



Reading
Fluency

Spanish MAP Reading Fluency Content Guide

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Chapter 1: Introduction

This document documents 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.

1.1. Spanish MAP Reading Fluency Overview

Students take a 20-minute benchmark assessment 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, a narrator 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 to get started. Then they read sentences silently and identify a matching picture, which gauges if the student is ready to read passages. If so, they read up to three passages out loud (although they are evaluated on only two). 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 results appearing in the educator reporting site. For each student, the test provides the following results: proficiency relative to grade-level expectations, individualized literacy profile, and recommended next steps.

For students who are not ready for passages, the foundational skills 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 to grade-level expectations and reported as *Exceeds Expectation*, *Meets Expectation*, *Approaching Expectation*, or *Below Expectation*. For students who read the passages, the report shows the words correct per minute (WCPM)², decoding accuracy, and passage comprehension scores. Teachers can also play back the audio recording for further evaluation. Student oral reading fluency performance is also compared to grade-level expectations and is reported as *Exceeds Expectation*, *Meets Expectation*, *Approaching Expectation*, or *Below Expectation*.

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

² The Spanish report shows raw WCPM, unlike the English report that shows scaled WCPM (SWCPM).

1.2. Background

English MAP Reading Fluency 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 challenging texts with excellent comprehension, 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 (Shanahan & Lonigan, 2010; Jenkins et al., 2003). 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., sounds as written), whereas English orthography is much more opaque. Consequently, Foundational Skills measures for Spanish focus predominantly on the syllable rather than on phonemes as in English.

The key foundational reading skill is automatic word reading. In an alphabetic language, this 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. It is moderately to strongly supported by both print concepts and oral language comprehension (Shanahan & Lonigan, 2010). 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 (Wayman et al., 2007; Jenkins 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 accuracy scores are useful in instructional decisions but that this use is lost when they are subsumed into the WCPM score alone (Valencia et al., 2010; García & Cain, 2014).

Researchers have long warned about 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 (Newman, 2009; Deeney, 2010).

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., RAND Reading Study Group, 2002; Common Core State Standards Initiative, 2010; Common

Core State Standards Spanish Version, 2013). 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 (Samuels, 2007; Lipson & Wixson, 2012). 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 by 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 to a general grade-level expectation. While 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. With this in mind, 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, then mark a quick semantic judgement. Examples include the Woodcock Johnson's 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 a 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). 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 the University of Texas Austin Building RTI project.

1.3.3. Gauging Improvements in Oral Reading

When 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, WCPM, accuracy, and low-level comprehension are scored automatically, and prosody is rated by a teacher where of interest 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.

Chapter 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 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 English, when decoding is weak, even a student with excellent oral language comprehension cannot fully comprehend the text. While both decoding and language comprehension play a role in Spanish as well, the better predictor of passage comprehension is not decoding accuracy but decoding rate, or fluency. This seems to be a function of the transparent orthography of Spanish, as decoding tends to develop more rapidly than in languages with opaque orthographies, such as English (Tapia, 2016).

Spanish MAP Reading Fluency aligns all the decoding, language comprehension, and fluency measures to the CCSS en español. 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, whereas alignment to other states' standards is documented elsewhere.

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 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. The 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 Measures 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

Domain	Measure	Code	Duration
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
	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*	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

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

2.2. Test Forms

As shown in Table 2.2, Spanish MAP Reading Fluency provides different forms to meet the varied needs of users.³ The default MAP Reading Fluency test form is Adaptive Oral Reading that routes students to the Oral Reading Fluency track if they are ready to read passages or to the Foundational Skills track if they are not. Teachers can also choose a specific form such as Foundational Skills only or passages only. These forms largely draw on 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.

On the passage track of the Adaptive Oral Reading form and on the Passages Only form, students receive up to three passages, each with six comprehension items. The third passage, if administered, is a field test passage. The test pulls items randomly from the measure's item pool for all Foundational Skills measures. Most measures are speeded 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 speeded 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 that is not speeded. 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.

³ 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).

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. Directs students into either oral reading fluency and comprehension or foundational skills. 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 in the skill progressions for phonics and phonological awareness, plus print concepts. This test is intended for fall testing of Pre-K students and 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 to either Oral Reading Fluency with passages or to Foundational Skills based on their performance at the beginning of the assessment. Both formats present content adaptively and present the same measures, with the exception of the Oral Reading measures, which are only on the Oral Reading Fluency forms, and Print Concepts, which is only on the Foundational Skills–Beginner form.

To start the assessment, all students read a picture book or graphic novel and complete the two-minute Sentence Reading Fluency measure, the routing test for all Adaptive Oral Reading forms. A threshold raw score (15 or more) and accuracy rate (75% or more) for Sentence Reading Fluency must be obtained to proceed to Oral Reading: Passages and Comprehension Quiz⁴, with the exception of Grade 4+ students who will always proceed to Oral Reading: Passages and Comprehension Quiz. Students performing below this threshold are presented instead with decoding and language comprehension measures in the Foundational Skills track.

Students routed to the passage track receive up to three passages, each with six comprehension items. For students in Pre-K to Grade 1 routed to the passage track, a third field test passage is not administered if the student did not pass the basic comprehension quiz for either of the first two passages ($\leq 66\%$ correct). In that case, language comprehension measures are administered instead. No Foundational Skills student takes all the Foundational Skills measures. Each Foundational Skills test event includes a subset of measures in Phonological Awareness and Phonics & Word Recognition, selected adaptively based on performance within a progression of skills.

⁴ The Sentence Reading Fluency cut point is in revision based on classification accuracy analysis.

2.3. Phonological Awareness

Early learners' phonemic 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 & 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 syllable awareness figures more prominently in predicting Spanish literacy. Students progress from first discriminating syllables to discriminating syllable parts before they develop the ability to distinguish and manipulate phonemes. 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 shown in Table 2.3.

Table 2.3. Phonological Awareness Progression

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

*Transitional level. The progression from measuring syllables first and then phonemes is meant to move from easier to harder within the same level. This is an indicator for teachers to see if the student is ready to move on to blending and segmenting phonemes.

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 terms of predicting success in Spanish reading development has been mixed, but it indicates sensitivity to rhyming as developing early in the progression of phonological awareness (Denton et al., 2000; Moats & Tolman, 2009). Spanish-speaking children who have had instruction on the alphabet seem to progress from syllable awareness first, then to onset and rime awareness, and lastly 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 one syllable and may differ at the phoneme level (e.g., *queso, yeso*) or at the syllable level (e.g., *botella, estrella*). Recognizing rhyming words is therefore a step toward working with syllable blending and syllable and phoneme segmentation. Rhyme sensitivity strongly predicts later development of phonemic sensitivity (Anthony & Francis, 2005). For Spanish-speaking children, these abilities occur in earlier stages of reading development than for their English-speaking peers and do not distinguish good from poor readers at the Grade 1 level and beyond, as these skills may be acquired even prior to reading development. (Carrillo, 1994).

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 kindergarten students. Any that were not clearly depictable by a simple illustration are rejected. Score is correct selections over 2 minutes.
Item Pool	Up to 20 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)

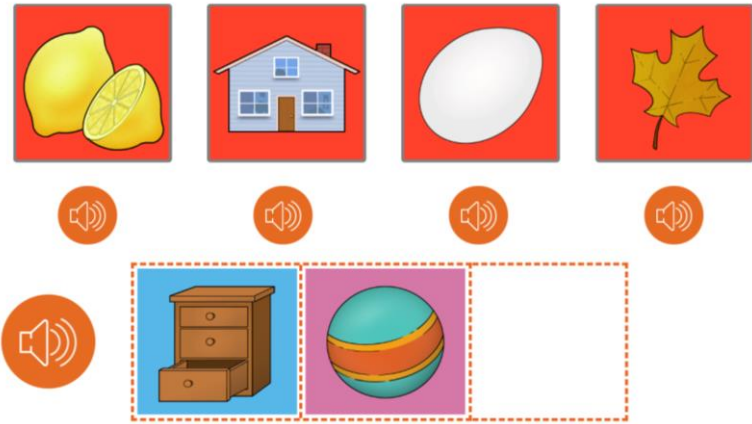
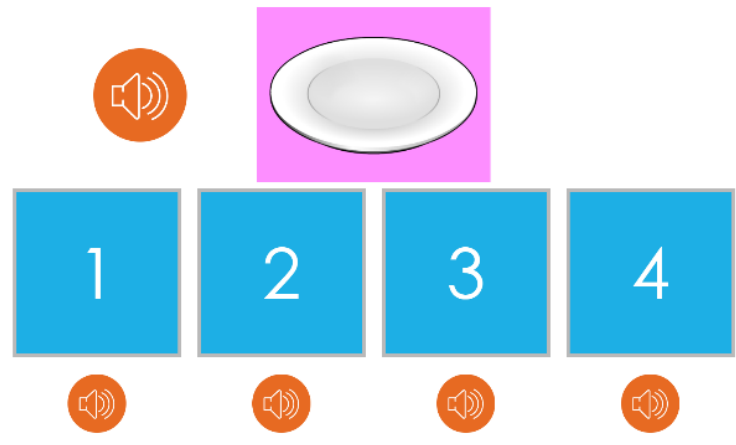
<p>Seleccionar Palabras que Riman</p> <p>Rhyme Completion</p>	<p>Listen to two words that rhyme. Choose the third word that completes the rhyme.</p>	
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Table 2.5. Specifications—Contar Sílabas (Counting Syllables)

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 35 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)

<p>Contar Sílabas</p> <p>Counting Syllables</p>	<p>Listen to a word. Count the syllables and choose the number that corresponds.</p>	
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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).

For Spanish, the sublexical unit of interest is the syllable, and research into syllabic sensitivity in Spanish has found syllabic awareness to be a strong predictor of successful reading prior to formal reading instruction (Fumagalli & Jaichenco, 2009). Spanish-speaking children also move from the larger word unit to syllables, then to smaller sound units. Research in Spanish has found that syllable awareness is easier than phoneme awareness in reading development (Goikoetxea, 2005) and, although there is evidence that this awareness of individual phonemes is advanced, it might develop earlier in the reading development process, perhaps even prior to being able to read (Carrillo, 1994).

Blending is generally 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 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 not be as relevant 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 the most 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 (e.g., 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)

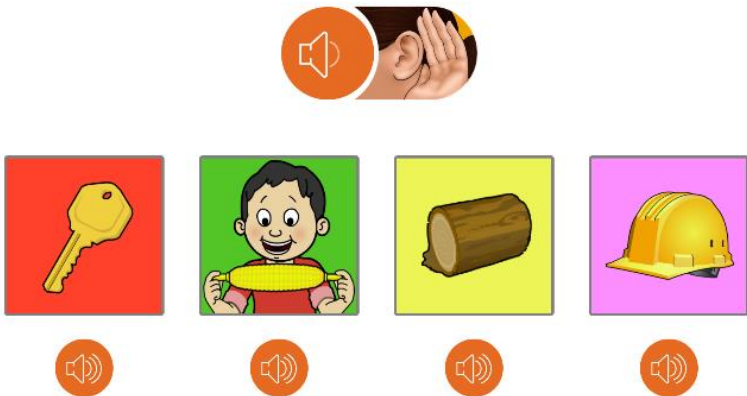
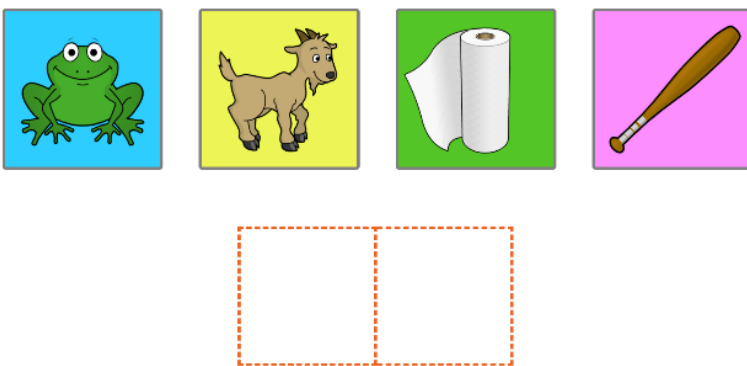
<p>Combinar Sílabas</p> <p>Syllable Blending</p>	<p>Listen to a set of syllables that comprise a word. Blend the syllables together and choose the image.</p>	
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Table 2.7. Specifications—Reconocer Sonido Inicial (Initial Sound Matching)

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 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 30 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)

<p>Reconocer Sonido Inicial</p> <p>Initial Sound Matching</p>	<p>Listen to four words. Choose the two that begin with the same sound.</p>	
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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 (e.g., 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 digraph phonemes. 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 32 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)

<p>Combinar Fonemas</p> <p>Phoneme Blending</p>	<p>Listen to four separated phonemes. Blend the sounds together and choose the image of the word.</p>	
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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 35 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)

<p>Segmentar y Contar Fonemas</p> <p>Segment & Count Phonemes</p>	<p>Listen to a word. Isolate the phonemes, count them, and choose the number that corresponds.</p>	
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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 last-developing skills in the progression of phonological awareness: phoneme addition, phoneme deletion, phoneme substitution (Anthony & Francis, 2005; Gillon, 2017), and syllable deletion (Adrian 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).

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 37 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)

<p>Agregar / Sustraer Sílabas</p> <p>Syllable Addition/ Deletion</p>	<p>Listen to a word and add or subtract a syllable. Choose the image for the new word.</p>	
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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 30 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)

<p>Sustituir Fonemas</p> <p>Phoneme Substitution</p>	<p>Listen to a word. Change the specified sound and choose the new word.</p>	
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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 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 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.

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 <i>Measures letter identification knowledge</i>	Words' Initial Letters <i>Measures letter sound decoding skills</i>	Decoding: Beginning Words <i>Measures early word decoding skills</i>	Decoding: Multi-Syllable Words <i>Measures more complex word decoding skills</i>
Letter-Sound Fluency <i>Measures letter sound correspondence knowledge</i>	Building Words: One Syllable Missing <i>Measures early word encoding skills</i>	Building Words: Two Syllables Missing <i>Measures intermediate word encoding skills</i>	Building Words: All Syllables Missing <i>Measures complex word encoding skills</i>

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., 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 the 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)



<p>Reconocer Letras</p> <p>Letter Knowledge</p>	<p>Choose the named letter.</p>	 <p>N T R L</p> <p>A X D S</p>
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Table 2.14. Specifications—Fluidez de Asociación Letra-Sonido (Letter-Sound Fluency)

Code	103
Specifications	<p>Each item presents in audio the sound of a letter and an example word beginning with that sound (e.g., /f/, as in <i>familia</i>). 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.</p>
Item Pool	Up to 25 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	<p>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.</p> <p>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>i</i>.</p>

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

<p>Fluidez de Asociación Letra-Sonido</p> <p>Letter-Sound Fluency</p>	<p>Listen to an isolated sound and a word that starts with it. Choose the letter that makes the sound.</p>	 <p>f j m o</p> <p>v u k x</p>
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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 sound-letter 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, 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 25 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).

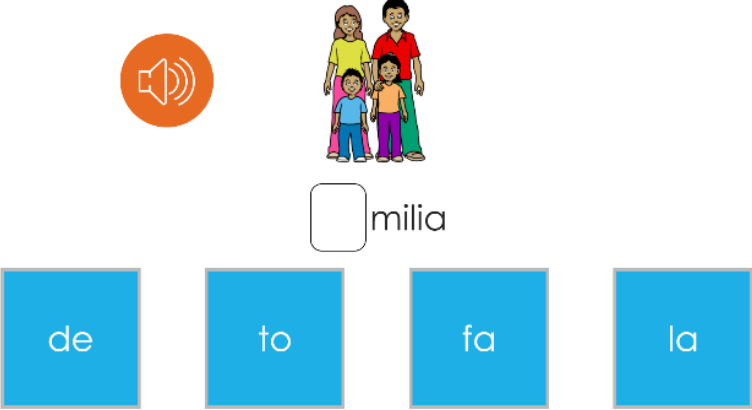
Figure 2.11. Sample Item— Letras Iniciales de la Palabra (Words' Initial Letters)

<p>Letras Iniciales de la Palabra</p> <p>Words' Initial Letters</p>	<p>Look at two words, one paired with a picture. Decode the word and identify the correct image of the unpaired word.</p>	
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Table 2.16. Specifications— Construir Palabras: Completar Una Sílabla (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 to the word. 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 35 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 Sílabla (Building Words: One Syllable Missing)

<p>Construir Palabras: Completar Una Sílabla</p> <p>Building Words: One Syllable Missing</p>	<p>Listen to a word and complete its spelling by choosing a syllable.</p>	
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2.4.3. Level 3: Beginning Words

In English, words with the 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 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 <i>casa</i> , other illustrations might show <i>capa</i> or <i>caja</i> . 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 35 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)

<p>Lectura Silenciosa de Palabras: Palabras Básicas</p> <p>Decoding: Beginning Words</p>	<p>Decode the onscreen word and choose the picture that matches.</p>	<p>casa</p>
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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 box completions per minute.
Item Pool	Up to 35 items presented in random order, each with two 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 2.14. Sample Item—Construir Palabras: Completar Dos Sílabas (Building Words: Two Syllables Missing)

<p>Construir Palabras: Completar Dos Sílabas</p> <p>Building Words: Two Syllables Missing</p>	<p>Listen to a word and complete its spelling by choosing a syllable for each box.</p>	
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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 Multi-Silábicas (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 35 items presented in random order
Duration	1 minute, speeded
CCSS en español Alignment	LF.2.3.c – Decodifican palabras multisilábicas.

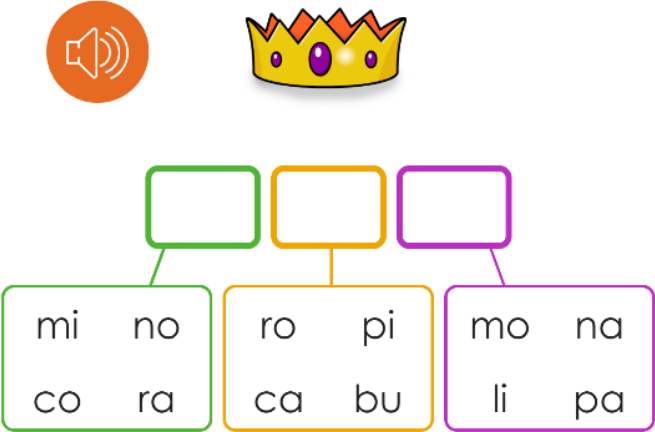
Figure 2.15. Sample Item—Lectura Silenciosa de Palabras: Palabras Multi-Silábicas (Decoding: Multi-Syllable Words)

<p>Lectura Silenciosa de Palabras: Palabras Multi-Silábicas</p> <p>Decoding: Multi-Syllable Words</p>	<p>Decode the onscreen word and choose the picture that matches.</p>	<p>manzana</p>
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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 35 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)

<p>Construir Palabras: Completar Todas las Sílabas</p> <p>Building Words: All Syllables Missing</p>	<p>Listen to a word and complete its spelling by choosing a syllable for each box.</p>	
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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, then mark a quick semantic judgement (such as the Woodcock-Muñoz’s 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.

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 count ranging from 3–7 words. Score is correct selections over 2 minutes.
Item Pool	Up to 25 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.

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

<p>Lectura Silenciosa de Oraciones: Reconocer la Imagen</p> <p>Sentence Reading Fluency</p>	<p>Choose the picture that matches the onscreen sentence.</p>	<p>La abeja está en la taza.</p> 
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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 de 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 Grade K and Grade 1 separately, 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 20
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.

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



2.6.2. Listening Comprehension

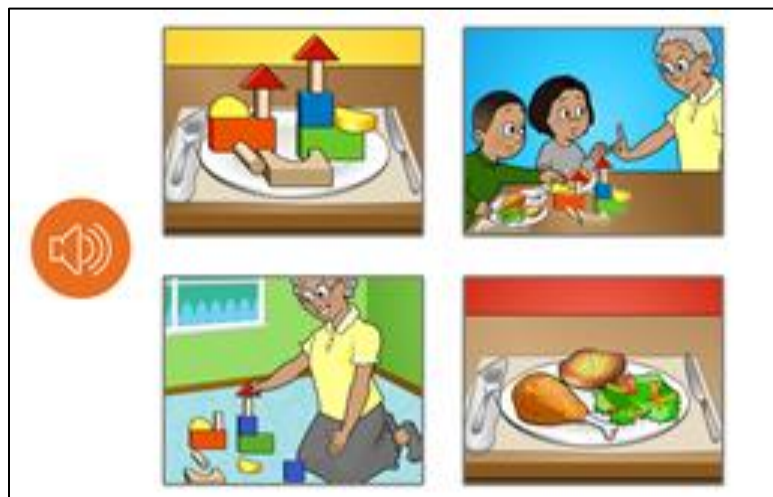
Language comprehension has been found to play a bigger role in later literacy achievement when it is measured using more complex measures that include grammar, the ability to define words, and listening comprehension than when measured using only simple vocabulary knowledge (Shanahan & Lonigan, 2010). 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. Researchers have found that syntactic awareness predicts passage comprehension (Catts, et al., 2006; Mokhtari & Thompson, 2006; Nagy, 2007) and that students of English as a second language (ESL) tend to have deficits in syntactic awareness or grammatical sensitivity in relation to their non-ESL peers (Siegel, 2004). Foorman et al. (2015) found that syntax, focusing on the sentence level, was a necessary component in a broader oral language factor that explained substantial variability in passage comprehension for Grades K–2.

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., <i>porque</i> , <i>si</i>), 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 form a pool of 20
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)



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 Spanish Version, 2013, Kindergarten, p. 7).⁵ Included are basic book skills like knowing where the cover is; concepts of word, including the understanding that print 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 (e.g., Clay, 1989). Questions for the student are presented. After the student answers by touching part of the page (e.g., “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).

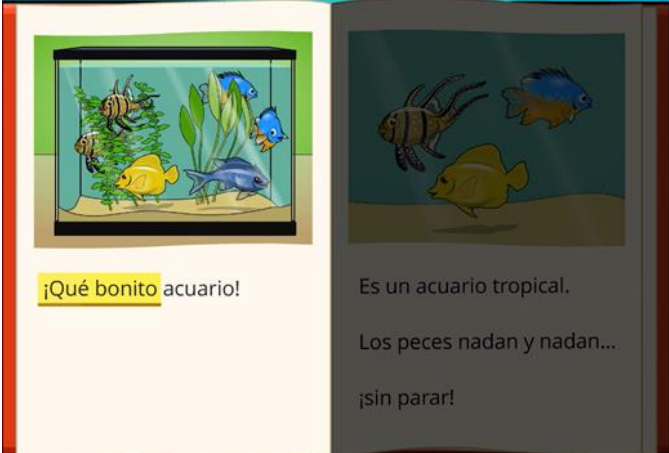
Table 2.24. Specifications—Conceptos de Material Impreso (Print Concepts)

Code	131–136
Specifications	Students choose the front cover of a book 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.

⁵ 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).

Item Pool	6 items within one storybook; 6 storybooks in pool
Duration	Untimed
CCSS en español Alignments	<p>K.LF.1.a – a. Siguen las palabras de izquierda a derecha, de arriba hacia abajo y página por página.</p> <p>K.LF.1.b – Reconocen que el lenguaje oral (palabras habladas) se representa en el lenguaje escrito mediante secuencias específicas de letras.</p> <p>K.LF.1.c – Entienden que las palabras se separan por espacios en blanco en los materiales impresos.</p>

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

<p>Conceptos de Material Impreso</p> <p>Print Concepts</p>	<p>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.</p>	
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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' response 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). 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). 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).

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 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 for age-appropriate content, form, and tone. Oral reading samples from the picture books are automatically scored for WCPM and accuracy. Human scoring for prosody is available via audio playback.

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

Code	113
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 for age-appropriate content, form, and tone. Oral reading samples from the graphic novel formatted stories are automatically scored for WCPM 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

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
El álbum de Gaby	250L	48
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 WCPM and accuracy. Comprehension is reported as percent correct.

Figure 2.23. Sample Passage

<p>¡Por fin llegó el domingo! Voy al parque de diversiones con mi familia y otros amigos. ¡Es mi primera vez! Todos tenemos nuestros boletos listos.</p> <p>En el parque hay juegos, luces de colores, globos y comida. Hay mucha gente también. Es verano y hoy hace mucho calor.</p> <p>¡Hay tantos juegos mecánicos! No es fácil decidir. Mi hermana Paty y yo vamos a los carritos que chocan. ¡Es divertido! ¡Chocamos todo el tiempo! Rita y Paco se suben al carrusel. En el parque hay muchos juegos que dan vueltas. Mamá y yo nos subimos a las tazas locas. ¡Casi me mareo!</p>	<p>Ahora estamos listos para un paseo. Todos nos subimos a un tren que nos lleva por todo el parque.</p> <p>Al final, vamos a la montaña rusa. La fila es muy larga. Mientras espero, veo la montaña. Es muy alta, ¡pero no tengo miedo! Yo me subo con papá, Paty se sube con mamá, y Rita y Paco se suben juntos. Todos gritamos, pero lo pasamos muy bien.</p> <p>Me encantó el parque de diversiones. Es hora de regresar a casa, ¡pero quiero volver pronto!</p>
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Figure 2.24. Sample Item—Comprensión de Texto (Oral Reading: Passage Comprehension Quiz)

¿Qué foto muestra quién se sube a las tazas locas?

Cuando los personajes están en la fila juntos, ¿qué esperan?

el carrusel

los boletos

la montaña rusa

la comida

2.9. 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 according to specific qualitative and quantitative criteria by NWEA content specialists:

- The passage is well written and engaging.
- The passage is age appropriate.
- The passage is free of bias, sensitivity, and fairness concerns.
- The passages focus on a variety of topics, including narrative and informational.
- 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).
- The passage fits onscreen without necessitating scrolling, with sufficient font size.
- The passage fits within a target Lexile measure.

In the second stage of passage review, NWEA publishing professionals reviewed passages for errors in grammar, usage, and mechanics; for 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® Text Measure	Word Count
El jardín de Lola	140	117
El tucán	140	148
Un día perfecto	160	129
¿Ves a quien veo?	200	199
Haciendo tamales	200	134
Una mascota para Lili	260	192
Vamos a la playa	290	150
Nuestro fuerte	300	179
A jugar fútbol	330	152
Todo sobre los cometas	340	172
Una tarde de deportes	360	189
La clase de arte	360	152
Objetos perdidos	380	185
Mauricio anda en bici	400	186
Cómo se forman las perlas	430	193
El canto del grillo	430	173
Cecilia y Plutón	510	209
Los topos	520	221
Trato hecho	520	203
El unicornio del mar	520	187
La piñata	570	223
Los cascarones	650	175
Mi mascota, León	680	183
Los altos saguaros	690	166
Limonada	700	180
La Noche de Rábanos	760	181
Los pulpos	780	173

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