-form item selection.

Table 4.2. Test-Retest with Alternate Forms Reliability (2022–2025 School Years)

Grade	Fall–Winter				Winter–Spring			
	N	*r*	95% CI		N	*r*	95% CI	
			Lower	Upper			Lower	Upper
Phonological Awareness								
K	28,656	0.393	0.383	0.403	32,470	0.515	0.507	0.523
1	32,874	0.538	0.530	0.545	26,170	0.574	0.566	0.582
2	14,920	0.534	0.523	0.546	11,591	0.579	0.567	0.591
3	3,716	0.546	0.523	0.568	2,831	0.585	0.560	0.608
Phonics & Word Recognition								
K	28,657	0.641	0.634	0.648	32,470	0.737	0.732	0.741
1	32,875	0.762	0.757	0.766	26,170	0.770	0.765	0.775
2	14,920	0.771	0.764	0.777	11,591	0.788	0.781	0.795
3	3,716	0.790	0.778	0.802	2,831	0.822	0.810	0.834
Language Comprehension								
K	28,657	0.612	0.605	0.620	32,470	0.687	0.681	0.692
1	32,875	0.701	0.696	0.707	26,170	0.717	0.712	0.723
2	14,920	0.701	0.693	0.709	11,591	0.711	0.702	0.720
3	3,716	0.713	0.697	0.728	2,831	0.734	0.716	0.750
Oral Reading Fluency								
1	6,428	0.719	0.707	0.731	12,249	0.758	0.751	0.766
2	5,374	0.805	0.795	0.814	6,953	0.821	0.813	0.829
3	1,203	0.552	0.511	0.590	3,971	0.668	0.651	0.685

5. Validity

5.1. Concurrent Validity

Concurrent validity is expressed in the form of a Pearson correlation coefficient between a test score and the score of another established and validated test designed to assess the same construct. It answers the question “How well do the scores from this test (that reference a particular scale) correspond to the scores obtained from another test (that references some other scale) in the same subject?” Concurrent validity requires that both tests are administered to the same students within a short amount of time. Concurrent evidence is a typical part of many validity arguments, as two tests of the same construct should share a strong statistical relationship.

Table 5.1 presents the correlations between the Spanish Foundational Skills domain scores and the Spanish MAP Growth Reading scores by grade and term. Data for this analysis came from students who completed both the Spanish MAP Reading Fluency assessment and the Spanish MAP Growth Reading assessment within the same term during the 2022–2023, 2023–2024, and 2024–2025 school years. The concurrent validity findings indicate that MAP Reading Fluency scores demonstrate expected, construct-relevant relationships with the external criterion measure across test terms. Correlations were generally moderate, with the strongest evidence observed for Phonics & Word Recognition, and with positive, consistent relationships also observed for Phonological Awareness, Language Comprehension, and Oral Reading Fluency. Differences in the magnitude of the correlations across grades and domains are expected because each Spanish MAP Reading Fluency domain measures a different construct of reading. In addition, these correlations reflect a part-whole relationship, as each Spanish Foundational Skills domain represents one component of early literacy performance, whereas Spanish MAP Growth Reading reflects overall reading achievement. Taken together, these findings provide supportive evidence of concurrent validity for MAP Reading Fluency scores.

Table 5.1. Concurrent Validity Between Spanish Foundational Skills Domain Scores and Spanish MAP Growth Reading Scores (2022–2025 School Years)

Grade	Fall				Winter				Spring			
	N	*r*	95% CI		N	*r*	95% CI		N	*r*	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Phonological Awareness												
K	16,490	0.411	0.398	0.424	21,871	0.517	0.507	0.526	35,646	0.554	0.546	0.561
1	32,847	0.566	0.559	0.574	36,667	0.612	0.606	0.619	24,648	0.578	0.570	0.587
2	17,193	0.445	0.433	0.457	14,123	0.512	0.500	0.524	9,690	0.484	0.469	0.499
3	7,584	0.457	0.439	0.475	4,119	0.474	0.450	0.497	3,706	0.462	0.437	0.487
Phonics & Word Recognition												
K	16,491	0.528	0.517	0.539	21,871	0.627	0.619	0.635	35,646	0.653	0.647	0.659
1	32,848	0.682	0.676	0.688	36,667	0.692	0.687	0.697	24,648	0.673	0.666	0.680
2	17,193	0.524	0.513	0.535	14,124	0.569	0.558	0.580	9,690	0.587	0.573	0.599
3	7,584	0.564	0.549	0.579	4,119	0.572	0.552	0.593	3,706	0.573	0.551	0.594
Language Comprehension												
K	16,491	0.473	0.461	0.485	21,871	0.571	0.562	0.579	35,646	0.580	0.574	0.587
1	32,848	0.607	0.600	0.614	36,667	0.603	0.597	0.610	24,648	0.589	0.581	0.597
2	17,193	0.365	0.352	0.378	14,124	0.434	0.420	0.447	9,690	0.398	0.382	0.415
3	7,584	0.349	0.329	0.368	4,119	0.356	0.329	0.383	3,706	0.389	0.361	0.416

Grade	Fall				Winter				Spring			
	N	*r*	95% CI		N	*r*	95% CI		N	*r*	95% CI	
			Lower	Upper			Lower	Upper			Lower	Upper
Oral Reading Fluency												
1	1,329	0.264	0.214	0.314	3,827	0.366	0.338	0.393	9,423	0.338	0.320	0.356
2	5,234	0.499	0.478	0.519	8,700	0.512	0.496	0.527	12,540	0.536	0.524	0.549
3	6,789	0.591	0.575	0.606	7,519	0.597	0.582	0.611	9,028	0.594	0.581	0.608

5.2. Predictive Validity

Predictive validity examines the extent to which scores from one assessment are associated with performance on a related outcome measured at a later point in time. In this analysis, predictive validity was evaluated by examining the Pearson correlation coefficient between Spanish MAP Reading Fluency scores obtained earlier in the school year and Spanish MAP Growth Reading scores obtained in spring. This type of evidence informs the extent to which performance on foundational literacy domains is associated with later overall reading achievement.

Table 5.2 summarizes the correlations between Spanish Foundational Skills domain scores and the spring Spanish MAP Growth Reading scores by grade and term pairing. The analytic sample included students who completed Spanish MAP Reading Fluency in fall or winter and Spanish MAP Growth Reading in spring during the 2022–2023, 2023–2024, and 2024–2025 school years. Across grades and domains, the correlations were positive and generally moderate, supporting the interpretation that earlier MAP Reading Fluency performance is meaningfully related to later reading performance. The strongest relationships were observed for Phonics & Word Recognition, with additional supportive evidence for Phonological Awareness, Language Comprehension, and Oral Reading Fluency. Variation in the size of the correlations across grades and domains is expected because the MAP Reading Fluency domains represent distinct constructs of early literacy, whereas Spanish MAP Growth Reading reflects broader reading achievement. Taken together, these results provide supportive evidence of predictive validity for Spanish MAP Reading Fluency scores.

Table 5.2. Predictive Validity Between Spanish Foundational Skills Domain Scores and Spring Spanish MAP Growth Reading Scores (2022–2025 School Years)

Grade	Fall–Spring				Winter–Spring			
	N	*r*	95% CI		N	*r*	95% CI	
			Lower	Upper			Lower	Upper
Phonological Awareness								
K	14,547	0.389	0.375	0.402	19,927	0.501	0.490	0.511
1	25,513	0.522	0.513	0.530	23,887	0.595	0.587	0.603
2	12,214	0.464	0.450	0.478	8,233	0.491	0.474	0.507
3	4,616	0.437	0.413	0.460	3,004	0.448	0.419	0.476
Phonics & Word Recognition								
K	14,547	0.459	0.446	0.472	19,927	0.608	0.600	0.617
1	25,514	0.631	0.624	0.638	23,887	0.688	0.681	0.694
2	12,214	0.604	0.593	0.615	8,233	0.608	0.595	0.622
3	4,616	0.614	0.596	0.632	3,004	0.593	0.570	0.616
Language Comprehension								
K	14,547	0.456	0.443	0.468	19,927	0.552	0.542	0.561
1	25,514	0.589	0.581	0.597	23,887	0.621	0.613	0.629

Grade	Fall–Spring				Winter–Spring			
	N	*r*	95% CI		N	*r*	95% CI	
			Lower	Upper			Lower	Upper
2	12,214	0.479	0.466	0.493	8,233	0.446	0.428	0.463
3	4,616	0.459	0.435	0.481	3,004	0.380	0.349	0.410
Oral Reading Fluency								
1	1,062	0.260	0.203	0.315	3,140	0.355	0.324	0.385
2	4,093	0.418	0.392	0.443	7,184	0.474	0.456	0.491
3	4,814	0.536	0.515	0.556	5,676	0.568	0.550	0.585

5.3. Classification Accuracy

Universal screening is paramount in identifying students at risk for academic difficulty in a response to intervention (RTI) model, the core of which is to provide students with multi-tiered support based on the level of academic risk that students encounter.

One primary component in RTI is assessment. A universal screening assessment in a particular content domain is typically administered multiple times a year. If a student scores below an established benchmark for a given time point, they are considered to be at risk for learning difficulties in that content domain and in need of intervention. For an assessment to be an effective universal screener, aside from the technical adequacy, it is imperative to establish benchmarks through a scientifically designed and evidenced-based process. The benchmarks also need to be explicit as to what level of academic risk they are established to identify (e.g., at *some* risk or at *substantial* risk).

NWEA conducts classification analyses to identify the universal screening cut scores for the Spanish MAP Reading Fluency assessments in accordance with the NCII rating rubrics (NCII, 2025). In the analyses, the concurrent Spanish MAP Growth Reading RIT score served as the criterion measure, and the 40th percentile was used as the criterion cut score. This criterion threshold aligns with the recommended universal screening benchmark for Spanish MAP Growth, as prior MAP Growth research (He & Meyer, 2025) has shown that it effectively identifies students who are likely to score in the bottom 10% on the state summative assessment, a level considered indicative of need for intensive intervention.

The classification analyses evaluated different candidate percentile thresholds (i.e., 10th, 20th, 30th, 40th percentiles) for Spanish MAP Reading Fluency domain scores at each grade and test term against the risk classification on the criterion measure. The analytic sample consisted of students in grades K–3 who completed both the Spanish MAP Reading Fluency assessment and Spanish MAP Growth Reading assessment in the same term during the 2022–2023, 2023–2024, and 2024–2025 school years. Students in this sample came from 29 states, with representation across all 9 geographical divisions defined by U.S. Census Bureau, meeting the NCII criterion of a national sample (NCII, 2025).

The 40th percentile on each Spanish MAP Reading Fluency domain score was selected as the screening threshold based on its superior classification accuracy results across all candidate thresholds. Table 5.3 summarizes classification accuracy results for each Spanish Foundational Skills domain by grade and test window. Area Under the Curve (AUC) values indicate strong discrimination, with values ranging from 0.810 to 0.926 and lower AUC confidence bounds ranging from 0.805 to 0.923. Specificity was consistently high, exceeding 0.822 across all groups. Sensitivity was more variable, with most grade-by-term values near or above 0.700, though a few fall into the low 0.60s. The false positive rate was consistently low, suggesting that the screening

thresholds were generally effective in minimizing the misclassification of students as at risk when they were not. Overall accuracy ranged from 0.726 to 0.889. These results suggest that the 40th percentile Spanish Foundational Skills domain scores are effective in distinguishing between at-risk and not-at-risk students, providing reasonable to strong classification accuracy across grades and test windows while minimizing false positive identifications.

Table 5.3. Classification Accuracy Results of Foundational Skills Domain Scores

Grade	Term	N	AUC	95% CI		Sensitivity	Specificity	False Positive Rate	False Negative Rate	Accuracy
				Lower	Upper					
Phonological Awareness										
K	Fall	9,270	0.833	0.824	0.842	0.746	0.857	0.143	0.254	0.816
	Winter	12,516	0.863	0.856	0.870	0.730	0.895	0.105	0.270	0.833
	Spring	20,601	0.881	0.876	0.886	0.757	0.893	0.107	0.243	0.842
1	Fall	18,988	0.883	0.878	0.888	0.814	0.856	0.144	0.186	0.842
	Winter	21,406	0.896	0.892	0.900	0.780	0.895	0.105	0.220	0.851
	Spring	13,967	0.888	0.882	0.893	0.739	0.914	0.086	0.261	0.823
2	Fall	9,558	0.842	0.834	0.850	0.699	0.879	0.121	0.301	0.806
	Winter	7,896	0.866	0.858	0.874	0.690	0.913	0.087	0.310	0.811
	Spring	5,097	0.868	0.858	0.879	0.671	0.921	0.079	0.329	0.752
3	Fall	3,958	0.863	0.851	0.875	0.669	0.931	0.069	0.331	0.744
	Winter	2,144	0.872	0.854	0.890	0.694	0.927	0.073	0.306	0.742
	Spring	1,926	0.863	0.844	0.883	0.684	0.925	0.075	0.316	0.739
Phonics & Word Recognition										
K	Fall	9,426	0.844	0.835	0.853	0.614	0.934	0.066	0.386	0.832
	Winter	12,849	0.901	0.895	0.906	0.789	0.899	0.101	0.211	0.856
	Spring	21,481	0.921	0.917	0.924	0.832	0.909	0.091	0.168	0.879
1	Fall	19,693	0.921	0.917	0.925	0.882	0.870	0.130	0.118	0.874
	Winter	22,355	0.926	0.923	0.930	0.844	0.918	0.082	0.156	0.889
	Spring	14,583	0.914	0.909	0.919	0.797	0.935	0.065	0.203	0.863
2	Fall	9,907	0.871	0.863	0.879	0.700	0.929	0.071	0.300	0.839
	Winter	8,170	0.895	0.888	0.902	0.729	0.938	0.062	0.271	0.842
	Spring	5,358	0.902	0.893	0.910	0.736	0.941	0.059	0.264	0.800
3	Fall	4,142	0.899	0.889	0.909	0.724	0.955	0.045	0.276	0.789
	Winter	2,298	0.897	0.881	0.913	0.784	0.917	0.083	0.216	0.809
	Spring	2,196	0.914	0.898	0.929	0.861	0.880	0.120	0.139	0.864
Language Comprehension										
K	Fall	9,345	0.857	0.849	0.865	0.826	0.822	0.178	0.174	0.824
	Winter	12,798	0.888	0.881	0.894	0.767	0.906	0.094	0.233	0.853
	Spring	21,106	0.897	0.892	0.901	0.753	0.927	0.073	0.247	0.863
1	Fall	19,721	0.901	0.896	0.906	0.804	0.909	0.091	0.196	0.876
	Winter	21,784	0.898	0.893	0.902	0.750	0.934	0.066	0.250	0.866
	Spring	14,114	0.888	0.882	0.893	0.731	0.939	0.061	0.269	0.833
2	Fall	9,430	0.810	0.805	0.823	0.639	0.891	0.109	0.361	0.793
	Winter	7,831	0.833	0.824	0.843	0.651	0.924	0.076	0.349	0.803
	Spring	5,100	0.857	0.847	0.867	0.663	0.936	0.064	0.337	0.753

Grade	Term	N	AUC	95% CI		Sensitivity	Specificity	False Positive Rate	False Negative Rate	Accuracy
				Lower	Upper					
3	Fall	3,999	0.841	0.828	0.854	0.696	0.909	0.091	0.304	0.754
	Winter	2,113	0.851	0.833	0.869	0.671	0.935	0.065	0.329	0.726
	Spring	1,982	0.877	0.860	0.894	0.726	0.920	0.080	0.274	0.768

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Appendix

Table A. Bootstrapped Marginal Reliability Coefficients by Demographic Subgroup (2022–2025 School Years)

Grade	Demographic Subgroup		Fall				Winter				Spring			
			N	Median	95% CI		N	Median	95% CI		N	Median	95% CI	
					Lower	Upper			Lower	Upper			Lower	Upper
Phonological Awareness														
K	Gender	Female	19,355	0.861	0.858	0.863	19,183	0.873	0.871	0.875	26,106	0.880	0.879	0.882
		Male	18,939	0.871	0.869	0.874	18,949	0.889	0.887	0.891	25,964	0.897	0.895	0.898
	Race/Ethnicity	White	3,514	0.894	0.889	0.898	4,504	0.896	0.893	0.900	5,811	0.892	0.889	0.895
		Hispanic	31,535	0.859	0.857	0.861	30,605	0.877	0.875	0.878	41,171	0.887	0.886	0.889
		African American	413	0.890	0.874	0.901	437	0.904	0.893	0.912	594	0.906	0.897	0.914
		Asian	121†	0.902	0.883	0.918	127†	0.912	0.895	0.925	181†	0.895	0.873	0.910
		American Indian/ Alaska Native	373	0.839	0.813	0.859	382	0.860	0.838	0.878	442	0.892	0.881	0.902
		Not Specified or Other	2,344	0.895	0.890	0.900	2,075	0.902	0.897	0.907	3,873	0.894	0.891	0.898
	English Learner Status	Yes	10,806	0.854	0.851	0.857	9,476	0.872	0.869	0.875	18,200	0.887	0.885	0.889
		No	28,033	0.871	0.869	0.873	29,109	0.885	0.883	0.886	34,101	0.891	0.889	0.892
1	Gender	Female	25,226	0.878	0.876	0.880	25,420	0.875	0.874	0.877	18,140	0.866	0.863	0.868
		Male	25,361	0.897	0.896	0.899	25,890	0.896	0.895	0.897	18,615	0.892	0.890	0.893
	Race/Ethnicity	White	5,368	0.890	0.886	0.893	6,125	0.880	0.876	0.883	4,101	0.875	0.870	0.879
		Hispanic	40,896	0.887	0.886	0.888	41,501	0.887	0.886	0.888	28,713	0.879	0.878	0.881
		African American	560	0.904	0.895	0.911	484	0.909	0.899	0.917	473	0.901	0.890	0.910
		Asian	162	0.912	0.897	0.924	140†	0.894	0.869	0.911	114†	0.887	0.853	0.911
		American Indian/ Alaska Native	608	0.882	0.871	0.893	670	0.876	0.865	0.887	401	0.873	0.855	0.886
		Not Specified or Other	3,000	0.898	0.894	0.902	2,401	0.888	0.884	0.893	2,959	0.881	0.876	0.885
	English Learner Status	Yes	14,694	0.884	0.882	0.886	11,681	0.881	0.878	0.883	11,393	0.878	0.875	0.880
		No	36,566	0.891	0.890	0.892	40,446	0.888	0.887	0.890	25,623	0.881	0.879	0.883
2	Gender	Female	15,979	0.864	0.862	0.867	11,600	0.859	0.856	0.862	8,779	0.863	0.860	0.866
		Male	16,534	0.893	0.891	0.895	12,350	0.889	0.886	0.891	9,687	0.894	0.891	0.896

Grade	Demographic Subgroup		Fall				Winter				Spring			
			N	Median	95% CI		N	Median	95% CI		N	Median	95% CI	
					Lower	Upper			Lower	Upper			Lower	Upper
	Race/Ethnicity	White	3,562	0.873	0.867	0.878	2,314	0.873	0.866	0.879	2,068	0.870	0.863	0.876
		Hispanic	26,363	0.880	0.878	0.882	20,077	0.876	0.874	0.878	14,310	0.882	0.879	0.884
		African American	409	0.905	0.896	0.914	267	0.894	0.879	0.907	311	0.895	0.881	0.905
		Asian	100†	0.885	0.853	0.906	39†	0.849	0.746	0.906	60†	0.883	0.829	0.916
		American Indian/ Alaska Native	411	0.869	0.852	0.883	217	0.874	0.850	0.893	180	0.889	0.864	0.907
		Not Specified or Other	1,676	0.880	0.873	0.886	1,035	0.878	0.869	0.887	1,541	0.875	0.867	0.883
	English Learner Status	Yes	10,483	0.882	0.880	0.885	9,169	0.871	0.868	0.874	6,131	0.884	0.880	0.888
		No	22,444	0.880	0.878	0.881	15,018	0.879	0.876	0.881	12,415	0.879	0.876	0.881
3	Gender	Female	5,030	0.853	0.848	0.858	2,522	0.863	0.856	0.869	2,186	0.867	0.860	0.873
		Male	5,482	0.886	0.882	0.889	3,027	0.889	0.884	0.893	2,700	0.894	0.890	0.899
	Race/Ethnicity	White	1,146	0.862	0.852	0.872	896	0.871	0.859	0.882	674	0.877	0.865	0.888
		Hispanic	8,424	0.872	0.869	0.876	4,167	0.878	0.873	0.882	3,588	0.884	0.879	0.888
		African American	142†	0.891	0.864	0.909	95†	0.891	0.866	0.909	113†	0.899	0.875	0.918
		Asian	42†	0.897	0.833	0.928	14†	0.890	0.778	0.925	26†	0.914	0.864	0.940
		American Indian/ Alaska Native	136	0.862	0.827	0.887	88	0.871	0.827	0.902	42	0.848	0.764	0.894
		Not Specified or Other	639	0.866	0.853	0.879	289	0.884	0.870	0.896	447	0.874	0.861	0.885
	English Learner Status	Yes	4,193	0.871	0.866	0.876	2,248	0.877	0.870	0.883	2,053	0.878	0.871	0.884
		No	6,485	0.873	0.869	0.877	3,363	0.878	0.873	0.883	2,863	0.886	0.881	0.892
Phonics & Word Recognition														
K	Gender	Female	19,356	0.900	0.897	0.902	19,183	0.933	0.932	0.934	26,106	0.933	0.933	0.934
		Male	18,939	0.906	0.903	0.908	18,949	0.938	0.937	0.939	25,964	0.942	0.942	0.943
	Race/Ethnicity	White	3,514	0.900	0.893	0.906	4,504	0.932	0.929	0.934	5,811	0.932	0.931	0.934
		Hispanic	31,536	0.900	0.898	0.902	30,605	0.936	0.935	0.937	41,171	0.939	0.939	0.940
		African American	413	0.859	0.840	0.876	437	0.913	0.900	0.922	594	0.929	0.923	0.935
		Asian	121†	0.902	0.866	0.927	127†	0.914	0.892	0.931	181	0.910	0.892	0.924

Grade	Demographic Subgroup		Fall				Winter				Spring			
			N	Median	95% CI		N	Median	95% CI		N	Median	95% CI	
					Lower	Upper			Lower	Upper			Lower	Upper
		American Indian/ Alaska Native	373	0.902	0.879	0.918	382	0.935	0.926	0.941	442	0.942	0.937	0.946
		Not Specified or Other	2,344	0.931	0.927	0.936	2,075	0.938	0.935	0.940	3,873	0.935	0.933	0.937
	English Learner Status	Yes	10,806	0.896	0.892	0.900	9,476	0.933	0.932	0.935	18,200	0.940	0.939	0.941
		No	28,034	0.905	0.903	0.907	29,109	0.936	0.936	0.937	34,101	0.937	0.937	0.938
1	Gender	Female	25,226	0.940	0.939	0.940	25,420	0.923	0.922	0.924	18,140	0.914	0.912	0.915
		Male	25,362	0.950	0.949	0.950	25,890	0.941	0.940	0.941	18,615	0.933	0.932	0.934
	Race/Ethnicity	White	5,368	0.937	0.935	0.938	6,125	0.927	0.925	0.929	4,101	0.921	0.917	0.924
		Hispanic	40,897	0.946	0.946	0.947	41,501	0.934	0.933	0.934	28,713	0.925	0.924	0.926
		African American	560	0.935	0.928	0.940	484	0.936	0.930	0.942	473	0.918	0.906	0.928
		Asian	162	0.925	0.906	0.937	140†	0.922	0.900	0.938	114†	0.913	0.881	0.935
		American Indian/ Alaska Native	608	0.944	0.939	0.947	670	0.928	0.920	0.934	401	0.932	0.924	0.939
		Not Specified or Other	3,000	0.946	0.944	0.947	2,401	0.930	0.926	0.933	2,959	0.915	0.911	0.919
	English Learner Status	Yes	14,694	0.946	0.945	0.947	11,681	0.932	0.931	0.934	11,393	0.926	0.924	0.928
		No	36,567	0.945	0.945	0.946	40,446	0.933	0.933	0.934	25,623	0.924	0.922	0.925
2	Gender	Female	15,979	0.913	0.912	0.915	11,601	0.910	0.907	0.912	8,779	0.906	0.903	0.909
		Male	16,534	0.937	0.936	0.939	12,350	0.935	0.933	0.936	9,687	0.933	0.931	0.934
	Race/Ethnicity	White	3,562	0.912	0.908	0.916	2,314	0.918	0.914	0.922	2,068	0.916	0.910	0.921
		Hispanic	26,363	0.928	0.927	0.929	20,078	0.925	0.924	0.926	14,310	0.924	0.922	0.925
		African American	409	0.932	0.923	0.940	267	0.901	0.877	0.918	311	0.894	0.875	0.910
		Asian	100†	0.923	0.900	0.938	39†	0.858	0.772	0.896	60†	0.902	0.858	0.929
		American Indian/ Alaska Native	411	0.928	0.918	0.936	217	0.917	0.900	0.930	180	0.919	0.902	0.932
		Not Specified or Other	1,676	0.925	0.919	0.929	1,035	0.914	0.906	0.921	1,541	0.909	0.902	0.915
	English Learner Status	Yes	10,483	0.927	0.925	0.929	9,170	0.926	0.924	0.928	6,131	0.927	0.925	0.929
		No	22,444	0.927	0.926	0.929	15,018	0.923	0.921	0.925	12,415	0.919	0.917	0.920

Grade	Demographic Subgroup		Fall				Winter				Spring			
			N	Median	95% CI		N	Median	95% CI		N	Median	95% CI	
					Lower	Upper			Lower	Upper			Lower	Upper
3	Gender	Female	5,030	0.901	0.897	0.905	2,522	0.907	0.902	0.912	2,186	0.913	0.909	0.918
		Male	5,482	0.925	0.922	0.928	3,027	0.929	0.925	0.932	2,700	0.932	0.928	0.935
	Race/Ethnicity	White	1,146	0.897	0.887	0.906	896	0.902	0.894	0.910	674	0.911	0.902	0.919
		Hispanic	8,424	0.917	0.915	0.920	4,167	0.923	0.920	0.926	3,588	0.927	0.923	0.930
		African American	142†	0.920	0.893	0.935	95†	0.926	0.898	0.945	113†	0.916	0.875	0.942
		Asian	42†	0.884	0.795	0.922	14†	0.607	0.120	0.776	26†	0.903	0.832	0.930
		American Indian/ Alaska Native	136†	0.882	0.843	0.910	88†	0.904	0.867	0.928	42†	0.887	0.832	0.918
		Not Specified or Other	639	0.889	0.875	0.900	289	0.916	0.901	0.926	447	0.908	0.895	0.919
	English Learner Status	Yes	4,193	0.919	0.915	0.922	2,248	0.926	0.922	0.930	2,053	0.928	0.923	0.932
		No	6,485	0.912	0.909	0.915	3,363	0.916	0.912	0.919	2,863	0.921	0.917	0.924
Language Comprehension														
K	Gender	Female	19,356	0.792	0.789	0.796	19,183	0.820	0.818	0.823	26,106	0.822	0.819	0.824
		Male	18,939	0.783	0.779	0.787	18,949	0.826	0.824	0.829	25,964	0.836	0.834	0.838
	Race/Ethnicity	White	3,514	0.786	0.775	0.795	4,504	0.827	0.821	0.833	5,811	0.827	0.822	0.832
		Hispanic	31,536	0.782	0.779	0.785	30,605	0.818	0.816	0.820	41,171	0.823	0.821	0.825
		African American	413	0.614	0.521	0.676	437	0.712	0.650	0.763	594	0.756	0.721	0.783
		Asian	121†	0.591	0.373	0.732	127†	0.690	0.586	0.749	181†	0.747	0.672	0.802
		American Indian/ Alaska Native	373	0.771	0.736	0.800	382	0.816	0.793	0.836	442	0.833	0.817	0.846
		Not Specified or Other	2,344	0.832	0.824	0.839	2,075	0.858	0.852	0.863	3,873	0.848	0.844	0.852
	English Learner Status	Yes	10,806	0.779	0.773	0.784	9,476	0.816	0.812	0.820	18,200	0.815	0.812	0.818
		No	28,034	0.792	0.789	0.795	29,109	0.827	0.825	0.829	34,101	0.835	0.833	0.837
1	Gender	Female	25,226	0.829	0.827	0.832	25,420	0.804	0.801	0.807	18,140	0.800	0.797	0.803
		Male	25,362	0.841	0.839	0.843	25,890	0.829	0.827	0.831	18,615	0.825	0.822	0.827
	Race/Ethnicity	White	5,368	0.839	0.835	0.843	6,125	0.825	0.821	0.829	4,101	0.822	0.816	0.827
		Hispanic	40,897	0.830	0.828	0.832	41,501	0.812	0.809	0.814	28,713	0.806	0.803	0.809

Grade	Demographic Subgroup		Fall				Winter				Spring			
			N	Median	95% CI		N	Median	95% CI		N	Median	95% CI	
					Lower	Upper			Lower	Upper			Lower	Upper
		African American	560	0.791	0.755	0.819	484	0.822	0.800	0.841	473	0.796	0.764	0.821
		Asian	162	0.722	0.656	0.773	140†	0.814	0.769	0.842	114†	0.814	0.761	0.849
		American Indian/ Alaska Native	608	0.819	0.802	0.834	670	0.790	0.766	0.809	401	0.802	0.780	0.821
		Not Specified or Other	3,000	0.860	0.856	0.864	2,401	0.843	0.837	0.849	2,959	0.821	0.816	0.827
	English Learner Status	Yes	14,694	0.820	0.817	0.823	11,681	0.802	0.798	0.806	11,393	0.793	0.788	0.797
		No	36,567	0.840	0.839	0.842	40,446	0.822	0.820	0.824	25,623	0.821	0.819	0.823
2	Gender	Female	15,979	0.811	0.807	0.814	11,601	0.786	0.782	0.791	8,779	0.792	0.788	0.797
		Male	16,534	0.827	0.824	0.829	12,350	0.817	0.814	0.821	9,687	0.826	0.822	0.829
	Race/Ethnicity	White	3,562	0.835	0.829	0.840	2,314	0.833	0.826	0.839	2,068	0.825	0.818	0.832
		Hispanic	26,363	0.812	0.810	0.815	20,078	0.793	0.789	0.797	14,310	0.803	0.799	0.806
		African American	409	0.784	0.749	0.812	267	0.738	0.690	0.776	311	0.799	0.754	0.830
		Asian	100†	0.813	0.758	0.848	39†	0.682	0.484	0.789	60†	0.770	0.664	0.827
		American Indian/ Alaska Native	411	0.795	0.771	0.815	217	0.779	0.736	0.811	180	0.809	0.771	0.835
		Not Specified or Other	1,676	0.833	0.825	0.840	1,035	0.823	0.811	0.832	1,541	0.811	0.800	0.820
	English Learner Status	Yes	10,483	0.793	0.788	0.797	9,170	0.774	0.767	0.779	6,131	0.792	0.786	0.798
		No	22,444	0.828	0.825	0.830	15,018	0.816	0.813	0.819	12,415	0.820	0.817	0.823
3	Gender	Female	5,030	0.798	0.791	0.805	2,522	0.789	0.778	0.798	2,186	0.810	0.802	0.818
		Male	5,482	0.823	0.818	0.828	3,027	0.826	0.819	0.832	2,700	0.836	0.831	0.842
	Race/Ethnicity	White	1,146	0.832	0.821	0.841	896	0.829	0.818	0.838	674	0.847	0.836	0.856
		Hispanic	8,424	0.803	0.798	0.808	4,167	0.801	0.793	0.807	3,588	0.811	0.805	0.817
		African American	142†	0.770	0.711	0.810	95†	0.782	0.679	0.835	113†	0.734	0.654	0.786
		Asian	42†	0.695	0.536	0.778	14†	0.638	0.257	0.767	26†	0.718	0.532	0.805
		American Indian/ Alaska Native	136†	0.722	0.661	0.770	88†	0.823	0.759	0.861	42†	0.832	0.605	0.895

Grade	Demographic Subgroup		Fall				Winter				Spring			
			N	Median	95% CI		N	Median	95% CI		N	Median	95% CI	
					Lower	Upper			Lower	Upper			Lower	Upper
		Not Specified or Other	639	0.814	0.798	0.828	289	0.786	0.754	0.809	447	0.809	0.786	0.826
	English Learner Status	Yes	4,193	0.772	0.763	0.780	2,248	0.775	0.765	0.786	2,053	0.784	0.772	0.794
		No	6,485	0.828	0.824	0.833	3,363	0.828	0.822	0.833	2,863	0.843	0.837	0.847

† N <150