MASSACHUSETTS
DYSLEXIA GUIDELINES

MASSACHUSETTS DEPARTMENT OF
ELEMENTARY AND SECONDARY
EDUCATION

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Foreward

I am excited to share the much anticipated Massachusetts Dyslexia Guidelines, co-developed by the Departments of Elementary and Secondary Education and Early Education and Care, to implement specific requirements of An Act Relative to Students with Dyslexia, Chapter 272 of the Acts of 2018. Chapter 272 was enacted in October 2018 and took effect on January 17, 2019, amending Chapter 71 of the Massachusetts General Laws to add the following provision:

> Section 57A. The department of elementary and secondary education, in consultation with the department of early education and care, shall, subject to appropriation, issue guidelines to assist districts in developing screening procedures or protocols for students that demonstrate 1 or more potential indicators of a neurological learning disability including, but not limited to, dyslexia. M.G.L. Chapter 71, § 57A, added by St. 2018, c.272, § 1, effective January 17, 2019.

The Guidelines will provide direction and support for district staff at all levels and parents to ensure that students with dyslexia and other learning disabilities receive the education they are entitled to, starting with early identification and continued access to evidence-based instruction.

Massachusetts practitioners will be doubly supported by our Guidelines and the Mass Literacy Guide, developed by our colleagues in the Center for Instructional Supports' Literacy and Humanities unit. The Dyslexia Guidelines were developed to work in tandem with the Mass Literacy Guide, which provides comprehensive access to the evidence-based literacy practices critical for reading success for all students. These resources together form a wealth of information and support.

We did not do this work alone, as we have been so very fortunate to have sustained guidance and feedback from dedicated stakeholders who partnered with us throughout the development of the Guidelines. Our first group of approximately 90 stakeholders included people with disabilities, parents of students with disabilities, district and school leaders, general and special education teachers, reading specialists, school psychologists, speech and language pathologists, special education directors, and dyslexia researchers, including nationally known neuroscientists. These experts helped to steer the initial development of the Guidelines during two meetings in January 2020. Following the release of the Guideline's draft chapters, listening and feedback sessions with 12 different groups of stakeholders were held during January and February 2021. These sessions included participants from two DESE advisory councils, elementary principals, school psychologists, education advocates, special education directors, and literacy leaders, among others. We received insightful feedback on the content of the Guidelines, as well as helpful guidance on how the subsequent roll-out and implementation might take shape.

It is our hope that the Massachusetts Dyslexia Guidelines will create the critical bridge between research and practice and positively impact the education of children in Massachusetts for years to come.

Russell D. Johnston, Ph.D.
State Director of Special Education and Senior Associate Commissioner
Center for District Support

1 Introduction

> *"Massachusetts must move from a reactive, deficit-oriented model to a proactive, preventive model."*
>
> *"Classroom teachers need the knowledge of the science of reading and evidence-based practices."*
>
> -Dyslexia Guidelines Stakeholders, January 2020

Massachusetts General Law Chapter 71 Section 57A directs the Department of Elementary and Secondary Education[1] to issue guidelines that support district development of screening procedures for students demonstrating one or more potential signs of a neurological learning disability including, but not limited to, dyslexia. These Guidelines have been developed as a clear and practical set of organized, relevant, and research-based best practices for the early screening, instruction, and accommodation of students with reading difficulties, learning disabilities, and dyslexia. The Guidelines are intended to assist district administrators, all educators, regardless of their role, and families to make informed educational decisions that will result in supportive, effective practices and the best possible outcomes for students.

The Massachusetts Dyslexia Guidelines serve three purposes:

- To provide a set of screening guidelines for all students, including students demonstrating one or more potential signs of a neurological learning disability including, but not limited to, dyslexia;
- To provide a framework of intervention for students at risk of dyslexia and other learning difficulties that is timely and responsive; and
- To provide a comprehensive resource of evidence-based practices aimed at all educators to support students at risk of dyslexia and those identified as having dyslexia, consistent with and linked to other guidance from DESE.

Districts, families, and other stakeholders have indicated that an external source of direction is urgently needed to make effective and sustainable changes in school practices. The Massachusetts Dyslexia Guidelines can be that catalyst for change.

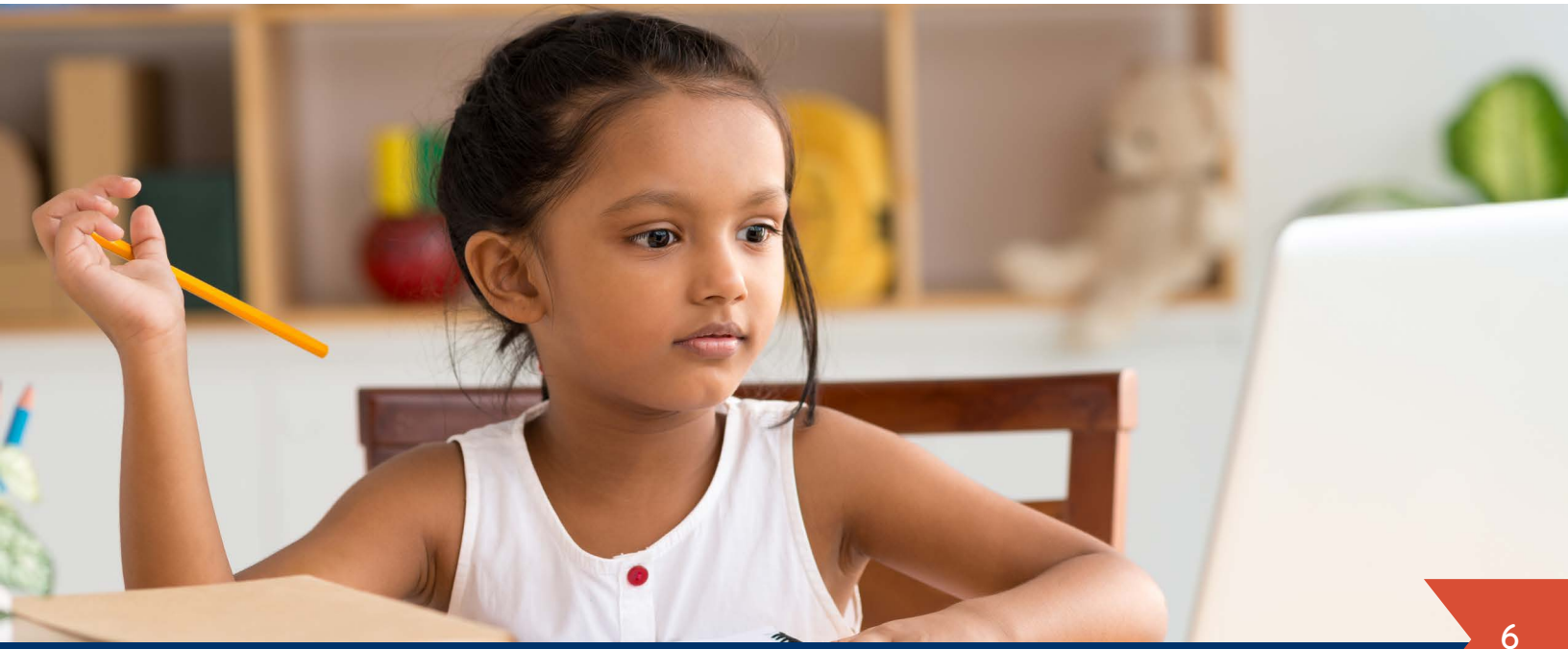
The most widely accepted definition of dyslexia was adopted by the U.S. National Institute of Child Health and Human Development (NICHD) in 2002[2] and remains the official definition for the International Dyslexia Association (IDA).[3]

> Dyslexia is a specific learning disability that is neurobiological[4] in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

Approximately 24% of disabilities reported by Massachusetts' school districts are students with learning disabilities,[5] with dyslexia recognized as one of the most common.[6] Despite the number of students impacted, the considerable advances in research, and the increase in dyslexia-related legislation across the U.S.,[7] early identification and targeted education of students with dyslexia in public schools remain a challenge. Although Massachusetts does not collect data specific to the identification and placement of students with dyslexia, the 2020-2021 placement data for Massachusetts students with specific learning disabilities (SLD),[8] which typically includes dyslexia, demonstrates that the number of students identified as SLD nearly triples between second and third grade, and close to 80% of all students with SLD are in full inclusion settings (see Appendix A).

Having a cohesive picture of Massachusetts' district practices with students at risk or identified with dyslexia is vital, and so the Departments of Elementary and Secondary Education and Early Education and Care determined that consultation with stakeholders was essential to develop the Massachusetts Dyslexia Guidelines.[9] Outreach to a variety of professional organizations and districts yielded a number of individuals recommended for their expertise and experience working with students with dyslexia and other learning disabilities. By December 2019, approximately 90 people had been selected to represent the state's districts, education professions, families, educational organizations, advocates, and researchers during two stakeholder meetings in January 2020.[10]

Bringing together this dynamic group of stakeholders resulted in meaningful conversations about the support in place for educators, students, and families affected by dyslexia. Practitioners identified areas of success, concern, and need across a variety of districts and roles, including general and



special education teachers, reading specialists, speech and language pathologists, and school psychologists. Parents contributed powerful perspectives as they detailed their experiences navigating sometimes uncertain and challenging paths to find solutions for their children. Administrators, including superintendents, special education directors, and principals, spoke to the essential role of strong leadership in supporting evidence-based practices across their districts. Leading researchers from Massachusetts universities stressed the compelling evidence from neuroimaging and rigorous longitudinal studies on the validity and effectiveness of early identification and targeted instruction.

During the stakeholder meetings, facilitators organized discussion groups to capture group insights in the following areas: the use of screeners, instructional planning across the tiers (classroom, intervention and specialized instruction), progress monitoring, and the use of assistive technology. Stakeholders also shared ideas specific to the development of dyslexia guidelines, including the intended audience, purpose of the document, elements that can support evidence-based practices, and areas of potential problem-solving.[11]

The critical goals, needs, and concerns identified by stakeholders are as follows:

Equitable and immediate access to reading support

The first theme to emerge from discussions highlighted the breadth of educational frameworks in place to support students with dyslexia. Stakeholders from across the state reported a wide variety of learning experiences for readers who are not meeting benchmarks, including those with SLD in reading and those identified with dyslexia. Some districts have created district-wide literacy programs for all students, while others have relied entirely on special education services to provide reading supports for students with, or at risk for, dyslexia. In some cases, families opted to pay for private tutoring, unhappy with the response from their district. Stakeholders reported mixed access to resources, with some families seeming to gain access to broad services from schools and districts immediately, and others reporting substantial delays in accessing appropriate educational resources, even after their student had been identified as having an SLD. One imperative that emerged from the discussion is the critical importance of universal screening of all students in Massachusetts for risk of dyslexia, and subsequent access to high quality, evidence-based literacy instruction across all three tiers of instruction (Tier 1: universal support; Tier 2: targeted support; Tier 3: intensive support).

It is also important to recognize that Massachusetts' MCAS[12] and NAEP[13] assessment results for students with disabilities, Black and Hispanic/Latino students, English learners, and lower-income students signal a potential for inconsistent access to foundational literacy instruction. As districts consider how to provide consistent access to this instruction, they should pay particular attention to making foundational literacy instruction available to these students.

Early screening and prompt interventions for all students

Stakeholders emphasized that guidance on selecting and implementing screeners was essential to practitioners collecting valid and reliable data regarding risk of dyslexia for all students. Participants acknowledged that screening is just the initial step; screening is only meaningful when it leads to targeted interventions, and in some cases, specialized instruction. Most of the stakeholders expressed concern about a potential disconnect between screening for word reading difficulties and receipt of targeted intervention for students who perform in the at-risk range of reading. Stakeholders also raised questions about the role that screening data will play in eligibility evaluations, particularly in identifying dyslexia.

Addressing risk of dyslexia begins early and in general education

Many participants noted the important role of a robust core curriculum and universal support (Tier 1) in preventing and addressing reading challenges. Stakeholders described a critical need for research-based curricula that feature clear and systematic instruction in foundational reading skills, including phonemic awareness and phonics. Participants considered thoughtful integration of dyslexia screening tools with rigorous classroom instruction in the general education setting essential to addressing struggles in reading. Stakeholders expressed concern regarding potential over-identification of students for special education and recommended that the Dyslexia Guidelines thoughtfully address reading instruction across the tiers and across the grade levels (preschool through secondary school) in the general education setting.

Evidence-based practices for students with dyslexia will be a key concept for districts

Stakeholders acknowledged that increasing educators' knowledge and capacity around evidence-based reading practices, including phonemic skills and phonics, may be a departure from familiar instructional materials and practices for some districts. Ongoing education about evidence-based reading instruction for administrators, teachers, and families will take effort, resources, and coordination. Stakeholders want to see professional development practices growing out of a variety of sources, including DESE, post-secondary teacher preparation programs, schools, and districts.

Integrate the Dyslexia Guidelines with other DESE guidance

Finally, Senior Associate Commissioner Russell Johnston began each of the stakeholder meetings by emphasizing that the Guidelines will be consistent with other guidance from DESE. As such, the Dyslexia Guidelines have drawn upon the Early Literacy Screening Assessments, the Mass Literacy Guide, the Massachusetts multi-tiered system of support (MTSS) Blueprint, and the Blueprint for English Learner Success so that districts can confidently and consistently build upon existing evidence-based best practices.

These Dyslexia Guidelines are intended to be a living, evolving document, one that will continue to be a source of direction and support for districts, families, and especially for students with dyslexia, learning disabilities, and reading needs.

To Learn More

- Massachusetts Department of Elementary and Secondary Education. Multi-tiered system of support: A Blueprint for Massachusetts Educators. https://matoolsforschools.com/resources/mtss-blueprint
- Massachusetts Department of Elementary and Secondary Education. The Massachusetts Blueprint for English Learner Success. https://www.doe.mass.edu/ele/blueprint/
- Massachusetts Department of Elementary and Secondary Education. Early Literacy Screening Assessments. https://www.doe.mass.edu/instruction/screening-assessments.html
- Massachusetts Department of Elementary and Secondary Education. Mass Literacy Guide. https://www.doe.mass.edu/massliteracy/

Chapter 1 Endnotes

1 In consultation with the Department of Early Education and Care, and subject to appropriation. See M.G.L. c.71 s.57A.

2 Lyon, G. Reid, Shaywitz, Sally E, & Shaywitz, Bennett A. (2003). A definition of dyslexia. *Annals of Dyslexia,* 53(1), 1–14.

3 Definition of dyslexia. (n.d.). International Dyslexia Association. dyslexiaida.org/definition-of-dyslexia/

4 The word 'neurobiological' acknowledges that the reading difficulties are the result of a distinct neural pattern, which is revealed through functional imaging as a person performs a reading task. Lyon, Shaywitz & Shaywitz (2003).

5 Massachusetts Department of Elementary and Secondary Education. Special Education Enrollment by Disability 2020-21.

6 Massachusetts Department of Elementary and Secondary Education. Report to the Legislature: Annual Report on Students with Disabilities 2014-2015.

7 National Center on Improving Literacy (2019). State policy and dyslexia. Washington, DC: U.S. Department of Education, Office of Elementary and Secondary Education, Office of Special Education Programs, National Center on Improving Literacy. http://improvingliteracy.org.

8 34 CFR § 300.8 (c)(10) and 603 CMR 28:02(7)(j).

9 Massachusetts Board of Elementary and Secondary Education. (October 2019). Students with Dyslexia – Update on Department Activities to Assist Schools.

10 Stakeholders attended either the University of Massachusetts-Amherst meeting on January 15, 2020 or the University of Massachusetts, Mt. Ida Campus meeting on January 16, 2020.

11 After the information was collated and thematically coded, key findings were presented in part during a virtual presentation for stakeholders in April 2020.

12 Massachusetts Department of Elementary and Secondary Education. Spring 2019 MCAS Tests: Summary of State Results.

13 Massachusetts Department of Elementary and Secondary Education. 2019 NAEP Reading and Mathematics: Summary of State Results.

2 Defining Dyslexia

In this chapter, you will learn:

- The most widely accepted definition of the term dyslexia
- The Massachusetts definition of specific learning disability that includes dyslexia
- Characteristics of common subtypes or profiles of dyslexia, and implications for intervention and support
- Use of the term dyslexia in school settings
- Common misconceptions about dyslexia

There are a number of reasons why children may have trouble learning to read, including language acquisition, poor instruction, gaps in school attendance, or unaddressed physiological challenges such as vision or hearing impairment. Dyslexia impacts a subset of struggling readers who have difficulty with accurate and/or fluent word reading that cannot be attributed to external or physiological factors.

Definition Of Dyslexia

Dyslexia is considered the most common of all specific learning disabilities affecting 5-17% of children in the general population.[1,2] Dyslexia can be largely characterized by difficulty learning to read despite adequate instruction and intelligence. Dyslexia is highly hereditary and individuals with a first degree relative with diagnosed or suspected dyslexia (i.e. biological parent or sibling) have a 50% chance of being diagnosed themselves.[3,4]

A common understanding of dyslexia is essential for promoting valid *identification*, implementing effective instructional *practices*, and informing *policies* that support the educational community.[5] The most widely accepted definition of dyslexia was adopted by the U.S. National Institute of Child Health and Human Development (NICHD) in 2002[6] and remains the official definition for the International Dyslexia Association (IDA).[7]

> Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

The core weakness in dyslexia is related to students' accurate and efficient pairing between the sounds in words (phonological processing) and their corresponding letter or letter patterns. These difficulties result in impairments in sight word recognition, decoding, overall reading fluency, and can also impact spelling. As a result of word reading difficulties, students with dyslexia are exposed to a significantly smaller volume of expository and narrative texts, thereby limiting their development of vocabulary and background knowledge. This definition has been cited extensively by researchers, educators, and parent groups, and is included in education codes and guidelines across the United States.[8]

State Definition of Dyslexia

As noted in 603 CMR 28.02(9), eligibility for special education services requires a student to have a disability and be determined by an IEP Team to be "unable to progress effectively in the general education program without specially designed instruction or is unable to access the general curriculum without a related service."

In Massachusetts, dyslexia can be understood as one type of a specific learning disability (SLD) which is defined in 603 CMR 28.02(7)(j):

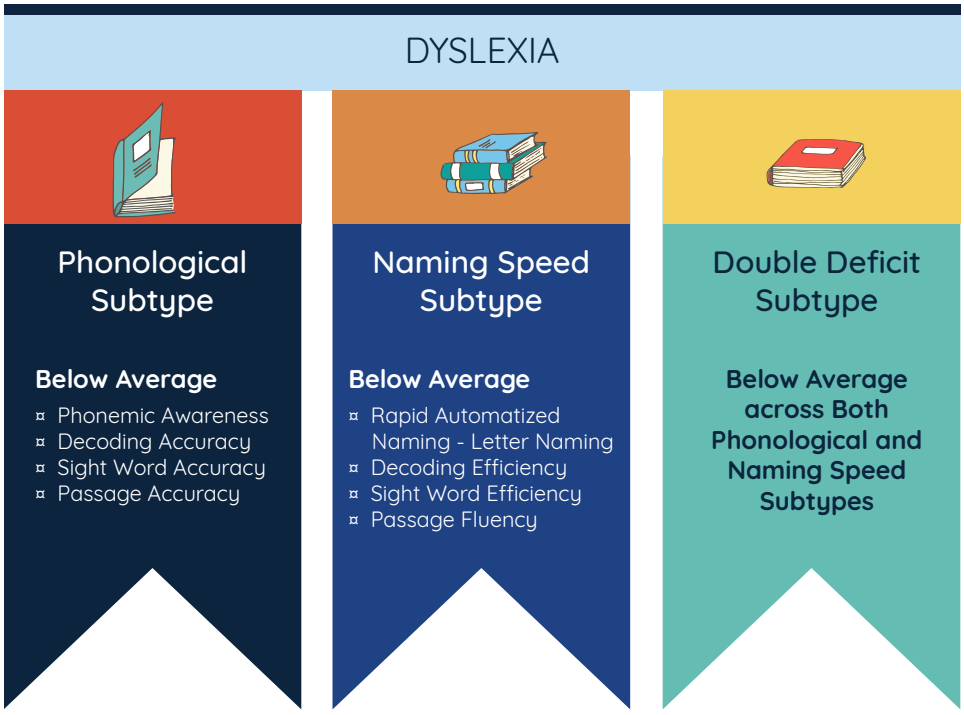
> Specific Learning Disability - The term means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think speak, read, write, spell, or to do mathematical calculations. Use of the term shall meet all federal requirements given in federal law at 34 CFR §§300.8(c)(10) and 300.309.

Although this definition of SLD does not list particular types of specific learning disabilities, dyslexia is considered to fall into this category of learning disability. More information is located here on DESE's website.

Subtypes of Dyslexia

Dyslexia is a considered a heterogeneous condition that can result in varied constellations of strengths and weaknesses related to reading.[9] Additionally, students with dyslexia may present with varying degrees of impairment that range from mild to severe.

Distinct groups or subtypes of dyslexic readers have emerged in a series of research studies conducted over the last twenty years.[10] [11] The most common subtypes include a phonological deficit and a naming speed deficit. The combination of both deficits in some individuals results in a reading impairment that is more severe than in individuals with a single deficit.[12]



*Subtype determination is based on individualized analysis of patterns of weaknesses. Qualifying students may not score below average on all subtest in a particular category (Wolf & Bowers, 1999)

Phonological deficits can be characterized as below-average performance on standardized measures of phonemic awareness (the ability to hear and manipulate individual speech sounds, called phonemes, in spoken words), and assessments of decoding, sight word and/or passage accuracy. These weaknesses impact students' accuracy as they read single words and connected text (e.g. sentences, passages). **Naming speed deficits** are characterized by below-average performance on standardized measures of rapid automatized naming, particularly subtests that involve letter naming, and measures of decoding word reading efficiency (i.e. timed measures of sight word recognition and decoding). These weaknesses impact students' ability to be fluent when reading sentences and passages. Students with a **double deficit** demonstrate below average performance in both areas.

One study that evaluated students in kindergarten and followed their reading achievement through second grade found that without intervention, performance on measures of critical pre-reading skills in kindergarten not only predicted risk of dyslexia but also reliably indicated the subtype to which the students belong.[13]

Use of the Term Dyslexia in Schools

Both Federal and State guidance endorse the use of the term dyslexia during evaluation, eligibility determinations, and IEP documents, when students meet the criteria as outlined in the most widely accepted definition of dyslexia.[14] By specifying the nature of the students' specific learning disability, the team can formulate goals, make instructional decisions and identify appropriate accommodations and modifications in a more strategic manner.[15]

Common Misconceptions about Dyslexia: From Fiction to Fact

Several misconceptions about dyslexia have long been perpetuated despite a body of evidence that disavows them. New research from the field of neuroscience provides insights into the brain-based differences among children with and without dyslexia. These findings, along with evidence from educational research, offer robust instructional insights, based in fact, that educators can embed into their instructional practices.

Misconception: Dyslexia is a Visual Issue.

One of the most common misconceptions about dyslexia is that it is a visual processing problem characterized by weaknesses in tracking or letters "moving around" the page. The root cause of dyslexia is a deficit in the accurate and/or efficient correlation between the sounds in language (phonology) and their spelling patterns (orthography).[16] [17] Modifications to the presentation of text, such as the use of a dyslexia font, have not resulted in significant improvements in reading rate or accuracy.[18] **Instructional tools like color overlays and dyslexic fonts may be appropriate accommodations for certain students but should not serve as the central intervention tool.**

"STAKEHOLDER VOICES

Alison Elmer | Director of Special Education, Arlington Public Schools

Historically, there was a reluctance amongst our school-based teams to identify dyslexia by name. Instead we would "talk around" the term, using its educational eligibility category. Currently, our district is participating in its fourth year of a professional development series designed to expand the capacity of teachers to identify and address dyslexia and its relevant subtypes. The combination of "permission" to use this term (not only from OSERS or the DESE but most importantly locally) AND ongoing coaching is transforming practitioners' comfort and confidence in saying "this child has dyslexia."

Misconception: Letter Reversals are Indicative of Dyslexia.

Letter reversals are common among children with or without difficulties learning to read, and represent an early phase of reading development.[19] As children move from interacting with three dimensional objects, which remain the same regardless of their orientation (i.e. a cup is a cup whether it is upside down or right side up), to engaging with symbols where directionality is critically important (i.e. b, d, p, q, n, u), the brain cells responsible for processing this information must adapt.[20] **Although many students with dyslexia struggle to accurately represent letters in writing, letter reversals are not the cause of reading impairment and should not serve as the primary diagnostic tool.**[21]

Misconception: Some Readers are Simply Immature.

Educators are often hesitant to refer students for reading services in the hope that they will outgrow difficulties in sufficient time. Yet, intervention studies confirm that the critical window during which remediation is most effective is between the ages of 6 - 8 years old.[22] Within a Multi-Tiered System of Support (MTSS) students can receive targeted, robust intervention in Tier 2 and, as necessary, Tier 3, without undergoing eligibility determination. **Although remediation is still effective beyond 8 years old, students may require a greater degree of intervention and are less likely to be brought into the average range.**[23]

Misconception: Dyslexia is Associated with a Lack of Intelligence.

There is no support that links dyslexia to limited intellectual potential. Rather, individuals with dyslexia have been found to demonstrate varied performance on assessments of intellectual ability.[23] One concern about dyslexia is the secondary consequences of limited reading experience. **Often referred to as the Matthew Effect,**[24] **individuals with dyslexia may be exposed to a reduced volume of text, which can constrain the development of their vocabulary and background knowledge.**[25]

Misconception: Reading Will Improve if Students are Motivated.

Reading difficulty among dyslexic students is not due to a lack of motivation, but rather is related to lack of accuracy or efficiency in pairing sounds in words with corresponding letters or letter patterns. As a group, struggling readers can present with higher rates of task avoidance likely because the act of reading is so challenging.[26] [27] **Structured literacy instruction has been found to be the most effective remediation approach with strategies that foster an intrinsic motivation for learning.**[28]

Misconception: Dyslexia is a Medical Diagnosis and the Term Cannot be Used in Schools.

Dyslexia is a specific learning disability that impacts a student's ability to learn to read. Teams of educators including school psychologists, reading specialists, speech and language pathologists, and special educators can determine if students meet the criteria for dyslexia during eligibility testing and/or re-evaluations. In Massachusetts, dyslexia falls under the category of a Specific Learning Disability. **Both Federal**[29] **and State**[30] **guidance endorse the use of the term dyslexia during evaluation, eligibility determinations, and IEP documents when students meet the criteria as outlined in the most widely accepted definition of dyslexia.**

To Learn More

- 2015 Dear Colleague Letter from the USDOE Office of Special Education and Rehabilitation Services: https://www2.ed.gov/policy/speced/guid/idea/memosdcltrs/guidance-on-dyslexia-10-2015.pdf
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4 Grigorenko, E. L. (2009). Speaking genes or genes for speaking? Deciphering the genetics of speech and language. *Journal of Child Psychology and Psychiatry*, 50(1-2), 116–125.

5 Dickman, E. (2017, February). Do we need a new definition of dyslexia? International Dyslexia Association. Retrieved from: dyslexiaida.org/do-we-need-a-new-definition-of-dyslexia/

6 Lyon, G. Reid, Shaywitz, Sally E, & Shaywitz, Bennett A. (2003). A definition of dyslexia. *Annals of Dyslexia*, 53(1), 1–14.

7 *Definition of dyslexia.* (n.d.). International Dyslexia Association. Retrieved November 15, 2020, from dyslexiaida.org/definition-of-dyslexia/

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3 The Importance of Screening for Risk of Dyslexia

In this chapter, you will learn:

- The rationale for dyslexia screening and early intervention
- Massachusetts legislation related to dyslexia screening
- The difference between early literacy screening and dyslexia screening

Across the country, legislation has been passed in 47 states to reform the educational experiences of students with dyslexia.[1] These policies are often related to screening for risk of dyslexia, providing professional development to address prevention in early grades, offering intervention following eligibility determination, and developing advisory boards to support the implementation of new dyslexia-related initiatives.[2] Dyslexia-based policies are supported by evidence from the fields of education, neuroscience, and psychology. **Research conducted over the last 25 years substantiates the notion that students with dyslexia have unique neurological profiles, these profiles exist prior to formal reading instruction, and that when provided with early and appropriate intervention, efficient neurological patterns for reading can emerge.**[3]

Screening for Risk of Dyslexia in Massachusetts

The Massachusetts legislature passed An Act Relative to Students with Dyslexia, Chapter 272 of the Acts of 2018 on October 19, 2018, which directed the Department of Elementary and Secondary Education (DESE), in consultation with the Department of Early Education and Care (EEC) and subject to appropriation, to

> "[I]ssue guidelines to assist districts in developing screening procedures or protocols for students that demonstrate 1 or more potential indicators of a neurological learning disability, including, but not limited to, dyslexia."

DESE and EEC embarked on a dynamic process that solicited stakeholder feedback and collected evidence-based practices to develop practical guidelines that are straightforward to implement, address all elements of the MTSS model, and can improve academic outcomes for all students.

Preventing Reading Failure

In many school settings, dyslexia is not identified until a student has experienced prolonged reading failure. This process, often referred to as a "wait to fail" model,[4] is predicated on the notion that targeted and sometimes specialized interventions cannot be put into place until a student meets the eligibility criteria for a learning disability. **A wait to fail framework is problematic for several reasons, including the negative impact reading challenges can have on the emotional well-being of struggling students**[5] [6] **and the difficulty students face in meeting grade-level expectations when reading interventions are initiated in later elementary school.**[7]

Risk Factors for Dyslexia Can Be Detected Prior to Formal Reading Instruction

A combination of research from the fields of neuroscience and education have resulted in a solid body of evidence that demonstrates students can reliably be screened for their risk of dyslexia before receiving reading instruction. Through neuro-imaging technology, researchers have identified the "neural signature" of dyslexia, or brain activation pattern, that is characterized by less activity in key areas of the brain responsible for processing the sounds in language, matching up sounds with letters,[8] and the retrieval of linguistic information.[9] More specifically, young children who performed poorly on particular measures of pre-reading skills (i.e. phonemic awareness, rapid automatized object naming, letter identification) and were later diagnosed with dyslexia, presented with these underactive patterns prior to receiving formal reading instruction.9 **This finding suggests that dyslexia is not a result of the daily struggle to learn to read; rather, students possess brain activation patterns that put them at risk before receiving formal instruction.**[10]

Screening for Risk Is Critical for Efficient Intervention

Screening for risk of dyslexia and other reading disabilities is the first step in the larger multi-tiered support system (MTSS) of identifying and preventing struggles with reading. When universal screening for dyslexia risk is coupled with meaningful data interpretation, targeted Tier 2 intervention, and progress monitoring, students receive support during the critical window of opportunity that occurs prior to fourth grade.[11] **A series of studies that examined the effectiveness of reading intervention at different grade levels found that, although targeted intervention brings 50-94% of at-risk first graders into the average range, the same impact is not observed in third grade students - particularly in regards to their reading fluency.** [12] [13] [14]

Screening Is Not An Eligibility Determination

Universal screening for dyslexia risk is designed to reliably indicate each student's unique risk for experiencing later difficulties with accuracy and/or fluency in word reading. Screening for dyslexia risk is not the same as evaluating a student for special education eligibility, as screening tools are designed to predict the likelihood of reading challenges without the presence of targeted interventions and support. One important caveat are those students who are performing significantly below their peers. There is evidence to support the provision of Tier 3 instruction and/or a referral for a comprehensive evaluation (including assessments that can identify dyslexia) among those students who perform at or below the 5th percentile on screening measures.[15] **However, the fifth percentile on screening measures should not be used as the only threshold for making either of these critical decisions when the student demonstrates multiple characteristics of reading difficulties. Additionally, students in the bottom quartile should be considered for additional diagnostic assessments such as phonemic awareness, phonics, and sight word inventories** (for more information, see Chapter 6).

Additionally, IDEA and Massachusetts law require public school districts to proactively identify and evaluate all students aged 3-21 who are suspected of having a disability (also known as Child Find).[16] If a district suspects that a student has a disability based on the screening data, the district has an obligation to "diagnose and evaluate the needs of such children, propose a special education program to meet those needs, [and] provide or arrange for the provision of such special education program," as applicable.[17] The use of screening measures and/or tiered interventions may not be used to delay or deny the evaluation of a student suspected of having a disability. Core instruction and universal supports (Tier 1) and other tiered interventions should continue throughout the special education eligibility process.[18]

The Relationship Between Early Literacy Screening and Screening for Risk of Dyslexia

Learning to read is a complex process that involves skill development in two major areas: word reading and oral language comprehension.[19] DESE has issued guidance for assessing students' risk of atypical development in each domain area. Screening for risk of dyslexia entails a valid, normed assessment of the predictive early literacy skills that contribute to accurate and fluent word reading. **The Early Literacy Screening guidelines also involve the administration of a valid, normed assessment that may measure the skills that predict accurate and fluent word reading, but in addition, evaluate aspects of oral language ability, including vocabulary knowledge, and/or listening comprehension.**

Given the overlapping nature of screening for risk of dyslexia and early literacy screening, school districts are encouraged to address both guidelines with the fewest tools necessary. Several measures exist that assess many of the critical skills identified in both sets of guidelines, and if districts are already meeting guidance criteria, there is no need to adopt new tools. Districts and schools are advised to look at what they are currently using for universal literacy screening to see if these tools meet the criteria for screening for risk of dyslexia.

For more information regarding guidance for Early Literacy Screening, see DESE's Early Literacy Screening Page. For information regarding Massachusetts guidelines for screening for risk of dyslexia, see Chapter 4.

To Learn More

- Gaab, N. (2019). "Identifying risk instead of failure. Reading impairments: Moving from a deficit-driven to a preventative model." Blog on Learning & Development.
- MA DESE Early Literacy Screening Assessments

Chapter 3 Endnotes

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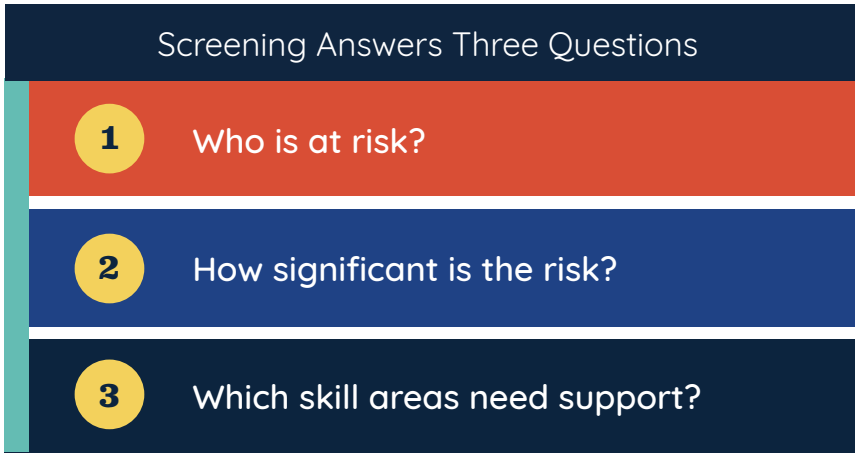
4 Selecting and Implementing a Universal Tool for Screening Risk of Dyslexia

In this chapter, you will learn:

- General guidelines for a screening administration protocol, including a timeframe and screening team considerations
- Specific guidelines regarding the skills to screen from Kindergarten – 2nd grade

Screening students for their risk of dyslexia and other reading disabilities is one essential process in preventing reading difficulties. The screening process is not equivalent to an evaluation for special education eligibility and cannot be equated with the diagnosis of dyslexia. The proper administration of screening measures serves as the first step in a sequence of processes that occur across an MTSS model (see Chapter 5). For the most effective results, it is essential that the screening tools efficiently collect reliable and valid data on the most predictive early literacy skills. Furthermore, in order for screening data to inform instructional decision-making, students' scores must designate their level of risk relative to same grade peers (i.e. low risk, some risk, high risk) and indicate specific weaknesses to address through intervention. **Cut points for risk[1] are determined by the publisher of each assessment tool. Publishers utilize different criteria to specify a student's individual risk given their current performance as compared to the normed or criterion-based standards.**[2]



Screening Administration Guidelines

These screening Guidelines have been formulated to delineate the earliest, most accurate timeframe for the identification of students at risk for dyslexia. Early identification promotes effective intervention,[3] [4] and screening data are considered valid even prior to the start of formal reading instruction.[5] One common concern among educators is that early screening prematurely measures children's ability and may result in a disproportionate percentage of students falling into the at-risk range. These Guidelines are based on a thorough review of existing data on screening outcomes and feature criteria that can simultaneously minimize the number of both false positive students (those who score at-risk but do not require intervention) and false negative students (those who score with low risk but need intervention).

Screening Time Frame: Preschool

The preschool years are marked by significant growth in all domains of development for children – physical, social, emotional, language and cognitive. In order to be responsive to the varying development needs of young children, it is important that preschool programs have systems for implementing developmental screening. The purpose of developmental screening in an early childhood program is to identify children who may exhibit potential red flags in development and who may benefit from additional assessments. In a joint statement issued on screening in preschool-3rd grade, the Massachusetts Departments of Early Education and Care, Elementary and Secondary Education, and Higher Education[6] have clarified that the most effective developmental screening processes include a range of skills across all major domains of development: cognitive, language, social-emotional/behavioral, physical (gross and fine motor), comprehensive health (including perceptual motor, vision, hearing, and medical history), general knowledge and approaches to learning.

In the context of identifying concerns related to dyslexia, developmental screenings could include, but are not limited to, gathering data on a child's phonological awareness, verbal working memory, name recognition and letter knowledge. Children who struggle with early speech and language skills may also experience difficulties acquiring literacy skills.[7] Given the breadth of domains that a developmental screening should cover, multiple tools and/or sources of information may be needed, including input from families.[8]

Screening Time Frame: Kindergarten - Second Grade

In light of the rapid development of reading skills over the first three years of school,[9] it is critical to **universally screen students multiple times annually from kindergarten to second grade**.[10] Universal screening entails the administration of measures to all students in kindergarten, first, and second grade. Screening should occur as early in the year as possible for students in grades 1 and 2 and within three months for younger students to maximize the ways in which students' data can inform the pacing, intensity, and differentiation that occurs in general classroom environments and/or targeted intervention. **Districts may select tools that can address both the Early Literacy Screening Assessments and screening for risk of dyslexia.**

Considerations for Kindergarten

As districts plan their screening administration timeline, one caveat to keep in mind for kindergarten screening is the "floor effect." Some research has found that screening administered early in the year can result in too many children scoring at the bottom end of the scale because of a lack of experience and/or developmental maturity. Floor effects can result in a high rate of overidentification among student populations without preschool experience.[11] [12] Therefore, the initial kindergarten screening can be completed between the beginning of school and the end of December, with the follow-up completed at the end of the school year.[13] Districts that are already following an annual three screening protocol, with a first screening completed by the end of December, followed by a mid- and end-of-year screening, may continue to do so.

Students Exempt from Screening

Screening exemptions exist for students with an existing dyslexia diagnosis,[14] and students with a sensory impairment such as a vision or a hearing impairment. The administration of screenings to students with severe cognitive limitations should be reviewed on an individual basis, with special care given to considering the potential exclusion of any student from the screening process.

Screening Criteria

By definition, screening tools are designed to be brief measures that collect reliable information about students' level of risk. A universal tool is designed for administration to all students at a particular grade level, with few exceptions (as noted above), to better understand the needs of an aggregate population.

Rather than endorsing a single tool, these Guidelines detail the essential components of a screening protocol across the grade levels, including skills to screen at various intervals between kindergarten and second grade.

Appropriate screening tools can reliably indicate each student's level of risk. See National Center for Improving Literacy for definitions of valid, reliable and norm and/or criterion-based screening tools. The most effective way to determine if a preferred screening tool has demonstrated predictive validity and classification accuracy is through the technical manuals and evidence provided by the publisher. Another reason to select valid, reliable tools is that these tools often have established cut points for risk. Cut points for risk are determined by the publisher of each assessment tool. Publishers utilize different criteria to specify a student's individual risk given their current performance as compared to the normed or criterion-based standards (again, refer to the technical and/or administration manual for your district's assessment). **It is highly recommended that districts use these evidence-based tools to screen for risk of dyslexia, rather than using individual tools created at the district-level.**

Your Screening Team

An effective universal screening process for risk of dyslexia across three grade levels (K-2) will involve a team of practitioners who hold various roles within the school and district. A screening team often includes:

- General educators who have established relationships with the students and are committed to offering targeted instruction and educational supports across the MTSS tiers.
- An administrator or district leader responsible for understanding and allocating the financial, personnel, and professional development resources needed to implement universal early literacy screening.
- Instructional experts in evidence-based reading instruction (especially the foundational components in phonemic awareness and phonics) who also have an understanding of the current screener and instructional systems for literacy. Reading specialists and special educators are often trained in these areas.
- Other specialists, such as school psychologists and English language development (ELD) or English as a second language (ESL) teachers, whose expertise and knowledge are relevant.

Skills To Assess During Screening

Reading development is a dynamic process that evolves considerably over the first three years of formal education. Along these lines, skills that are highly predictive among kindergarten students may no longer be as predictive among second graders. Recommendations for skill-based subtests will vary by grade level, and in some cases, time points within a year. The screening tasks below are considered the most predictive of achievement in word reading accuracy and fluency.

Kindergarten

Kindergarten screening for risk of dyslexia is meaningful when administered at least twice over the course of the year (fall and spring).[15] While some districts may opt for three annual screening periods, those assessing twice can create a timeline in which the first screening is completed by the end of December.[16] Among kindergarten students, three main areas of skill development predict risk of later challenges with accuracy and/or automaticity in word reading. The three areas include phonemic awareness, alphabetic knowledge, and rapid automatized naming.

- **Phonemic Awareness** refers to students' knowledge of individual sounds in language. One predictive aspect of early phonemic awareness is students' ability to break apart the sounds in words, a skill that is measured through phoneme segmentation tasks.[17] Phoneme segmentation is a single task that can efficiently reveal students' larger phonological skills and their verbal working memory skills.
- **Alphabetic Knowledge** refers to students' familiarity with the names and sounds of letters and letter patterns. This knowledge is measured through letter naming tasks, and assessments of letter-sound recognition. Some letter-sound tasks require students to read nonsense words. These types of activities are effective because they isolate students' phonics skills, and often award credit for any correct sound/symbol correspondences students can identify.

  During the school year, kindergarteners' alphabetic knowledge will grow, and the nature of screening tasks should change to capture the dynamic development of their literacy skills. During their initial assessment, kindergarteners' alphabetic knowledge is screened with letter naming and/or letter-sound tasks. Yet, by the end of the year, students' risk is predicted by both their letter-sound knowledge and their decoding ability with nonsense words, which requires blending the sounds together to produce a word.[18]

- **Rapid Automatized Naming** refers to students' ability to rapidly name a limited set of repeatedly presented known objects or letters.

From an early age, students' performance on Rapid Automatized Naming (RAN) tasks are highly predictive of later reading automaticity, as the brain activity involved in naming symbols (i.e. objects and letters) is also involved in oral reading fluency.[19] Too often, reading is measured in terms of accuracy, yet many studies have demonstrated that students can be accurate without being fluent.[20] Weaknesses in automaticity are likely to remain "hidden" until later grades when the volume of materials increases and reading stamina is required.[21] A RAN task is an efficient, straightforward, reliable measure of students' risk of later difficulty with reading fluency.

RAN tasks are sometimes confused with letter naming tasks because they both involve producing names of letters rather than sounds. Yet, several differences exist between the two measures, and kindergarteners' performance on these tasks offer important insights into the nature of their profiles. Letter Naming screenings measure students' broad knowledge of the alphabet and the task typically involves recognition of as many upper- and lower-case letters as possible. These tasks can be timed or untimed.

Sample Rapid Automatized Naming (RAN) Letters Task

o	e	t	p	q	e	o	t	q	p
t	p	e	q	p	o	e	q	t	o
e	o	t	q	t	p	p	o	p	e
p	e	q	o	p	t	e	t	o	q
o	e	p	t	q	p	o	e	q	t

Alternatively, RAN screenings are always timed, and the students' scores represent the rate at which they are able to retrieve the names of a limited set of symbols (i.e. objects or letters) that are presented repeatedly. A RAN task has several important criteria, including naming in a serial, left-to-right fashion, and sufficient familiarity of items to be named,[22] which is why object rather than letter naming has been selected for the initial kindergarten assessment (See Chapter 2).[23]

Recommended Timeline for the Administration of Screening Measures in Kindergarten

SKILL	BEGINNING OF THE YEAR and/or MIDDLE OF THE YEAR	END OF THE YEAR
Phonemic Awareness	Phoneme Segmentation	Phoneme Segmentation
Alphabetic Knowledge	Letter Identification and/or Letter Sound Knowledge	Letter Sound Knowledge and Decoding (Nonsense Words)
Rapid Automatized Naming	Object or Letter Naming Subtest	Letter Naming Subtest

First Grade

First grade screening for risk of dyslexia is effective when administered at three time points over the course of the year (fall, winter and spring). Among first grade students, there are several areas of skill development that reliably predict risk of later challenges with accuracy and/or automaticity in word reading. Several first grade screening tasks overlap with screening measures from kindergarten; these include phonemic awareness, alphabetic knowledge, and rapid naming. Other tasks, like word identification and passage reading fluency are introduced for the first time.

- **Phonemic Awareness** abilities, as measured by phoneme segmentation tasks, continue to be predictive in first grade. These tasks are administered at least once, and preferably three times over the course of the year as the criterion evolves in complexity. Furthermore, demonstrated weaknesses in phonemic awareness at any point in the year can inform instructional decision-making across the tiers.
- **Alphabetic Knowledge** in first grade is highly predictive of later reading achievement. Students' knowledge of individual letter-sound correspondences and ability to decode nonsense words is essential screening information both for predicting risk and informing instruction.[24]
- **Word Reading** abilities emerge more fully in first grade, and effective screening measures include both single word recognition and passage reading fluency (i.e. oral reading fluency).[25] These skills are highly predictive of reading fluency and comprehension in later grades including performance on standardized assessments.[26]
- **Passage reading fluency**, also referred to as oral reading fluency, is a timed assessment in which students are asked to read criterion-based passages, and the examiner can calculate the number of correct words read in one minute (i.e. words correct per minute). Passage reading fluency is an efficient metric of both word reading accuracy and fluency because it requires the automatic integration of component skills, like decoding and sight word recognition. Additionally, passage reading fluency offers information about students' skills in related areas such as vocabulary and syntax knowledge which contribute to overall comprehension.[27] Students' performance on measures of passage reading fluency are highly predictive of risk status.[28]
- **Rapid Automatized Naming (RAN)** letter naming task is administered once at the beginning of the year to indicate students' risk for later challenges with word reading fluency. RAN tasks do not need to be administered repeatedly or progress monitored as the scores serve as an indicator of the likelihood of reading impairment in fluency but not an outcome measure.[29]

Recommended Timeline for the Administration of Screening Measures in First Grade

SKILL	BEGINNING OF THE YEAR	MIDDLE OF THE YEAR	END OF THE YEAR
Phonemic Awareness	Phoneme Segmentation (At least at the beginning of the year, preferably three times across the year).		
Alphabetic Knowledge	Letter Sound Knowledge and Decoding (Nonsense Words)	Decoding (Nonsense Words)	Decoding (Nonsense Words)
Word Reading	Word Identification	Passage Reading Fluency	Passage Reading Fluency
Rapid Automatized Naming (RAN)	RAN - Letter Naming Subtest	None	None

Second Grade

Second grade screening for risk of dyslexia is effective when administered at three time points over the course of the year (fall, winter, and spring). After a few years of reading instruction, second graders are now screened using measures of decoding, passage reading fluency, reading comprehension and RAN.

- **Alphabetic Knowledge** in second grade continues to be highly predictive of later reading achievement. Second grade reading instruction typically involves a review of first grade phonics patterns (short and long vowel syllables) and the introduction of new patterns that span all six syllable types (e.g., closed, open, vowel-consonant-e, r-controlled, vowel teams/diphthongs, consonant-le; see Reading Rocket's Six Syllable Types). Using nonsense words to assess students' current knowledge of complex phonics patterns is an effective method for identifying children at-risk of later difficulties with accurately and/or fluently decoding unknown words.[30]
- **Word Reading** abilities develop quickly in second grade, and efficient screening tools include assessments of passage reading fluency (i.e. oral reading fluency).[31] Similar to first grade, passage reading fluency remains an efficient metric of both word reading accuracy and fluency because it requires the automatic integration of component skills like decoding and sight word recognition. Additionally, passage reading fluency offers information about students' skills in related areas such as vocabulary and syntax knowledge, which contribute to overall comprehension.[32] Students' performance on measures of passage reading fluency are highly predictive of risk status.[33]
- **Reading Comprehension** assessments are recommended at the second grade level, as students begin to use reading as a tool for learning, and skills in this area become a more reliable predictor of risk.[34] [35]
- **Rapid Automatized Naming (RAN)** letter naming task is administered once at the beginning of the year to indicate students' risk for later challenges with word reading fluency. Similar to first grade guidelines, RAN tasks do not need to be administered repeatedly or progress monitored as the scores serve as an indicator of the likelihood of reading impairment in fluency but not an outcome measure.[36]

Recommended Timeline for the Administration of Screening Measures in Second Grade

SKILL	BEGINNING OF THE YEAR	MIDDLE OF THE YEAR	END OF THE YEAR
Alphabetic Knowledge	Decoding (Nonsense Words) to be administered at the three benchmark periods.		
Word Reading	Passage Reading Fluency to be administered at the three benchmark periods.		
Reading Comprehension	Reading Comprehension to be administered at the three benchmark periods.		
Rapid Automatized Naming	RAN - Letter Naming Subtest	None	None

Implementation of Universal Screening for Risk of Dyslexia

As school districts work to establish accurate and reliable identification of students' risk for dyslexia, they will likely embark on a process of evaluating existing screening measures in light of the current guidelines.

The proper administration of screening measures serves as the first step in a sequence of processes that occur across an MTSS model. The following chapters outline additional MTSS processes including data interpretation, instructional planning, Tier 2 and 3 reading intervention and progress monitoring.

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- Massachusetts Departments of Early Education and Care, Elementary and Secondary Education, and Higher Education. *Screening in Preschool-3rd Grade Classrooms: A Joint Position Statement of the Massachusetts Departments of Early Education and Care, Elementary and Secondary Education, and Higher Education.* https://www.doe.mass.edu/sfs/earlylearning/resources/screening-statement.docx
- Connecticut Department of Education's Approved Menu of Research-based Screening Reading Assessments, Academic Screening Tools Chart, National Center on Intensive Intervention

Chapter 4 Endnotes

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5 The Role of a Multi-Tiered System of Supports (MTSS) in Screening for Risk of Dyslexia and Providing Appropriate Instruction

In this chapter, you will learn:

- An Overview of the Multi-Tiered System of Support and its Relation to Identifying and Supporting Students at Risk for Dyslexia
- A Common Framework for Data Team Meetings
- The Critical Elements of Evidence-Based Tier 1 Instruction in Kindergarten - Second Grade
- The Role of Tier 2 and Tier 3 Intervention
- The Importance of Collecting Progress Monitoring Data and Conferring with Team Members During Progress Monitoring Meetings

A Multi-Tiered System of Support (MTSS) includes interwoven processes and protocols that identify, evaluate, deliver, and adjust instruction for all students, not just those at risk for reading difficulty (see Multi-Tiered System of Support: Blueprint for Massachusetts and Leading a Multi-Tiered System of Support, Mass Literacy Guide).

Universal Screening For Early Literacy And Risk Of Dyslexia

Student data is central to the MTSS framework, which is organized around an interpretation protocol that is both preventative (i.e., early screening) and responsive (i.e., targeted intervention) to students' learning needs. Recommended universal screening tools are designed to collect information on the most predictive component skills for each grade level and time interval (see Chapter 4). Data collected through ongoing screening and benchmark assessments can both identify at-risk students and evaluate the effectiveness of instruction across grades and tiers.[1]

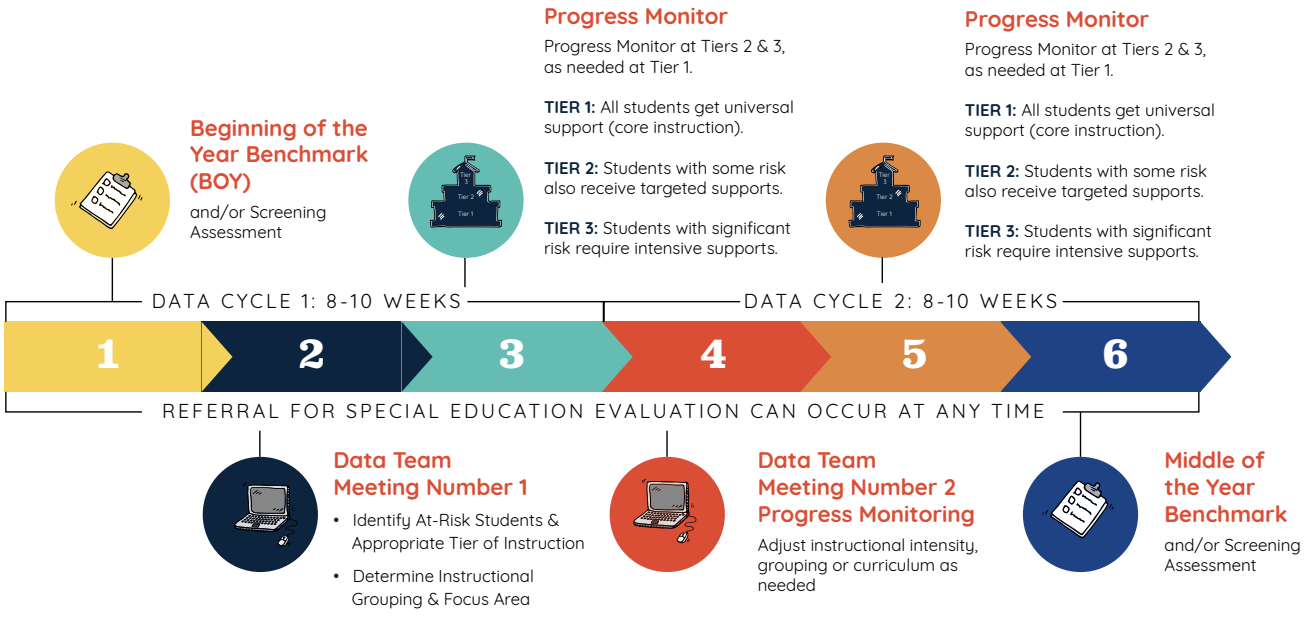
Assessment Cycle

Using data to improve student achievement requires a commitment to analysis, planning, and instructional adjustments across the entire school year. Data-driven instruction is a dynamic and iterative process that evolves as new information about student performance is collected via formal tools like screening and benchmark and progress monitoring data, as well as informal tools like teacher observations and diagnostic inventories.

A concrete timeline for formal data collection and related grade-level meetings provides an important framework for school communities. Practitioners can conceptualize the data collection process as occurring in cycles, with a total of five assessment cycles over the course of the year. The first cycle extends from the beginning-of-year (BOY) screening and/or benchmark assessment to the initial progress monitoring meeting, a time period of approximately eight to ten weeks. The second cycle extends for another eight to ten weeks, from the initial progress monitoring meeting to the middle-of-year (MOY) screening and/or benchmark assessment, concluding with an end-of-year screening (EOY) and/or benchmark assessment to complete the cycle for the year. Each of the additional three assessment cycles also lasts for approximately eight to ten weeks (See Figure 1).

Figure 1: How to Integrate Screening, Intervention and Progress Monitoring within a Multi-Tiered System of Support (MTSS) Framework: Supporting Students At-Risk for Dyslexia

By organizing data into cycles, teams create formal timeframes by which to monitor student



performance and adjust instruction. Rather than strictly relying on informal conversations with colleagues and data from varied sources and tools, practitioners can feel confident about a protocol that has allocated shared planning time to data-driven decision-making.

Data team meetings

Data team meetings are held at least five times per year. These meetings are divided into opportunities to review benchmark data (three times per year) and opportunities to review progress monitoring data (two times per year). Data team meetings are traditionally organized by grade level and attended by the general educators, specialists, and coaches who support each grade. Data is often interpreted in a stepwise process that is predetermined either by the data management system or by team members. The goal of data team meetings is to make determinations in the following areas for every student:

The Appropriate Tier(s) of Instruction

The Appropriate Tier(s) of Instruction is determined for every student at each grade level, from kindergarten through second grade, including those students who demonstrate no or low risk and are placed in Tier 1 to only receive core instruction.

Districts can select from one of two protocols for students who demonstrate some risk for dyslexia on screening measures. In the *direct to intervention* model, all students at-risk for reading difficulty begin receiving secondary intervention through Tier 2 instruction. An alternate procedure involves approximately two months of *ongoing progress monitoring* on a bimonthly basis (every other week) to determine the necessity of supplemental intervention.2 Both approaches are considered accurate, and districts can select the methodology that matches both their "tolerance of under- or over-identification rates" and available resources.3

One caveat pertains to those students who demonstrate significant risk for dyslexia and score at the fifth percentile or below on screening measures. These students should automatically receive universal supports in Tier 1 instruction coupled with intensive support in Tier 3,[4] and depending on the students' ages, grades, and educational histories, they may be considered for referral for a special education evaluation. **Performance at or below the fifth percentile on screening measures is not intended to be the sole criterion for eligibility determination or for specialized intervention at the Tier 3 level.** For more information about Tiers 2 and 3 for students at risk for dyslexia, see Chapter 6; see Chapter 8 for information about an eligibility determination.

The Instructional Focus Area

The Instructional Focus Area is determined for at-risk students by analyzing the individual areas of weakness(es). Data collected through early literacy and dyslexia screenings will provide information about the three broad domains of reading-related skill development. These include accuracy, automaticity/fluency, and language comprehension. Focus areas can be further refined as educators consider the severity of students' risk and their performance on additional diagnostic assessments such as phonemic awareness, phonics, and sight word inventories. For more information about secondary diagnostic measures, see Chapter 6.

Student Grouping

Student Grouping entails examining students' risk levels and their instructional focus areas in order to form instructional groups with similar strengths and weaknesses. Tiered intervention is most effective when students with the same instructional focus area are placed into groups of no more than five students for targeted supports in Tier 2 instruction.[5] Data is less consistent on the optimal group size for intensive supports in Tier 3 instruction, but in general, most groups do not exceed three. Some students who require intensive supports present with a complex learning profile that benefits from individualized instruction.[6] Once an instructional focus area has been determined, teachers may use diagnostic reading measures, like surveys that assess specific knowledge in phonemic awareness, phonics, and sight words, to further refine student grouping.

Considerations for Support Delivery

Considerations for Support Delivery. There are several elements that are essential to address at the conclusion of each Data Team meeting so that instruction can commence quickly. These include the logistics of intervention delivery, such as identifying: the teacher who will deliver targeted supports in Tier 2 instruction, where and when the instruction will occur, and the curricular material on which the instruction will be based.

Three Outcomes of Data Meetings

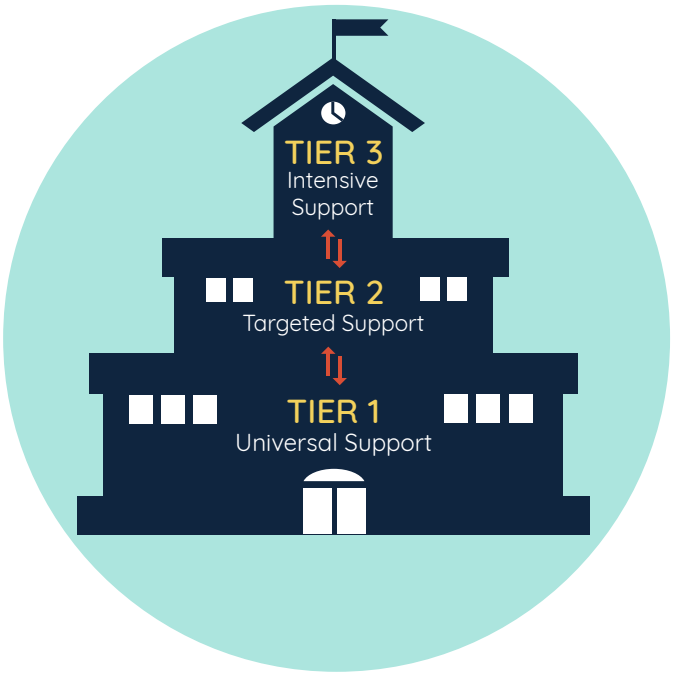
A data meeting concludes when the following determinations have been made for each student:

- Assigned to the Appropriate Tier(s) of Instruction (in addition to Tier 1 or core instruction)
- Instructional Focus Area for Students who Demonstrated Some Risk
- Arrangement of Student Groups for Tiers 2 and 3 Intervention

*Districts can follow the direct to intervention or ongoing progress monitoring models for students who demonstrate some risk.

Evidence-Based Universal Tier 1 Instruction

The efficacy of an MTSS model rests in large part on the nature of universal supports in Tier 1 instruction. High-quality instruction is a mixture of both evidence-based content—which comprises *what* educators teach—and evidence-based practices, which offer guidance on *how* to convey information. See the Mass Literacy Guide for evidence-based practices.



Essential Content for Tier 1 Instruction in K-2

Between kindergarten and second grade, high-quality reading instruction balances targeted instruction on word-level skills (phonemic awareness, decoding, etc.) with listening and reading comprehension (including the development of vocabulary and background knowledge).[7] The Mass Literacy Guide carefully details the critical foundational literacy skills from Pre-K to Grade 3 that all students should be taught as part of their core literacy block. In order to develop successful readers, the Guide emphasizes the need to foster accurate and fluent word reading skills through phonological awareness, advanced phonemic awareness, phonics and decoding, advanced phonics, and automatic word recognition, in addition to language comprehension.[8] A scope and sequence of the component skills that contribute to students' knowledge of the alphabetic principle (i.e., phonics knowledge) can be found in the LETRS Scope and Sequence for Word Study, Reading, and Spelling.[9]

The Critical Role of Sight Word Recognition

One relatively recent advancement in the field of reading research is the emergent understanding of how students develop their ability to automatically recognize sight words. The term "sight words" is often used to describe different categories of words, including frequently occurring and irregularly spelled words. For the purposes of this document, "sight words" refers to frequently occurring words that need to be immediately recognized, as opposed to decoded, to facilitate fluent reading. Sight words can follow phonetically regular (i.e., we, can, for) or irregular patterns (i.e., was, warm, their).[10]

The instant and effortless reading that is characteristic of sight word recognition is one critical element in the development of reading fluency. To become fluent, a reader must develop automaticity within and across componential reading processes that support comprehension with individual words, sentences, and entire passages.[11] Chief among these component skills is the automatic ability to recognize most words, as opposed to the labor-intensive task of sounding them out.

For many years, the dominant belief was that sight word recognition was developed through visual memory, and, as such, students were taught to recognize frequently occurring or irregular words as whole units (i.e., whole word approach, drill with flash cards). In his book, *Essentials of Assessing, Preventing and Overcome Reading Difficulties*, David Kilpatrick has curated a body of research that has largely debunked the impact of visual memory on word recognition.[12] Instead, Kilpatrick highlights the established finding that sight word recognition is developed through a process called orthographic mapping. Orthographic mapping occurs when students "map" frequently occurring letters and letter patterns onto their related sounds. The process of orthographic mapping is not simply reliant upon sound symbol awareness; rather, it is an integration of several key oral and written language skills, which include advanced phonemic awareness, letter sound knowledge, and phonics abilities.[13]

The Role of Advanced Phonemic Awareness

Many early elementary curricula teach phonemic awareness but may rely on an incidental rather than targeted approach. Furthermore, content stops at segmenting and blending sounds. Yet research has found a stronger relationship between advanced phonemic awareness skills like deletion (e.g., Say "slip," but don't say /l/ = "sip") and manipulation (e.g., Say "slip," now change /s/ to /f/ = "flip") and overall sight word recognition.[14] In orthographic mapping, a person's knowledge of the

STAKEHOLDER VOICES

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Having a strong Tier 1 Literacy curriculum that is rooted in the science of reading and evidence-based practices is critical for all readers. We cannot "intervene" our way out of a Tier 1 problem. All of our students need access to the instruction that teaches the skills of reading, and we cannot reserve a systematic and structured approach to only those who qualify for extra help or intervention. We also want to be sure that the students who are dyslexic and who do need a highly structured and systematic approach, do not have that instruction undermined by a classroom reading program that attempts to "balance" multiple approaches. All special education students are general education students first and our curriculum should be designed to include them and instruct them.

individual sounds in words (i.e., phonemic awareness) and the particular sequence of sounds in words serve as the "anchoring points" with which to map letter sequences. Segmenting sounds in words allows students to map individual letters. Kilpatrick notes that in order to map longer words, a student's brain must quickly calculate the myriad possible sound combinations, just as a search engine anticipates the web address one is typing.[15] Advanced phonemic awareness skills—particularly sound manipulation—account for the unseen phonological calculations that facilitate a comprehensive sight word inventory that would not be possible if readers relied on visual memory. (See Scope and Sequence of Phonemic Awareness Skills.[16])

When Tier 1 instruction in Grades K-2 includes robust curricula and/or routines that target phonemic awareness, including advanced stages of manipulation and substitution, and the alphabetic principle starting with letter sound knowledge through advanced phonics, it is possible to prevent the large majority of word reading difficulties,[17] as well as to improve overall reading comprehension.[18] In fact, by the end of first grade, students who receive targeted, systematic phonics instruction perform, on average, seven to eight standard score points higher on tests of reading comprehension than students who were taught with a meaning approach that relied on whole word instruction and context clues.[19]

Essential Instructional Practices for Tier 1 Instruction in K-2

High-quality reading instruction is characterized by evidence-based practices like following a predetermined scope and sequence of increasingly complex topics, introducing concepts in a targeted and systematic manner,[20] using multiple modalities or a multisensory format,[21] and providing repeated opportunities for practice through a cumulative approach. When these practices are brought together, they result in a learning environment that fosters greater equity in skill development.

Research that examined the impact of high-quality core instruction found that when low-achieving readers received strong universal Tier 1 instruction that integrated advanced phonemic awareness with phonics, their rate of improvement was equivalent to the rate of skill development through tutorials. These findings do not imply that tutorials are unnecessary for some students, but rather that, when targeted Tier 2 or intensive Tier 3 intervention is combined with high-quality core instruction and universal supports, the overall number of struggling readers will be significantly reduced.[22]

Evaluating Existing Curricula

Districts are encouraged to evaluate current ELA curricula to determine the extent to which they are aligned with previously described best practices. The Mass Literacy Guide carefully details the critical foundational literacy skills from Pre-K to Grade 3 that all students should be taught as part of their core literacy block.[23] In addition to language comprehension, the Guide emphasizes the need to foster accurate and fluent word reading skills through phonological awareness, advanced phonemic awareness, phonics and decoding, advanced phonics, and automatic word recognition in order to develop successful readers.

Critical Importance of Pre-Service and Ongoing Professional Development

Expert teaching of reading requires knowledge of language structure across the multiple aspects of word knowledge, including phonology, orthography, semantics, syntax, and morphology.[24] Despite the fact that helping children learn to read is the most complex and imperative task facing elementary educators, many graduate programs in elementary education offer limited coursework on the science of reading and literacy instruction.[25] As a result, teachers may struggle with the nuanced elements of instruction that go beyond a scripted curriculum. These elements include planning and pacing of instruction to prioritize essential concepts, offering appropriate corrective feedback, and providing powerful illustrative examples to ensure meaningful practice.

School districts can expand practitioners' knowledge through ongoing, culturally sustaining, and universally designed professional development opportunities that are followed up with guided practice, study groups, inquiry/action research, and tiered coaching.[26] [27]

It should be a shared goal for institutions of higher education to instruct those seeking to become educators how to serve students at-risk for reading difficulties, and for districts to examine how they can increase their capacity to serve such students. Recent changes to the subject matter knowledge guidelines for general educators teaching at the K-2 level and reading specialists require that they demonstrate knowledge related to the science of reading.

Development of a Strategic Plan

District leaders can anticipate that meaningful change at the Tier 1 level will require strategic planning for three to five years of improvement-work, which is often guided by a Literacy Leadership team and a formal strategic plan. The Literacy Leadership team typically represents stakeholders from across the district and develops a strategic plan to prioritize investments in various curricula, assessments, training, and additional positions to support the implementation of new protocols. For specific guidance regarding the development of a Literacy Leadership team—including conducting a district-wide needs assessment, formulating a strategic plan, and supporting implementation and sustainability of new practices—refer to *Leading Literacy Change* in the section titled "Learn More" below.

Targeted Intervention In Tier 2 And Intensive Intervention In Tier 3

Tier 1 or universal general classroom instruction is delivered to all students —those found to have risk of dyslexia are not excluded. Targeted intervention at the Tier 2 level is designed to extend from the Tier 1 curricula and supplement, enhance, and support core instruction. Tier 3 instruction is intended to be intensive, strategic, and specialized to address significant student weaknesses. **However, Tier 2 and Tier 3 instruction do not replace universal Tier 1 (core) instruction. Students receiving Tier 2 and Tier 3 interventions should still participate in Tier 1 instruction.**

See Chapter 6 for a more detailed description of characteristics, criteria, and effective elements of Tier 2 and Tier 3 interventions.

Progress Monitoring

Progress monitoring assesses the nature and rate of students' ongoing skill development. Often referred to as formative assessments, these brief measures are administered frequently to capture incremental changes in growth and to inform instruction. Progress monitoring tools are an essential part of the intervention process that occurs in Tiers 2 and 3.

Similar to screening tools, effective progress monitoring measures are criterion- or norm-based and quantify skill development in a valid and reliable manner.[28] Monitoring data offers the greatest value when multiple data points have been collected during each assessment cycle. Recommendations vary, but general guidelines suggest administering a progress monitoring assessment every one to three weeks.[29] As multiple data points are being collected, they can be graphed against an "aimline." Aimlines refer to the distance between a student's beginning-of-year benchmark or screening score and the end-of-year goal.

Progress monitoring data are traditionally collected on the skills that fall in the at-risk range on screening measures. It is not necessary to progress monitor students' performance in areas where they have not demonstrated risk for difficulty/failure. There is some debate about the appropriate measure to use for students who are performing significantly below grade level, but generally it is advised that students are regularly progress monitored at their estimated instructional reading level (i.e., weekly or bimonthly) and periodically progress monitored at their grade level (i.e., monthly).[30]

Progress Monitoring Meetings serve as a formally scheduled time to gather grade-level teams and evaluate the nature of student progress. Meetings are traditionally held in between benchmark data meetings, approximately every eight to ten weeks, and involve the analysis and interpretation of students' growth rates against designated aimlines. The progress monitoring meeting serves as a formal opportunity to make changes to the nature and/or intensity of instruction or rearrange groupings of students. Further explanation about Progress Monitoring, aimlines, and learning targets can be found in Chapter 7.

To Learn More

- *Leading Literacy Change: Strategies and Tools for Administrators, Teachers and Coaches* by Sandra Jones, Darci Burns, and Catherine Pirri.
- Mass Literacy Guide: Data-Based Decision Making
- Mass Literacy Guide: Pathway to Equity in Early Literacy
- Multi-Tiered System of Support: Blueprint for Massachusetts

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20 Archer, A. L., & Hughes, C. A. (2010). Explicit instructon: Effective and efficient teaching. Guilford Press; Brady, S. (2011). Efficacy of phonics teaching for reading outcomes: Indications from post-NRP research. In Brady, S., Braze, D., & Fowler, C., eds. Explaining Individual Differences in Reading: Theory and Evidence. New York: Psychology Press.

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22 Slavin, R. E., Lake, C., Davis, S., & Madden, N. A. (2011). Effective programs for struggling readers: A best-evidence synthesis. *Educational Research Review,* 6(1), 1-26.

23 Along with high-quality instruction and ELA curricula that are evidence-based, instruction should be culturally responsive and meet the needs of all students. See Zaretta Hammond's Ready for Rigor Framework, which describes specific culturally responsive practices that support students to be "ready for rigor and independent learning" and other recommended resources on the Mass Literacy Guide's Pathway to Equity in Early Literacy page. https://crtandthebrain.com/wp-content/uploads/READY-FOR-RIGOR_Final1.pdf

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25 Walsh, K., & Drake, G. (2020). Teacher Prep Review: Program Performance in Early Reading Instruction. National Council on Teacher Quality, Washington, D.C.

26 Jones, Burns, & Pirri, 2010.

27 Guskey, T. R. (2000). *Evaluating Professional Development.* Corwin Press, 38.

28 Criterion-referenced progress monitoring measures student performance against pre-determined learning standards or skills that are expected at a particular time within a grade level (for example, reading common high-frequency words by sight). Norm-based progress monitoring compares a student's performance to the overall achievement of grade-level peers, i.e., a student is at the 30th percentile compared to other second graders.

29 Fuchs, L., & Kern, L. (2014). Data rich, information poor? Making sense of progress monitoring data to guide intervention decisions (Webinar and Transcript). National Center on Intensive Intervention at the American Institutes for Research. Retrieved from: intensiveintervention.org/resource/data-rich-information-poor-making-sense-progress-monitoring-data-guide-intervention.

30 Fuchs & Kern, 2014.

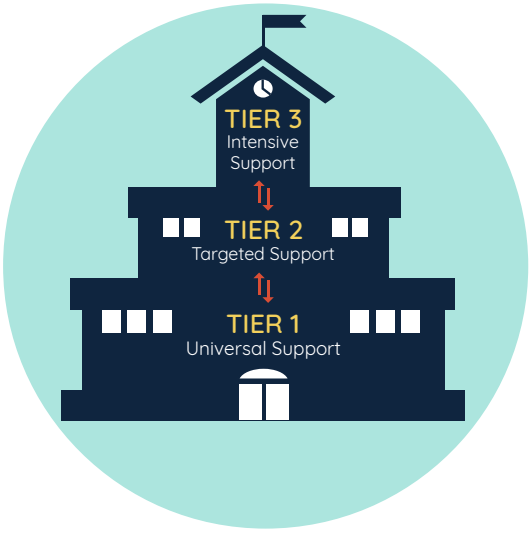
6 Targeted Reading Intervention at Tiers 2 and 3

In this chapter, you will learn:

- The Importance of Universal Core Reading Instruction (Tier 1) for Students at Risk for Dyslexia and Intervention at Tiers 2 and 3
- How to Make Data-Driven Decisions at Tiers 2 and 3
- Identifying Students' Instructional Focus Areas
- Using Supplemental Assessment Measures to Plan Targeted Intervention
- Defining Characteristics That Distinguish Tiers 2 and 3
- Guidelines for Interventions at Tiers 2 and 3

The Importance Of Universal Core Reading Instruction (Tier 1) For Students At Risk For Dyslexia

The success of MTSS rests squarely on the effectiveness of Tier 1 instruction for all students. Small-group interventions can be logistically untenable when a large proportion of students falls in the at-risk range.[1] From kindergarten to second grade, a robust, universal evidence-based Tier 1 ELA curriculum is critical for preventing and addressing word reading challenges. The strategies employed in interventions at the Tier 2 and 3 level are predicated on the same evidence-based practices that drive core instruction and are delivered to all students. These strategies reflect the accumulating research on how the brain develops a reading circuit, including the relationship between oral language skills (e.g., vocabulary, text structure, and background knowledge) and word reading ability, including the development of orthographic mapping, which facilitates sight word recognition and decoding.



Making Data-Driven Decisions At Tier 2 And Tier 3

Tiers 2 and 3 are designed to supplement the core curriculum so that students who perform in the at-risk range on a screener receive a "double dose" of reading instruction, participating in both classroom teaching (Tier 1) and intervention supports (Tier 2 or Tier 3).[2] This model is designed to prevent students from missing grade-level instruction[3] that often involves the introduction of background knowledge, new vocabulary, and rich conversation about literature.

Identifying Students' Instructional Focus Areas

The guidelines for screening risk of dyslexia (see Chapter 4) incorporate the reading skills that contribute to achievement in word reading accuracy and fluency from kindergarten to second grade. The use of screening data to inform instructional planning for at-risk students typically improves the targeted nature of Tier 2 and Tier 3 interventions.[4] In order to plan instruction that appropriately addresses students' needs, additional assessments may also be needed. The following sections outline best practices for each instructional focus area, as well as the use of supplemental assessments such as inventories and surveys.

Phonemic Awareness

Phonemic awareness instruction (PA) is not optional if the goal is for students to become good readers.[5] PA not only significantly develops students' immediate knowledge of the sounds in words but also has a broader impact on their decoding, spelling, and sight word recognition.[6] Students in kindergarten and first grade who perform in the at-risk range on screening/supplemental assessment measures of PA (such as phoneme segmentation) have been found to improve their decoding and encoding skills as a result of targeted PA intervention. Additionally, students in second grade who perform in the at-risk range on measures of word reading and oral reading fluency have been found to benefit from an assessment of their phonemic awareness knowledge, via survey or inventory, to confirm whether PA is a "hidden bottleneck" in their reading acquisition.[7]

Important Aspects of Phonemic Awareness Intervention. The development of phonological skills typically follows an increasingly complex path, moving from larger units of language (whole words) to smaller units of language (individual sounds or phonemes). Although some skills may develop out of order, generally students develop abilities along this continuum (see the Levels of Phonological Awareness chart in Appendix B). Some students, especially those at risk for dyslexia, become "stuck" at the onset-rime or even phoneme segmentation level at the end of first grade, negatively impacting their ability to advance in their decoding and sight word recognition. To be a fluent reader, a student needs to achieve proficiency in the manipulation and substitution of individual sounds (phonemes) in three-letter (e.g., sip) and four-letter (e.g., slip) words.[8]

Instruction in phonemic awareness does not have to be lengthy for students to derive considerable benefit. Sessions that are less than 15-minutes per day can be effective.[9] Some students will require multisensory scaffolds such as manipulatives or Elkonin boxes as their skills develop. The greatest benefit of phonemic awareness knowledge is derived when students can perform advanced phonemic awareness skills, like manipulation and substitution, automatically—without the presence of any manipulatives or scaffolds.[10] When advanced phonemic awareness is achieved, students are better able to develop their sight word recognition through the orthographic mapping process.[11]

Phonics

Students who struggle to learn the alphabetic principle (the connection between letters and sounds) and subsequent phonics skills require targeted instruction in sound-symbol correspondences for reading and writing. Phonics instruction is most effective when it is delivered in a systematic manner.[12] Students taught through explicit phonics methods score six to seven standard score points higher on measures of single word reading than students who are taught in an incidental manner.[13] Phonics not only improves word reading but also has great benefit for comprehension.[14]

Important Aspects of Phonics Intervention. As students are developing their understanding of the alphabetic principle, several strategies have been found effective in supporting those at risk for dyslexia. Introducing the letters whose names contain the initial sound (b, d, j, k, etc.), is more effective than letters whose sounds are in the last position in the name (f, l, m, r, etc.).[15] Additionally, using letters that have embedded picture mnemonics, or drawings of letters embedded in a picture of something containing that sound, has facilitated more efficient sound-symbol knowledge than the letter alone.[16]

Comprehensive phonics programs can follow substantially different protocols. Some programs teach sound-symbol correspondences and blending. In the absence of formal rules, these programs rely heavily on immediate corrective feedback and are used most frequently in kindergarten and first grade. Others teach the basic rules of phonics in addition to sound-symbol correspondences and blending. The final group teaches a set of elaborate rules that govern almost all words, and students are taught to think in a metalinguistic manner as they learn to read. Text annotation strategies like “marking-up” are prominent. To date, many of the programs that abide by these approaches have an evidence base, but the efficiency of each approach has not been compared to the others.

Regardless of the program, the most effective phonics interventions concurrently address phonemic awareness to the level of advanced skills and offer a multitude of opportunities to apply knowledge in controlled and uncontrolled connected text.[17]

Fluency

Fluent readers can recognize words automatically, giving them time to focus on the comprehension of a text, rather than struggling to decode individual words. Though fluency allows for ease in reading, the process itself—or rather, the network of processes—is complex. Students achieve fluency by becoming automatic across all underlying word-related skills and brain processes.

Sight Word Recognition

Sight word recognition is an important contributor to overall reading fluency.[18] Sight word recognition is developed through a process of orthographic mapping. Orthographic mapping occurs when students "map" frequently occurring letters and letter patterns onto their related sounds. The process of orthographic mapping is not simply reliant upon sound-symbol awareness; rather, it is an integration of several key oral and written language skills, which include advanced phonemic awareness, letter-sound knowledge, and phonics skills.[19]

It is important to note that orthographic mapping and sight word recognition are not simply memorization of key, non-decodable words.

In orthographic mapping, a person's knowledge of the individual sounds in words (i.e., phonemic awareness) and the particular sequence of sounds in words serve as the "anchoring points" with which to map letter sequences. Segmenting sounds in words allows students to map individual letters. Reading researcher David Kilpatrick notes that in order to map longer words, a student's brain must quickly calculate the countless possible sound combinations, just as a search engine anticipates the web address one is typing.[20] Advanced phonemic awareness skills—particularly sound manipulation—account for the unseen phonological calculations that a student's brain must complete to facilitate a comprehensive sight word inventory that would not be possible if readers relied on visual memory alone.

Instructional strategies that address weaknesses in students' sight word recognition include addressing any weaknesses in students' phonemic awareness skills to the advanced level (see the section in this chapter titled Phonemic Awareness). Specific weaknesses in phonemic awareness skills can be identified through the use of a phonemic awareness inventory (see the section in this chapter titled Using Supplemental Assessment Measures to Plan Targeting Intervention).

STAKEHOLDER VOICES

Cheryl Jordan | First Grade Teacher, Winchendon Public Schools

Although I am a veteran first-grade teacher, I have benefitted from learning about current research. In particular, the importance of phonemic awareness instruction for all students because it is literally the foundation and first step for reading success. Phonemic awareness is not a random activity—it must be built in throughout the day and taught explicitly to a whole group, small group, and/or one-on-one. Many students need it, but all students benefit from it.

Passage Reading Fluency

Passage reading fluency represents much more than the rate of reading speed. Fluency represents a complex network of processes that bridge basic decoding skills, including increasingly sophisticated comprehension and analytical processes. Any approach to remediating fluency needs to take this underlying complexity into account.[21] The most common approach to building fluency, repeated reading instruction, is based on the premise that the rehearsal of text—in which students reread phrases, sentences, and selections of passages—will bolster automaticity and prosody (the patterns of stress and intonation in a language) with written language.[22] Repeated reading provides a useful method for practice and is sufficient for improving fluency weaknesses in some students—typically those who do not score in the at-risk range on measures of rapid automatized naming (RAN). Yet, for some students, this is not enough because repeated reading does not explicitly develop students' automaticity in and across the *multiple* linguistic processes that contribute to automatic word recognition. Therefore, more robust approaches include both repeated readings and novel passages for all students who demonstrate deeper weaknesses in fluency, as indicated by their at-risk scores on measures of RAN.

In order to achieve fluency, students with retrieval weaknesses must become automatic across all five aspects of word knowledge. These aspects include the retrieval not only of the knowledge of sounds in words (phonology) and common letter patterns (orthography), but also knowledge of sentence structure (syntax), word meaning (semantics), and roots and affixes (morphology).[23] Together these linguistic processes—phonology, orthography, semantics, syntax, and morphology—are essential for fluency development.[24] It is the interaction of these processes across single words, sentences, and passages that allows a student to simultaneously read and understand text with fluent comprehension.[25] Within this view, fluency is no longer reducible to a matter of speed; rather, it represents multiple skills and a level of automatic processing in all the *underlying word-related processes* that allows readers to decode text fast enough and effortlessly enough to allocate their attention to the varied comprehension processes and skills involved in understanding and analyzing text.[26]

Structured Literacy

Structured Literacy (SL) is a relatively recent term that is used to describe the targeted and systematic introduction of the multiple aspects of word knowledge and skills. In a structured literacy approach, students are taught the sounds in words, letter-sound relationships, syllable patterns, morphemes, vocabulary, sentence structure, paragraph structure, and text structure.[27] Skill introduction follows a logical sequence wherein complex concepts build upon previously learned fundamental knowledge, and "the sequential nature of SL means that teachers design learning activities to require students to practice only what they have been explicitly taught."[28] SL is also characterized by a high degree of teacher-student interaction, including modeling, gradual release of responsibility, and immediate corrective feedback.

Early in skill development, SL instruction generally relies on controlled texts in which the majority of the content is decodable to provide an effective platform to directly apply phonics knowledge.[29] Yet, in order to adequately develop reading fluency, exposure to a variety of sentence structures and content-area vocabulary through appropriately challenging texts, including uncontrolled passages, is essential.[30]

Reading Comprehension

Reading comprehension requires the integration of reading fluency skills and listening comprehension.[31] Reading comprehension difficulties, in the absence of decoding, sight word recognition, or fluency issues, often indicate weaknesses in oral language skills—not a risk of dyslexia.[32] Oral language comprehension involves the interaction of many different linguistic and cognitive skills. The Mass Literacy Guide has carefully detailed the components of oral language knowledge and related instructional strategies.

Using Supplemental Assessment Measures To Plan Targeted Intervention

Data-based decision-making is a process that employs several different sources of information to inform instructional planning. As data teams are determining the appropriate tier of instruction and skill-building, they may choose to employ a skill inventory or survey to refine their choices. Inventories are not intended to be used as screening tools because they are not statistically capable of indicating students' individual levels of risk for dyslexia. Rather, supplemental surveys provide insights into which existing skills and areas need support.

Common supplemental tools assess key component areas of word reading accuracy and fluency, including phonemic awareness, letter identification, letter-sound and broader phonics surveys, spelling, and sight word inventories. These assessments often differ from screening measures as they provide detailed information regarding students' underlying skill strengths and weaknesses that can be easily translated into instructional practices. Such tools can be used prior to reading intervention to prioritize skills and sequence of instruction/intervention or during instruction to measure progress and inform the ongoing decision-making process for student grouping and instruction.

Inventory of Advanced Phonemic Awareness

One particular tool that provides valuable information for instructional planning is an inventory of students' phonemic awareness skills, including manipulation of individual sounds, such as a deletion task (e.g., Say tin, now don't say /t/ = in) or a substitution task (e.g., Say sap, now change /a/ to /i/ = sip). Students' phonemic manipulation skills are more strongly correlated with word reading than phoneme segmentation skills.[33] Therefore, beginning in first grade, districts are encouraged to utilize an inventory that includes phonemic manipulation to supplemental instructional planning. Such inventories are particularly relevant for students who score in the at-risk range on measures of decoding, word reading, and/or oral reading fluency and may have underlying weaknesses in advanced phonemic awareness.[34]

Defining Characteristics That Distinguish Tiers 2 and 3

In the MTSS model, Tiers 2 and 3 represent increasingly intensified levels of instruction. Yet essential instructional content and practices that are effective at addressing difficulties related to word reading remain the same across all levels of instruction. The primary distinction between Tiers 2 and 3 is the intensity of service delivery and nature of curricular individualization. Whereas Tier 2 intervention represents small-group instruction that offers opportunities to review, preview, and practice concepts from core instruction, Tier 3 supports are intensive by nature. These are often targeted, focused interventions that occur individually or in very small groups. It is important to note that Tier 3 is not synonymous with special education. Students with disabilities may not need Tier 3 support, and students not identified with a disability may in fact need Tier 3 support. Furthermore, movement between the tiers is fluid and not determined or defined by specific designations. Instead, it is driven by data from universal screeners, diagnostic assessments, and progress monitoring response to intervention. See the MTSS blueprint and Tiered Instruction within the MTSS Model from the Mass Literacy Guide for more information.

Universal Use of Evidence-Based Practices

Regardless of the service tier, all reading instruction should employ evidence-based practices (EBPs). The Every Student Succeeds Act (ESSA) of 2015 calls for schools to use evidence-based interventions,[35] and the U. S. Department of Education issued guidance on ways to evaluate the evidence of an intervention's effectiveness, as well as select an intervention for use.[36] Evaluating the evidence of an intervention requires a critical eye. Many publishers label their intervention as "evidence-based," "research-based," or a "best practice." These labels are meant to draw attention to the empirical or practical support of the intervention. However, these labels should not be considered equal, and understanding the differences among them can help determine if a program is worth further investigation for purchase.

Evidence-based practices are interventions or programs that have evidence to show that they are effective at producing results and improving outcomes when implemented as intended, and the evidence has been produced through published peer-reviewed studies and research.[37] In other words, experimental research has evaluated the impact of the intervention compared to a control condition to demonstrate that the EBP led to significant student improvement. Moreover, interventions are subject to rigorous replication studies in a variety of settings to demonstrate effectiveness.

Guidelines for Instruction at Tiers 2 and 3

Providing Tier 2 and Tier 3 instruction is a responsibility shared across educational roles, as collaboration and coordination are key processes within the MTSS model.[38] Teachers across all tiers of instruction are responsible for delivering evidence-supported practices to students with and without dyslexia. Instruction at each tier should be fully aligned with consistent teaching and practice of strategies, so students learn reading skills to mastery. Time is allocated for teachers, school leaders, and coaches to work together to examine instructional practices and align the lessons and strategies provided in any intervention tier with the curriculum provided in the classroom. Lessons across providers should complement one another and provide the same skills and strategies to maximize consistency and practice opportunities.

Co-teaching describes a collaborative relationship between a general and special education teacher within a general education classroom to instruct all students, including those at risk for reading challenges and those who have been found eligible for special education services.[39] Actual co-teaching practices can follow many different models, which range from turn-taking to center-based instruction to dividing the class. Literature on co-teaching has established a set of principles that facilitate successful implementation, including establishing a strong relationship between co-teachers and developing clear goals, expectations, and roles.[40]

The impact of co-teaching on reading achievement of struggling students and those who qualify for special education has been positive. There is evidence to indicate that students who participate in a co-taught classroom feel more connected to their learning environment, report greater social satisfaction, and make greater improvements on reading than their peers who receive instruction in a “pull out” model.[41]

To Learn More

- Kilpatrick, D. A. (2015). *Essentials of Assessing, Preventing, and Overcoming Reading Difficulties.* John Wiley & Sons.
- IRIS Center: https://iris.peabody.vanderbilt.edu/module/ebp_01/#content A series of three modules that discuss the importance of identifying and selecting evidence-based practices.
- Multi-Tiered Systems of Support: Blueprint for Massachusetts
- Mass Literacy Guide: Tiered System of Support: Data-Based Decision Making

Chapter 6 Endnotes

1 This refers to the group of students who are at risk of falling short on the end-of-year reading benchmarks or are experiencing reading difficulties, which will include students who may be at risk of dyslexia. Kilpatrick, D. A. (2015). *Essentials of Assessing, Preventing, and Overcoming Reading Difficulties.* John Wiley & Sons.

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3 See Massachusetts' current subject frameworks.

4 Snowling, M. J., & Hulme, C. (2011). Evidence-based interventions for reading and language difficulties: Creating a virtuous circle. *British Journal of Educational Psychology*, 81(1), 1-23.

5 Kilpatrick, 2015.

6 Ehri, L. C. (1998). Grapheme-phoneme knowledge is essential for learning to read words in English. Word recognition in beginning literacy, 3, 40; and Kilpatrick, 2015.

7 Kilpatrick, 2015.

8 Kilpatrick, 2015.

9 National Institute of Child Health, Human Development (NICHD). (2000) Report of the National Reading Panel: Teaching Children to Read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction: Reports of the subgroups. National Institute of Child Health and Human Development, National Institutes of Health.

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12 The NICHD National Reading Panel's large-scale analysis of the impact of phonics highlighted its indisputable role in overall reading achievement.

13 NICHD, 2000.

14 NICHD, 2000.

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17 Velluntino et. al, 1996; Torgesen, J. K., Wagner, R. K., Rashotte, C. A., Herron, J., & Lindamood, P. (2010). Computer-assisted instruction to prevent early reading difficulties in students at risk for dyslexia: Outcomes from two instructional approaches. *Annals of Dyslexia*, 60(1), 40-56.

18 Torgesen, J. K. (2004). Preventing early reading failure–and its devastating downward spiral. *American Educator*, 28(3), 6-19.

19 Ehri, 1998.

20 Kilpatrick, 2015.

21 Wolf, M., & Stoodley, C. J. (2008). Proust and the squid: The story and science of the reading brain (pp. 147-148). New York: Harper Perennial.

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Samuels, S. J. (1994). Toward a theory of automatic information processing in reading, revisited. Chapter in Alvermann, D.E., Unrau, N.J., & Ruddell, R.B. (Eds.). (pp. 698-718) (2013). Theoretical models and processes of reading. (6th ed.). Newark, DE: International Reading Association..

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35 Every Student Succeeds Act (ESSA), Title II, Sec. 2221. See also Massachusetts Department of Elementary and Secondary Education. Federal Grant Programs: ESSA Evidence-Based Interventions.

36 U.S. Department of Education. (2016). Non-Regulatory Guidance: Using Evidence to Strengthen Education

Investments.

37 Cook, B. G., Tankersley, M., Cook, L., & Landrum, T. J. (2008). Evidence-based practices in special education: Some practical considerations. *Intervention in School and Clinic*, 44(2), 69-75. See also DESE's The How Do We Know Initiative.

38 DESE MTSS Blueprint.

39 Bauwens, J., Hourcade, J. J., & Friend, M. (1989). Cooperative teaching: A model for general and special education integration. Remedial and Special Education, 10(2), 17-22; Murawski, W. W., & Lochner, W. W. (2011). Observing co-teaching: What to ask for, look for, and listen for. *Intervention in School and Clinic*, 46(3), 174-183; Sileo, J. M. (2011). Co-teaching: Getting to know your partner. *Teaching Exceptional Children*, 43(5), 32-38.

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7 The Role of Progress Monitoring in Measuring Students' Response to MTSS Interventions

In this chapter, you will learn:

- An Overview of Progress Monitoring for Students At-Risk for Dyslexia
- The Essential Characteristics of Progress Monitoring Tools
- Metrics for Determining the Rate of Progress including the use of Aimlines
- Guidance for Measuring Adequate Progress
- Action Steps to Address a Lack of Progress

Classroom teachers daily observe and determine what students have learned. They ask questions that check for students' understanding, review student work, and give end-of-unit tests to determine whether students can demonstrate what they know. Progress monitoring in MTSS goes beyond these daily activities to quantify the impact of instruction on student learning. Progress monitoring assessments provide valid and reliable data that show whether a student is improving as a result of the evidence-based intervention they are receiving.

Progress monitoring is designed to assess the fit among instructional planning, instruction delivery, and students' needs. Once students have been identified as at-risk for dyslexia through screening assessments, grade-level teams meet to determine the nature of tiered supports that are needed for each child (see Chapter 5). As educators plan interventions, they consider several factors. First, they identify students' area(s) of need and determine an appropriate instructional focus and group. Then they administer supplemental assessments, such as inventories, that allow for further refinement of instructional planning (see Chapter 6). Finally, they review the evidence-based practices for each type of intervention (see Chapter 6). It is at this point that progress monitoring will efficiently reveal the effectiveness of well-developed and appropriately delivered intervention.

What Is Progress Monitoring and How Is It Related to the Development of Skills among Students at Risk for Dyslexia?

Progress monitoring in early literacy is intended to assess componential skills using valid and reliable tools. These assessments are administered to all students receiving tiered supports, including those who qualify for special education. As noted in Chapter 5, districts can also use progress monitoring to confirm the risk status of some children who performed below expectation on screening measures. The recommended protocol for these students is two months of progress monitoring on a bimonthly basis (every other week) to determine the necessity of supplemental intervention (see Chapter 5, Appropriate Tier(s) of Instruction).[1]

Progress monitoring may also be used for students who are not receiving intervention but scored in the at-risk range, and for whom teachers are closely following skill development to determine if Tier 2 supports are warranted. Sometimes referred to as Curriculum-Based Measures (CBM),[2] these assessments are administered at frequent intervals to capture the rate of progress towards specific reading targets. CBM are designed to monitor areas of weakness, which may include phonemic awareness, decoding, word recognition, passage reading fluency, and reading comprehension. Characteristically, CBM are easy and quick to administer, sensitive to incremental progress, and offer multiple equivalent forms to facilitate ongoing assessment.[3]

Progress monitoring data are traditionally collected on the skills that fall in the at-risk range on screening measures. It is not necessary to progress monitor students' performance in areas where they have not demonstrated risk. There is some debate about the appropriate measure to use for students who are performing significantly below grade level, but **generally, it is advised that students are regularly progress monitored at their estimated instructional reading level (i.e., weekly or bimonthly) and periodically progress monitored at their grade level (i.e., monthly)**.[4]

Without progress monitoring data, it is difficult to determine if an intervention is adequate or if instruction should be modified to better support an individual student's needs. Well-designed MTSS models include progress monitoring assessments that extend from the screening and benchmark tools, continuing to collect data on the development of important skill areas (See Chapter 4 for screening criteria across kindergarten, first and second grade). Linking screening, intervention, and progress monitoring results in a robust MTSS model that is continuous across individual grade-levels and throughout elementary school.

STAKEHOLDER VOICES

Gregg Bach | Assistant Superintendent, Gloucester Public Schools

In Gloucester, our success at the elementary schools has come from hard work by individual teachers and administrators, but a collective approach has also been an essential ingredient, beginning with agreement among all schools on common curriculum, assessments, and practices. This initial agreement would have been difficult to sustain without the consistent leadership of the instructional coaching team. Coaches from each school meet weekly throughout the year to plan, communicate, support, and lead. They are the "doers" at the school level, coordinating and often performing the assessment of students on a regular schedule of benchmarks and progress monitoring, but they also research and recommend materials and program adjustments, lead professional development, and run data meetings and intervention systems. Most importantly, they assume the shared role of district curriculum coordinators. They are at the table for every important decision regarding curriculum, instruction, and assessment, and are considered essential partners by school and district administrators.

How Is Progress Determined?

Data from progress monitoring assessments indicate both students' current performance and rate of progress. To determine whether a student in intervention is making adequate progress at a sufficient rate, progress monitoring data is evaluated against an aimline,[5] which is the distance between a student's beginning-of-year benchmark or screening score and their end-of-year goal. As progress monitoring data are collected, the scores are graphed onto the aimline to determine whether growth is occurring at a sufficient rate to meet the end-of-year goal. Progress monitoring data offer the greatest value when multiple data points have been collected during each assessment cycle (See Chapter 5 for an assessment cycle timeline). Recommendations vary, but general guidelines suggest administering a progress monitoring assessment every one to three weeks.[6]

Guidelines For Measuring Progress

Research on the impact of literacy interventions can offer some guidance as to the amount of intervention necessary before determining if a student is making adequate progress.[7] When interventions contain the elements described in Chapter 6, namely systematic instruction in phonemic awareness to the advanced level as appropriate by grade (see Appendix B), systematic instruction in phonics, and ample opportunities to practice reading connected text, significant reading gains are typically made in the first 15 to 20 hours of intervention.[8]

Based on a service schedule of 30-minute interventions/three times per week, 15 - 20 hours of literacy instruction is delivered in approximately 10 - 13 weeks, which aligns with the span of one data cycle. A cycle concludes with a progress monitoring meeting, which serves as a formal opportunity to evaluate the performance of students receiving Tier 2 and 3 interventions (see Chapter 5). A lack of substantive gains in 15 - 20 hours, despite an intervention that contains the evidence-based practices mentioned, may necessitate a change to the intervention and/or level of tiered support. In certain but not all cases, a referral for a special education evaluation may be warranted.[9]

The MTSS process cannot be used to delay or deny evaluation for special education.[10] However, progress monitoring data from interventions can contribute to a robust evaluation process and help form the basis for annual IEP goals if a student is determined to have a disability and qualifies for special education services (see Chapter 8).

Using a Progress Monitoring Meeting to Make Data-Driven Instructional Decisions

Valid and reliable progress monitoring tools (like the ones found on the NCII Tools Chart) are based on national norms or benchmarks. Using the data from these assessments will guide two types of decisions:

Using Progress Monitoring for Instructional Decision-Making	
Is the current intervention meeting the student's targeted needs to reduce skills discrepancies and facilitate grade-level achievement?	If progress monitoring data show that a student's progress is not growing at an adequate rate, check the following related areas: • Confirm that the intervention is appropriate to address the student's weaknesses, leverages their strengths, and is implemented with fidelity. • Adjust the intensity of the intervention. • Adjust the instruction group (i.e. size or composition).[11]
Does the student show patterns that are consistent with a suspected specific learning disability, including dyslexia?	Progress monitoring data are one form of information that can reveal if a student displays: • A pattern of difficulty that persists beyond age expectations; • A pattern of difficulty across settings; • A pattern of difficulty that is not solely the result of cultural, linguistic, or socioeconomic differences; and • A pattern of difficulty that continues despite instructional support activities.

To Learn More

- A First-Person Narrative of Data-Based Individualization, from *Teaching Exceptional Children.* Lemons, C. J., Kearns, D. M., & Davidson, K. A. (2014). Data-based individualization in reading: Intensifying interventions for students with significant reading disabilities. *Teaching Exceptional Children*, 46(4), 20-29.
- Mass Literacy Guide: Data-Based Decision Making
- National Center on Intensive Intervention: Progress Monitor. This page describes the progress monitoring process and includes a link to the tools chart that reviews progress monitoring measures and a tool for data collection and graphing. intensiveintervention.org/intensive-intervention/progress-monitor
- Additional DESE resources on data-based decision making in a multi-tiered system of support:
  - MA MTSS Blueprint: Implementation Drivers, MTSS Module 5 (Video)
  - MA MTSS Blueprint: Tiers are not a Location, MTSS Module 7 (Video)

Chapter 7 Endnotes

1 Compton, D. L., Fuchs, D., Fuchs, L. S., & Bryant, J. D. (2006). Selecting at-risk readers in first grade for early intervention: A two-year longitudinal study of decision rules and procedures. *Journal of Educational Psychology,* 98(2), 394.

2 See Vanderbilt University's tip sheets on curriculum-based measurement at CBM Tip Sheet, Reading CBM Tip Sheet and Writing CBM Tip Sheet.

3 Hosp, M. K., Hosp, J. L., & Howell, K. W. (2016). *The ABCs of CBM, Second Edition: A Practical Guide to Curriculum-Based Measurement.* Guilford Publications.

4 Fuchs, L. & Kern, L. (2014). Data-rich, information poor? Making sense of progress monitoring data to guide intervention decisions (Webinar and Transcript). National Center on Intensive Intervention at the American Institutes for Research.

5 A line on a graph that represents expected student growth over time. From RTI Action Network glossary.

6 Fuchs & Kern, 2014.

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10 See DESE's Administrative Advisory SPED 2002-2.

11 Fuchs, L. S., Fuchs, D., & Malone A. S. (2017). The taxonomy of intervention intensity. *Teaching Exceptional Children*, 50(1), 35–43.

8 Dyslexia and Special Education

In this chapter, you will learn:

- Key triggers for a referral for a special education evaluation
- Considerations for:
  - individualized evaluation planning
  - developing a dyslexia assessment battery
- When appropriate, dyslexia considerations in IEP development

General education provides evidence-based literacy instruction as well as academic, behavioral, and social emotional learning (SEL) supports to all students. To help students who experience reading difficulty, general education also provides early and responsive support through MTSS tiered interventions. Many students who may have dyslexia can and should make effective progress with these general education supports. However, for students who may need special education services to make effective progress in the general education program, timely and appropriate special education evaluation and eligibility determination is key.

For many students who are eligible for special education, their specially designed instruction includes an important two-pronged approach for changing the trajectory of their educational progress:

1. Removal of barriers to a student's age-appropriate access to the general education program.
2. Development of a student's skills through annual goals and the associated service delivery.

This chapter targets considerations for students with dyslexia, within the special education referral, evaluation planning, and Individualized Education Program (IEP) development processes. For information about the Individuals with Disabilities Education Act (IDEA) and special education procedures, visit the U.S. Department of Education Office of Special Education Programs and the Massachusetts Department of Elementary and Secondary Education's Special Education page, which provide extensive guidance in implementing the provisions and requirements of IDEA and special education state law.

Referral for Special Education Evaluation

A student can be referred for a special education evaluation in three ways. First, IDEA and Massachusetts law require public schools to proactively identify and evaluate all students aged 3-21 who are suspected of having a disability.[1] This is known as child find. School districts must locate all students with disabilities living or attending school in the district, including English learners and students who are highly mobile or homeless, regardless of whether the students attend public or private schools or are home schooled. Second, young children already receiving services through the federal Early Intervention (EI) program may be referred by EI for a district evaluation as they approach their third birthday.

Finally, parents/guardians, educational personnel, and other caregivers can refer a student for an initial evaluation to determine whether the student needs special education services. For example, referrals can be initiated when a student does not respond to interventions within an MTSS model as

evidenced by ongoing progress monitoring data (see Chapter 7). Another prompt for referral could occur when screening data reveals that a student has a significant risk for dyslexia.[2] However, this referral can be made at any time when a student is suspected of having dyslexia that is causing an inability to progress effectively in the general education curriculum.[3] The use of screening measures and/or tiered interventions may not be used to delay or deny a full and individualized evaluation of a student suspected of having a disability,[4] but they should continue throughout the special education process.

Students who are suspected of having a disability are vulnerable to lost educational opportunities if their need for special education and related services is not promptly identified and appropriately addressed. Making an appropriate referral for such students to be evaluated for special education services is vital. However, other students may make effective progress in the general education program with tiered supports and interventions. For these students, referral for special education evaluation may not be necessary.

Comprehensive Individualized Evaluation Planning

An effective initial evaluation, which must be "full and individual,"[5] assesses a student's skills in all areas related to the suspected disability to accurately identify disability-related needs so that appropriate services and supports can be provided. Given that academic reading difficulties can be affected by factors such as English language proficiency and existing disabilities, such as attention deficit hyperactivity disorder (ADHD), the Team should determine if additional data need to be collected in relevant areas such as speech and language development; cognitive processing; attention, hyperactivity and impulsivity; and English language proficiency. For example, accurate assessment of English learners' reading abilities should include a review of their English language proficiency, such as results from ACCESS tests.[6] Data collected from the language proficiency measure may help determine what language(s) should be used to assess English learners' reading abilities.[7] Similarly, students exhibiting difficulty with attention and focus, in addition to reading difficulties, should be assessed for levels of executive functioning,[8] potential ADHD, and sensory integration and processing.[9] Reading is predicated on oral language abilities,[10] listening comprehension and other receptive language skills, and executive functioning; as a result, accurate assessment and determination of the root causes of reading difficulties is critical.

Assessment tools used in a comprehensive evaluation are selected and administered so as not to be discriminatory on a racial, cultural, or linguistic basis, and must be administered by trained and knowledgeable personnel.[11] Trained personnel should understand the role culture plays in students'

development and be able to discern whether observed difficulties are the result of different cultural experiences, linguistic differences, typical variations in development, or an actual disability. Furthermore, trained personnel should know and be mindful of the potential for implicit bias during the assessment process and their interactions with families and students.

There are many kinds of assessment measures that can be used to assist with appropriate decision-making about eligibility, priorities for IEP services, and effective classroom teaching/learning strategies. In particular, a finding of eligibility under Specific Learning Disability (SLD) requires gathering supporting information, including, among other required information, relevant behavior (if any) noted during observation, educationally relevant medical findings (if any), and past academic performance.[12] Evaluation planning for SLD should include four components: a historical review, identification of areas of concern and evaluation method, a review of possible exclusionary factors, and an age-appropriate observation (i.e., pre-school/kindergarten, elementary, middle, or high school).

When selecting assessment tools for an initial evaluation of a school-aged student, the Team should keep the end goal in mind (accurate eligibility determination and if appropriate, IEP development) so that students with reading difficulties receive the services and supports needed to meet grade level standards. Consider including data from these sources:

- Class performance and benchmark assessment data,
- A history of the student's participation in instructional support services, including all relevant progress monitoring data,
- Language proficiency assessment results, as appropriate,
- Family history of dyslexia,
- Family input,
- Relevant developmental history, including potential adverse childhood experiences,
- Psychological assessment using normed, standardized measures of cognitive processing,
- Academic assessment using standardized measures of skills related to reading and writing,
- Speech and Language evaluation using standardized measures of skills related to oral language ability, and
- Needs-specific rating scales (e.g. anxiety, behavior).

It is important to plan evaluations to seek the "why" behind concerns (e.g., chronic absences could be caused by a disability-related anxiety issue, "misbehavior" in class may be the result of reading difficulties, or perceived reading difficulties may be because a student's primary language is not English) and collect data that will inform a Team's determination of the services that will respond most appropriately to a student's educational needs. Teams should keep in mind that the appropriate services provided through an IEP may work best on their own, or provided in concert with tiered interventions, and should make an individualized determination for each student.

When planning an initial evaluation for students suspected of developmental delay, remember that dyslexia may exist in addition to other disabilities. Using age-appropriate assessments of component skills related to dyslexia (see Tables 1a-b below), reviewing family history, and observing students in the classroom are helpful tools to determine whether students may have dyslexia in addition to other language-related disabilities.

Technical assistance resources can be found in the Department's Special Education Website under the Memorandum on Specific Learning Disability-Eligibility Process/Forms.

Considerations for Selecting Reading Assessments

The complex nature of reading means that multiple assessments may be needed to reveal the nature of students' strengths and weaknesses (see Chapter 5). In addition to data from progress monitoring (see Chapter 7) and measures of cognitive processing, a robust dyslexia assessment battery will evaluate the three major domain areas related to reading and writing achievement. These areas are accuracy skills, automaticity or retrieval skills, and oral language skills. Within each of these domain areas, various assessments in the battery will measure a hierarchy of subskills, including passage level reading, single word reading, and foundational skills (see tables below).[13] Corresponding hierarchical or successive skills for measuring writing development, from the spelling of single words to spelling in sentences and paragraphs, are also important areas to assess. Information collected through this process will clarify the nature of a student's strengths and weaknesses particularly as related to the subtypes of dyslexia (phonological, naming speed and double-deficit).[14]

Developing a comprehensive evaluation battery specific to students suspected of having dyslexia is consistent with the 2015 guidance issued by the U.S. Department of Education's Office of Special Education and Rehabilitation Services (OSERS). This document provides clarity on the use of the term dyslexia, emphasizing that its use is appropriate throughout the entire special education process, as it allows for a better common understanding and addresses the unique needs of students with dyslexia.[15]

The tables below serve as a guide for a comprehensive evaluation that measures component skills related to reading and writing achievement. Rather than listing individual assessment tools, this framework is designed to support the development and organization of an assessment battery.

Table 1a: Component Skills Related to Reading and Writing Achievement (Accuracy and Automaticity)

Skill	Accuracy	Automaticity
To determine how the student performs on CONNECTED TEXT	➡ measure of accuracy in oral reading ➡ measure of reading comprehension ➡ measure of written language	➡ measure of rate and fluency in oral reading
To determine how the student performs at the WORD LEVEL	➡ measure of single word reading of real words ➡ measure of single word reading of nonsense words ➡ spelling of single words	➡ timed measure of single word reading of real words ➡ timed measure of single word reading of nonsense words
To determine how the student performs at the FOUNDATIONAL LEVEL	➡ measure of phonemic awareness ➡ measure of phonological awareness ➡ measure of letter recognition	➡ measure of Rapid Automatized Naming (RAN)

Table 1b: Component Skills Related to Reading and Writing Achievement (Oral Language)

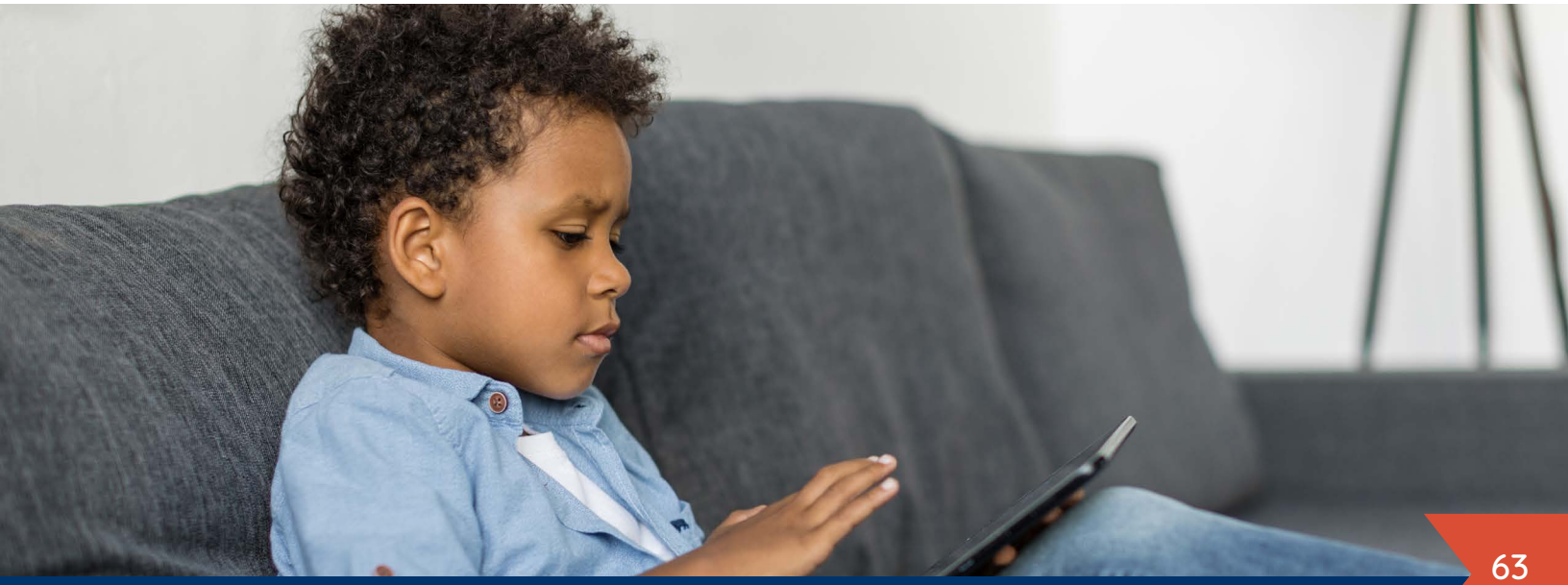
Skill	Oral Language
➡ To determine how the student performs on CONNECTED TEXT	➡ measure of listening comprehension
➡ To determine how the student performs at the WORD LEVEL	➡ measure of expressive vocabulary[16] ➡ measure of receptive vocabulary
➡ To determine how the student performs at the FOUNDATIONAL LEVEL	➡ measure of expressive language skills ➡ measure of receptive language skills

Planning and coordinating a thorough evaluation can make the IEP process more effective by providing the Team with the information it needs to determine eligibility and construct an effective IEP.

Dyslexia Considerations for IEP Development

The IEP development process relies on assessment data. It is therefore necessary that those assessments are, among other things, valid, reliable, administered without discrimination, and in a language and form most likely to yield accurate information for that specific student.[17] Importantly, the Team's discussion extends from assessment results to the impact dyslexia has on a student's daily experience at school (Present Levels of Educational Performance). This discussion summarizes the unique dyslexia-related needs of the student, describes the impact and intensity of dyslexia on the student in school environments, and describes supports for educators to provide so the student can access the general education program and make educational progress.[18] Determining the severity of dyslexia's impact on the student, as revealed from the comprehensive evaluation process, will aid in determining relevant accommodations and/or modifications, as well as prioritizing skills for remediation.

Thoughtful IEP Team membership and full Team participation as well as inclusive collaboration is essential for effective IEP development. Rich input from families, related service providers, and general educators (including ESL teachers), on the individualized design of accommodations, modifications, supplementary aids and services, and annual IEP goals is important for supporting areas of disability-related need holistically, in all environments (e.g., oral language, executive functioning, anxiety, English language proficiency, mitigating potential for implicit bias, social relationships, positive behavioral interventions).



Accommodations

Accommodations[19] are adjustments to the educational environment that allow students to access the curriculum frameworks (in the least restrictive environment[20]), their peers, and the life of the school.[21] Accommodations do not change the rigor, expectations, requirements or content of the curriculum or learning task. Instead, accommodations may adjust the teacher's presentation of material, student's response mode, setting for or schedule of learning, etc. For example, a classroom accommodation could allow a student with a learning disability to use a graphic organizer to assist with comprehension and writing.

To select appropriate accommodations, the Team discusses how the student's disability(ies) affects progress in the curriculum area(s), life of the school, and other age-appropriate areas of educational need. After potential barriers are noted, the Team considers accommodations that are culturally and linguistically appropriate and will facilitate successful participation in the classroom and other school activities, including social engagement with age-appropriate nondisabled peers.

The accommodations selected for inclusion in the IEP are intended to be tailored to the nature and severity of the student's educational disability. There is no single mandate for specific kinds of accommodations for students with dyslexia. Rather, consider broad categories of support, such as:

- Presentation accommodations that allow students with dyslexia to access information in ways other than complete reliance on print in the typical format;
- Response accommodations that allow students with dyslexia options for expressing their ideas and answers;
- Setting accommodations that allow students with dyslexia to work on a test or assignment in an alternate location;
- Timing or scheduling accommodations that allow students with dyslexia flexibility in the time constraints for completing or responding to assignments or tests.[22]

Accommodations related to state and district-wide assessments should also be considered.[23] Please consult accommodations listed in a student's IEP to help inform the accommodations that may be needed for state or district-wide Assessments. The Massachusetts Department of Elementary and Secondary Education has also issued guidance on the types of accommodations available for statewide assessments.

Modifications

Unlike accommodations, modifications do alter, sometimes substantially, the curriculum or content the student is taught, methodology/delivery of instruction by teachers, and/or performance criteria expectations for a student with disabilities, as compared to their general education classmates. Furthermore, modifications are typically designed by specialists or special educators. For example, if an entire class were provided with a particular spelling assignment, a modification to the assignment might include a selection of different words. Modification options are thoughtfully weighed and discussed, as the intensity of modifications to the curriculum frameworks may limit a student's access to the general curriculum and affect their educational outcomes. When high intensity modifications are appropriate for the student, discussion should also include any possible impact to earning the competency determination and graduating with a diploma.

Before making a final decision about a set of accommodations or modifications, review them with racial, cultural, and linguistic equity lenses with a focus on potential implicit biases that may affect the decision. This focus on the individual student within their cultural/familial context will help the student's identified accommodations and modifications better address their unique needs.

IEP Goals Informed by the Essential Components of Reading Instruction

As discussed in previous chapters, there are five essential components of reading instruction that result in the greatest impact on reading achievement.[24] They are:

1. Phonemic Awareness
2. Phonics
3. Fluency
4. Vocabulary
5. Comprehension

Recent work in the fields of education and neuroscience[25] [26] reinforces that the ability to read involves the integration of many sub-skills, such as proficiency in each of the five essential components. Reading goals developed for IEPs should reflect areas of need as identified in the assessment process (see Tables 1a and 1b). These five essential components of reading instruction offer a helpful framework by which to develop individual annual IEP goals.[27] For example, if a student performs in the Below Average range on a standardized measure of phonemic awareness, then a Team may decide to write a reading goal in phonemic awareness. For students identified as having multiple disabilities, including dyslexia, the Team should examine the identified supports, services, and annual goals to determine if they comprehensively address the various needs and are not in conflict with each other.

The supports, services, and annual goals and objectives must be developed in partnership with parents and the student (as appropriate). Engaging with students and their families will provide valuable insight into the student's cultural and familial background. Considering the individual student, within their cultural and familial context, will allow the Team to identify culturally/linguistically appropriate goals, supports, and services that will better position the student for academic success.

> For more information about the IEP development process, see the Massachusetts Department of Elementary and Secondary Education issued guidance. These resources should be consulted when developing the IEP.

To Learn More

- The Center for Parent Information and Resources' overview of the 10 Basic Steps in Special Education
- The U.S. Department of Education's Regulations for the implementation of IDEA
- The International Dyslexia Association's Fact Sheet: Accommodations for Students with Dyslexia
- The International Dyslexia Association's Fact Sheet: Dyslexia Assessment: What Is It and How Can It Help?
- Understood.org Scenarios of the differences between accommodations and modifications
- Understood.org Some common accommodations and modifications in school
- Culturally Responsive and Sustaining Schools and Classrooms (DESE online module) https://www.doe.mass.edu/odl/e-learning/culturally-resp-sust/content/index.html#/
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- Hammond, Z. (2013). Culturally Responsive Teaching and the Brain. Thousand Oaks, CA: Corwin.
- Muhammad, Gholdy. (2020). Cultivating Genius: An Equity Framework for Culturally and Historically Responsive Literacy. New York: Scholastic.
- U.S. Department of Education, Office for Civil Rights. (December 2016). Dear Colleague Letter: Preventing Racial Discrimination in Special Education.
- U.S. Department of Education, Office for Civil Rights. (December 2016). Fact Sheet: Preventing Racial Discrimination in Special Education.

Chapter 8 Endnotes

1 34 C.F.R. § 300.111, M.G.L. c. 71B § 3 and 603 CMR 28.03(1)(d).

2 Al Otaiba, S., & Fuchs, D. (2006). Who are the young children for whom best practices in reading are ineffective? An experimental and longitudinal study. *Journal of Learning Disabilities*, 39(5), 414-431.

3 603 CMR 28.02(9) and 34 CFR § 300.8(a)(1)

4 See U.S. Department of Education. OSEP Memorandum 11-07 Response to Intervention (RTI) (January 21, 2011) and DESE Administrative Advisory SPED 2002-2.

5 34 CFR 300.301(a)

6 Massachusetts Department of Elementary and Secondary Education. ACCESS: Assessing Comprehension and Communication in English State-to-State for English Language Learners.

7 34 CFR 300.304(c)(1)(ii)

8 Diamond, A. (2013). Executive functions. *Annual Review of Psychology,* 64, 135–168. http://www.iapsych.com/articles/diamond2013.pdf

9 Perrachione, T.K., Del Tufo, S.N., Winter, R., Ghosh, S.S., Christodoulou, J.A, & Gabrieli, J.D.E. (2016). Dysfunction of rapid neural adaptation in dyslexia. *Neuron* (92)(6), pp.1383-1397;

Viana A.R., Razuk M., de Freitas P.B., Barela J.A. (2013) Sensorimotor Integration in Dyslexic Children under Different Sensory Stimulations. PLoS ONE 8(8): e72719.

10 Seidenberg, M. S. (2017). *Language at the speed of sight: How we read, why so many can't, and what can be done about it.* New York: Basic Books;

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11 34 CFR § 300.304(c)(1)(i)-(ii) and (iv)

12 34 C.F.R § 300.311 and 603 CMR 28.04(2)(a). See also DESE's Memorandum on Specific Learning Disability - Eligibility Process Forms.

13 Kilpatrick, D. A. (2015). *Essentials of assessing, preventing, and overcoming reading difficulties.* Wiley.

14 Ozernov-Palchik, O., Norton, E. S., Sideridis, G., Beach, S. D., Wolf, M., Gabrieli, J. D.E, & Gaab, N. (2017). Longitudinal stability of pre-reading skill profiles of kindergarten children: implications for early screening and theories of reading. *Developmental Science*, 20(5), e12471–n/a.

15 United States Department of Education. (2015). OSEP *Dear Colleague Letter on Individuals with Disabilities Education Act (IDEA)/ Individual Education Program (IEP) Terms.* https://sites.ed.gov/idea/files/idea/policy/speced/guid/idea/memosdcltrs/guidance-on-dyslexia-10-2015.pdf.

16 "Receptive vocabulary refers to all the words that can be understood by a person, including spoken, written, or manually signed words. In contrast, expressive vocabulary refers to words that a person can express or produce, for example, by speaking or writing." Burger A., & Chong I. (2011) Receptive Vocabulary. In: Goldstein S., Naglieri J. A. (eds) *Encyclopedia of Child Behavior and Development. Springer*, Boston, MA.

17 See 34 CFR 300.304(c)(1)(i-iii).

18 Lowell et al, 2014.

19 The use of the term "accommodations" in this document is not coextensive with the use of that same term in Section 504 of the Rehabilitation Act of 1973, as amended.

20 34 C.F.R. § 300.114.

21 603 CMR 28.06(6).

22 For specific examples of these types of accommodations, see the fact sheet Accommodations for Students with Dyslexia prepared by the International Dyslexia Association, Inc.

23 34 CFR § 300.320(a)(6)(i).

24 National Reading Panel. (April 2000) Report of the National Reading Panel: Teaching Children to Read.

25 Dehaene, Stanislas. (2009). *Reading in the Brain: the Science and Evolution of a Human Invention.* New York: Viking.

26 D'Mello, A.M., & Gabrieli, J. D. E. (2018). Cognitive Neuroscience of Dyslexia. Language, Speech, & Hearing Services in Schools, 49(4), 798–810.

27 National Reading Panel, 2000.

9 Considerations for English Learners at Risk for Dyslexia

In this chapter, you will learn:

- Screening and supplemental data collection for English learners
- Basics of cross-linguistic transfer
- Differences between reading difficulty and language acquisition needs

The Mass Literacy Guide emphasizes that an asset-based, culturally responsive practice views bilingual and bidialectal (proficiency in two dialects of the same language) students as having cultural and linguistic assets, not greater risk factors. In Massachusetts' Blueprint Dashboard For English Learner Success, shared responsibility for English learners is identified as the first pillar of school culture. These principles of bilingualism as a valuable asset and shared responsibility for English learners are central to school culture and become more critical for students who are simultaneously learning English and experiencing reading difficulty. It can be challenging to determine whether the student's difficulty is the result of less exposure to English or due to a neurological disability like dyslexia.[1] [2] As a consequence, English learners are often identified with specific learning disabilities and dyslexia much later as compared to their native English-speaking peers.[3] However, it is possible to screen for risk of dyslexia in English learners, even when their language proficiency is developing at a different pace than native English speaking peers, in the early grades of pre-Kindergarten through grade two.

Is Additional Screening Information Needed for English Learners?

Research indicates that English learners benefit from early screening and effective, early instruction.[4] [5] Therefore, bilingual students and English learners should not be excluded from universal literacy screening (see Chapters 3 and 4).[6] However, while screening information is important in assessing whether English learners may be at risk for reading problems, the screening process should not end with a screening measure that focuses on decoding and phonemic skills.[7] Additional data is needed to determine whether reading difficulty stems from a lack of oral language proficiency or a possible reading disability:

- How long has the student been speaking their native language?
- What is the student's performance in their native language? Students with strong native literacy skills will likely require different support than students with weaker native language literacy skills.[8]
- How long has the student been speaking/exposed to English (in addition to their native language)? Is there a family history of reading difficulties? Because dyslexia has a genetic component, knowing whether an immediate family member may have had reading difficulty can be helpful in determining whether the student's difficulty might be related to a disability.
- Is the student's first language one that promotes transfer to learning English (cross linguistic transfer)?

Recommendations for using screening tools with English learners[9]

- Use tools with demonstrated reliability and validity to identify and monitor students' need for instructional support in reading.
- Assess students' language skills in reading in the native language (L1) and in English (second language or L2) to provide an appropriate context regarding evaluation of current levels of performance.
- Evaluate the potential effect of the process of L1 and L2 acquisition on current performance.
- Plan instruction based on what is known about the student's current level of performance and the student's literacy experiences in L1 and L2.

Brown and Stanford, RTI for English Language Learners: Appropriately Using Screening and Progress Monitoring Tools to Improve Instructional Outcomes, pp. 10-11.

In addition, the following information from students' educational history should be gathered:

- What level of English proficiency has been achieved?
- Are difficulties present in both the native language and English?
- Did the student experience delays in learning to talk or interruptions in their education?
- Have structured reading instruction and interventions been provided?[10]
- Have cognitive functions such as rapid automatized naming (RAN), phonological memory, basic phonemic awareness, and phonemic proficiency (advanced phonemic awareness) been assessed?

What is Cross-Linguistic Transfer?

Researchers Geva and Wiener[11] suggest that understanding the typical development of learning to speak and read in a second language can be helpful in determining the causes for reading difficulty issues with English learners. Cross-linguistic transfer occurs when children are able to use knowledge of one language to assist the learning of a second language. Educators will want to know what elements of the first language are similar to or different from the second language and can aid or hinder English language development. Several examples of positive cross-linguistic transfer from Spanish to English occur in the many consonant sounds that exist in both languages such as /k/, /m/, /p/, and /t/. Another example are cognates, or words that are spelled identically or similarly and sound similar in both languages, such as, for English and Spanish, *flexible/flexible*, *important/importante*, and *organization/organización*. When languages are more phonologically similar (have similar sounds), positive cross-linguistic transfer is more likely to occur. The greater the opportunities for positive cross-linguistic transfer, the easier it becomes to learn to speak and read the language. Children at risk of dyslexia may have challenges with this positive transfer, especially as language deficits are often associated with dyslexia.

Even for languages with fewer opportunities for positive cross-linguistic transfer, students can still be taught the elements of English that differ from their primary language. Young students, particularly in grades K-2, can learn these language differences quickly. For example, although Chinese students learning English commonly struggle to differentiate between /th/ and /s/ sounds, these students can learn how to distinguish these sounds with careful and appropriate instruction.[12]

Persistent Difficulty Despite Access to Evidence-Based Instruction

There are two key warning signs that may indicate an English learner's underlying learning difficulty with reading:

- Students continue to experience persistent difficulties acquiring new language differences, e.g., phonemes not consistent with their native language, despite consistent access to high quality, evidence-based instruction within an MTSS framework.
- Students demonstrate more difficulties than their peers with similar language backgrounds, despite consistent access to high-quality, evidence-based instruction within an MTSS framework.[13]

A common misconception is that English learners need well-developed oral language proficiency before they can be assessed in word-level reading skills. In their summary of reading research, Geva and her colleagues assert the following:

> The research shows that phonological processing skills such as phonological awareness and rapid automatized naming are not strongly associated with language proficiency; that [these skills] can be reliably assessed in the L2 [second language]; and that they can be used to predict word reading skills to help understand the source of difficulties in learning to develop word level reading and spelling skills in the L2. This highlights the fact that second language assessment measures can be used reliably to assess L2 word reading skills (p. 128).[14]

Many educators tend to attribute a student's degree of oral language proficiency as related to decoding skills, despite the student demonstrating persistent word recognition difficulties. Oral language proficiency does not drive the development of word reading skills when learning a new language in the primary grades, however phonological skills do. Since phonological skills and rapid automatized naming have minimal association with oral language proficiency but are highly correlated with word reading skills, assessing these two skills, along with additional data such as family history, level of language proficiency, and persistence of difficulty compared to students with similar language backgrounds, can help to distinguish language acquisition issues from dyslexia.[15]

Screening cognitive processing skills associated with word reading and spelling, such as phonological awareness, rapid automatized naming, and working memory, as well as student performance on decoding and word recognition skills, helps with the early detection of reading difficulties and risk of dyslexia.[16] These assessments, along with monitoring for persistent difficulty in pronouncing new English sounds that are different from native languages, decoding words and/or spelling, and using qualitative data can help educators better discern whether the source of a student's difficulty is oral language or a reading disability.

STAKEHOLDER VOICES

Maria Campanario | Boston Public Schools (retired)

Dyslexia can be diagnosed regardless of native language. What is important to keep in mind is that the challenges created when a student has dyslexia will vary by language. In other words, just as there are differences between languages, the signs of dyslexia may not appear the same way in every English learner. The linguistic differences must be taken into account so as to provide individualized support for the student.

Research shows that English learners benefit from instruction in all tiers that is: 1) systematic and direct, structured instruction, 2) evidence-based, and 3) aligned to the five essential components of reading as outlined by the National Reading Panel.[17] There is no need to wait until students' oral language proficiency is fully developed to assess English learners who are struggling in reading and provide them with evidence-based interventions to address their foundational skills needs.

To Learn More

For guidance on reading development for students learning English, please refer to the Mass Literacy Guide, which addresses evidence-based literacy acquisition and instruction, along with instructional resources and references, for English learners and bilingual and multilingual students.

- Mass Literacy Guide
- Pathway to Equity in Early Literacy
- Dr. Mariela Páez, Early Literacy for Bilingual Students, January 27, 2021
- Massachusetts Department of Elementary and Secondary Education. Massachusetts Blueprint for English Learner Success
- Massachusetts Department of Elementary and Secondary Education. English Learners with Disabilities/Special Education
- Massachusetts Department of Elementary and Secondary Education. Next Generation ESL Project: Model Curriculum Units developed by MATSOL, Northeast Comprehensive Center/WestEd and WIDA.
- Multitiered Systems of Support for English Learners. (2019). Culturally and linguistically responsive response to intervention within multi-tiered system of supports: Fidelity of implementation rubric. Washington, DC: U.S. Office of Special Education Programs. Multitiered Systems of Support for English Learners. https://www.mtss4els.org/files/resource-files/CLRT-RTI-Rubric.pdf
- Multitiered Systems of Support for English Learners. Resources Briefs
- MTSS 4 Success. RTI: Considerations for English Language Learners (ELLs)
- Identifying ELLs with Specific Learning Disabilities: Facts, Advice, and Resources for School Teams (Identification Toolkits for ELLs with Specific Learning Disabilities on page 4). https://wida.wisc.edu/sites/default/files/resource/FocusOn-Identifying-ELLs-with-Specific-Learning-Disabilities.pdf
- American Speech-Language-Hearing Association, Phonemic Inventories and Cultural and Linguistic Information: asha.org/practice/multicultural/phono/
- U.S. Department of Education. English Learner Toolkit for State and Local Agencies (SEAs and LEAs). Chapter 6: Tools and Resources for Addressing English Learners with Disabilities. https://www2.ed.gov/about/offices/list/oela/english-learner-toolkit/index.html
- U.S. Department of Education. Best Practice for ELLs: Screening. readingrockets.org/article/best-practice-ells-screening
- Capin, P., Hall, C., & Vaughn, S. (2020). Evidence-Based Practices in the Treatment of Reading Disabilities Among English Learners. Perspectives on Language and Literacy, 46(2).
- Literacy Instruction for ELLs - Early Literacy Instruction colorincolorado.org/early-literacy-instruction
- Literacy Instruction for ELLs – Reading 101 for English Language Learners colorincolorado.org/article/reading-101-english-language-learners
- Teaching Academic Content and Literacy to English Learners in Elementary and Middle School https://ies.ed.gov/ncee/wwc/Docs/practiceguide/english_learners_pg_040114.pdf
- Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades: https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/rti_reading_pg_021809.pdf

Chapter 9 Endnotes

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3 Rivera et al, 2008; Wagner, R. K., Francis, D. J., & Morris, R. D. (2005). Identifying English language learners with learning disabilities: Key challenges and possible approaches. *Learning Disabilities Research & Practice,* 20(1), 6–15.

4 Gersten, R., Baker, S.K., Shanahan, T., Linan-Thompson, S., Collins, P., & Scarcella, R. (2007). Effective Literacy and English Language Instruction for English Learners in the Elementary Grades: A Practice Guide (NCEE 2007-4011). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from https://ies.ed.gov/ncee/wwc/Docs/PracticeGuide/20074011.pdf.

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7 Literacy screening may indicate that students need support in foundational reading skills but will not determine whether they also need English language development (ELD) instruction and comprehension strategies. Institute of Education Sciences, Teaching Academic Content and Literacy to English Learners in Elementary and Middle School, p. 61.

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9 Esparza Brown, J., & Sanford, A. (2011). RTI for English language learners: Appropriately using screening and progress monitoring tools to improve instructional outcomes. Washington, DC: U.S. Department of Education, Office of Special Education Programs, National Center on Response to Intervention. Retrieved from https://mtss4success.org/resource/rti-english-language-learners-appropriately-using-screening-and-progress-monitoring-tools

10 Klingner, J. K. and Harry, B. (2006). "The Special Education Referral and Decision-Making Process for English Language Learners: Child Study Team Meetings and Placement Conferences." *Teachers College Record* 108, 2247-2281. Retrieved from https://nepc.colorado.edu/sites/default/files/publications/10.1.1.548.1121.pdf.

11 Geva & Wiener, 2015.

12 Geva & Wiener, 2015.

13 Geva, E., Xi, Y., Massey-Garrison, A and Mak, J. (2019). Assessing reading in second language learners: development, validity, and educational considerations. In book: Reading problems at school (forthcoming) Edition: forthcoming. Publisher: Springer. Editors: Kilpatrick, Joshi, Wagner.

14 Geva et al, 2019.

15 Geva et al, 2019.

16 Geva et al, 2019.

17 Gersten et al, 2007.

Glossary[1]

Alphabetic principle: The understanding that written letters represent spoken sounds and that these sounds go together to make words.

Alphabetic knowledge: Familiarity with the names and sounds of letters and letter patterns.

Automaticity: The ability to recognize a word effortlessly and rapidly.

Blending: When given a word separated into phonemes, the ability to combine the sounds to form a whole word.

Comprehension: The process of extracting and constructing meaning from written texts.

Curriculum-Based Measurement (CBM): An assessment tool that usually includes a standard set of directions, a timing device, a set of passages, scoring rules, standards for judging performance, and record forms or charts.[2]

Cut point or score: A specified point on a score scale; scores at or above that point are interpreted differently from scores below that point.[3]

Decodable text: Reading practice material in which the majority of words are linked to phonics instruction using pre-taught sound/spelling relationships and spelling patterns.

Decoding: The process of converting printed words into its spoken form.[4]

Dyslexia: Dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.[5]

Evidence-based interventions: Practices or programs that have evidence to show that they are effective at producing results and improving outcomes when implemented. The kind of evidence described in the Every Student Succeeds Act (ESSA)[6] has generally been produced through formal studies and research.

Explicit instruction: Refers to lessons in which concepts are clearly explained and skills are clearly modeled, without vagueness or ambiguity.

Fluency: Accurate reading of connected text at a conversational rate, with appropriate prosody or expression.[7]

Grapheme: A letter or a written representation of one sound.

Letter knowledge: Knowing that letters are the components of written words, that letters represent sounds systematically in the spelling of words, and familiarity with the 26 uppercase and lowercase letter shapes and their names.

Letter Naming Fluency: An assessment that evaluates how fluently a student can name visually presented uppercase and lowercase letters in one minute.

Morphemes: Word-part clues; the meaningful parts of words such as root words, prefixes, suffixes, and Greek and Latin roots.

1 Unless otherwise cited, definitions are from the Massachusetts Dyslexia Guidelines or from Honig, B., Diamond, L. and Gutlohn, L. (2018). CORE Teaching Reading Sourcebook (3rd Edition). Novato, CA: Arena.

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6 Every Student Succeeds Act (ESSA) of 2015.

7 Hudson, R. F., Lane, H. B., and Pullen, P. C. (2005). Reading fluency assessment and instruction: What, why and how. Reading teacher, 60(6), 506-515.

Onset: The part of the syllable that comes before the vowel (example: br in bring).

Oral Reading Fluency (ORF): A measure of overall reading proficiency that is a combination of reading rate and accuracy.

Orthographic mapping: The ability to "map" or connect frequently occurring letters and letter patterns onto their related sounds. The process of orthographic mapping is an integration of several key oral and written language skills, which include advanced phonemic awareness, letter-sound knowledge, and phonics skills.

Phoneme: The smallest unit of spoken language; individual speech sounds.

Phoneme Isolation: The ability to recognize individual sounds in words.

Phonemic awareness: The ability to hear and manipulate individual speech sounds (phonemes) in spoken words.

Phonics: A method of instruction that teaches the systematic relationship between letter and letter combinations (graphemes) in written language and the individual sounds (phonemes) in spoken language and how to use these relationships to read and spell words.

Phonological awareness: An umbrella term that includes awareness of words, syllables, onsets, rimes, and the smallest unit of spoken language, phonemes.

Print awareness or concepts: Knowing about the forms and basic functions of print, including how to handle a book, where on a page to begin reading, and the difference between a letter and a word.

Prosody: The tonal and rhythmic aspects of spoken language.

Rapid Automatized Naming (RAN): The ability to rapidly name a limited set of repeatedly presented known objects or letters.

Rime: Part of the syllable that contains the vowel and everything after it (example: -ing in bring). Sometimes these are referred to as phonograms.

Segmentation: Given a whole word, the ability to separate the word into individual phonemes and says each sound.

Sight words: Frequently occurring words that need to be immediately recognized, as opposed to decoded, to facilitate fluent reading.

Syllable: A word or part of a word pronounced as a unit.

Systematic phonics instruction: Teaching a set of useful sound/spelling relationships in a clearly defined, carefully selected, logical instructional sequence,[8] so that the logic of the alphabetic principle becomes evident, newly introduced skills are built on existing skills, and tasks are arranged from simplest to most complex.

Tiered instruction:[9]

- **Tier 1** provides the instructional foundation or universal support, often referred to as "core" within a tiered model, and is provided to all students. Data from screening and progress monitoring is used to differentiate instruction within tier 1. All students must have equitable access to core instruction that addresses grade-level expectations for learning.
- **Tier 2** is targeted support offered to students who demonstrate difficulty based on screening measures or who make weak progress from regular classroom instruction. Instruction in tier 2 must be targeted to the underlying difficulty(s) impacting the students' progress in literacy. Students in tier 2 receive supplemental ("in addition to") small group instruction. Importantly, this instruction should be systematic, explicit, and highly interactive. Progress-monitoring data should be used to group students periodically. Students who demonstrate improvement and exit from tier 2 support should be carefully monitored to ensure that general classroom instruction is adequate.
- **Tier 3** is more intensive support offered to students for whom support in tiers 1 and 2 is insufficient. Instruction in tier 3 must be targeted to the underlying difficulty(s) impacting the students' progress in literacy. Ongoing tracking of student performance is critical in tier 3. If students still experience difficulty after receiving high-quality core instruction and targeted tier 2 support, they may be evaluated for possible special education services, but tier 3 is not synonymous with special education.

Vocabulary: Knowledge of words and word meanings.

8 Armbruster, B., Lehr, F., and Osborn, J. (2001). Put reading first: The research building blocks for teaching children to read. Jessup, MD: National Institute for Literacy.

9 Mass Literacy Guide: Tiered Instruction within the MTSS Model.

Appendix A: SLD Data Tables

Table 1: 2020-2021 special education placements for students with specific learning disabilities by grade

(Data table provided by DESE Office of Data Services)

Special education placement by grade (ages 6-12)	K	01	02	03	04	05	06	07
Full Inclusion (special education services outside the general education classroom less than 21% of the time)	9	52	494	1,652	3,158	3,904	4,048	4,052
Partial Inclusion (special education services outside the general education classroom 21% to 60% of the time)	0	8	46	165	391	583	624	712
Substantially Separate Classroom (special education services outside the general education classroom more than 60% of the time)	0	1	8	37	109	204	236	234
Public Separate Day School	0	0	1	3	5	4	4	5
Private Separate Day School	0	1	0	2	7	14	21	37
Residential School	0	0	0	0	0	0	1	0
Homebound/Hospital								
Residential Institutional Facilities								
All SLD, Ages 6-21	9	62	549	1,859	3,670	4,709	4,934	5,040

Special education placement by grade (ages 6-12)	08	09	10	11	12	SP	SLD Total
Full Inclusion (special education services outside the general education classroom less than 21% of the time)	3,754	3,456	3,035	2,689	2,403	8	32,714
Partial Inclusion (special education services outside the general education classroom 21% to 60% of the time)	801	783	751	718	531	2	6,115
Substantially Separate Classroom (special education services outside the general education classroom more than 60% of the time)	192	192	175	157	97	13	1,655
Public Separate Day School	16	12	15	13	14	2	94
Private Separate Day School	44	37	50	45	34	7	299
Residential School	1	5	1	8	14	2	32
Homebound/Hospital							1
Residential Institutional Facilities							11
All SLD, Ages 6-21	4,808	4,487	4,029	3,634	3,096	35	40,921

In addition, three students aged 3-5 identified with specific learning disabilities were reported in 2020-2021.

Table 2: 2020-2021 Special Education Placements For Students With Specific Learning Disabilities By Student Sub-Group

(Data table provided by DESE Office of Data Services)

Special education placement (ages 6-21)	Economically Disadvantaged	English Learner	Male	Female	Non-binary
Full Inclusion (special education services outside the general education classroom less than 21% of the time)	14,740	3,846	17,160	15,545	9
Partial Inclusion (special education services outside the general education classroom 21% to 60% of the time)	3,349	1,033	3,459	2,654	2
Substantially Separate Classroom (special education services outside the general education classroom more than 60% of the time)	1,203	465	1,086	569	0
Public Separate Day School	59	10	69	25	0
Private Separate Day School	58	3	189	110	0
Residential School	7	1	22	10	0
Homebound/Hospital					
Residential Institutional Facilities					
All SLD, Ages 6-21	19,427	5,358	21,995	18,915	11

Special education placement (ages 6-21)	White	Afr. Amer./ Black	Asian	Amer. Ind. or Alaska Nat.	Nat. Haw. or Pacif. Isl.	Multi-race, Non-Hisp./Lat.	Hispanic/ Latino	SLD Total
Full Inclusion (special education services outside the general education classroom less than 21% of the time)	18,816	3,440	601	108	22	1,231	8,496	32,714
Partial Inclusion (special education services outside the general education classroom 21% to 60% of the time)	3,087	727	131	26	4	221	1,919	6,115
Substantially Separate Classroom (special education services outside the general education classroom more than 60% of the time)	478	370	20	3	0	67	717	1,655
Public Separate Day School	44	16	1	0	0	3	30	94
Private Separate Day School	243	11	7	0	0	8	30	299
Residential School	25	1	0	0	0	0	6	32
Homebound/Hospital								1
Residential Institutional Facilities								11
All SLD, Ages 6-21	22,695	4,571	760	137	26	1,531	11,201	40,921

Appendix B: Levels of Phonological Awareness

(with Description of Tasks Often Used to Assess and Teach)

Typical Age	Phonological or Phonemic Skill	Sample Tasks
4	Responsiveness to rhyme and alliteration during word play	Enjoying and reciting learned rhyming words or alliterative phrases in familiar storybooks or nursery rhymes
5	Rhyme recognition, odd word out; production of learned rhymes or recognition of changes that don't belong	Which two words rhyme? *stair, steel, chair* Hickory dickory dock, the mouse went up the _____?
	Clapping, counting syllables	*truck* (1), *airplane* (2), *boat* (1), *automobile* (4)
	Matching words with the same first sound	Do Mary and Martha start with the same sound? Yes or no?
5.5	Distinguishing and remembering separate phonemes in a series	Showing sequences of single phonemes with colored blocks, such as /s/, /s/, /f/ or /z/, /sh/, /z/
	Blending onset and rime	What word? *th – umb, qu – een, h – alf, d – amp*
	Segmenting and pronouncing the initial sound of a word	Say the first sound in *shoelace* (/sh/), *sock* (/s/), *funnel* (/f/).
6	Syllable deletion	Say *parsnip*. Say it again but don't say *par.*
	Deleting part of a compound	Say *cowboy*. Say it again but don't say *cow.*
	Onset-rime blending; beginning phoneme blending	/sh/–op (*shop*) / kw/–e¯n (*queen*) / b/ –a¯th (*bathe*) /b/–/a¯/–/t/ (*bait*)
	Phoneme segmentation, simple syllables with 2–3 phonemes (no blends)	Say each sound in the word as you move a chip for each sound: /sh/–/e¯/, /m/–/aˇ /–/n/, /l/–/eˇ/–/g/.

Typical Age	Phonological or Phonemic Skill	Sample Tasks
6.5	Phoneme segmentation up to 3–4 phonemes, including blends	Say the separate phonemes while you tap the sounds: /b/–/aˇ /–/ck/ (*back*) /ch/–/e¯/–/z/ (*cheese*) /k/–/l/–/ou/–/d/ *(cloud*)
	Phoneme substitution to build new words—simple syllables with no blends	Change the /j/ in cage to /n/. Change the /a¯/ in cane to /o¯/.
	Extracting and pronouncing beginning, final, and medial phonemes from one-syllable words	Say the last sound in *milk*. Say the vowel sound in *rope*.
7	Sound deletion, initial and final position	Say *meat*. Say it again without the /m/. Say *safe*. Say it again without the /f/.
	Sound substitution in words with 5–6 phonemes	Listen. What sound have I changed? *Shrink, shrank; square, squire*
8	Sound deletion, initial position,including blends	Say *prank*. Now say it again without the /p/.
9	Sound deletion, medial and final blend position	Say *snail*. Say it again without /n/. Say *smoke*. Say it again without /m/. Say *fork*. Say it again without the /k/.
	Phoneme reversal	Say *safe*. Say the last sound first and the first sound last. (*face*) Say *slack*. Say the last sound first and the first sound last. (*class*)
	Phoneme chaining	In a series of words that change only one sound at a time, use colored blocks to show addition, deletion, substitution, and resequencing of sounds from one word to the next.

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Moats, L. C., & Tolman, C. A. (2019). Excerpted from LETRS (3rd edition). Voyager Sopris Learning.

Appendix C: Assistive Technology (AT) Considerations

As stated in DESE's AT guidance, Access to Learning: Assistive Technology and Accessible Instructional Materials (November 2012), "IDEA[1] requires schools to consider a student's possible need for assistive technology devices and services whenever an Individualized Education Program (IEP) is developed. In addition, the Americans with Disabilities Act (ADA) and Section 504 of the Rehabilitation Act require schools to provide assistive technology for students with disabilities, if needed to assure equal access to the school's programs and services. Both laws also require that schools provide instructional materials in accessible formats to students who need them."[2] This document provides guidance on consideration and selection of AT to fit students' learning needs, as well as pages of resources and several student scenarios as examples (see page 18 for a spotlight on a student with dyslexia).

Although stakeholders saw many positives in using AT to support students with dyslexia and learning disabilities, they cautioned that AT should never replace good instruction in reading and writing, especially at the elementary level. In addition, jumping too quickly to an AT solution could prevent a student who can improve skills such as written expression from doing so. Given most students' comfort level with technology, one stakeholder advocated for "UDL (universal design for learning) accessibility for everyone – bring AT into the Tier 1 setting for all learners because it benefits everyone, from apps to devices used in conjunction with instruction."

To Learn More

Additional DESE AT resources

- https://www.doe.mass.edu/sped/assistive/
- https://www.doe.mass.edu/sped/links/dyslexia.html (see Dyslexia-Related Resources, Accommodations & Assistive Technology)
- MCAS Accessibility and Accommodations Manual for the 2020-2021 MCAS Tests and Retests for allowable accommodations during MCAS

US DOE resources

- Office of Special Education Programs: Family Information Guide to Assistive Technology https://osepideasthatwork.org/node/121
- IRIS Center: https://iris.peabody.vanderbilt.edu/module/at/#content

Center on Technology and Disability

- Assistive Technology Tools to Meet Student Needs -- Resource List (includes apps, Chrome, and SIRI technology)
- Georgia Project for Assistive Technology (list of academic and learning devices for reading, writing, and spelling)

Appendix C Endnotes

1 IDEA defines an AT device as "[A]ny item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability. The term does not include a medical device that is surgically implanted, or the replacement of such device." 34 CFR § 300.5

2 Department of Elementary and Secondary Education. (November 2012). Access to Learning: Assistive Technology and Accessible Instructional Materials. Introduction.