The New Jersey Dyslexia Handbook

A Guide to Early Literacy Development & Reading Struggles

September 2017

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1. Purpose

The purpose of **The New Jersey Dyslexia Handbook: A Guide to Early Literacy Development & Reading Struggles** is to provide information to educators, students, families, and community members about dyslexia, early literacy development, and the best practices for identification, instruction, and accommodation of students who have reading difficulties.

With this goal in mind, the intent is to:

- ***Build an understanding of dyslexia and related difficulties with written language;***
- ***Demonstrate how to identify and remediate students with dyslexia and other reading difficulties; and***
- ***Inform both educators and families in best practices to support students with dyslexia and other reading difficulties.***

In addition, this handbook will provide guidance for administrators, specialists, and teachers in making the best educational programming decisions for New Jersey students with dyslexia. It can also serve as a starting point when additional resources are needed to support students suspected of having difficulties in other areas, such as listening, speaking, reading and/or writing.

Information regarding implementing strategies according to state statutes pertaining to dyslexia and how they relate to federal laws such as *Section 504 of the Rehabilitation Act of 1973 (Section 504)*, the *Americans with Disabilities Act (ADA)*, as amended, and the *Individuals with Disabilities Education Act (IDEA, 2004)* are also included.

To complement this handbook, the development of additional dyslexia resources will be ongoing. Currently, the New Jersey Department of Education (NJDOE) website hosts a *Dyslexia Resources* section. On the "Professional Development" tab, professional development webinars are available. The content for these webinars was developed and presented by the New Jersey Branch of the International Dyslexia Association in collaboration with the NJDOE's Office of Special Education Policy and Procedure (OSEPP). The NJDOE website contains additional resources for families, educators and community members regarding the New Jersey Learning Standards, best practices, and professional development opportunities.

It should be noted that New Jersey school districts have considerable autonomy in making decisions about diagnostic tools and instructional programs. The NJDOE does not endorse specific diagnostic tools or instructional programs and, as a result, this handbook does not provide lists of mandated or preferred products or programs.

In order to assure a broad representation for input into this handbook, a diverse group of individuals with expertise in learning disabilities were brought together to develop this document. We would like to acknowledge the following members of this dyslexia handbook taskforce:

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2. Introduction

"Science has moved forward at a rapid pace so that we now possess the data to reliably define dyslexia, to know its prevalence, its cognitive basis, its symptoms and remarkably, where it lives in the brain and evidence-based interventions which can turn a sad, struggling child into not only a good reader, but one who sees herself as a student with self-esteem and a fulfilling future."

—Sally Shaywitz, 2014 Testimony Before the Committee on Science, Space, and Technology, United States House of Representatives

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The International Dyslexia Association states "Of the students with specific learning disabilities receiving special education services, 70-80% have deficits in reading. Dyslexia is the most common cause of reading, writing and spelling difficulties. Dyslexia affects males and females nearly equally, and people from different ethnic and socioeconomic backgrounds as well."

The State of Learning Disabilities (Horowitz, Rawe & Whitaker, 2017) states "Learning disabilities don't suddenly appear in third grade. Researchers have noted that the achievement gap between typical readers and those with dyslexia is evident as early as first grade. But many students struggle for years before they are identified with SLD [specific learning disability] and receive needed support."

Many educators and families are not surprised by this statement. They see the impact of this early delay in identification in their classrooms and homes every day. The typical window of identification varies; some students struggle to acquire early reading skills while other students' reading difficulties are masked by other strengths and not apparent until later grades when reading and writing demands intensify with greater quantities and more complex texts. There are also many factors that can impact reading development and add complexity to our efforts at identification. For example, it is critical to determine whether a student's struggles are attributable to difficulties with English language proficiency or whether there may be underlying signs of a disability in his/her native language. Additionally, a student's lack of early literacy opportunities may add a layer of complexity to their struggles with a language-based learning disability. Even when identified, many students with dyslexia can continue to find reading, writing and spelling challenging, despite conventional or intensified instruction. Students with dyslexia are at risk for being retained, failing courses, performing below proficient on academic assessments, receiving disciplinary actions and dropping out of school; and these risks increase for those who are not identified, or not identified early, in their academic careers (Horowitz et al., 2017). It is vitally important to reach all struggling learners early and effectively so their progress can be monitored and resources can be aligned to support not only their academic needs but also their social-emotional health and well-being.

Decades of research have yielded considerable progress in our understanding of the brain of individuals with dyslexia. We now have knowledge of the specific regions of the brain mapped to characteristic difficulties, of the identified differences in young children's brains prior to any reading instruction, and a greater understanding of the underlying genetic features. This research has contributed to the shaping of effective interventions while revealing new areas for research and exploration.

"Learning disabilities are not a prescription for failure. With the right kinds of instruction, guidance and support, there are no limits to what individuals with learning disabilities can achieve."

—Sheldon H. Horowitz, Ed.D., Director of LD Resources NCLD

Students with dyslexia represent a subgroup of all the students in school who experience difficulties learning to read, albeit a significant one due to their neurobiological conditions. It is important to understand students may struggle in learning to read for different reasons, including weak preparation from the preschool home environment, weak English language skills, low general intellectual ability, lack of motivation and interest (Snow, Burns, & Griffin, 1998) or issues associated with poverty. The good news is that all of these students benefit from evidence-based screening practices, evidence-based literacy instruction and ongoing progress monitoring.

It is imperative that New Jersey students have the opportunity to learn from teachers and specialists who are well versed in the cognitive science of reading and well trained in delivering literacy instruction that aligns to evidence-based practices and methodologies.

References and Resources:

Horowitz, S. H., Rawe, J., & Whittaker, M. C. (2017). *The State of Learning Disabilities: Understanding the 1 in 5*. New York: National Center for Learning Disabilities.

Snow, C.E., Burns, M.S., & Griffin, P. (eds.) (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy Press.

3. Definition

The New Jersey Administrative Code includes the definition of dyslexia adopted by the International Dyslexia Association (IDA) Board of Directors on Nov. 12, 2002.

(*N.J.A.C. 6A:14-1.3*) 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 the growth of vocabulary and background knowledge.

It is useful to consider each component of this definition:

• Dyslexia is a specific learning disability that is neurobiological in origin.

Dyslexia is a term used to refer to a specific type of learning disability in reading. The Individuals with Disabilities in Education Act (IDEA) lists it as one of the qualifying conditions under the special education eligibility category, Specific learning disability (SLD).

The problem is not simply one of poor instruction, lack of motivation on the part of the student, or inadequate exposure to literature in the home. While the exact causes of dyslexia are still not completely clear, it is neurobiological in origin. Anatomical and brain imagery studies show differences in the way the brain of a person with dyslexia both develops and functions at the level of neuronal activity.

• It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities.

Although some students with dyslexia can show a variety of speech and language problems prior to entering the formal school environment (Catts & Kahmi, 2005), their problems become very noticeable once they begin early reading instruction. They have persistent difficulties acquiring accurate and/or fluent decoding and encoding skills, that interfere with their ability to recognize words automatically, read text independently with proper accuracy, expression and rate, and spell words correctly.

• 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.

The phonological processing difficulties of students with dyslexia can significantly interfere with the development of phonemic awareness and phonics skills for reading and spelling. It should also be noted that many students with dyslexia also experience difficulties with orthographic processing and rapid automatized naming.

Dyslexia is not caused by low general intellectual ability, but rather by special difficulties processing the phonological and orthographic features of language, that can co-exist with all ranges of intellectual ability. However, some students with dyslexia may have strong cognitive abilities that allow them to compensate for or mask their deficits on certain tasks. These intellectual and compensatory skills may enable these students to obtain reading scores in the average range yet still have dyslexia. Research shows us that there is no difference between IQ consistent poor readers and IQ discrepant poor readers, providing very little justification for the use of the IQ-discrepancy approach solely to identify a reading disability (Stuebing, Fletcher, LeDoux, Lyon, Shaywitz & Shaywitz, 2002). Therefore it is vital that we assess and account for the full profile of strengths and weaknesses of these bright students so that we are not missing or delaying their identification.

Students with dyslexia may struggle to read or show a slow rate of progress, despite conventional or intensified evidence-based instruction.

• Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede growth of vocabulary and background knowledge.

While language comprehension deficits are not the underlying core deficit of dyslexia, students who struggle to decode with the proper fluency to understand what they are reading will experience problems with reading comprehension. As students shy away from reading, problems will begin to compound quickly. Students can show reduced growth in both their vocabulary and background knowledge putting them further and further behind their grade-level peers. For these reasons, it is imperative to provide students with access to grade level text through audio, text to speech technologies or teacher read-alouds, when appropriate, while they continue to receive instruction and develop their reading skills.

References and Resources:

Catts, H., & A. Kamhi. (2005) *Language and Reading Disabilities*. Boston: Pearson.

Stuebing, K., Fletcher, J., LeDoux, J., Lyon, G., Shaywitz, S., & Shaywitz, B. (2002). Validity of IQ-discrepancy classifications of reading disabilities: A meta-analysis. *American Educational Research Journal*, 39, 469-518.

4. Comprehensive Literacy Instruction for All

The following guidelines are intended to provide a framework for literacy instruction and to guide districts and schools in their efforts to provide the structure, curriculum and interventions needed to ensure that all students are successful in learning the New Jersey Student Learning Standards for English Language Arts (ELA).

The Key Components of Comprehensive Literacy Instruction

The New Jersey Department of Education (NJDOE) adheres to the philosophy of evidence-based instruction, incorporating the elements of reading instruction to include:

- ***Phonemic Awareness***
- ***Phonics***
- ***Comprehension***
- ***Fluency***
- ***Vocabulary***
- ***Background Knowledge***
- ***Motivation***
- ***Writing***

These elements are drawn from the National Reading Panel Report (2000) and other respected research. The NJDOE, with input from stakeholders, has added motivation, background knowledge and writing. The NJDOE has consistently held firm to the reciprocity of reading and writing instruction, and its benefit to students, as skills and strategies are cultivated in an integrated system of literacy instruction in the classroom.

The Role of the NJ ELA Student Learning Standards with Implications for Struggling Readers

In 2016, New Jersey adopted the NJ Student Learning Standards for English Language Arts (ELA) for K-12 based on the Common Core ELA standards. The NJ Student Learning Standards for ELA define grade specific end-of-year expectations and a cumulative progression of literacy skills in reading, writing, speaking, listening and language needed to prepare for college and careers by grade 12.

The standards are not inclusive of all skills and strategies that need to be taught. The standards acknowledge that interventions and supports for students whose achievement is below or way below grade level standards need to be in place, and rely on the expertise of knowledgeable educators to determine the appropriate methods and materials needed. Struggling students regardless of grade level will require more instructional time and more systematic and intensive instruction to make progress in the standards. ***Some will require instruction in foundational or other skills specified in the standards for students at lower grade levels.***

Within the K-5 reading standards are foundational skills that include print concepts, phonological awareness, phonics (decoding and spelling), sight word recognition, word structure and fluency. These critical skills underlie the development of independent reading and comprehension abilities and are of particular importance for students with dyslexia, as well as many other students who struggle with word level skills. These students require specific, intensive and systematic instruction in these foundational skills as an essential part of their program.

To support educators in the development of local curriculum aligned to the ELA Student Learning Standards, the NJDOE has developed curricular frameworks for *English Language Arts and Mathematics* for kindergarten through grade twelve. The **Key Principles of Comprehensive Literacy Instruction** chart included in this section, as well as the following sections of this handbook, address differentiated interventions for students who are below or very below grade level standards. In addition, Universal Design for Learning addresses the needs of struggling readers who require methods and materials at their instructional level for reading instruction. They also require accommodations to access current grade level texts to develop comprehension skills, vocabulary and content area knowledge.

Structuring the Literacy Block to Maximize Learning for Struggling Readers

The NJDOE recommends a minimum of 90-minutes of **uninterrupted** literacy instruction daily in grades K-5. The recommendation for grades 6-8 is 80 minutes in order to accommodate content/departmental classes at those grade levels. A block of 120-minutes is recommended for bilingual/ESL classes to allow additional allocated time for second language instruction and support.

Uninterrupted instruction means that no students are pulled for related services during the ELA block and no other classes are scheduled that would break the block into smaller units (PE, Art, Music, etc.). This recommendation also applies to students with Individualized Education

Programs (IEP). The IEP team determines the location of special education services; however, they must be provided in the least restrictive environment. Supports and interventions can, and should be, provided within the literacy block as well as an additional intervention period to supplement literacy instruction beyond the block. As students get older and the gap between the actual and expected achievement broadens, more time and increased intensity of instruction will be needed.

It is generally agreed that these time allotments are not sufficient for adequate instruction and extensive practice required by the standards. In recognition of this problem, there are many districts within the state that substantially exceed these time allotments especially at K-8 levels.

In order to allow sufficient time for differentiated instruction that includes structured literacy instruction as well as guided practice in reading and writing, the NJDOE recommends as a best practice that:

- At the elementary level a minimum of 90 minutes of uninterrupted time is devoted to literacy instruction. At least 60 minutes of the literacy block should be devoted to teachers providing small group intervention through structured literacy sessions **in addition to** conducting guided reading groups, reading and writing conferences, and sustained reading and writing activities in meaningful, differentiated centers. Centers of this type provide opportunities for the inclusion of students reading at a variety of levels in the literacy block. While working in centers, struggling readers will require monitoring to ensure that they are appropriately and productively engaged.

- An ample and varied collection of literature (e.g., poetry, drama, narratives) and informational texts for instruction as well as for independent reading should be in every classroom. Instructional resources should include an ample supply of controlled texts for use in structured literacy lessons, leveled texts for guided reading and exemplary texts with rich language for read alouds. Controlled texts with phonetically regular content provide opportunities for struggling readers to practice their decoding skills with success. Classroom libraries should contain exemplary texts for a wide range of genre, authors, reading levels, and topics/subject areas, including science, social studies and multicultural selections.

- A full array of media center services, text, as well as digital, is provided through a media center, staffed by a certified media specialist.

Universal Design for Learning (UDL)

UDL is a set of principles for curriculum development and instructional planning that gives all students equal opportunities to learn. UDL provides a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone – not a single, one-size-fits-all solution, but rather, flexible approaches that can be customized and adjusted for individual needs. UDL provides guidance and examples for a wide range of instructional approaches and formats to stimulate and motivate learning, including the use of technology and assistive technology. UDL also incorporates principles of student choice and self regulation as part of the design to foster independence in learning. UDL principles can benefit students in the classroom during core literacy instruction, as well as during intervention periods.

The Center for Applied and Special Technology (CAST) has extensive free resources for teachers, some developed by teachers, to build curricula utilizing the principles of UDL. Additionally, the NJDOE has established a *Universal Design for Learning Supports* page on their website.

Implementation of UDL relies heavily on students having access to appropriate technology, including assistive technology. For example, students with dyslexia will benefit from access to grade level content in a range of formats including audio and text-to-speech.

Differentiated Instruction

New Jersey classrooms should host a variety of types of reading instruction to offer appropriately differentiated instruction to all students addressing the following:

- As shown in the flowchart in the *Universal Screening & Early Dyslexia Identification* section of this handbook, structured literacy instruction is recommended for all students who fail to meet screening benchmarks or are observed by their teachers to struggle with reading and spelling. This instruction should be explicit, systematic, cumulative, and as individualized as possible within small group settings.

- Each classroom should have a broad array of reading and writing instructional strategies (e.g., direct, explicit structured literacy instruction, small group, guided reading, shared writing, and other evidence-based practices).

- There should be continuity and consistency of programs, language/terminology, and methods across grade levels and schools.

- Bilingual, English as a second language, and English language services programs should be provided as per New Jersey state and federal statute.

- All classrooms should be engaged in culturally responsive instruction.

- The revised ELA state standards and the call for close reading and more informational text in classrooms must also be addressed. In order to learn skills to engage in close reading of complex text, commensurate with a student's current grade level, students who have dyslexia will require access to accommodations. Assistive technology tools to help students access text may include: text-to-speech, word prediction and/or other technology applications to meet grade appropriate goals.

- The NJDOE believes that there is room for multiple strategies and instructional methods, and that it is incumbent upon teachers to consistently assess student needs (and struggles), while providing effective, varied instructional support for all learners. Early readers, as well as struggling readers of all ages, may need much more support one-on-one or in small groups, as they learn to make sense of text that is skillfully chosen to challenge them incrementally. For those same students, there are times that they will need to hear (and read) more complex text, building academic vocabulary, and increasing their ability to use more advanced reading strategies.

Assessment

As part of their curriculum design, districts identify multiple forms of both formative and summative assessment to measure both achievement and growth in ELA. All districts must assess English language proficiency and screen for reading disabilities according to New Jersey regulations. The *Universal Screening & Early Dyslexia Identification* section of this handbook outlines the requirements and guidelines for developing a screening protocol for dyslexia and other reading disabilities.

In addition to meeting the requirements for screening for dyslexia, districts should utilize universal screening, benchmark, diagnostic, and annual summative assessments, including NJ state assessments, to measure achievement and progress.

In order to determine the needs of students, it is critical that districts and schools employ a system of formative assessment that includes:

Universal Screening: a brief procedure designed as a first step in identifying students who may be at high risk for delayed development or academic failure and in need of further services, specifically reading instruction. Screening should be conducted upon entry at grade levels (K-5), and at regular intervals (minimally, twice a year) to determine the need for additional interventions.

Ongoing/benchmark assessment: an assessment of students' learning, based on systematic observations by teachers, as well as district/school adopted benchmarks.

Diagnostic assessment: an assessment used for students below grade level reading, as identified by multiple measures. The diagnostic assessment procedure follows regular screening and benchmark assessment, as well as targeted, sustained interventions designed specifically for the needs of the student. The purpose of diagnostic assessment:

- To identify a student's specific areas of strengths and weaknesses;

- To identify specific difficulties that a student may have in learning to read and the potential cause of such difficulties;

- To help determine the possible reading intervention and related special needs.

Summative assessment: an assessment to determine how well students are progressing in the standards aligned with the ELA curriculum. Summative assessments include end of unit assessments and teacher designed assessments, as well as the state-approved standardized assessment that is independent of a reading program.

Providing Intervention for Students Not Making Adequate Progress

The *Universal Screening & Early Dyslexia Identification* section of this handbook presents a flow chart which maps out the route of intervention for students not making adequate progress in reading, spelling and/or writing. Students are placed in small groups for structured literacy instruction. Intervention must be targeted, sustained and re-designed when not producing the intended results. Students should be identified for intervention when they struggle with any element of the reading, spelling and writing process. Interventions may be short-term or long-term as determined by a team of educators, based on data from regular progress monitoring. **It is most important that** struggling students have the full benefit of grade level

literacy instruction, while receiving additional instruction on identified areas needing intervention. In order to close the gap, students in need of long term instruction need more time on task within the block and beyond. Depending upon the time devoted to literacy instruction, long-term intervention may be delivered during the block and/or in addition to the literacy block. Short-term intervention should be delivered during the literacy block (one-on-one or small group). See the *Intervention: A Structured Literacy Framework for Struggling Readers* section of this handbook for specific information regarding intervention for students with dyslexia or other reading disabilities.

"Increasing learning time is one of the most important ways to intensify academic interventions in areas such as reading."

—Joseph K. Torgesen, 2000

Intervention and Referral Services

According to *N.J.A.C. 6A:16-8*, each district board of education is required to establish and implement a coordinated system in each school for the planning and delivery of Intervention and Referral Services (I&RS). I&RS is designed to assist students who are experiencing learning, behavior or health difficulties, and to assist staff who have difficulties in addressing students' learning, behavior or health needs. **It is particularly important that these services begin in kindergarten and first grade for students struggling to acquire early reading skills.**

New Jersey Tiered System of Support (NJTSS)

One way to implement the I&RS regulations is through implementation of a multi-tiered system of support (MTSS). NJTSS is a framework of academic and behavioral supports and interventions to improve student achievement, based on the core components of MTSS and the three tier prevention logic of Response to Intervention (RTI). With a foundation of strong district and school leadership, a positive school culture and climate, and family and community engagement, NJTSS builds upon I&RS and gives schools a structure to meet the academic, behavioral, health, enrichment, and social-emotional needs of all students.

NJTSS was developed in collaboration with New Jersey stakeholders including educators and administrators from districts implementing an RTI/MTSS model, higher education experts, and parents. It provides schools and districts a systematic way to address learner variability and engage all students in learning the New Jersey Student Learning Standards.

NJTSS involves the systematic development of nine (9) essential components in schools for the effective implementation of the framework with fidelity and sustainability. Those components include:

1. Effective district and school leadership;
2. Family and community engagement;
3. Positive school culture and climate;
4. High-quality learning environments, curricula and instructional practices;
5. Universal screening;
6. Data-based decision making;
7. Collaborative problem-solving teams;
8. Progress monitoring; and
9. Staff professional development.

The NJDOE website hosts a *NJTSS Resources* section to assist with implementation.

References and Resources:

National Reading Panel (U.S.), & National Institute of Child Health and Human Development (U.S.). (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.* Washington, D.C.: National Institute of Child Health and Human Development, National Institutes of Health.

Torgesen, J. K. (2000). Individual differences in response to early interventions in reading: The lingering problem of treatment resisters. *Learning Disabilities Research and Practice*, 15, 55-64.

Key Principles of Comprehensive Literacy Instruction

Key Principle	All Students Need:	Struggling Readers Need:
Instructional decisions should be guided by assessment of individual student knowledge and progress.	• Universal Screening • Ongoing progress monitoring • Diagnostic assessment • Summative assessment	• Screening for dyslexia if below benchmark on universal screening. Consideration of dyslexia screening, if at or above benchmark, but poor classroom performance. • Early and immediate intervention beginning in K-1 and continuing in higher grades when deficiencies are found in foundational skills of print concepts, phonological awareness, alphabetic knowledge, phonics, spelling, word recognition or fluency. • More frequent progress monitoring to gauge effectiveness of interventions and to make instructional changes if progress is not sufficient. • Referral to Child Study Team for comprehensive assessment for students with positive indicators of dyslexia and/or those with poor or slow rate of improvement. See the *Universal Screening & Early Dyslexia Identification* section of this handbook.
Explicit instruction is necessary to build skills and strategies for reading, spelling and writing.	• Teacher modeling with explanation (e.g., thinking aloud with step by step demonstration) • Active responding techniques (e.g., choral responding, turn and talk, quick writes) • Guided practice • Content needs to be aligned with the National Reading Panel's findings (e.g., systematic and explicit instruction)	Structured literacy interventions in small groups (Tiers 2 & 3) to build foundational skills not yet mastered and differentiated core instruction (Tier 1). The instruction has the following characteristics: • Explicit instruction that is explained by the teacher one language and print concept at a time. Information is taught directly. • Sequential instruction that begins with the easiest concepts that the student does not know, and remains on these to mastery before progressing to more difficult concepts. • Cumulative instruction that consistently reviews all concepts that have been introduced, and concepts unknown to the student are not included in the lesson. • Instruction that frequently uses multisensory strategies such as tracing, writing, fingerspelling and manipulatives to enhance learning for sound-letter correspondences; blending and segmenting sound-letter combinations; and learning syllable patterns to read and spell unknown decodable words, as well as to learn high frequency words. • Diagnostic instruction that requires continually monitoring a student's level of mastery of individual concepts and adjusts accordingly. • Repeated modeling and guided practice for students in small, flexible, homogeneous groups. • More frequent and longer periods of instruction. See the *Intervention: A Structured Literacy Framework for Struggling Readers* section of this handbook.
Coaching and specific feedback should be provided to address individual needs.	• Individual prompts, cues and specific feedback foster independent application of new skills and strategies. • Gradual reduction in the frequency and type of prompts as students gain proficiency.	More extensive coaching and specific feedback which may include re-teaching, teaching alternative strategies and/or use of alternative materials.
Metacognitive skills are essential to the development of word solving strategies as well as higher order thinking skills.	Awareness of what strategy is needed, when a strategy is needed, and when to change or modify a strategy.	More explicit instruction and coaching to develop skills in self-monitoring and self-correction for word recognition and comprehension strategies.

Key Principles of Comprehensive Literacy Instruction

Key Principle	All Students Need:	Struggling Readers Need:
Students need not only explicit instruction in skills and strategies but also extensive practice in reading connected text.	To build reading stamina, reading accuracy, vocabulary, fluency and comprehension through: • Opportunities to read connected text at their instructional level with teacher support. • Opportunities to read connected text independently with comprehension.	• More time to engage in reading connected text to apply foundational skills and strategies in a meaningful context. • Texts with controlled vocabulary and phonics patterns should be part of reading instruction to support practice in decoding and word recognition skills. • Teacher guidance to select texts and to monitor student engagement and comprehension during independent reading time.
Literacy learning is enhanced through social interaction and collaboration with peers.	Exchanging and responding to others' ideas helps all students solidify and extend their knowledge and comprehension skills.	Opportunities for conversations with peers can be a motivating and supportive pathway to explore challenging grade level content.
Motivate interest in reading through rich literacy environments, activities and materials.	• Classrooms filled with books and other media representing different genres, at different reading levels, organized, labeled and presented in attractive, accessible ways. • Teachers use of exemplary texts containing rich language and content through read alouds, book talks, peer discussions (e.g., literature circles) and independent reading activities.	• Assistive technology to access books on topics of interest and grade level texts. • "Text-to-Speech", multi-media, audio and read aloud can be used as accommodations to develop comprehension skills, vocabulary, background knowledge and knowledge of text structure as part of independent and guided reading.

5. Universal Screening & Early Dyslexia Identification

"The best solution to the problem of reading failure is to allocate resources for early identification and prevention."

—Joseph K. Torgesen, 1998

A multi-tiered system of supports such as the New Jersey Tiered System of Supports (NJTSS) is designed to improve outcomes for all students through a data-driven, prevention-based framework, and this approach, when implemented well, is especially helpful for teaching struggling readers and learners from all social groups (Prestwich, 2014). Research shows the rapid growth of the brain and its responsiveness to instruction in the primary years make the time from birth to age eight a critical period for literacy development (Nevills & Wolfe, 2009).

It is therefore important to understand the basic principles of universal screening, the cognitive science of reading and literacy development, and specifically the potential indicators that serve as red flags for the common reading disability, dyslexia.

"Ninety percent of children with reading difficulties will achieve grade level in reading if they receive help by the first grade. Seventy-five percent of children whose help is delayed to age nine or later continue to struggle throughout their school careers."

—Vellutino, Scanlon, Sipay, Small, Pratt, Chen & Denckla, 1996

Universal Screening for Reading

Following the NJTSS best practice model, school districts implement universal reading screening of all students (K-2) at various points in the beginning, middle, and end of the school year, regardless of the student's performance in the classroom. Universal screening results should identify those students potentially "at-risk" for future reading failure, including those with developmental reading disabilities, and can provide districts with information regarding the effectiveness of their core instructional program.

Screening Measures by Grade Level

Kindergarten: Research indicates that kindergarten screening measures are most successful when they include assessment of the following areas: phonological awareness including blending onset-rime and phoneme segmentation, rapid automatic naming including letter naming fluency, sound-letter identification, and phonological memory including nonword repetition. (Catts, Nielsen, Bridges, Liu, & Bontempo, 2015 and Jenkins & Johnson, 2008).

First Grade: Research indicates that first grade screening measures are most successful when they include assessment of the following areas: phonemic awareness specifically phoneme segmentation and manipulation tasks, rapid automatic naming including letter naming fluency, sound-letter identification, phonological memory including nonword repetition, oral vocabulary and word recognition fluency. (Compton, Fuchs, Fuchs, Bouton, Gilbert, Barquero, Cho & Crouch, 2010 and Jenkins & Johnson, 2008). The Center on Response to Intervention's *Screening Briefs* also cites that oral reading fluency could be added in mid-first grade.

Second Grade: The Center on Response to Intervention's *Screening Briefs* states that in second grade, screening assessments should assess word reading, oral reading fluency, and reading comprehension. Word reading assessments should include both real and nonsense words.

There is no one test or assessment tool that would measure all reading skills. Different assessments measure different discrete skills. Districts should consider the use of multiple measures for screening purposes to ensure that all identified skills have been assessed at the appropriate grade level. Another consideration should be the use of both timed and untimed measures. When multiple measures are used to screen students, the accuracy of classification for who is "at-risk" improves significantly.

Choosing Screening Tools

When establishing a process for universal reading screening, attention should focus on selection of evidence-based screening tools and fidelity of implementation. The rubric **Selecting A Universal Screener**, included in this handbook, can be used to guide decisions about appropriate screening tools by grade level. School personnel should be appropriately trained in how to administer the universal screening tool before it is used with students.

Based on more than 30 years of research in curriculum-based measurement (CBM), universal screening tools are:

- ***Quick targeted assessments of discrete skills that indicate if students are making adequate progress in their reading achievement.***
- ***Administered 3-4 times a year, offering alternate formats.***
- ***Reliable and valid, following standardized directions and scoring protocols.***

School districts already implementing universal reading screening may wish to assess the evidence base of their current universal screening tools or assess the need for staff training. School districts not already implementing universal reading screening of students should evaluate potential screening tools based on several characteristics before making a selection. Districts should consider a tool's predictive validity and classification accuracy to ensure it is making useful and accurate predictions.

"Predictive validity is a measure of how well the prediction of future performance matches actual performance along the entire range of performance from highest to lowest, not just at or near the cut score. It answers the question, *If we used this screener to predict how every child will perform at some point in the future, how good would those predictions be?*

Classification accuracy is a measure of predicting into categories of risk. It answers the question, *If we used this screener to divide our students into those considered at-risk and those considered not to be at-risk, how well would we do based on the outcome of their future performance?*" (Dykstra, 2013).

Information on the reliability, validity, and classification accuracy of a screening tool can be found in the publisher's technical notes. The Center on Response to Intervention also has a *Screening Tools Chart* on their website.

Developmental Reading Disabilities

A process for universal reading screening provides the data needed to predict which students may be "at-risk" for future reading difficulties and/or the early warning signs of developmental reading disabilities, such as dyslexia. Researchers currently propose that there are three kinds of developmental reading disabilities that often overlap but that can be separate and distinct (Moats & Tolman, 2009).

Figure 1 shows the subtypes of reading disability. Students with a primary phonological or fluency/naming speed deficit fit the profile for dyslexia.

Subtypes of Reading Disability

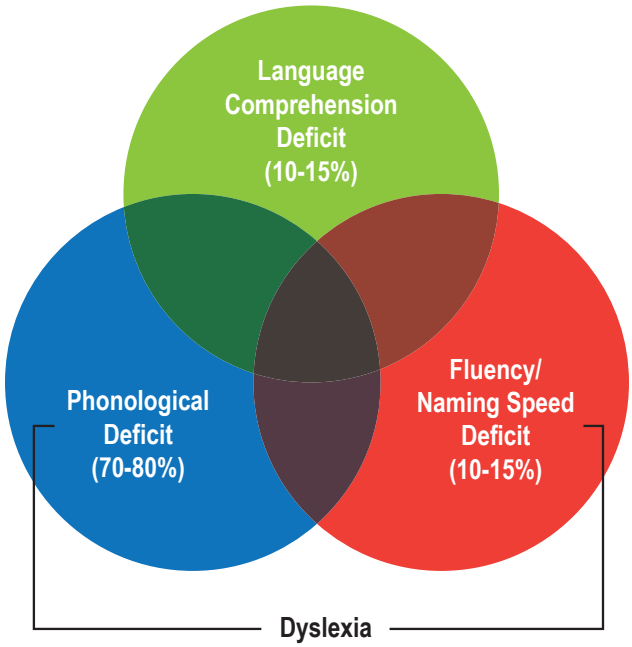

Figure 1 – Source: Adapted from Moats & Tolman, 2009

Phonological Deficit: 70–80% of poor readers show difficulties with accurate and fluent word recognition originating from phonological processing weaknesses that often result in secondary consequences in poor fluency and reading comprehension.

Fluency/Naming Speed Deficit: 10–15% of poor readers show accurate word reading, but have difficulties with slow word recognition and text reading. They have trouble with speed of word recognition and automatic recall of word spellings. They tend to spell phonetically but not accurately.

Reading researchers still debate the primary problem for this subgroup. Some indicate that it is a timing and processing speed problem, and others propose a specific deficit with the orthographic processor that affects storage and recall of exact letter sequences. This is also called a *processing speed* or *orthographic processing problem* (Moats & Tolman, 2009).

If a student with dyslexia has a specific weakness in either phonological or fluency/naming speed processing, they are said to have a single deficit. Students who have a combination of phonological and naming speed deficits are referred to as having a *double deficit* (Wolf & Bowers, 2000). Students with double deficit dyslexia are more common than single deficit and are also the most challenging to

remediate.

Language Comprehension Deficit: 10–15% of poor readers present with social-linguistic disabilities (e.g., autism spectrum disorders), vocabulary weaknesses, generalized language learning disorders, and learning difficulties that affect abstract reasoning and logical thinking.

Although this deficit can occur along with the first two types of problems, these readers are distinguished from students with dyslexia because they can read words accurately and quickly and they can spell (Moats & Tolman, 2009). Their primary deficit is caused by disorders of social reasoning, abstract verbal reasoning, or language comprehension.

"Dyslexia is an alternative term used to refer to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor decoding, and poor spelling abilities."

—The Diagnostic and Statistical Manual of Mental Disorders, 5th Edition

Screening for Dyslexia

The NJ dyslexia screening law states, "A board of education shall ensure that each student enrolled in the school district who has exhibited one or more potential indicators of dyslexia or other reading disabilities is screened for dyslexia and other reading disabilities using a screening instrument selected pursuant to section 2 of this act no later than the student's completion of the first semester of the second grade." A **Screening for Dyslexia Flowchart** is included in this handbook.

Students who are identified by the district's universal reading screening tools as "at-risk" and not considered "likely on track" should be promptly placed into structured literacy interventions, progress monitored, and screened for dyslexia. It is important that school personnel are properly trained to understand the specific terminology used by the screening tool to identify students who are "at-risk" (e.g., some risk, at risk, below benchmark, well below benchmark, etc.). Additionally, older students or students who scored adequately on the universal reading screening but who demonstrate poor classroom performance or display other indicators for dyslexia should also be considered for a screening for dyslexia. A **Potential Indicators of Dyslexia Checklist**, included in this handbook, can be used by teachers to identify the potential indicators of dyslexia.

Assessments used during a screening for dyslexia should be administered by staff members, such as reading specialists, academic support/basic skills teachers, intervention specialists, speech-language pathologists, or classroom teachers, who are appropriately trained in how to administer the assessment tools, how to monitor for age-appropriate literacy benchmarks, and how to identify the characteristics of dyslexia.

Kindergarten through Second Grade

Extensive research documents the role of phonemic awareness and the influence of rapid automatized naming (RAN) in the development of reading skills. These two skills have been identified as the best predictors of dyslexia (Moats & Dakin, 2008). Therefore, the universal reading screening data from these two areas must be integrated into any screening for dyslexia in kindergarten through second grade.

For kindergarten and first grade students, assessments of phonological awareness and phonemic awareness should be given first to determine the specific point of difficulty for a student on the phonological awareness skills continuum, shown in ***Figure 2***. If a student was assessed during universal reading screening on phonemic awareness skills including segmentation, blending and deletion and was determined "below benchmark", then additional areas to assess would include ability to identify rhyming words, produce rhyming words, initial consonant isolation, final consonant isolation and medial sound isolation.

Phonological Awareness Continuum

Typical Age	Skill Domain
4	Recognize rhyme, alliteration
5	Recognize and produce rhyme, phoneme matching, count, pronounce, blend and segment syllables (NJSLS.ELA-Literacy.RF.K2.A, NJSLS.ELA-Literacy.RF.K3.A, NJSLS.ELA-Literacy.RF.K2.B)
5.5	Onset-rime awareness, initial consonant isolation (NJSLS.ELA-Literacy.RF.K2.C)
6	Phoneme blending, segmentation (simple) (NJSLS.ELA-Literacy.RF.K2.D, NJSLS.ELA-Literacy.RF.12.B)
6.5	Phoneme segmentation, blending, substitution (NJSLS.ELA-Literacy.RF.K2.E, NJSLS.ELA-Literacy.RF.12.B, NJSLS-ELA-Literacy.RF.12.D)
7	Initial and final sound deletion
8	Deletion with blends
9	Longer and more complex deletion tasks (NJSLS.ELA-Literacy.RF.12.B)

Figure 2 – Source: Adapted from Moats, 2005

It should be noted that the New Jersey Student Learning Standards for English Language Arts (ELA) supports this phonological continuum.

If phonological awareness and phonemic awareness skills seem intact, more thoroughly assess kindergarten, first, and second grade students' word recognition skills (real word reading), decoding skills (nonsense word reading), and encoding skills (spelling) to determine areas of difficulty. An informal phonics survey and a developmental spelling inventory can provide useful information. A measure of oral reading fluency from mid-first grade and beyond can also be administered to determine accuracy and fluency of connected text. Assessments should include data on oral reading accuracy and oral reading rate calculated in words correct per minute. Results should be compared to national norms created for oral reading fluency.

"The type of spelling errors made by the student should be analyzed and described. The analysis of a student's spelling errors indicates which phonics patterns and orthographic patterns the student does not know."

—Lowell, Felton, & Hook, 2014

A measure of vocabulary knowledge is often included at this level to "estimate underlying oral language abilities that will be important for reading comprehension" (Lowell, Felton, & Hook, 2014). It can be a naming task of pictured objects and assessment of the student's expressive vocabulary skills. The results of oral vocabulary knowledge tasks should be compared to the student's written vocabulary. Often individuals with dyslexia will use an easier word in writing than when speaking due to the fear of spelling the word wrong. Professionals should also be aware of difficulties with word retrieval evidenced by some students with dyslexia. Word retrieval problems are defined as an inability to retrieve a word when the child knows the concept or meaning (German, 2002). Students might say "I know this word. It is on the tip of my tongue." yet struggle to produce the word.

Third Grade and Beyond

Typically starting in third grade, school districts administer a reading assessment to all students at least once a year whether that is a statewide assessment or a particular district benchmark assessment. These assessments can be used to help identify students who may be struggling readers. Districts can review this data to identify students performing below expectations. These students should be screened for dyslexia as well. In addition, students who score adequately on these district reading assessments, but demonstrate poor classroom performance and/or display indicators for dyslexia, should be screened. It is particularly important that these students be recommended for screening because dyslexic students with high level cognitive ability may mask reading difficulty by using their strong reasoning ability. These students frequently will perform at the mean for their age and grade but actually be performing well below their potential.

As students enter third grade through adolescence, "the rate of reading, as well as facility with spelling, may be most useful, clinically, in differentiating average from poor readers." (Shaywitz, Fletcher, Holahan, Shneider, Marchione, Stuebing, Francis, Pugh & Shaywitz, 1999). Poor results are still indicators of an underlying deficit in phonological processing. Assessments that time how accurately and fluently a student can read real words, as well as nonsense words provide scores that can be compared to norms showing what is expected for students at different age or grade levels. Poor spelling is also an indicator of dyslexia. Additionally, students with dyslexia often demonstrate a higher level of listening comprehension as compared to reading comprehension.

Options After Screening

After completing a dyslexia screening, the data should be used to confirm the student's specific areas of need. Based on the analysis of the results, informed decisions about evidence-based intervention strategies and progress monitoring should follow; or the student may need further assessment.

Progress Monitoring

Progress should be monitored frequently to determine the student's response to the chosen intervention and rate of improvement. According to the Institute of Education Sciences (IES) Practice Guide *Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades*, it is recommended that training is provided for teachers on how to collect and interpret student data on reading efficiently and reliably.

Progress can be monitored weekly but no less than once a month. Progressing monitoring probes can be general outcome measures, such as those used for universal screening, or skills-based measures that focus on a specific set of skills that will be taught within a given curriculum. Many intervention programs, that have been commercially developed, contain weekly mastery tests that can be used to guide instruction.

Progress monitoring measures to use for kindergarten through second grade are suggested in ***Figure 3***.

Progress Monitoring Measures

Grade	Measure
K	Phoneme Segmentation Letter Naming Fluency
Grade 1	Word Recognition Fluency (real word reading) Word Recognition Fluency/Decoding (nonsense word reading) Oral Reading Fluency (connected text)
Grade 2	Word Recognition Fluency (real word reading) Word Recognition Fluency/Decoding (nonsense word reading) Oral Reading Fluency (connected text)

Figure 3

One of the main benefits of using these types of measures for progress monitoring is that the data can be displayed in graphs and charts. A standard graph used for progress monitoring is a line graph, see ***Figure 4***. The vertical axis usually indicates the number of correct student responses and the horizontal axis usually indicates the number of weeks the student will be monitored. This allows professionals to record changes in student learning over time as a series of data points is collected.

To begin progress monitoring, the first set of data to be entered on the graph is the baseline data. If the district's universal screening tools assess the same skills needed for the individual student's progress monitoring then this data can be used as a baseline data point. Second, a goal needs to be set to compare with the student's performance over time. Goals can be determined by using national or local norms. When they are available, national norms are good to use. Norms come in two forms: levels of performance and rates of improvement (ROI). Levels of performance norms are based on typical performance of same grade peers (e.g., a third grade student at the 50th percentile reads 107 wcpm by the end of the year). Rates of improvement norms have been determined as average weekly gain. On a line graph, this is represented as a line drawn from the student's baseline data point to the goal data point establishing an aim line for student performance.

As probes are administered to students weekly, the scores are plotted on the graph and connected to the previous point. If four consecutive data points fall below the aim line, a decision regarding the intervention needs to be made. These decisions could include working individually with the student, meeting more frequently with the student, or increasing the duration of the intervention period.

The Center on Response to Intervention's *Progress Monitoring Briefs* provide guidance on planning and implementing progress monitoring within response to intervention or multi-tiered system of supports frameworks.

Sample Progress Monitoring Graph

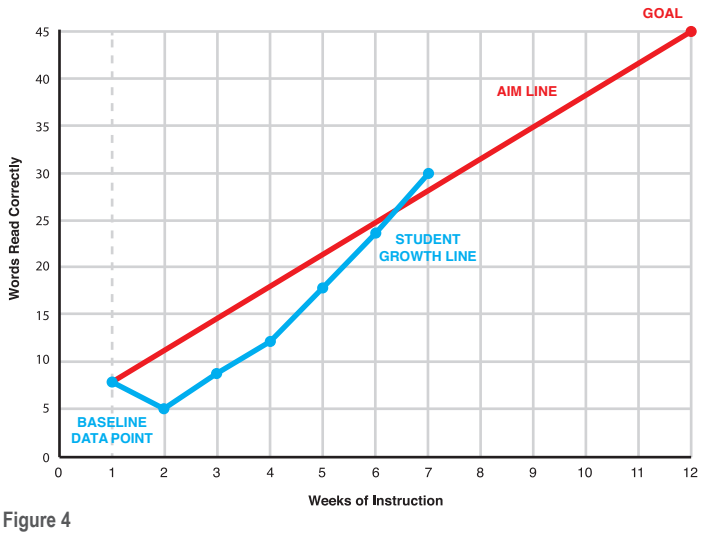

Figure 4

Further Comprehensive Assessment

When the district's screening indicates dyslexia, discussions regarding the need for further comprehensive assessment, Child Study Team (CST) evaluation, or Section 504 eligibility determination are also warranted. Students may be referred to the school district CST or Section 504 Coordinator at any time for a formal, comprehensive evaluation for a specific learning disability, particularly if the student is not responding to the evidence-based intervention at an appropriate rate of improvement and may be in need of special education services or accommodations. Parents and guardians also have the right to request a formal CST evaluation at any time.

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Websites:

Center on Response to Intervention at American Institutes for Research

Institute of Education Sciences *What Works Clearinghouse*

National Center on Intensive Intervention at American Institutes for Research

RTI Action Network

Selecting A Universal Screener

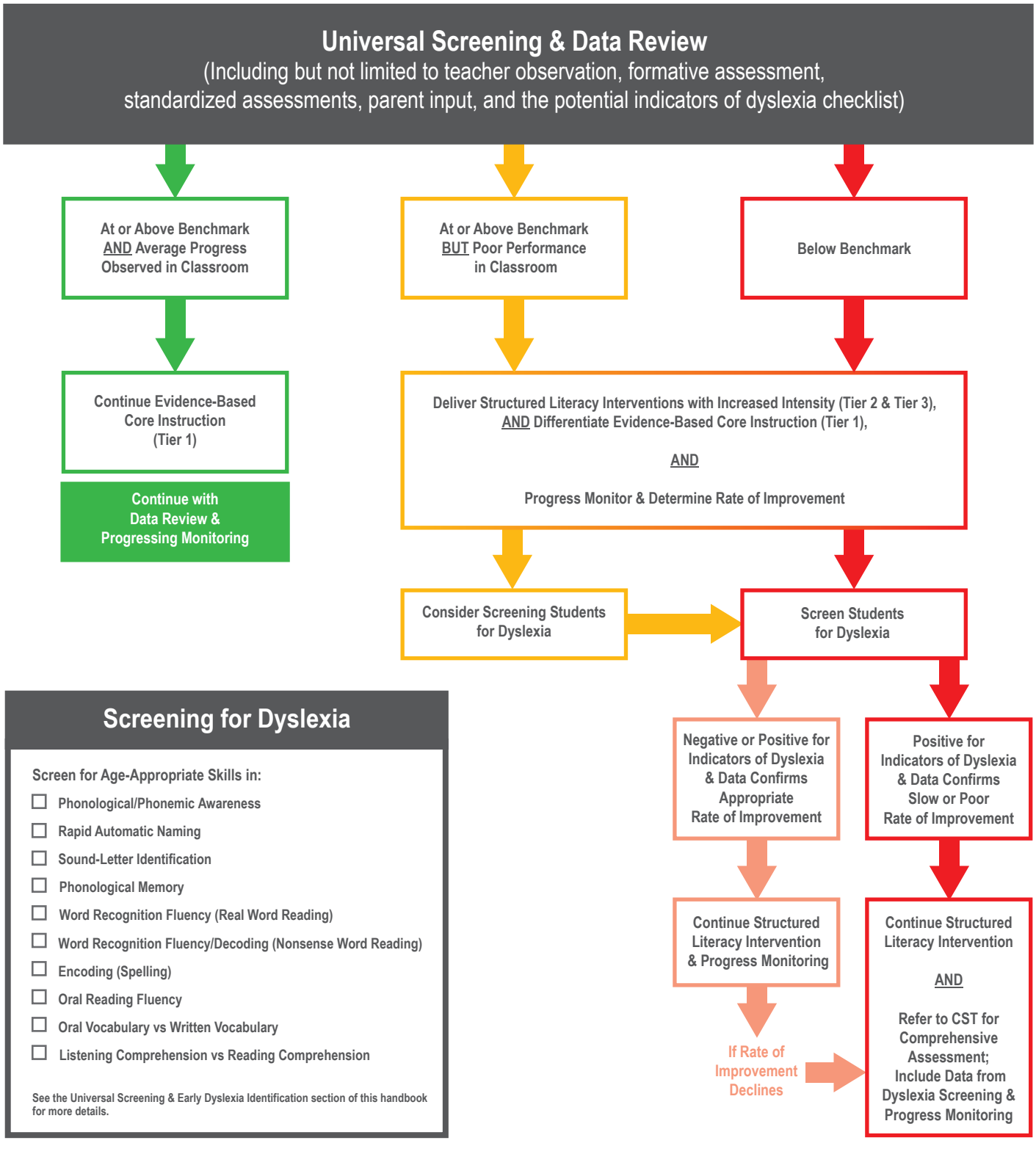
This rubric is designed to help educators evaluate universal screening tools for use within the NJTSS Framework. No single tool is sufficient for all of the data-based decisions that schools must make (e.g., universal screening, ongoing/benchmark assessment, diagnostic assessment, progress monitoring, accountability/program evaluation). Therefore, it is imperative for schools to consider the purpose of the universal screening tool and its evidence base.

Universal Screening Tool Name: _____ **Publisher:** _____

Directions: For each criterion on the rubric, evaluate the screening tool, citing evidence for each criterion. If the criteria are present, give it a score of 1. If the criteria are not present, give it a score of 0.

Criteria	Evidence in Assessment Tool	Criteria Present (1)	Criteria Not Present (0)
Screening Tool Qualities	Brief		
	Good predictive validity		
	Good classification accuracy		
	Easy to administer and score		
	Standardized scoring rules		
	Valid and reliable		
	Available in multiple, equivalent forms		
Kindergarten	Phonological Awareness		
	Blending Onset-Rime		
	Phoneme Segmentation		
	Rapid Automatized Naming		
	Letter Naming Fluency		
	Letter-Sound Identification		
	Phonological Memory		
	Nonword Repetition		
First Grade	Phonemic Awareness		
	Phoneme Segmentation		
	Manipulation Tasks (Deletion, Substitution, & Reversal)		
	Rapid Automatized Naming		
	Letter Naming Fluency (Beginning of Year)		
	Sound-Letter Identification		
	Phonological Memory		
	Nonword Repetition		
	Oral Vocabulary		
	Word Recognition Fluency (Real Word Reading in Isolation)		
	Word Recognition Fluency (Nonsense Word Reading in Isolation)		
	Oral Reading Fluency (Middle of Year)		
Second Grade	Word Recognition Fluency (Real Word Reading in Isolation)		
	Word Recognition Fluency (Nonsense Word Reading in Isolation)		
	Oral Reading Fluency		
	Reading Comprehension		
Data Management	Data can be disaggregated by student, class, grade, and school		
Training	Training on how to administer is available online or in-person		
Total Criteria Present			

Screening for Dyslexia Flowchart



Screening for Dyslexia

Screen for Age-Appropriate Skills in:

- ☐ Phonological/Phonemic Awareness
- ☐ Rapid Automatic Naming
- ☐ Sound-Letter Identification
- ☐ Phonological Memory
- ☐ Word Recognition Fluency (Real Word Reading)
- ☐ Word Recognition Fluency/Decoding (Nonsense Word Reading)
- ☐ Encoding (Spelling)
- ☐ Oral Reading Fluency
- ☐ Oral Vocabulary vs Written Vocabulary
- ☐ Listening Comprehension vs Reading Comprehension

See the Universal Screening & Early Dyslexia Identification section of this handbook for more details.

A referral to the school district Child Study Team can be made at any point if a disability is suspected. If dyslexia is identified, a discussion regarding the impact of the reading disability on the student's learning and expected rate of improvement is warranted to determine if the student is eligible for special education supports & services under IDEA and/or Section 504 of the Rehabilitation Act of 1973, as amended.

Potential Indicators of Dyslexia Checklist

This checklist is designed to aid educators in identifying students with characteristics or potential indicators of dyslexia and to document any skill deficits confirmed during screening to inform instruction. Check all areas of consistent difficulty, based on observation, assessment history, progress monitoring data, and work samples. It is likely that many students will exhibit some of the behaviors on this checklist. A preponderance of checks in one area suggests further examination into this set of skills.

Student Name: Teacher Name: Date:

	YES	NO	Background Information & Characteristics
			Family history of dyslexia or learning challenges
			Student scored below benchmark on universal screening measure
			Student is performing poorly in the classroom
			Student progress monitoring data shows slow or poor rate of improvement
Kindergarten			Late learning to talk or slow to learn new words
			Trouble pronouncing speech sounds (such as /th/, /r/, /l/, and /w/)
			Mixing up the sounds and syllables in long words (says “aminal” for “animal”)
			Avoids letters or confuses them
			Cannot recall sounds of letters
			Unable to break words into separate speech sounds (cat has 3 sounds /c/ /ă/ /t/)
			Cannot identify or create words that rhyme
			Doesn’t know letters in own name
			Confused about the meanings of the words – who, what, where, when
			Disinterested in books, read aloud or word play activities
Kindergarten & 1st Grade			Difficulty remembering the names of letters and recalling them quickly
			Difficulty learning sound-letter correspondence
			Difficulty with phonemic awareness tasks (such as blending or breaking words into separate speech sounds, flash = /f/, /l/, /ă/,/sh/)
			Difficulty learning to recognize common words automatically (family names, names on signs or objects, high frequency words)
			Reading errors show no connection to the sounds of the letters (reads “rabbit” as “bunny”)
			Poor spelling (omitting sounds, substituting sounds, adding sounds, transposal of sounds)
			Difficulty remembering sequences (days of the week, months, ABCs)
			Poor handwriting
2nd & 3rd Grade			Frequently misreads common high frequency words even after practice (when, went, they, their, been, to, does, said, what)
			No strategies for word attack; makes wild guesses at words; relies heavily on the context or pictures in a story to “read”
			Difficulty decoding words, often making single sound errors, omitting syllables, or skipping over prefixes and suffixes
			Mispronunciation of long, unfamiliar words
			Loses place and skips over words while reading
			Use of imprecise language (says “stuff”)
			Persistant reversals and transpositions of letters, numbers, and words with similar visual appearance (such as b & d, 6 & 9, was & saw)
			Spells phonetically without applying spelling rules or patterns
			Poor spelling (omitting sounds, substituting sounds, adding sounds, transposal of sounds)
			Spelling the same word different ways on the same page
			Slow, choppy, and/or inaccurate oral reading that lacks appropriate expression
			Comprehension problems arising from poor word recognition
			Beginning to avoid reading and writing tasks
			Difficulty with math facts

Potential Indicators of Dyslexia Checklist - Continued

Student Name: Teacher Name: Date:

	YES	NO	Background Information & Characteristics
4th through 6th Grades			Slow on oral reading fluency tests
			Inaccurate reading of real and nonsense word lists (pem, loit, thwadge)
			Poor spelling (omitting sounds, substituting sounds, adding sounds, transposal of sounds)
			Poor handwriting and written expression
			Avoidance of reading
			Weak in reading strategies
			Weak reading comprehension compared to listening comprehension
7th through 12th Grades			Slow and laborious reading
			Poor spelling (omitting sounds, substituting sounds, adding sounds, transposal of sounds)
			Difficulty with note-taking
			Overwhelmed by multiple assignments
			Cannot work fast enough to cope
			Lack of effective strategies for studying
			Difficulty with homework completion
			Difficulty with organization
			Comprehension and vocabulary deficits due to lack of practice
			Writes poorly and with great effort

Student Profile: Screening for Dyslexia

Screen for Age-Appropriate Skills in:	Area of Concern? Y/N	Tool Used to Assess
Phonological/Phonemic Awareness		
Rapid Automatic Naming		
Sound-Letter Identification		
Phonological Memory		
Word Recognition Fluency (Real Word Reading)		
Word Recognition Fluency/Decoding (Nonsense Word Reading)		
Encoding (Spelling)		
Oral Reading Fluency		
Oral Vocabulary*		
Written Vocabulary		
Listening Comprehension**		
Reading Comprehension		

*** Students with dyslexia may display stronger oral language skills than written language skills.**
**** Students with dyslexia may display stronger listening comprehension skills than reading comprehension skills.**

6. Intervention: A Structured Literacy Framework for Struggling Readers

"Teaching reading IS rocket science!" —Louisa Moats, 1999

Both proponents of response to intervention models and proponents of cognitive neuropsychology agree that early intervention and the use of evidence-based intervention techniques are essential in efforts to assist struggling learners make progress in reading. As educators design intervention practices to meet the needs of struggling readers, especially those with dyslexia, it will be important for key implications documented by researchers to be recognized and woven into the district or building level plans. This section on structured literacy interventions, can assist districts **in using evidence** when evaluating programs for teacher training and for implementation.

Theoretical Models of Reading

The *National Reading Panel* (2000) emphasized that phonemic awareness and phonics (decoding) should be included in all reading instruction that focuses on language comprehension such as vocabulary, fluency and reading and/or listening comprehension so that a comprehensive reading program is created.

Gough and Tunmer, 1986 and Hoover and Gough, 1990 described reading as the product of word recognition (decoding) and language comprehension. They add that these components work together in a delicate, interdependent balance and that when there is a disconnection between these components, reading failure can occur. This model is referred to as the simple view of reading:

Decoding (D) X Language Comprehension (LC) = Reading Comprehension (RC)

Hollis Scarborough, a leading researcher in literacy, expands the simple view of reading and shares that reading is a multifaceted skill that is gradually acquired through years of instruction and practice. Scarborough's Reading Rope, ***Figure 1***, illustrates how the many skills that are required to comprehend texts are intertwined and how they become more complex. Language comprehension skills become increasingly more strategic over time while word recognition skills become increasingly more automatic. These skills enable a student to fluently read connected text and to coordinate word recognition and text comprehension. The strands weave together over many years and enable a student to become a skilled reader.

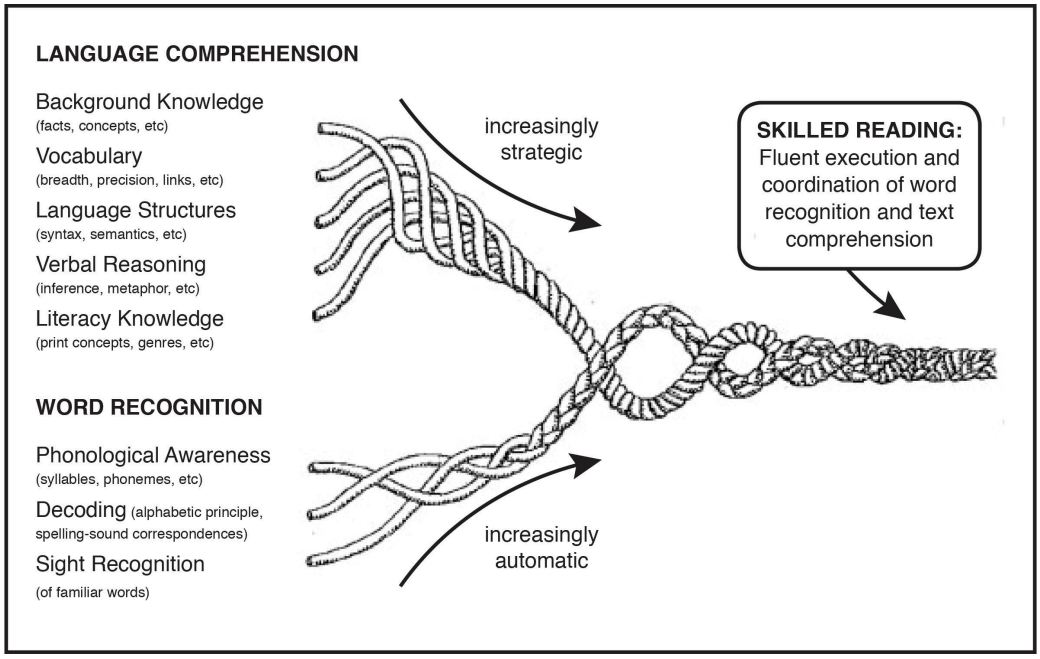


Figure 1 – Source: Scarborough, 2001

Philosophy of Structured Literacy

There has been widespread consensus in the dyslexia community since the 1990's, that providing intervention by a skilled teacher using direct, systematic and sequential instruction, focused on the structure of language will enable students with dyslexia to make the greatest progress in reading achievement. This type of intervention, also called multisensory structured language instruction, when provided with sufficient intensity by a teacher who has the appropriate level of competence in delivering instruction, monitoring progress and providing feedback to ensure consistent quality of instruction (Moats, 1994, 2004), will result in the highest level of achievement.

"In dyslexia, remarkably in America, in the year 2014, we have not a knowledge gap but an action gap. We have the knowledge but it is not being put into policy and practice, and far too many children and adults too are suffering needlessly. There is an epidemic of reading failure that we have the scientific evidence to treat effectively and we are not acknowledging or implementing it."

—Lowell, Felton, & Hook, 2014

The International Dyslexia Association's fact sheet titled *Effective Reading Instruction for Students with Dyslexia* explains that the most difficult problem for students with dyslexia is learning to read. Unfortunately, popularly employed reading approaches, such as guided reading or balanced literacy, are not in and of themselves, sufficient for struggling readers and not effective for dyslexic students. These approaches do not provide sufficient or appropriate instruction in decoding and the essentials of the structure of language. This fact sheet and position statement explains that "what does work is Structured Literacy, which prepares students to decode words in an explicit and systematic manner." IDA further shares that "this approach not only helps students with dyslexia, but there is substantial evidence that it is more effective for all readers."

For students with dyslexia, instruction in structured literacy plays an essential role to develop below grade level foundational reading skills of decoding, encoding and sight vocabulary. Structured literacy must be delivered in addition to grade level instruction for comprehension skills, vocabulary and content area knowledge. These important skills should be taught using accommodations, as needed, including differentiated materials and assistive technology to enable students to progress in these grade level standards while developing lower level foundational skills through structured literacy.

Definition of Structured Literacy

Structured literacy is instruction that is explicit, systematic, cumulative, and multisensory. This type of intervention emphasizes the structure of language including the speech sound system (phonology), sound/symbol association, the writing system (orthography), the structure of sentences (syntax), the meaningful parts of word (morphology), the relationships among words (semantics), and the organization of spoken and written discourse. Multisensory instructional strategies involve simultaneous use of visual, auditory, tactile-kinesthetic sensory systems and/or articulatory motor components while linking, listening, speaking, reading and writing.

Components of Dyslexia Instruction

Phonological awareness: Phonological awareness is understanding the internal linguistic structure of words (onset and rime, syllables, phonemes). An important aspect of phonological awareness is the ability to segment words into their component phonemes [phonemic awareness]. A phoneme is the smallest unit of sound in a given language that can be recognized as being distinct from other sounds. (Birsh, 2011) Examples of phonemes are: /ă/, /t/, /ch/, and /ē/.

Many leading experts state that the importance of recognizing phonological awareness as a foundation for decoding cannot be overemphasized. Students who exhibit difficulty acquiring phonemic awareness skills typically will experience difficulty learning the alphabetic principle or code and decoding words accurately.

Sound-symbol association: Sound-symbol association is the ability to associate letter or letter combinations, (e.g., m, sh) with their sounds. In reading, students must read/say the right sound when they see the letter with which it is associated. Additionally, students must blend sounds into words for reading. In spelling, they must spell/write the correct letter when they hear the sound. They must segment the sounds in words and write the associated letters in order to spell words. ***Figure 2*** shows a few examples of sound-symbol associations for consonants in English.

Phoneme (Sound)	/p/	/t/	/k/	/n/	/ch/	/j/
Grapheme (Symbol)	pot	ten walked	cup kettle deck school oblique	net knight sign	cheer batch	judge wage gent, gym, gist

Figure 2 – Source: Adapted from Moats, 1998

Experts state that there are 42-44 phonemes in the English language represented by letters or letter combinations from our 26 letter alphabet.

Syllable instruction: A syllable is a word or a part of a word with one vowel sound or pattern. ***Figure 3*** shows the six basic syllable types in the English language with examples of each.

Syllable Type	Example
Closed	bat, will, trip, mash, bend
Vowel-consonant-e	rope, safe, lime
Open	he, go, my, flu
Consonant-le	middle, table
R-controlled	bird, star, her
Vowel digraph/diphthongs	beat, toad, sweet, saw, boil, snow

Figure 3

Syllabication rules govern how words are broken into parts (syllables). For example, one syllabication pattern is the vccv pattern which directs the reader to break the word into syllables by "breaking" the word between consonants (e.g., pic/nic).

Orthography/Spelling: Orthography refers to the written spelling patterns and rules in a given language. For example, the sound /ch/ directly following a short vowel is spelled -tch. Students must be taught the regular and irregular orthographic patterns of a language in an explicit and systematic manner. ***Figure 4*** illustrates the principles of English spelling. Orthography instruction should be integrated with phonology, sound-symbol knowledge, and morphology.

Principles of English Spelling
Words' language of origin and history of use can explain their spelling.
Words' meaning and part of speech can determine their spelling.
Speech sounds are spelled with single letters and/or combinations of up to four letters.
The spelling of a given sound can vary according to its position within a word.
The spellings of some sounds are governed by established conventions of letter sequences and patterns.

Figure 4 – Source: Adapted from Moats, 2005

Morphology: Morphology is the set of rules that govern how morphemes, i.e., base words, prefixes, roots, and suffixes can be combined to form words. Even the most obscure and complicated appearing words can be broken down into more manageable units and deciphered if the reader is aware of their derivation or roots (Shaywitz, 2006). A morpheme is the smallest unit of meaning in a language. Learning the frequently used morphemes in a systematic manner to automaticity not only helps students' spelling, but also provides strategies for decoding and for enhancing vocabulary (Henry, 2005). ***Figure 5*** shows some examples of common morphemes.

Prefix	Root	Suffix
in-, im-	tract	-s, -es
mis-	port	-ment
pre-	struct	-ible, -able
sub-	rupt	-ness

Figure 5

Grammar/Syntax: Syntax is the set of rules that govern the sequence and function of words in a sentence in order to convey meaning. Syntax tells us "what" goes "where" in a sentence. For example, in the English language, adjectives precede nouns. ***Figure 6*** below lists other components of syntax:

Syntax, as a subset of grammar, considers:
Parts of speech
Rules for correct word order (i.e., active/passive)
Sentence length
Sentence types (declarative, interrogative, exclamatory, and imperative)
Sentence constructions (simple, compound, complex, compound/complex)

Figure 6

Vocabulary: Vocabulary is defined as knowledge of words and word meanings in both oral and print language both in receptive (understanding) and expressive (productive) forms (Lehr, Osborn & Hiebert, 2004). Vocabulary knowledge plays a significant role in comprehension.

Explicit vocabulary instruction is particularly critical for struggling readers as they may not read extensively and have more difficulty using contextual cues to determine word meanings in text, and it remains a critical component of vocabulary acquisition even in the upper grades. ***Figure 7*** shows some considerations for explicit instruction.

Explicit Vocabulary Instruction Should Consider:
Teaching words before encountering them in text as this will increase word comprehension by a factor of one-third (Jenkins, Matlock & Slocum, 1989)
Providing explicit, unambiguous and student-friendly definitions as well as contextual examples
Providing opportunities for use and practice in multiple settings
Providing illustrations and photographs about the word's use
Assessing a word's usefulness and frequency of use to determine the value of using instructional time to teach specific terms (Beck, McKeown & Kucan, 2002)

Figure 7

Background Knowledge: Researchers have described different types of background knowledge that affect language comprehension, as well as reading comprehension. ***Figure 8*** lists the types of background knowledge needed for meaningful comprehension.

Types of Background Knowledge
General world knowledge/cultural knowledge
Specific topical knowledge (directly related to the text)
Background knowledge and prior life experiences
Knowledge of text structure
Vocabulary Knowledge

Figure 8

Providing students with prior background knowledge for listening or reading comprehension has been found to help all students, even those with low-average to below-average language skills, as well as English language learners (ELL).

Reading Fluency: Fluency is the rapid, prosodic flow with which a skilled reader reads. Reading should sound as if a reader is speaking with appropriate speed, phrasing and intonation. Word level automaticity, which is the speed and accuracy with which words are identified; is the best predictor of comprehension (Hook & Jones, 2002). Poor reading fluency is known to hinder comprehension and overall reading achievement. The lack of fluency in poor readers is evidenced by their slow, halting, and inconsistent rate; poor phrasing; and inadequate intonation patterns (Hook & Jones, 2002). Some students who present a deficit with phonological processing will also present a deficit with rapid automatized naming and therefore will experience difficulty with acquiring fluent reading skills.

In order to develop word level automaticity, students must recognize syllable type patterns automatically and ultimately read words as wholes rather than through the application of phonic word attack strategies. Interventions for developing word level automaticity include repeated readings of letters and words. At the text level, application of appropriate phrasing should be addressed directly with students. Repeated reading of connected text involves the oral reading and rereading of the same passage of 50-200 words several times. Repeated readings of short three word phrases are initially modeled by the teacher and then practiced by students. Instruction should also include attention to the prosodic features in punctuation marks. The incorporation of a multisensory component of scooping under syntactic chunks may benefit some students as they read.

Example: Meg told Jim her kite was stuck in a tree.

Teachers should also provide multiple examples and models of fluent oral reading so that background knowledge can be expanded and a framework for fluency can be established. Attention to prosody, the use of intonation, phrasing and rhythmic flow, will support readers' comprehension (Birsch, 2011).

Oral reading fluency (ORF) should be measured regularly. Measures of oral reading fluency need to be assessed individually so that a one-minute reading sample can be timed and evaluated for word reading rate and accuracy. Errors (inserted, skipped and/ or substituted words) need to be recorded so that the number of words read correctly per minute (wcpm) will be calculated by subtracting the number of errors from the total words read. The rate of accuracy can then also be calculated. ***Figure 9*** shows national ORF norms at the 50th percentile.

Grade	Fall WCPM	Winter WCPM	Spring WCPM
1		23	53
2	51	72	89
3	71	92	107
4	94	112	123
5	110	127	139
6	127	140	150
7	128	136	150
8	133	146	151

Figure 9 – Source: Hasbrouck and Tindal, 2006

Reading Comprehension: In addition to strategies for teaching vocabulary knowledge cited in the previous section of this chapter, students with dyslexia and other reading disabilities need explicit instruction in research-based cognitive strategies to enhance comprehension of text. Too often, students will read a passage without understanding what they have read because they have not yet learned that reading is an active, thinking process. Through explicit instruction, students can learn strategies that help them address difficulties in focusing and maintaining attention, identifying and summarizing key information, as well as monitoring their understanding before, during and after reading.

Because dyslexia is a language based disability, difficulties with comprehension may arise for some students at the word, sentence and/or passage levels. Students may have difficulty understanding idioms, metaphors as well as figures of speech. Students also may have difficulty understanding sentences due to unfamiliarity with sentence structure, difficulty determining appropriate referents (e.g., pronouns), as well as the number of meaning units within a sentence or passage. Multisensory language

based techniques can be used to enhance understanding, associations, and memory.

Delivery of Dyslexia Instruction

While it is necessary that students are provided instruction in the above content, it is also critical that the way in which the content is delivered be consistent with research-based practices. Requirements for successful intervention include:

- Must be evidence/data that the intervention is effective for students who have dyslexia;
- Must be implemented by a trained or certified instructor;
- Must be taught with fidelity;
- Must be sufficiently intensive (frequent sessions and extended time) to accomplish objectives; and
- Must include frequent assessment and progress monitoring.

Principles of effective intervention for students with dyslexia include all of the following:

Explicit instruction: Explicit instruction is explained and demonstrated by the teacher one language and print concept at a time, rather than left to discovery through incidental encounters with information. Explicit instruction is "an approach that involves direct instruction: The teacher demonstrates the task and provides guided practice with immediate corrective feedback before the student attempts the task independently" (Mather & Wendling, 2012). For example, when introducing the sound symbol association for the vowel team *ee*, the teacher presents an image of the letters on an index card, smart board, or other surface (often with a key word and a related picture) and says to the student "This says /ē/." The introduction would include multisensory reinforcement, such as the following: "Let's trace the letters and say the sound as you trace, three times. Let's write it three times and say the sounds as you write." The student would then read a short list of words with the ee pattern, spell a short list of words with the ee pattern, and then read a controlled text featuring the ee pattern. As the student works, the teacher provides corrective feedback as needed.

Systematic and Cumulative: Systematic and cumulative instruction requires that the sequence of instruction begin with the easiest concepts (that the student does not know) and progress to more difficult concepts. An example of a sequence for instruction is shown in the **Sample Scope and Sequence Chart** provided in this handbook. For example, single letters are taught before vowel teams, the concept of closed syllable is taught before the concept of vowel team syllables is taught, etc. Review lessons must cumulatively review all concepts that have been introduced in order to provide adequate practice to mastery and to bolster memory of the specific sound symbol association. Typically, a newly introduced sound pattern would be reviewed in follow up lessons through reading (in a pack of sounds the student regularly reviews) and spelling in isolation, as well as in reading and spelling words with that pattern. Because instruction is cumulative, the content of lessons is controlled so that previously introduced concepts are systematically reviewed and concepts unknown to the student are never included in any part of the lesson. It is important to consider the consistency of elements of instruction across grade levels and different teachers within a school, as the child progresses. Items such as scope and sequence of varying programs, different keywords for various sounds, and different markings for various syllable types, can be challenging for children who may have working memory, phonological processing or orthographic issues. Students who have these challenges may be the least likely to adapt to new programs, terminology and techniques as they move from one grade/teacher to the next.

Multisensory Instuction: In multisensory instruction, children learn language concepts by simultaneously using all learning pathways to the brain. In the example above, using explicit instruction to introduce the sound symbol association for *ee*, instruction included the use of visual feedback (from seeing the letters that represent the sound), auditory feedback (from hearing the sound as it is said), kinesthetic feedback (from feeling the movements in the mouth as the sound is said) and tactile feedback (from the movements of muscles as the letters are traced and/or printed).

"Kinesthetic awareness involves sensitivity to muscle movement. Students' awareness of the position of the mouth, tongue, teeth, or lips and the activity of the vocal cords during the production of a sound assists the definitive learning of speech sounds. Students' awareness of how a letter feels when written in the air (sky writing) or on paper connects kinesthetic and visual information so that the letter shapes can be thoroughly learned."

—Birsh, 2011

Multisensory strategies frequently used in structured literacy lessons include finger spelling (segmenting a word for spelling by putting one sound on each finger), tracing letters to facilitate retrieving a sound from memory, and

tracing or writing letters while simultaneously saying the sound to reinforce learning the sound symbol association.

Diagnostic Teaching to Automaticity: Diagnostic teaching requires continually monitoring students' levels of mastery of individual concepts and adjusting accordingly. Structured literacy instruction typically begins with informal assessment of concepts and identifying known and unknown concepts as a basis for instructional planning. Known concepts will be systematically included for review in future lessons. Unknown concepts will be introduced, usually one concept at a time, in order of difficulty. When a reading skill becomes automatic (direct access without conscious awareness), it is performed quickly in an efficient manner. (Berninger & Wolf, 2009). Teachers monitor student performance throughout the lesson for errors, or even hesitation, to identify already "learned" concepts that need more practice. Expert clinicians agree that when a structured literacy lesson is calibrated to the student's true level of mastery, 80% of student responses for spelling and 90% of student responses for reading or higher will be accurate. A hallmark of properly planned and implemented structured literacy lessons is students' consistent success.

The **Components of Structured Literacy Intervention Checklist** included in this handbook can be used to guide decisions about appropriate intervention programs.

When Should Remedial Services Be Discontinued?

"In general, when a child is just gaining momentum in reading is the time for an all-out push and never the time for an abrupt halt to instruction."

—Shaywitz, 2006

As a student becomes proficient with reading and spelling tasks and begins to demonstrate the ability to perform satisfactorily in the classroom, teachers can sometimes prematurely recommend discontinuation of Tier 2 or 3 instruction. Students should not be removed from evidence-based reading programs until they are able to read words and passages fluently, at their grade level. Dysfluent reading hinders comprehension and overall reading achievement. It is imperative that results from reading assessments document mastery of phonological concepts for both reading and spelling before interventions are discontinued. Teachers conducting the assessments should have a strong base of knowledge pertaining to the types of syllables found in the English language, fluency expectations for decoding words in isolation and context, spelling and oral fluency expectations for every grade level. Interventions with an individual student should continue with explicit individualized goals remaining a focus until the student exhibits mastery of the phonological code and can transfer all concepts into classroom settings.

The Important Role of the School Administrator

Taking knowledge to the level of organizing and implementing a model for effective assessment and instruction can be a very challenging task. School administrators accept a critical role in ensuring that schools are designed to meet the needs of students with dyslexia and other reading struggles by:

- Organizing continued professional development programs so that both new and seasoned educators receive information about best practices and research in the field of dyslexia;
- Providing for ongoing coaching and mentoring in evidence-based practices;
- Determining curriculum that allows for differentiated instruction and permits teachers to remediate the phonological/orthographic deficits associated with dyslexia;
- Prioritizing the scheduling for intervention instruction so that well-trained teachers have uninterrupted instructional time with appropriate grouping of students, resources and opportunities to collaborate with colleagues who also teach their students; and
- Developing systems for analyzing assessment and progress monitoring data to ensure that instruction is effective and is appropriately sustained until deficits are overcome and students are fluent, automatic readers.

Knowledge and Practice Standards for Teachers of Reading

The *IDA Knowledge and Practice Standards for Teachers of Reading* define what all teachers of reading need to know and be able to do to teach all students to read proficiently. The IDA Standards were written for two main audiences: classroom educators and dyslexia specialists. IDA has written separate narratives for each audience.

Included in this handbook is a **Knowledge and Practice Standards Self-Study Checklist**. The intent of including this checklist is to provide a document for professionals to use as a tool during self-study through professional learning communities and other peer collaboration groups. Areas of

strength can be identified to determine staff to serve as coaches, model classrooms and mentors. Areas of need in content knowledge can be identified to create professional development opportunities for staff at differentiated levels.

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Sample Scope and Sequence Chart

Structured literacy instruction is systematic and cumulative. This sample scope and sequence illustrates what a progression of skills might typically look like in such programs. It is not, however, a comprehensive sample.

Level I Phonograms
Group 1: a /ă/, b, c, f, h, i /ĭ/, j, k, m, p, t
Group 2: g, o /ŏ/, r, l, n, th, u /ŭ/, ch, e /ĕ/, s, sh, d, w, wh, y (consonant), qu, v, x, z
Glued Sounds – all, ing, ong, ang, ung, ink, ank, onk, unk
Suffixes – -s /s/ and /z/, -ed /d/, /ĕd/ and /t/
Bonus Letters – ff, ll, ss, zz
Concepts – digraph, blend, short and long vowel sound, trigraph
Double Vowels: ai, ay, ee, ea, oi, oy, oo, ow, ie, ou, y (vowel)
Syllable Types – closed (one and two syllables), open, and vowel-consonant-e

Level II Phonograms
Closed syllable exceptions: ind, ild, ost
r-controlled sounds: ar, or, ir, er, ur
Suffixes – es, er, est, ly, y, ful, less, ness, en, ment
Prefixes – un, dis, mis, in, non, pre, re
Concepts – diphthong, compound word, base word, present tense, past tense, singular, plural, contraction
Syllable Types – r-controlled, vowel pair

Level III Phonograms
Vowel Sounds: ea /ĕ/ and /ā/, oe, c before i, e, y, g before i, e, y, igh, ew, au, aw, ue, ou, eu
Suffixes – -able, -ive, -ion
Prefixes – anti-, con-, de-, ex-, inter-, per-, pre-, pro-, semi-, sub-, super-
Latin Roots – cept, dict, duct, fort, ject, port, rupt, sist, spect, vert, flex, fic, fin, gen, mit, pos, plic, scrib, vis
Syllable Types – consonant-le

Level IV Phonograms
Vowel Sounds: ei, eigh, ey, ar (beggar), or (doctor), wa (want), u (push, pull), ou (country, cousin)
Silent Letters – wr, kn, gn, mb, gh, stle, ps, pn, alk, ough, augh
Additional Sounds: ch (Christmas), ch (Chicago), ture, ti, si, ci
Suffixes – -ture, -ous, -al, -ic, -ure, -age, -an, -able, -ible, -ate, -ite, -ine, -ology
Prefixes – uni-, bi-, micro-, sy-, hyper-, hydro-, tele-, phone-, auto-

Components of Structured Literacy Intervention Checklist

This rubric is designed to help educators evaluate intervention programs. It identifies the necessary components of sturctured literacy interventions and will help to identify areas that may need to be supplemented with additional evidence-based instructional practices.

Intervention Name: Date:

Does the intervention program include all components of structured literacy instruction?

Yes	No	Phonological Awareness
		Segmenting Sentences Into Words
		Syllable Segmentation and Blending
		Phonemic Awareness - Segmentation, Blending & Manipulation

Yes	No	Sound-Symbol Association
		Sounds & Letters Connected for Both Reading (visual) and Spelling (auditory) to Mastery
		Blending of Sounds & Letters into Words to Mastery
		Segmenting Whole Words into Individual Sounds to Mastery

Yes	No	Syllable Instruction
		6 Basic Syllable Types: Identify the Sound of the Vowel Within a Syllable
		Syllable Division Rules: Enhance Accuracy for Reading Unknown Words to Mastery

Yes	No	Orthography
		Focus on Spelling Patterns and Rules as well as Word Meanings, Parts of Speech and Word Origins
		Explicit Instruction in Letter Formation

Yes	No	Morphology
		Study of Base Words, Roots, Prefixes and Suffixes

Yes	No	Grammar/Syntax
		Focus on Grammar & Sentence Variations
		Study of Mechanics of Language & Function of Word Order to Convey Meaning

YES	NO	Vocabulary
		Words Taught Explicitly in Multiple Settings
		Synonyms, Antonyms and Multiple Meanings Integrated into Discussions
		Essential Features with Visual Representations for Concepts Indentified During Discussions
		Idioms Integrated When Appropriate to Situations

Yes	No	Fluency
		Attention to Accuracy, Rate and Prosody
		Use of Normative Data to Ensure Adequate Progress

Yes	No	Reading Comprehension
		Process of Deriving Meaning & Establishing a Coherent Mental Model of the Text's Content
		Attention to Integration of Ideas Within Text and Between Texts
		Use of Text Structure to Accomplish a Goal (i.e., explaining main idea or recalling details)
		Purposeful Teaching of Strategies Related to the Text Structure with Opportunities to Apply in New Situations
		Access Background Knowledge & Identify Language in Text that May be Problematic (indirect meanings, figurative language, complex sentences, pronoun referents, new vocabulary)
		Use of Graphic Organizers

Yes	No	Delivery of Instruction
		Training Standards and Fidelity of Implementation Measures Defined
		Explicit Instruction is Provided One Language Concept at a Time
		Sequence of Instruction is Systematic and Cumulative
		Provides Multisensory Instruction
		Includes Assessments for Diagnostic Teaching (Pre/Post Tests, Mastery Checks)
		Establishes Guidelines for Student Grouping (Size, Homogenous Needs)

Notes

Knowledge and Practice Standards Self-Study Checklist

Aligned to the IDA Knowledge and Practice Standards for Teachers of Reading, this checklist can assist teachers in assessing their current knowledge base about the science of reading in order to develop meaningful professional development plans.

Name: Date:

Rating Scale: This simple rating scale may help teachers evaluate the amount of knowledge they possess for each of the competencies and identify areas where they may benefit from professional development.

3 – I Know It Well Enough to Use It: I have sufficient understanding and experience to operate at a full professional level with this information and I can generalize basic principles to effectively function in both predictable and new situations with my students.

2 – I Have Some Knowledge: My knowledge is newly developing in this area. I have a general understanding of key principles but limited or no applied experience using this with my students. I am capable of using this with coaching and support, in simple situations.

1 – I Have No Knowledge: I have no understanding of this information and will need to learn more.

Level Identification: Many of the competentcies are followed by the designation of Level 1 or Level 2. These designations indicate whether a competency should be met by:

Level 1: teachers or any staff member whose responsibilities include general reading instruction for all students, such as a classroom teacher

Level 2: specialists or any staff member whose responsibilities include delivering reading interventions to struggling readers, such as a therapist, a reading specialist, an intervention teacher, a basic skills instructor, a Learning Disabilities Teacher-Consultant, a special education teacher, etc.

Foundation Concepts of Oral and Written Learning

Rating			Content Knowledge	Application
3	2	1		
			1. Understand and explain the language processing requirements of proficient reading and writing • Phonological (speech sound) processing • Orthographic (print) processing • Semantic (meaning) processing • Syntactic (sentence level) processing • Discourse (connected text level processing)	a. Explain the domains of language and their importance to proficient reading and writing (Level 1). b. Explain a scientifically valid model of the language processes underlying reading and writing (Level 2).
			2. Understand and explain other aspects of cognition and behavior that affect reading and writing • Attention • Executive function • Memory • Processing speed • Graphomotor control	a. Recognize that reading difficulties coexist with other cognitive and behavioral problems (Level 1). b. Explain a scientifically valid model of other cognitive influences on reading and writing, and explain major research findings regarding the contribution of linguistic and cognitive factors to the prediction of literacy outcomes (Level 2).
			3. Define and identify environmental, cultural, and social factors that contribute to literacy development (e.g., language spoken at home, language and literacy experiences, and cultural values).	Identify (Level 1) or explain (Level 2) major research findings regarding the contribution of environmental factors to literacy outcomes.
			4. Know and identify phases in the typical developmental progression of • Oral language (semantic, syntactic, pragmatic) • Phonological skill • Printed word recognition • Spelling • Reading fluency • Reading comprehension • Written expression	Match examples of student responses and learning behavior to phases in language and literacy development (Level 1).
			5. Understand and explain the known casual relationships among phonological skill, phonic decoding, spelling, accurate and automatic word recognition, text reading fluency, background knowledge, verbal reasoning skill, vocabulary, reading comprehension, and writing.	Explain how a weakness in each component skill of oral language, reading, and writing may affect other related skills and processes across time (Level 2).

Knowledge and Practice Standards Self-Study Checklist

Rating			Content Knowledge	Application
3	2	1		
			6. Know and explain how the relationships among the major components of literacy development change with reading development (i.e., changes in oral language, including phonological awareness; phonics and word recognition; spelling; reading and writing fluency; vocabulary; reading comprehension skills and strategies; written expression).	Explain how a weakness in each component skill of oral language, reading, and writing may affect other related skills and processes across time (Level 2).
			7. Know reasonable goals and expectations for learners at various stages of reading and writing development.	Given case study material, explain why a student is/is not meeting goals and expectations in reading or writing for his or her age/grade (Level 1).

Knowledge of the Structure of Language

Rating			Content Knowledge	Application
3	2	1		
Phonology (The Speech Sound System)				
			1. Identify, pronounce, classify, and compare the consonant and vowel phonemes of English.	a. Identify similar or contrasting features among phonemes (Level 1). b. Reconstruct the consonant and vowel phoneme inventories and identify the feature differences between and among phonemes (Level 2).
Orthography (The Spelling System)				
			2. Understand the broad outline of historical influences on English spelling patterns, especially Anglo-Saxon, Latin (Romance), and Greek.	Recognize typical words from the historical layers of English (Anglo-Saxon, Latin/ Romance, Greek) (Level 1).
			3. Define grapheme as a functional correspondence unit or representation of a phoneme.	Accurately map graphemes to phonemes in any English word (Level 1).
			4. Recognize and explain common orthographic rules and patterns in English.	Sort words by orthographic "choice" pattern; analyze words by suffix ending patterns and apply suffix ending rules (Level 1).
			5. Know the difference between "high frequency" and "irregular" words.	Identify printed words that are the exception to regular patterns and spelling principles; sort high frequency words into regular and exception words (Level 1).
			6. Identify, explain, and categorize six basic syllable types in English spelling.	Sort, pronounce, and combine regular written syllables and apply the most productive syllable division principles (Level 1).
Morphology				
			7. Identify and categorize common morphemes in English, including Anglo-Saxon compounds, inflectional suffixes, and derivational suffixes; Latin-based prefixes, roots, and derivational suffixes; and Greek based combining forms.	a. Recognize the most common prefixes, roots, suffixes, and combining forms in English content words, and analyze words at both the syllable and morpheme level (Level 1). b. Recognize advanced morphemes (e.g., chameleon or assimilated + prefixes) (Level 2).
Semantics				
			8. Understand and identify examples of meaningful word relationships or semantic organization.	Match or identify examples of word associations, antonyms, synonyms, multiple meanings and uses, semantic overlap, and semantic feature analysis (Level 1).
Syntax				
			9. Define and distinguish among phrases, dependent clauses, and independent clauses in sentence structure.	Construct and deconstruct simple, complex, and compound sentences (Level 1).
			10. Identify the parts of speech and the grammatical role of a word in a sentence.	a. Identify the basic parts of speech and classify words by their grammatical role in a sentence (Level 1). b. Identify advanced grammatical concepts (e.g., infinitives, gerunds) (Level 2).
Discourse				
			11. Explain the major differences between narrative and expository discourse.	Classify text by genre; identify features that are characteristic of each genre, and identify graphic organizers that characterize typical structures (Level 1).
			12. Identify and construct expository paragraphs of varying logical structures (e.g., classification, reason, sequence).	Identify main idea sentences, connecting words, and topics that fit each type of expository paragraph organization (Level 2).
			13. Identify cohesive devices in text and inferential gaps in the surface language of text.	Analyze text for the purpose of identify the inferences that students must make to comprehend (Level 2).

Knowledge and Practice Standards Self-Study Checklist

Structured Language Teaching: Phonology

Rating			Content Knowledge	Application
3	2	1		
			1. Identify the general and specific goals of phonological skill instruction.	Explicitly state the goal of any phonological awareness teaching activity (Level 1).
			2. Know the progression of phonological skill development (i.e., rhyme, syllable, onset-rime, phoneme differentiation).	a. Select and implement activities that match a student's developmental level of phonological skill (Level 1). b. Design and justify the implementation of activities that match a student's developmental level of phonological skill (Level 2).
			3. Identify the differences among various phonological manipulations, including identifying, matching, blending, segmenting, substituting, and deleting sounds.	Demonstrate instructional activities that identify, match, blend, segment, substitute, and delete sounds (Level 1).
			4. Understand the principles of phonological skill instruction: brief, multisensory, conceptual, and auditory-verbal.	a. Successfully produce vowel and consonant phonemes (Level 1). b. Teach articulatory features of phonemes and words; use minimally contrasting pairs of sounds and words in instruction; support instruction with manipulative materials and movement (Level 2).
			5. Understand the reciprocal relationships among phonological processing, reading, spelling, and vocabulary.	a. Direct students' attention to speech sounds during reading, spelling, and vocabulary instruction using a mirror, discussion of articulatory features, and so on as scripted or prompted (Level 1). b. Direct students' attention to speech sounds during reading, spelling, and vocabulary instruction without scripting or prompting (Level 2).
			6. Understand the phonological features of a second language or dialect, such as Spanish, and how they may interfere with English pronunciation and phonics.	Explicitly contrast first and second language phonological systems, as appropriate, to anticipate which sounds may be most challenging for the second language learner (Level 2).

Structured Language Teaching: Phonics and Word Recognition

Rating			Content Knowledge	Application
3	2	1		
			1. Know or recognize how to order phonics concepts from easier to more difficult.	Plan lessons with a cumulative progression of word recognition skills that build one on another (Level 1).
			2. Understand principles of explicit and direct teaching, model, lead, give guided practice, and review.	Explicitly and effectively teach (e.g., information taught is correct, students are attentive, teacher checks for understanding, teacher scaffolds students' learning) concepts of word recognition and phonics; apply concepts to reading single words, phrases, and connected text (Level 1).
			3. State the rationale for multisensory and multimodal techniques.	Demonstrate the simultaneous use of two or three learning modalities (to include listening, speaking, movement, touch, reading, and/or writing) to increase engagement and enhance memory (Level 1).
			4. Know the routines of a complete lesson format, from the introduction of a word recognition concept to fluent application in meaningful reading and writing.	Plan and effectively teach all steps in a decoding lesson, including single-word reading and connected text that is read fluently, accurately, and with appropriate intonation and expression (Level 1).
			5. Understand research-based adaptations of instruction for students with weaknesses in working memory, attention, executive function, or processing speed.	Adapt the pace, format, content, strategy, or emphasis of instruction according to students' pattern of response (Level 2).

Structured Language Teaching: Fluent, Automatic Reading of Text

Rating			Content Knowledge	Application
3	2	1		
			1. Understand the role of literacy in word recognition, oral reading, silent reading, comprehension of written discourse, and motivation to read.	Assess students' fluency rate and determine reasonable expectations for reading fluency at various stages of reading development, using research-based guidelines and appropriate state and local standards and benchmarks (Level 1).

Knowledge and Practice Standards Self-Study Checklist

Rating			Content Knowledge	Application
3	2	1		
			2. Understand reading fluency as a stage of normal reading development, as the primary symptom of some reading disorders; and as a consequence of practice and instruction.	Determine which students need a fluency-oriented approach to instruction, using screening, diagnostic, and progress-monitoring assessments (Level 2).
			3. Define and identify examples of text at a student's frustration, instructional, and independent reading level.	Match students with appropriate texts as informed by fluency rate to promote ample independent oral and silent reading (Level 1).
			4. Know sources of activities for building fluency in component reading skills.	Design lesson plans that incorporate fluency-building activities into instruction at sub-word and word levels (Level 1).
			5. Know which instructional activities and approaches are most likely to improve fluency outcomes.	Design lesson plans with a variety of techniques to build reading fluency, such as repeated readings of passages, alternate oral reading with a partner, reading with a tape, or rereading the same passage up to three times (Level 1).
			6. Understand techniques to enhance student motivation to read.	Identify student interests and needs to motivate independent reading (Level 1).
			7. Understand appropriate uses of assistive technology for students with serious limitations in reading fluency.	Make appropriate recommendations for use of assistive technology in general education classes for students with different reading profiles (e.g., dyslexia versus language disabilities) (Level 2).

Structured Language Teaching: Vocabulary

Rating			Content Knowledge	Application
3	2	1		
			1. Understand the role of vocabulary development and vocabulary knowledge in comprehension.	Teach word meanings directly using contextual examples, structural (morpheme) analysis, antonyms and synonyms, definitions, connotations, multiple meanings, and semantic feature analysis (Levels 1 and 2).
			2. Understand the role and characteristics of direct and indirect (contextual) methods of vocabulary instruction.	Lesson planning reflects: a. Selection of material for read-alouds and independent reading that will expand students' vocabulary. b. Identification of words necessary for direct teaching that should be known before the passage is read. c. Repeated encounters with new words and multiple opportunities to use new words orally and in writing. d. Recurring practice and opportunities to use new words in writing and speaking (Levels 1 and 2).
			3. Know varied techniques for vocabulary instruction before, during, and after reading.	
			4. Understand that word knowledge is multifaceted.	
			5. Understand the sources of wide differences in students' vocabularies.	

Structured Language Teaching: Text Comprehension

Rating			Content Knowledge	Application
3	2	1		
			1. Be familiar with teaching strategies that are appropriate before, during, and after reading and that promote reflective reading.	a. State purpose for reading, elicit or provide background knowledge, and explore key vocabulary (Level 1). b. Query during text reading to foster attention to detail, inference-making, and mental model construction (Level 1). c. Use graphic organizers, note-taking strategies, retelling and summarizing, and cross-text comparisons (Level 1).
			2. Contrast the characteristics of major text genres, including narration, exposition, and argumentation.	Lesson plans reflect a range of genres, with emphasis on narrative and expository texts (Level 1).
			3. Understand the similarities and differences between composition and text comprehension, and the usefulness of writing in building comprehension.	Model, practice, and share written responses to text; foster explicit connections between new learning and what was already known (Level 1).
			4. Identify in any text the phrases, clauses, sentences, paragraphs and "academic language" that could be a source of miscomprehension.	Anticipate confusions and teach comprehension of figurative language, complex sentence forms, cohesive devices, and unfamiliar features of text (Level 2).

Knowledge and Practice Standards Self-Study Checklist

Rating			Content Knowledge	Application
3	2	1		
			5. Understand levels of comprehension including the surface code, text base, and mental model (situation model).	Plan lessons to foster comprehension of the surface code (the language), the text base (the underlying ideas), and a mental model (the larger context for the ideas) (Level 2).
			6. Understand factors that contribute to deep comprehension, including background knowledge, vocabulary, verbal reasoning ability, knowledge of literary structures and conventions, and use of skills and strategies for close reading of text.	Adjust the emphasis of lessons to accommodate learners' strengths and weaknesses and pace of learning (Level 2).

Structured Language Teaching: Handwriting, Spelling, and Written Expression

Rating			Content Knowledge	Application
3	2	1		
			Handwriting	
			1. Know research-based principles for teaching letter naming and letter formation, both manuscript and cursive.	Use multisensory techniques to teach letter naming and letter formation in manuscript and cursive forms (Level 1).
			2. Know techniques for teaching handwriting fluency.	Implement strategies to build fluency in letter formation, and copying and transcription of written language (Level 1).
			Spelling	
			3. Recognize and explain the relationship between transcription skills and written expression.	Explicitly and effectively teach (e.g., information taught is correct, students are attentive, teacher checks for understanding, teacher scaffolds students' learning) concepts related to spelling (e.g., a rule for adding suffixes to base words) (Level 1).
			4. Identify students' levels of spelling development and orthographic knowledge.	Select materials and/or create lessons that address students' skill levels (Level 1).
			5. Recognize and explain the influences of phonological, orthographic, and morphemic knowledge on spelling.	Analyze a student's spelling errors to determine his or her institutional needs (e.g., development of phonological skills versus learning spelling rules versus application of orthographic or morphemic knowledge in spelling) (Level 2).
			Written Expression	
			6. Understand the major components and processes of written expression and how they interact (e.g., basic writing/transcription skills versus text generation).	Integrate basic skill instruction with composition in writing lessons (Levels 1 and 2).
			7. Know grade and developmental expectations for students' writing in the following areas: mechanics and conventions of writing, composition, revision, and editing processes.	a. Select and design activities to teach important components of writing, including mechanics/conventions of writing, compositions, and revision and editing processes. b. Analyze students' writing to determine specific instructional needs. c. Provide specific, constructive feedback to students targeted to students' most critical needs in writing. d. Teach research-based writing strategies such as those for planning, revising, and editing text. e. Teach writing (discourse) knowledge, such as the importance of writing for the intended audience, use of formal versus informal language, and various schemas for writing (e.g., reports versus narratives versus arguments) (Levels 1 and 2).
			8. Understand appropriate uses of assistive technology in written expression.	Make appropriate written recommendations for the use of assistive technology in writing (Levels 1 and 2).

Interpretation and Administration of Assessments for Planning Instruction

Rating			Content Knowledge	Application	Observable Competencies for Teaching Students with Dyslexia and Related Difficulties
3	2	1			
			1. Understand the differences among screening, diagnostic, outcome, and progress-monitoring assessments.	Match each type of assessment and its purpose (Level 1).	Administer screenings and progress monitoring assessments (Level 1).
			2. Understand basic principles of test construction, including reliability, validity, and norm-referencing, and know the most well-validated screening tests designed to identify students at risk for reading difficulties.	Match examples of technically adequate, well-validated screening, diagnostic, outcome, and progress-monitoring assessments (Level 1).	Explain why individual students are or are not at risk in reading based on their performance on screening assessments (Level 1).

Knowledge and Practice Standards Self-Study Checklist

Rating			Content Knowledge	Application	Observable Competencies for Teaching Students with Dyslexia and Related Difficulties
3	2	1			
			3. Understand the principles of progress-monitoring and the use of graphs to indicate progress.	Using case study data, accurately interpret progress-monitoring graphs to decide whether or not a student is making adequate progress (Level 1).	Display progress-monitoring data in graphs that are understandable to students and parents (Level 1).
			4. Know the range of skills typically assessed by diagnostic surveys of phonological skills, decoding skills, oral reading skills, spelling, and writing.	Using case study data, accurately interpret subtest scores from diagnostic surveys to describe a student's patterns of strengths and weaknesses and instructional needs (Level 2).	Administer educational diagnostic assessments using standardized procedures (Level 2).
			5. Recognize the content and purposes of the most common diagnostic tests used by psychologists and educational evaluators.	Find and interpret appropriate print and electronic resources for evaluating tests (Level 1).	Write reports that clearly and accurately summarize a student's current skills in important component areas of reading and reading comprehension (Level 2).
			6. Interpret measures of reading comprehension and written expression in relation to an individual child's component profile.	Using case study data, accurately interpret a student's performance on reading comprehension or written expression measures and make appropriate instructional recommendations.	Write appropriate, specific recommendations for instruction, and educational programming based on assessment data (Level 2).

Knowledge of Dyslexia and Other Learning Disorders

Rating			Content Knowledge	Application
3	2	1		
			1. Understand the most common intrinsic differences between good and poor readers (i.e., cognitive, neurological, and linguistic).	a. Recognize scientifically accepted characteristics of individuals with poor word recognition (e.g., overdependence on context to aid word recognition, inaccurate non-word reading) (Level 1). b. Identify student learning behaviors and test profiles typical of students with dyslexia and related learning difficulties (Level 2).
			2. Recognize the tenets of the NICHD/IDA definition of dyslexia.	Explain the reasoning or evidence behind the main points in the definition (Level 1).
			3. Recognition that dyslexia and other reading difficulties exist on a continuum of severity.	Recognize level of instructional intensity, duration, and scope appropriate for mild, moderate, and severe reading disabilities (Level 1).
			4. Identify the distinguishing characteristics of dyslexia and related reading and learning disabilities (including developmental language comprehension disorder, attention deficit hyperactivity disorder, disorders of written expression or dysgraphia, mathematics learning disorder, nonverbal learning disorders, etc.).	Match symptoms of the major subgroups of poor readers as established by research, including those with dyslexia, and identify typical case study profiles of those individuals (Level 2).
			5. Identify how symptoms of reading difficulty may change over time in response to development and instruction.	Identify predictable ways that symptoms might change as students move through the grades (Level 2).
			6. Understand federal and state laws that pertain to learning disabilities, especially reading disabilities and dyslexia.	a. Explain the most fundamental provisions of federal and state laws pertaining to the rights of students with disabilities, especially students' rights to a free, appropriate public education, an individualized educational program, services in the least restrictive environment, and due process (Level 1). b. Appropriately implement federal and state laws in identifying and serving students with learning disabilities, reading disabilities, and dyslexia (Level 2).

Adapted from: Moats et al. (2010). Knowledge and Practice Standards for Teachers of Reading. International Dyslexia Association. https://dyslexiaida.org/knowledge-and-practices/

7. Accommodations, Modifications and Assistive Technology

"For a dyslexic reader, accommodations represent the bridge that connects him to his strengths and, in the process, allows him to reach his potential." —Sally Shaywitz, 2006

Students with dyslexia frequently experience barriers to fully participate in classroom activities. Whether the difficulties arise from struggles with reading, written expression, or other obstacles, providing students with accommodations and modifications will increase their opportunities to participate and thrive in academic and extracurricular settings.

Accommodations and Modifications

An accommodation is a change in timing, formatting, setting, scheduling, response and/or presentation that allows students to complete the same assignment or test as other students. Accommodations do not alter the content of assignments, or change what an assignment or test is designed to measure; rather accommodations are meant to provide equal access to the curriculum and an equal opportunity for students to show what they know. For example, students who struggle to read a worksheet may be provided with an electronic version that can be read aloud, so that they can listen to the content, and not get bogged down trying to decipher the words on the page. In this way, accommodations enable students to utilize their strengths while compensating for their weaknesses.

Using needed accommodations is not a "crutch" nor is it "cheating"; it does not provide an unfair advantage, and it does not prevent students from learning how to master skills that they are lacking. Rather, accommodations provide a mechanism to work around struggles and utilize strengths, providing even greater opportunities for learning. Students who uses audio or text-to-speech formats, for example, are exposed to more vocabulary, more background information, and more complex content than they would be without access to accommodations.

Modifications are changes to tasks, assignments, and assessments that alter content and expectations. Modifications can change the scope or the level of difficulty of assignments. Students who struggle to read, for example, may be assigned an abridged version of a book that their classmates are reading in the original.

Accommodations are said to level the playing field while modifications change the field on which students play. It is important to ensure that the accommodations and modifications provided to students are tailored to meet their unique, individual needs, and implemented during core instruction, as well as during intervention periods. Selecting and monitoring the effectiveness of an accommodation and/or modification should be an ongoing process.

Accommodations and modifications are not meant to take the place of intensive, evidence-based instruction to develop skills, but rather are effectively used when the goal of the task or assignment is for students is to acquire content-based knowledge or produce content-based outputs.

Assistive Technology

One way to accommodate students with dyslexia is through the use of Assistive Technology (AT). IDEA 2004 defines AT as any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability (Individuals with Disabilities Education Act, Sec. 602 (1)). For many students with dyslexia, AT is a crucial accommodation that allows them to learn what their non-disabled peers are learning by providing them with equal access to the curriculum and equal opportunities to demonstrate what they know.

AT is not meant to be a replacement for learning the skills needed to alleviate reading, writing and other deficits, nor is it meant to be used as a substitute for evidence-based remedial instruction; rather, AT is designed to be used when the goal of a task is to acquire information or demonstrate knowledge that a student is unable to accomplish without such support.

AT is a bridge between students' area(s) of weakness and their actual abilities and skills. AT can assist students in a variety of ways including: enabling access to material at their grade through the use of text-to speech software and audiobooks; enabling students to express their thoughts through the use of dictation, (e.g., speech-to-text software), keyboards and word processing or word prediction software, correct spelling and grammar through electronic spelling and grammar checkers; as well as enabling students to create notes through the use of recording devices such as recording pens. In all these cases, the AT is used as a tool to compensate for the adverse impact of dyslexia on

learning and demonstrating knowledge.

Accommodations, Assistive Technology and the Law

The legal cornerstone for providing AT and AT services can be found in federal law. Students with disabilities, like all students, must have the opportunity to fully participate in our public schools. Three federal laws – the Individuals with Disabilities Education Act (IDEA), Title II of the Americans with Disabilities Act of 1990 (ADA), and Section 504 of the Rehabilitation Act of 1973 – address the obligations of public schools, including charter schools, to meet the needs of students with disabilities.

For students with dyslexia, as with any student with a disability, consideration of the need for AT devices, supports and services is a necessary component of developing an appropriate Individualized Education Program (IEP) or a 504 Plan. On a case-by-case basis, the provision of school-purchased AT devices, supports and services in a student's IEP or 504 plan is required if it is determined that the child requires those services in order to equally access the curriculum.

"In order for students with disabilities to meet high academic standards and to fully demonstrate their conceptual and procedural knowledge and skills in mathematics, reading, writing, speaking, and listening (English language arts), their instruction must incorporate supports and accommodations"

—Common Core State Standards Initiative

Considerations for Effective AT Implementation

To assist in determining a student's AT needs, AT evaluations may be conducted in the student's customary environment by professionals familiar with available technologies. For example, to determine if audio or text-to-speech technologies are necessary, a student may be asked to read a grade-level passage and to answer comprehension questions. Next, he/she should be asked to listen to a grade-level passage and answer comprehension questions. If the student's ability to comprehend print material is enhanced by listening, then audio or text-to-speech technology may be warranted. *Quality Indicators for Assistive Technology: A Comprehensive Guide to AT Services* includes a comprehensive list of criteria for review when considering the appropriateness of AT for individual students.

AT services are also critical to students' effective use of AT. These services include:

- selecting the programs or devices to effectively meet students' needs;
- acquiring the devices and software programs; and
- providing students, teachers, and parents instruction in the use, implementation and integration of the technology into all appropriate settings.

"…software cannot be fully effective unless the children who need it have adequate time and support to use it well."

—Wise & Raskind, 2007

Students may also need AT to fully and effectively participate in elective courses or extracurricular activities in which they participate. For example, students who struggle to read and who want to participate on their school's debate team may need print material provided to them in an accessible format. School-provided AT may be made available in the child's home, or in other settings, (if the IEP/504 team determines that the student requires AT to gain equal access or as an accommodation to receive a free and appropriate public education (FAPE)). School systems should develop policies, procedures, or operating guidelines in accordance with all applicable regulations and laws, that support the team's and/or district's ability to address and provide for the use of AT in all needed settings.

Common Accommodations for Dyslexia

In addition to AT, many lists of possible accommodations are available online and in print, such as within IDA's *Dyslexia In the Classroom - What Every Teacher Needs to Know*. However, it is essential to remember that accommodations must match an individual's need and that individual needs are different and can change depending on the demands of the situation and student progress. Extensive accommodations are available to students with IEPs and 504 plans and students who are English language learners, for state assessments.

Below are examples of areas to consider when determining appropriate accommodations and/or modifications for students with dyslexia:

- ***Notetaking*** – Does the student struggle to listen and take notes at the same time? Is keeping up with the pace of notetaking in the classroom too difficult? Can the student read his/her own notes

and are the notes accurate? Would receiving a copy of class notes meet the student's needs?

- ***Accessing grade level text –*** Does the student struggle to accurately and fluently read grade level text? Does this adversely impact comprehension? Would audio or text-to-speech formats meet the student's needs?

- ***Acquiring information from text –*** Does the student struggle to identify essential information in text due to the quantity or length of information, even with audio or text-to-speech accommodations? Would providing outlines or text with important information highlighted meet the student's needs?

- ***Composing a written response –*** Does the student have the knowledge and ideas for composing a response, but struggles with writing due to handwriting issues, spelling or putting thoughts on paper? Would using a graphic organizer, a spell and grammar check, a keyboard, word prediction software, or dictation software and/or scribe meet the student's need?

- ***Storing and remembering information –*** Does the student struggle with study skills strategies? Does the student have difficulty integrating information from multiple sources to identify essential material to focus on in preparation for assessments? Would a study guide meet the student's needs? Would flash cards that break concepts into smaller parts help with studying and recall? Would teaching students mnemonic devices to help remember essential material meet the student's needs?

- ***Organizational skills –*** Does the student struggle with organizational skills? Does the student misplace or have difficulty finding classwork, assignments, books, homework and worksheets? Does the student have difficulty recording homework assignments? Would a single binder system or accordion folder meet the student's needs? Would allowing the student to take a picture of the homework assignment meet the student's needs? Would a checklist and schedule of "to dos" help? Would color coding materials (books, folders, binders) help the student bring the needed items to class? Would a rubric be helpful for longer assignments?

- ***Amount of work –*** Does the student get overwhelmed by being presented with too much material at once? Would being presented with one page at a time, rather than an entire workbook meet the student's needs? Would fewer problems per page be helpful?

- ***Extraneous stimuli –*** Does the student get easily distracted by visual stimuli on a full worksheet or page? Does the student have difficulty filling out computer scantrons? Would a blank sheet of paper covering sections of the page not being worked on at the time meet the student's needs? Would providing answers directly on the test, rather than transferring answers to a scantron or answer sheet help? Would line markers aid reading, and windows displaying individual math problems be helpful? Would using larger font sizes and increasing spacing help make tasks easier?

- ***Variations in time –*** Does the student need additional time to complete tasks? Would adapting the time allotted for learning and task completion provide the student with equal access or an equal opportunity to show what he/she knows?

- ***Written directions –*** Is the student overwhelmed by the amount of information contained in directions? Does the student have difficulty completing multi-tasked directions? Would a checklist or having directions broken down into single steps or read aloud meet the student's needs?

Additional AT Resources

The following are several organizations and tools that can be used to assist in finding AT resources:

Assistive Technology Center (ATC) is New Jersey's online resource for information and equipment. ATC helps people with disabilities, their families, teachers and employers identify and learn to use the technology that will be most effective in meeting their goals. ATC provides Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) certified staff; thorough assessments; support options for nearly every budget; trials of equipment before purchase; training and support.

Bookshare is an organization that provides free accessible books to qualified students.

Center for Applied and Special Technology (CAST) is a nonprofit education research and development organization that works to expand learning opportunities for all individuals through Universal Design for Learning.

Georgia Project for Assistive Technology (GPAT) outlines the assistive technology considerations for students with disabilities and provides resource guides and a checklist for AT considerations.

Learning Ally is an organization that provides human narrated audio books to qualified members.

National Assistive Technology in Education Network (NATE) brings together information from the many fields and disciplines that are involved in assistive technology services in educational settings.

National Center on Accessible Educational Materials provides resources and technical assistance on implementing AEM and the National Instructional Materials Accessibility Standard (NIMAS).

National Center on Universal Design for Learning supports the effective implementation of UDL by connecting stakeholders in the field and providing resources and information.

National Instructional Materials Access Center is a federally-funded, searchable online file repository of source files, such as print textbooks, in the NIMAS format. Authorized users can access K-12 NIMAS-format files that can then be converted to accessible content for students with disabilities.

PARCC Accessibility Features and Accommodations Manual is a comprehensive policy document that provides guidance to districts and decision-making teams to ensure that the PARCC assessments provide valid results for all participating students. Use this manual to understand how to assign and deliver these accommodations and accessibility features to students.

Quality Indicators for Assistive Technology (QIAT) is a website including work done to date to develop a comprehensive set of quality indicators for effective AT services by school districts.

Technology & Media (TAM) Division, Council for Exceptional Children offers a variety of information about AT and special education instructional technology.

Wisconsin AT Initiative "Assessing Students' Needs for Assistive Technology" (ASNAT) is a comprehensive AT manual covering all disabilities developed by Wisconsin Assistive Technology Initiative.

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8. Diagnostic/Comprehensive Assessment

"Assessment is a systematic approach to collecting, analyzing, and reviewing data to improve learning." —Alexander W. Astin, 1991

Following reading screening, a comprehensive assessment of reading may be necessary. This chapter provides a framework for a comprehensive assessment that will identify areas of strength and areas for intervention. The chapter also addresses the components of an evaluation for a student who has been referred to the Child Study Team when dyslexia or other reading disability is suspected and it has been determined that an evaluation is warranted.

As noted earlier, a referral to the school district Child Study Team can be made at any point if a disability is suspected. If dyslexia is identified, a discussion regarding the impact of the reading disability on the student's learning and expected rate of improvement is warranted to determine if the student is eligible for special education supports & services under IDEA and/or Section 504 of the Rehabilitation Act of 1973, as amended.

Assessment serves multiple purposes within the pubic school setting; of these, one of the most important is to identify an individual student's current performance, strengths, strategies, and needs to inform instruction. Assessment also serves a range of other functions within the public school setting. Students are exposed to different types of assessments: screening, on-going/benchmark assessment, progress monitoring, summative assessment and diagnostic/comprehensive assessment, with each serving a different purpose as noted in previous sections of this handbook.

Diagnostic Assessment: The First Step in Identification

A diagnostic or comprehensive assessment can identify the source of a reading problem. It should determine if a student's profile fits the definition of dyslexia, rule out or rule in other common causes of reading difficulties, and also suggest the need for additional testing or referral to a specialist. It should provide information about a student's areas of strength and weakness.

A diagnostic assessment can also assist schools, teachers and parents in developing an individualized and focused intervention program. An effective assessment will provide information about a student's level of ability or performance in the specific areas related to reading (e.g., phonemic awareness, word reading, oral reading fluency, spelling, comprehension), thus identifying the level where intervention and progress monitoring should begin.

Who can identify and diagnosis dyslexia?

"A diagnosis of dyslexia begins with the gathering of information gained from interviews, observations and testing. This information is collected by various members of a team that includes the classroom teacher(s), speech/language pathologist, educational assessment specialist(s), and medical personnel (if co-occurring difficulties related to development, health or attention are suspected).

The task of relating and interpreting the information collected should be the responsibility of a professional who is thoroughly familiar with the important characteristics of dyslexia at different stages in the development of literacy skills. This professional should also have knowledge of the influence of language development and behavior on literacy learning."

— Sawyer & Jones (IDA Fact Sheet), 2009

Background Information

It is important to obtain information about a student's birth history, family history, attainment of developmental milestones including speech and language development, educational history, including early education, as well as information regarding languages spoken in the home and home literacy experiences.

This information should be obtained from parents, teachers and any specialists who have worked with the student.

Family History: When evaluating for dyslexia, it is important to be aware of the strong heritability of literacy problems. Dyslexia runs in families and is common among siblings. It is reported that up to 40% of individuals with a first-degree relative with developmental dyslexia will present with a similar reading disability (Fischer & Francks, 2006; Lyytinen, Ahonen, Eklund, Guttorm, Kulju, Laakso, Leiwo, Leppänen, Lyytinen, Poikkeus, Richardson, Torppa & Viholainen, H. , 2004).

A family history of dyslexia or reading struggles would indicate that a student is at-risk to have dyslexia.

Speech and Language Development History: A history of delayed speech or language acquistion significantly places a student at risk for reading and writing difficulties. Some students with dyslexia may often have had early speech and language delays, but their higher-level language skills may be intact by the time they start school.

Medical History: Information about attainment of developmental milestones, and any past diagnoses that could impact learning should be reviewed.

School and Intervention History: Past and current academic performance in all subject areas, as well as progress monitoring data showing rates of improvements made in any previous interventions, should be reviewed. In addition, teacher feedback concerning classroom performance should be collected.

Specific Areas to Assess to Identify Dyslexia

The following areas are recommended to be assessed as part of a diagnostic assessment specific to the identification of dyslexia:

- ***Cognitive Function***
- ***Oral Language Skills (including Listening Comprehension)***
- ***Phonological Awareness (including Phonemic Awareness)***
- ***Word Recognition***
- ***Decoding***
- ***Orthography/Spelling (Encoding)***
- ***Automaticity/Fluency Skills***
- ***Reading Comprehension***
- ***Written Expression***
- ***Functional Assessment***

Due to the typically uneven pattern of strengths and weaknesses in students with dyslexia, when looking at test results, composite scores should be interpreted with caution. Using only composite scores may mask important information about a student's individual skill profile. A more precise picture can be obtained by also using subtest scores. In addition, useful information can be obtained by examining patterns of a student's responses.

Cognitive Function

Until recently, an intelligence test was considered to be an integral part of a dyslexia assessment, as the criteria for the diagnosis was based on a discrepancy model (difference between IQ and reading skill). Research has demonstrated that intelligence is not the best predictor of how easily a student will develop written language skills, and in fact, oral language abilities (listening and speaking) are the best predictors of reading and spelling ability acquisition (Sawyer & Jones, 2009). To rely solely on the discrepancy model to determine dyslexia is ignoring modern science that has proven the central role of a phonological deficit in diagnosing dyslexia (Shaywitz, 2003). This deficit is a primary cause of dyslexia in students who, for a variety of technical reasons, may or may not have a discrepancy between IQ and reading skill.

Researchers have identified additional cognitive abilities that, when deficient, may further exacerbate difficulty in learning to read and spell. Two of these cognitive abilities are processing speed and memory span/working memory.

Students with dyslexia can exhibit speed-related deficits measured with processing speed tasks. These timed tasks may measure speed of input or perception, speed of output, or speed of integrating perceptual, cognitive, and output processes. A student's cognitive processing speed appears to impact automaticity of word recognition and reading rate (Mather & Wendling, 2012).

Memory span and working memory also affect reading achievement. Memory span involves the ability to listen to information and then repeat it back verbatim in a short time period. Research has postulated that one of the reasons some poor readers have shorter memory spans is that they articulate words more slowly due to inefficiency in accessing phonological information. Working memory involves the capacity to hold information in immediate awareness while manipulating the information in some way. Researchers hold differing views of the role working memory plays in reading. "As it relates to dyslexia, it appears that verbal working memory tasks and phonological working memory tasks, such as reversing the sounds in a word, cause the most difficulty" (Mather & Wendling, 2012).

A note about twice exceptional students (2e) - Even though arguments against diagnosing dyslexia on the basis of a performance discrepancy have much validity, information on IQ and a discrepancy between ability and achievement is particularly important for identifying students who are both academically talented and have a learning disability. This is because the relatively high achievement of many of these students (compared to that of their chronological age peers) often masks a disability unless that achievement is compared to the student's ability (Brody & Mills, 1997).

Oral Language Skills

Oral language refers to the ability to listen to and understand speech as well as to express thoughts through speech. Since oral language is the foundation for learning and the primary means through which learning occurs, a

Receptive and Expressive Language Domains

	Oral Language		Written Language	
	Receptive: Listening	Expressive: Speaking	Receptive: Reading	Expressive: Writing
Phonology	The ability to identify and distinguish phonemes while listening (phonological processing, phonological awareness, phonemic awareness)	The ability to appropriately use phonological patterns (speech sounds) when speaking	The ability to understand and make the sound-to-letter associations for reading (phonics/ decoding)	The ability to understand and make the sound-to-letter associations for spelling (phonics/ encoding)
Morphology	The ability to understand the meanings of morphemes when listening (grammar)	The ability to appropriately use morphemes (grammar) when speaking	The ability to decode morphemes in words and understand grammar	The ability to include morphemes in word spellings; use appropriate grammar
Syntax	The ability to understand sentence structure elements when listening	The ability to appropriately use sentence structure elements when speaking	The ability to understand sentence structure when reading	The ability to use correct sentence structure in writing
Semantics	The ability to understand words and their meanings in context (listening vocabulary)	The ability to use words and word combinations to express thoughts/meaning when speaking	The ability to understand words and their meanings in context (reading vocabulary)	The ability to use words and combinations of words meaningfully and in context to express thoughts/meaning in a coherent and cohesive manner
Pragmatics	The ability to understand the social aspects of spoken language including conversational exchanges/ discourse	The ability to use socially appropriately spoken language, including production of cohesive and relevant messages during conversations	The ability to understand point of view, needs of the audience, character/author perspective, etc.	The ability to convey a point of view and intended message (1) for a specific audience, (2) taking on the perspective of characters/narrator/author, (3) for a specific type of writing style (expository, descriptive, persuasive and narrative)

Figure 1 – Source: Adapted from a Language in Brief chart on the American Speech-Language-Hearing Association (ASHA) website.

comprehensive evaluation should include assessment in both receptive and expressive language skills. In addition, knowledge of language milestones is important in recognizing students who are at risk for reading problems. Oral language is made up of low-level skills, such as recognizing and making the sounds within our speech, and higher-level skills, such as understanding meaning by listening to someone speak or expressing thoughts in sentences. Students with dyslexia typically have adequate or better higher-level language skills. Indicators of higher-level oral language skills include being able to understand an age-appropriate story and spoken directions, to carry on a conversation, and to understand and use words that are age-appropriate. To document adequate higher-level language skills, an evaluation should include measures of listening comprehension and oral vocabulary both receptively and expressively. Language comprehension abilities, at a minimum, encompass "receptive vocabulary, grammatical understanding, and discourse comprehension" (Catts, Adlof, & Weismer, 2006).

Figure 1 describes the five basic language domains as part of a continuum from low-level language skills (phonology) to higher-level language skills. A thorough language evaluation will consider each of these domains.

Although students with dyslexia often have strong higher-level language skills, they characteristically have problems (a deficit) in low-level language skills, particularly phonological processing. This deficit in phonological processing limits the ability to learn to read and spell using the sounds of language. A child with dyslexia may use his/her good higher-level language skills (e.g., verbal reasoning ability), to compensate for weaknesses in low-level skills, like phonemic awareness.

Some individuals with dyslexia may have word retrieval problems and/or difficulty pronouncing certain multisyllabic words. A child with dyslexia may exhibit difficulty remembering, recalling or producing sound combinations. Words may be difficult to produce due to exact sound combinations in a word or due to word meaning/sematic cues. Sometimes children may confuse, delete or add sounds or misuse words when connecting thoughts (i.e.,

distinct vs. extinct; pacific for specific). Words may be on the "tip of the tongue" and other frequent struggles in this area are referred to as word retrieval or word finding difficulties. Interventions with a speech-language pathologist will focus on teaching word meanings as well as strategies for recalling specific words.

Typically, if a student has average level oral language skills but much difficulty developing written language (reading and spelling) skills, this is an indicator of dyslexia (Sawyer & Jones, 2009). However since language development and language skills exist on a continuum, dyslexia can be present with other language problems (Mather & Wendling, 2012).

Phonological Awareness

Once the phonological system has been acquired for basic listening and speaking, students begin to develop phonological awareness, which is the awareness of individual words in sentences or syllables in words. Other aspects of phonological awareness include the ability for rhyming, alliteration and onset-rime (word families). At the most complex level of phonological awareness is phonemic awareness which includes the ability for blending, segmenting, and manipulating individual sounds (phonemes) in words. In addition to assessing these skills, a nonword repetition task should be administered. This type of task measures how well a student can represent a new and unfamiliar phonological sequence in memory. This information is essential for understanding how a student will fare when attempting to sequence the sounds in unfamiliar words. Spelling and decoding difficulties resulting from a deficit in the phonological component of language are a hallmark of dyslexia.

Word Recognition

Word recognition, also called word reading or word identification, is the ability to read single printed words. Tests of word recognition, including phonetically regular and irregular words, require that students read individual words printed in a list. The student is not able to use context cues, such as the meaning of a sentence, to figure out the word. Tests of word recognition that score both accuracy and the time it takes for the student to read the words (fluency) are particularly useful. Students with dyslexia may become accurate following appropriate intervention but are still very slow when reading words (Sawyer & Jones, 2009).

Decoding

Decoding is defined as "efficient word recognition" (Hoover & Gough, 1990), or the ability to sound out words based on phonics rules and the ability to quickly and accurately read familiar and unfamiliar words in list form or connected text. Decoding "involves a narrow scope of knowledge (e.g., letters, sounds, words) and processes (decoding) that, once acquired, will lead to fast, accurate word recognition" (Kamhi, 2009). Students with dyslexia have difficulty with these word attack skills particularly with learning phoneme/grapheme (sound/letter) correspondences. It is particularly important to assess pseudoword reading to get a true indication of a student's ability to internalize and apply decoding skills to unfamiliar words.

Orthography/Spelling (Encoding)

Orthography incorporates all of the symbols in a writing system, including numbers, punctuation, letters and letter patterns. Some students with dyslexia have difficulty recalling letters and letter patterns. Spelling or encoding is the opposite of decoding but is even more difficult. It requires separating (segmenting) the individual sounds in a spoken word, recalling the different ways each sound might be spelled, choosing/recalling the letters or letter patterns associated with the sound, writing the letter(s) for that sound, and repeating the same sequence for the next sound in the word. Spelling stresses a student's short and long-term memory and is complicated by a student's ease or difficulty in writing letters legibly and in proper order/sequence. Spelling is usually the most severe weakness among students with dyslexia and the most difficult to remedy (Sawyer & Jones, 2009).

A student's orthographic awareness skills can be assessed by formal and informal measures. Tasks such as asking the young student to write his/her name, write the alphabet or recognize letters and asking students beyond this level to read/spell regular and irregular words provide information about how a student matches sounds with letters/letter patterns when writing (Mather & Wendling, 2012). The type of spelling errors a student makes on formal and informal measures should be analyzed to determine which phonics and orthographic patterns the student does not know.

Automaticity/Fluency Skills

Students with dyslexia often have slow speed in processing information (visual or auditory) which can be measured using naming speed tasks (also called rapid automatic naming) as well as other tests of more general processing speed available in frequently used standardized tests. Naming speed, particularly letter naming, is one of the best early predictors of reading difficulties and thus often used as part of screening measures for young children. Slow naming speed results in problems with developing reading fluency. It also makes it difficult for students to do well on

timed tests. Students with both the naming speed deficit and the phonological processing deficit are considered to have a "double deficit." Students with the double deficit have more severe difficulties than those with only one of the two (Sawyer & Jones, 2009).

Reading Comprehension

Reading comprehension is different from oral language/ listening comprehension because it relies on the student's ability to decode text and is only attained when a student can successfully comprehend the intended meaning from the text. Measuring reading comprehension can be complicated as reading comprehension tests vary significantly in their processing demands and how they measure this complex ability. Therefore consideration should be given to using multiple reading comprehension measures when evaluating a student at risk for dyslexia. Reading comprehension should be assessed at the sentence level as well as the passage level. Good reading comprehension tests should provide different types of passages that contain both familiar and unfamiliar information about a variety of topics (Farrall, 2012).

It is important to assess oral and silent reading comprehension as well as listening comprehension skills. It is important to evaluate a student's silent reading comprehension versus oral reading comprehension to obtain information as to which style results in better performance, which will provide better guidance for classroom strategies. Oral reading allows for analysis of word reading errors, a student's ability to self-monitor/self-correct for errors, and reading speed. Some students may do better when reading orally because they may be able to "hear" their errors, recognize when the text doesn't make sense and then self-correct. However, other students may do better when reading silently as they have the opportunity to read information over if not being timed. It may also be beneficial to use reading comprehension measures which do not allow students to refer back to the text to answer questions and then compare a student's performance to measures that do allow text reference to determine the student's ability to identify and recall key information with and without look-back support. Further, asking about a student's familiarity with the content within the text assists in determining whether any aspect of the student's comprehension is attributable to background knowledge rather than reading comprehension.

It is particuly important to use a variety of comprehension measures with high functioning students with dyslexia. Students with dyslexia often have strong higher-level oral language skills which enable them to get the main idea of a passage, or correctly guess answers, using contextual clues or prior knowledge, thus, "masking" their difficulty with reading words. Also, reading comprehension tasks usually require the student to read only a short passage to which they may refer when finding the answers to questions. For these reasons, students with dyslexia may earn an average score on reading comprehension tests, but still have much difficulty reading and understanding long reading assignments in their grade-level texts (Sawyer & Jones, 2009).

Typically, students with dyslexia score lower on tests of reading comprehension than on listening comprehension tasks. A lower reading comprehension score may be due to several factors, such as, missing important information, misunderstanding the content due to word reading errors, and/or difficulty connecting presented ideas due to time lapses caused by fluency weaknesses that impact working memory. By including an assessment of listening comprehension, the evaluator is able to determine if there is a gap between what a student is cognitively capable of comprehending and what he/she is able to comprehend through independent reading. This will provide a more complete picture of a student's strengths and weaknesses.

Written Expression

Written expression is a highly complex process that depends on the integration of many different skills. Many students with dyslexia also have writing difficulties. An assessment of written language should include measures of handwriting legibility and fuency, spelling in a list and in context, mechanics, syntax, vocabulary and paragraph writing (Farrall, 2012). Analyzing the student's informal writing samples can add valuable information to an evaluation. If handwriting/graphomotor or visual motor weaknesses are observed, a referral to an occupational therapist may be warranted.

Functional Assessment

A review of a student's functional reading and writing abilities can provide information regarding his/her ability to apply learned skills to different settings (i.e., school, home, structured versus unstructured setting), to different tasks (i.e., independent assignments, homework, studying for tests), different subject areas (i.e., reading, math, science) and under different conditions (i.e., individual versus group instruction, listening versus speaking, oral versus silent reading). This information can guide assessment, support test data, and assist with planning for intervention.

Functional assessments can be obtained via:

- Diagnostic/trial teaching

- Observation of student
- Review of classwork and quiz/test performance
- Parent/teacher checklists

Co-occurring Conditions

All learning disabilities may co-occur with other disorders, including attention, language, executive function and behavior issues, and each is distinct in how it impacts learning and development of literacy skills. Dyslexia is often seen with some of the following common concurrent conditions:

- ***Attention-Deficit Hyperactivity Disorder***
- ***Auditory Processing Disorder***
- ***Dyscalculia***
- ***Dysgraphia***
- ***Disorder of Written Expression***
- ***Other Speech and Language Disorders***
- ***Emotional Disorders, such as Anxiety and/or Depression***

Due to the complex nature of reading deficits, it is likely a student may benefit from further testing. This might include: vision, hearing, fine motor/handwriting, attention/executive function, emotional adjustment, comprehensive speech-language and/or social communication.

A note about concurrent math difficulties - Mathematics can be viewed as a language, similar to literacy. Math requires an understanding of numerical symbols rather than letter symbols, and there are specific rules for math calculations that are similar to rules governing decoding and encoding. Some students with dyslexia may also show difficulty with math concepts such as number sense, number facts, calculation and mathematical reasoning (Barnes, Martinez-Lincoln & Raghubar, 2017).

Dyslexia and Specific Learning Disability in Special Education

A thorough diagnostic/comprehensive assessment should provide the documentation necessary to determine eligibility under the Individuals with Disabilities Education Act (IDEA) or the Section 504 of the Rehabilitation Act of 1973.

According to N.J.A.C. 6A:14-3.5(c)12, *"Specific learning disability" corresponds to "perceptually impaired" and means a disorder in one or more of the basic psychological processes involved in understanding or 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, including conditions such as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia.*

A specific learning disability can be determined when a severe discrepancy is found between the student's current achievement and intellectual ability in one or more of the following areas:

1. *Basic reading skills;*
2. *Reading comprehension;*
3. *Oral expression;*
4. *Listening comprehension;*
5. *Mathematical calculation;*
6. *Mathematical problem solving;*
7. *Written expression; and*
8. *Reading fluency.*

A specific learning disability may also be determined by utilizing a response to scientifically based interventions methodology as described in N.J.A.C. 6A:14-3.4(h)6.

Dyslexia falls under Specific learning disability; it is not its own eligibility category. A student with dyslexia will typically present with primary weaknesses in basic reading skills and/or reading fluency, and may show secondary consequences in reading comprehension. Written expression may also be impacted due to weaknesses with spelling and writing fluency.

An *October 23, 2015 "Dear Colleague letter"* from the U.S. Department of Education, Office of Special Education and Rehabilitative Services, clarifies that "there is nothing in IDEA that would prohibit the use of the terms dyslexia, dyscalculia, and dysgraphia in IDEA evaluations, eligibility determinations, or IEP documents."

"Multidisciplinary teams need the information, opportunity, and time to consider and integrate assessment findings in order to engage in a team evaluation that informs identification, eligibility, services, and instruction."

—National Joint Committee on Learning Disabilities, 2011

The Role of the Multidisciplinary Team in Comprehensive Assessment

Through the Child Study Team, NJ provides for the assessment of students who present with difficulty acquiring reading skills. This multidisciplinary team is comprised of specialists who have earned higher educational degrees and who administer standardized tests designed to identify

areas of strength and weakness. In addition, the school-based Child Study Team has the opportunity to collaborate with teachers, therapists and family members in order to develop a full picture of a student's performance in multiple settings.

Evaluations by team members should be relevant to the particular student and presenting concerns. Interpretation and analysis of each student's testing results is essential so that the underlying etiology of literacy difficulties and remedial services can be identified. It is imperative that all members of the multidisciplinary team have a strong base of knowledge about the neurobiology of dyslexia and all aspects of reading acquisition. This knowledge is imperative for conducting a diagnostic/comprehensive assessment.

The School Psychologist: It is critical that school psychologists understand the progression of literacy development, so they are able to identify the phase at which students are functioning (Joseph, Wargeline & Ayoub, 2016). School psychologists have the training, knowledge and skills to identify a student's unique pattern of strengths and weaknesses. To be relevant, cognitive assessment should result in sound recommendations for the educational programming of a student. These recommendations will not surface without a comprehensive cognitive evaluation. School psychologists are trained to use norm-referenced standardized tests and their analysis of how cognitive testing results relate to reading achievement is essential.

The Learning Disabilities Teacher-Consultant (LDT-C): It cannot be understated how essential it is for LDT-Cs to have a thorough base of knowledge pertaining to the structure of language, how students learn to read, why some students struggle to learn to read and what effective instructional practices should be implemented to remediate students' specific areas of weakness. LDT-Cs' evaluations should result in complete interpretations of results that identify the student's current levels of performance and how the student's performance impacts his/her mastery of reading skills.

Reporting of standardized scores alone is not adequate for making an interpretation of results. An analysis of performance on subtests (i.e., phonological awareness, rapid naming, nonsense word reading) is essential for identifying needs and planning interventions. After evaluating a student, LDT-Cs should look for patterns in test results to identify the profile of dyslexia. Typically, students with dyslexia will have difficulty spelling and reading single words, with particular difficulty decoding nonsense or unfamiliar words. Reading comprehension is often superior to decoding individual words, and oral reading is inaccurate and labored. Evidence in the evaluation results should demonstrate a phonological/orthographic weakness with other higher-level language functions relatively unaffected (Shaywitz, 2003). LDT-Cs can play an important role as a teacher mentor/coach and ensure that students are progressing at expected rates.

The Social Worker: Social workers play an important role in supporting families' needs and with identifying key factors which impact a student's progress in school. Social workers' interviews with family members should identify genetic and familial background that can help explain underlying neurobiological challenges that result in difficulty with mastering the phonological code. In addition, emotional and environmental factors that may play a factor in a student's progress should be investigated.

The Speech-Language Pathologist/Specialist (SLP/SLS): Speech-language pathologists/specialists play an important role in the development of literacy skills of students due to the connection between spoken and written language. Students with reading and writing skill deficits may present with a history of speech and language delay, and exhibit ongoing difficulty with using language strategically to communicate, think and learn. SLPs/SLSs have the skills to diagnose oral and written language disorders across different age and grade levels, and to intervene at the level of need. Their collaboration with teachers, administrators, and CST members can be essential to early identification and to fostering literacy acquisition in general education settings where students are at risk or experiencing reading and writing disorders.

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9. New Jersey Dyslexia Legislation

Chapter 105

An Act concerning professional development for public school employees and supplementing chapter 6 of Title 18A of the New Jersey Statutes.

Be It Enacted by the Senate and General Assembly of the State of New Jersey:

C.18A:6-130 Professional development opportunities related to reading disabilities.

1. The Department of Education shall provide professional development opportunities related to reading disabilities, including dyslexia, to school district personnel. The professional development shall be made available to general education, special education, basic skills, and English as a second language teachers, instructional support staff, administrators, supervisors, child study team members, and speech-language specialists. The professional development opportunities shall be designed to account for the various manners in which different school district personnel interact with, or develop instructional programs for, students with reading disabilities.

C.18A:6-131 Required instruction.

2. The State Board of Education shall, as part of the professional development requirement established by the State board for public school teaching staff members, require certain teaching staff members to annually complete at least two hours of professional development instruction on the screening, intervention, accommodation, and use of technology for students with reading disabilities, including dyslexia. The professional development requirement established pursuant to this section shall apply to general education teachers employed in grades kindergarten through 3, special education, basic skills, and English as a second language teachers, reading specialists, learning disabilities teacher consultants, and speech-language specialists. A board of education may make the professional development opportunities available to other instructional or support staff as the board deems appropriate.

3. This act shall take effect immediately and shall first be applicable to the first full school year beginning after the effective date of this act.

Approved August 7, 2013

Chapter 131

An Act concerning special education and supplementing chapter 46 of Title 18A of the New Jersey Statutes.

Be It Enacted by the Senate and General Assembly of the State of New Jersey:

C.18A:46-55 Regulations incorporating definition of dyslexia.

1. The State Board of Education shall promulgate regulations that incorporate the International Dyslexia Association's definition of dyslexia into chapter 14 of Title 6A of the New Jersey Administrative Code.

2. This act shall take effect immediately.

Approved August 9, 2013

Chapter 210

An Act concerning reading disabilities among public school students and supplementing chapter 40 of Title 18A of the New Jersey Statutes.

Be It Enacted by the Senate and General Assembly of the State of New Jersey:

C.18A:40-5.1 Definitions relative to reading disabilities.

1. As used in this act:

"Potential indicators of dyslexia or other reading disabilities" means indicators that include, but shall not be limited to, difficulty in acquiring language skills; inability to comprehend oral or written language; difficulty in rhyming words; difficulty in naming letters, recognizing letters, matching letters to sounds, and blending sounds when speaking and reading words; difficulty recognizing and remembering sight words; consistent transposition of number sequences, letter reversals, inversions, and substitutions; and trouble in replication of content.

C.18A:40-5.2 Distribution of information on screening instruments.

2. a. The Commissioner of Education shall distribute to each board of education information on screening instruments available to identify students who possess one or more potential indicators of dyslexia or other reading disabilities pursuant to section 3 of this act. The commissioner shall provide information on the screening instruments appropriate for kindergarten through second grade students and on screening instruments that may be suitably used for older students. A board of education shall select and implement age-appropriate screening instruments for the early diagnosis of dyslexia and other reading disabilities.

b. The commissioner shall develop and distribute to each board of education guidance on appropriate intervention strategies for students diagnosed with dyslexia or other reading disabilities.

C.18A:40-5.3 Screening for dyslexia, other reading disabilities.

3. a. A board of education shall ensure that each student enrolled in the school district who has exhibited one or more potential indicators of dyslexia or other reading disabilities is screened for dyslexia and other reading disabilities using a screening instrument selected pursuant to section 2 of this act no later than the student's completion of the first semester of the second grade.

b. In the event that a student who would have been enrolled in kindergarten or grade one or two during or after the 2014-2015 school year enrolls in the district in kindergarten or grades one through six during or after the 2015-2016 school year and has no record of being previously screened for dyslexia or other reading disabilities pursuant to this act, the board of education shall ensure that the newly-enrolled student is screened for dyslexia and other reading disabilities using a screening instrument selected pursuant to section 2 of this act at the same time other students enrolled in the student's grade are screened for dyslexia and other reading disabilities or, if other students enrolled in the student's grade have previously been screened, within 90 calendar days of the date the student is enrolled in the district.

c. The screening shall be administered by a teacher or other teaching staff member properly trained in the screening process for dyslexia and other reading disabilities.

C.18A:40-5.4 Comprehensive assessment for the learning disorder.

4. In the event that a student is determined through the screening conducted pursuant to section 3 of this act to possess one or more potential indicators of dyslexia or other reading disabilities, the board of education shall ensure that the student receives a comprehensive assessment for the learning disorder. In the event that a diagnosis of dyslexia or other reading disability is confirmed by the comprehensive assessment, the board of education shall provide appropriate evidence-based intervention strategies to the student, including intense instruction on phonemic awareness, phonics and fluency, vocabulary, and reading comprehension.

5. This act shall take effect immediately and shall first apply to the 2014-2015 school year; provided, however, that the Commissioner of Education shall take any anticipatory actions that the commissioner determines to be necessary and appropriate to effectuate the purposes of this act prior to the 2014-2015 school year.

Approved January 17, 2014

10. Glossary

academic vocabulary	words traditionally used in academic dialogue and text
accuracy	ability to recognize words correctly
alphabetic principle	ability to associate sounds with letters and use those sounds to form words
automaticity	ability to perform a skill easily with little attention, effort, or conscious awareness
background knowledge	connections formed between the text and the information and experiences of the reader
benchmark	pre-determined level of performance on a screening test that is considered representative of proficiency or mastery of a certain set of skills
classification accuracy	extent to which a screening tool is able to accurately classify students into “at risk” and “not at risk” categories
connected text	words that are linked as in sentences, phrases, and paragraphs
controlled text	reading materials in which a high percentage of words can be identified using their most common sounds and use sound-letter correspondences that students have been taught
cumulative instruction	approach that builds upon previously learned concepts
decoding	process of using sound-letter correspondences to sound out words or nonsense words
encoding	process of using sound-letter correspondences to spell
explicit instruction	direct, structured, systematic approach to teaching that includes both instructional design and delivery procedures
expressive language	language that is spoken
fidelity of implementation	degree to which instruction follows the intent and design of the program
fluency	ability to read a text accurately, quickly, and with proper expression and comprehension
grapheme	letter or letter combination that corresponds to a single phoneme
guided practice	approach in which students practice newly learned skills with the teacher providing prompts and feedback
high frequency words	small group of words (300-500) that account for a large percentage of the words in print, can be phonically regular or irregular
IQ-discrepancy approach	model assessing whether there is a significant difference between a student’s scores on a test of general intelligence and scores obtained on an achievement test; also called severe discrepancy model
metacognitive skills	strategies that help students to “think about their thinking” before, during, and after they read
nonsense words	pronounceable letter patterns that are not real words; also called pseudowords
norm	standard of performance on a test that is derived by administering the test to a large sample of students

morpheme	smallest meaningful unit of a language
morphology	study of words, how they are formed, and their relationship to other words in the same language
onset-rime awareness	awareness of the two separate elements in syllables, the consonant sounds before the vowel sound (onset) and the vowel sound and any consonant sounds that follow (rime); a subcategory of phonological awareness
orthographic processing	use of the visual system to form, store, and recall words
orthography	conventional spelling system/writing system of a language
phoneme	smallest unit of sound within spoken words
phonemic awareness	awareness of individual sounds/phonemes in spoken words; a subcategory of phonological awareness
phonics	system for approaching reading by focusing on sound-letter correspondence
phonological awareness	awareness of sounds in spoken words including syllables, onset-rimes and individual phonemes
phonological processing	use of the sounds of one's language to process spoken and written language
phonology	study of how sounds are organized and used in natural languages
prosody	reading with expression, proper intonation and phrasing
rapid automatized naming	quickly accessing presumably rote information (numbers, letters, colors, objects); also called rapid naming
receptive language	language that is heard
reliability	consistency with which a tool classifies students from one administration to the next
scope and sequence	blueprint that provides an overall outline of an instructional program including the range of teaching content and the order or sequence in which it is taught
semantics	study of the meaning of morphemes, words, phrases and sentences
sight word	word immediately recognized "on sight" regardless of whether it is phonically regular or irregular
sound-letter identification	a phoneme (sound) associated with a letter or letters (grapheme); also called sound-letter correspondence
syllable	word part that contains a vowel sound in spoken language
syllabication	act of breaking words into syllables
syntax	way in which words are put together to form phrases, clauses, or sentences
validity	extent to which a tool accurately measures the underlying construct that it is intended to measure

Appendix A
Screening for Dyslexia Flow Chart

Universal screening and data review includes, but is not limited to, teacher observation, formative assessment, standardized assessments, parental input, and the potential indicators. Screening for dyslexia includes age-appropriate skills in phonological and phonemic awareness; rapid automatic naming; sound letter identification; phonological memory; word recognition fluency, or real word reading; word recognition fluency and decoding, or nonsense word reading; encoding, or spelling; oral reading fluency; oral vocabulary versus written vocabulary; and listening comprehension versus reading comprehension. Details are included in the Universal Screening and Early identification section of this handbook.

This is the flow of recommended steps in the screening process:

If a student is at or above benchmark and average progress is observed in the classroom, then continue evidence-based core instruction (Tier 1). Further, the teacher should continue with data review and progress monitoring.

If a student is at or above benchmark but has poor performance in the classroom, then deliver structured literacy interventions with increased intensity (Tier 2 and Tier 3) and differentiate evidence-based core instruction (Tier 1). Additionally, the teacher should be progress monitoring to determine the rate of improvement. Based on data, the teacher should consider screening the student for dyslexia. If appropriate, the teacher should screen for dyslexia.

If a student is below benchmark, then deliver structured literacy interventions with increased intensity (Tier 2 and Tier 3) and differentiate evidence-based core instruction (Tier 1). Additionally, the teacher should be progress monitoring to determine the rate of improvement. Based on data, the teacher should screen for dyslexia. If the student displays either negative or positive for indicators of dyslexia but the data confirms an appropriate rate of improvement, then the teacher should continue structured literacy interventions and progress monitor. However, if the rate of improvement declines, then a referral to the child study team for a comprehensive assessment, which would include the data from the dyslexia screening, and progress monitoring is appropriate, while continuing structured literacy interventions.

Conversely, if the student displays the positive indicators of dyslexia and data confirms slow or poor rate of improvement, a referral to the child study team for a comprehensive assessment, which would include the data from the dyslexia screening, and progress monitoring is appropriate, while continuing structured literacy interventions.

It is important to note that a referral to the school district's child study team can be made at any point if a disability is suspected. If dyslexia is identified, a discussion regarding the impact of the reading disability on the student's learning and expected rate of improvement is warranted to determine if the student is eligible for special education supports and services under IDEA and or section 504 of the Rehabilitation Act of 1973, as amended.