

Assessment Plan

An Early Childhood Guide for Evaluating Dyslexia



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According to the International Dyslexia Association (IDA, 2002),

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

Assessment for younger children should place an emphasis on the foundational skills for reading: oral language, phonological awareness, rapid naming, letter recognition, and sound-symbol association. *Riverside Insights* offers powerful tools in the assessment of Dyslexia, allowing examiners to assess various latent and applied abilities pertinent to early childhood reading achievement.

Dyslexia Early Childhood Bundle (Ages 3.6 - 7.11)								
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-	Letter & Sound Assessment	-						



Screeners*

BATTELLE EARLY ACADEMIC SURVEY[™] (BEAS)

The **BEAS** can be used as a screening tool to obtain data on a student's early literacy skills that can be used to plan instruction and guide further assessment.

The Literacy Domain of the BEAS tests foundational skills in the subdomains of Print Concepts, Phonological Awareness, Phonics and Word Recognition, Listening Comprehension, and Fluency. The examiner can derive subdomain scores for each of these areas, in addition to an overall domain score when all subdomains within the Literacy Domain are administered. Administration of this domain allows for screening primary reading difficulties associated with Dyslexia, including letter identification, phoneme pronunciation, basic reading skills (print awareness and letter-word identification), and phoneme-grapheme knowledge.

Phonics and Word Recognition items focus on connecting symbols (letters) to the sounds (phonemes) they represent. This subdomain taps foundational skills central to the primary reading area of phoneme-grapheme (letter-sound) knowledge. An adequate foundation in phonics, word recognition, and word decoding is crucial in developing reading proficiency. Within this subdomain, the student is tasked with:

- Letter Identification Identifying uppercase and lowercase letters based on visual presentation.
- Letter-Sound Correspondence Producing sounds corresponding to visually presented letters.
- Early Decoding Matching pictures with consonant-vowel-consonant words.
- Sight Words Reading sight words aloud.
- Nonsense Words Applying decoding skills to read nonsense/non-real words.
- Long Vowel Patterns Applying knowledge of long and short vowel patterns to match pictures with words.
- Inflectional Endings Identifying the correct word in a series based on an understanding of inflectional endings.

 * Instruments that could be used in conjunction as part of a robust screening battery.





Phonological Awareness is considered a relevant cognitive ability area in the assessment of Dyslexia. Items in this subdomain focus on a student's ability to identify, analyze, and manipulate sounds within words. A foundation in phonological awareness leads to phonics mastery, which in turn, helps the student to read text with confidence. In this subdomain, the student is tasked with:

- Rhyming Identifying rhyming and nonrhyming words.
- Syllables Breaking words into syllables and blending syllables to create words.
- Onset Rime Identifying initial sounds in words and blending initial sounds with word parts to create whole words.
- **Phoneme Identification** Identifying phonemes (speech sounds) in initial, medial, and ending positions within words.
- Phoneme Blending and Segmenting Blending individual phonemes to create words, and breaking words into individual phonemes.
- Phoneme Manipulation Adding and removing phonemes in the initial and ending position in words, in addition to substituting phonemes in the initial, medial, and ending position to create new words.

The BEAS also allows for an evaluation of foundational skills in the domain of Rapid Naming, another cognitive correlate of dyslexia. Rapid naming can be defined as the ability to recall names of familiar objects or symbols (e.g., letters and numbers) quickly and accurately. This domain is tapped by the Fluency subdomain.

Fluency items test fluency and automaticity in picture naming, requiring the child to identify depicted objects under timed conditions. As the fluency items do not involve the reading of text, examiners are able to assess a student's rate and accuracy prior to their being able to read. Fluency measurement provides data that children are reading at an adequate rate with appropriate accuracy for a given stage of reading development. Furthermore, reading fluency is paramount in an individual's ability to comprehend text.

Listening Comprehension taps a student's ability to answer questions about orally presented short passages and stories. Performance within this domain can offer data about a student's auditory processing skills and listening comprehension skills, which are crucial in reading comprehension skill development. It can also provide important information about the child's ability to learn in the absence of print.

Print Concepts assesses a student's understanding of the features of standard English print concepts while looking at a picture book. A student's understanding of basic print concepts is crucial for them to develop later reading skills.



Upon scoring the BEAS via *Riverside Score®*, Riverside Insights' Online Scoring and Reporting Platform, examiners will be able to identify areas in a student's literacy profile requiring monitoring and support:

Domain: Subdomain	Examiner	Test Date	RS	Scale Score	Standard Score	Percentile Rank	Performance Level*
Literacy Domain	-	-	-	-	100	50	ON TRACK
Print Concepts	Geremy Grant	10/26/2021	10	9	-	37	MONITOR
Phonological Awarness	-	-	-	16	-	98	ON TRACK
	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Syllables	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Onset Rime	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Phoneme Identification	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Phoneme Blending and Segmenting	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Phoneme Manipulation	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Phonics and Word Recognition	-	-	-	13	-	84	ON TRACK
Letter Identification	Geremy Grant	10/26/2021	10	-		-	SUPPORT
Letter-Sound Correspondance	Geremy Grant	10/26/2021	10	-	-	-	SUPPORT
Early Decoding	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Sight Words	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Nonsense Words	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Long Vowel Patterns	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Inflectional Endings	Geremy Grant	10/26/2021	10	-	-	-	ON TRACK
Listening Comprehension	Geremy Grant	10/26/2021	10	10	-	50	ON TRACK
Fluency	Geremy Grant	10/26/2021	10	3	-	1	SUPPORT

 * Support indicates scores that fall below the 25th percentile. Monitor indicates scores falling within the 25th - 49th percentile. On track indicates scores falling at the 50th percentile or above.



X Riverside Insights[®]

Test of Early Reading Ability, Fourth Edition (TERA-4)

The **TERA-4** is a measure of early-reading development for examinees as young as four years of age through eight years of age. It assesses mastery of skills via the following subtests:

- Alphabet measures knowledge of the alphabet and its uses.
- Conventions assesses knowledge of print conventions.
- Meaning tests an examinee's comprehension of print.

Upon administration of all threeTERA-4 subtests, examiners can derive a General Reading Index, which serves as a measure of overall early-reading ability development.

To score the TERA-4, examiners can utilize the optional TERA-4 Online Scoring and Report System, which allows examiners to generate several derived scores and conduct performance analysis to further enhance interpretation and understanding of the student's skills.

Comprehensive Measures

Upon screening foundational literacy skills, it is recommended that examiners utilize the following instruments for a comprehensive early childhood evaluation of Dyslexia.

WOODCOCK-JOHNSON IV TESTS OF EARLY COGNITIVE AND ACADEMIC DEVELOPMENT (ECAD®)

The **ECAD**[®] allows for an assessment of primary reading and writing difficulties associated with Dyslexia, including basic reading skills (print awareness and letter-word identification) and pre-writing and spelling.

- Basic reading skills are assessed by Letter-Word Identification (Early Form), which tests the broad ability of reading-writing. This task initially requires the examinee to identify letters amongst distractors. As the difficulty increases, the examinee is asked to name individual letters, and then later, individual words.
- Spelling skills are tested by Writing (Early Form), which falls within the domain of reading-writing ability, assessing both pre-writing skills (i.e., drawing lines and tracing letters), in addition to more formal writing skills (i.e., producing uppercase and lowercase letters and individual words).





The ECAD also taps underlying cognitive abilities that can inform reading and spelling difficulties. Abilities of interest assessed by the ECAD[®] include short-term working memory, associative memory, orthographic awareness, rapid naming, processing speed, and phonological abilities.

- Sentence Repetition tests short-term working memory, and auditory memory span, requiring the examinee to remember and then restate individual words, phrases, and sentences. Working memory involves the ability to hold information in immediate awareness while manipulating or transforming the information in some fashion. Short-term working memory functioning lends itself to reading development and achievement. For example, in the service of reading comprehension, one's working memory can support the retention of the important elements of a text needed to understand and answer questions pertaining to it.
- Memory for Names is a measure of associative memory, which is a possible contributing factor in Dyslexia. It is a controlled-learning auditory-visual association task. The examinee is shown visual stimuli paired with names. The examinee is then shown a page containing the target stimuli amongst a set of distractors. The examinee must correctly identify the stimuli that was introduced, in addition to any other stimuli previously noted. The examinee is only required to point to the stimuli, and the examiner provides immediate correction of the examinee's errors.
- Orthographic awareness is tapped by the Letter-Word Identification (Early Form) test. Orthographic awareness requires the ability to decode and encode printed symbols (e.g., letters, letter patterns, numbers, punctuation).
- Rapid Naming and Processing Speed are tested via the Rapid Picture Naming test. It is a speeded task which taps processing speed, speed of lexical access, and naming facility. The examinee is asked to quickly name a series of simple pictures under timed conditions. Weaknesses in rapid naming can impact reading fluency and comprehension.
- Phonological Awareness skills are crucial for literacy skills, as they are central to being able to perceive and manipulate sounds in words. Sound Blending assesses phonetic coding and requires the examinee to listen to a word pronounced syllable-by-syllable, or phoneme-by-phoneme, and then combine the parts together to say the target word.



The ECAD allows examiners to assess abilities related to learning when reading is not required. This gives the examiner the option to check whether the student's performance in reading and spelling is unexpectedly low in comparison.

In terms of General Intelligence, the examiner has access to seven tests that contribute to an overall General Intellectual Ability (GIA) composite. These tests span a breadth of cognitive functions including long-term memory and retrieval, auditory processing, comprehension-knowledge, visual processing, short-term working memory, and processing speed. According to Proctor et al. (2015), individuals with Dyslexia will likely present with strengths in Comprehension-Knowledge, Fluid Reasoning, and Visual Processing. In turn, weaknesses may be present in Short-Term Working Memory, Processing Speed, Auditory Processing, and Long-Term Retrieval.

- Memory for Names is a controlled-learning auditory-visual association task. The examinee is shown visual stimuli paired with names. The examinee is then shown a page containing the target stimuli amongst a set of distractors. The examinee must correctly identify the stimuli that was introduced, in addition to any other stimuli previously noted. The examinee is only required to point to the stimuli, and the examiner provides immediate correction of the examinee's errors.
- Sound Blending assesses phonetic coding, which falls within the domain of auditory processing. It requires the examinee to listen to a word pronounced syllable-by-syllable, or phoneme-by-phoneme, and then combine the parts together to say the target word.
- **Picture Vocabulary** is a comprehension-knowledge task demanding oral language development and word knowledge. The examinee is asked to identify pictured objects, generally at the single-word level. As the items become more challenging, the depictions become less common.
- Verbal Analogies tests comprehension-knowledge and fluid reasoning. Items on this test assess whether an examinee understands and can complete logical word relationships. The examinee first must identify the association between the target words, and then must recall an appropriate word for their response.

Visual Closure measures closure ability, an aspect of visual processing. The
examinee must verbally identify a drawing that has been altered (e.g., missing lines or an overlaid pattern).

Sentence Repetition tests short-term working memory, requiring the examinee
to remember and then restate individual words, phrases, and sentences. Memory strategy usage can be analyzed during this task, as the examinee can use sentence meaning to support their recall.

 Rapid Picture Naming is a speeded task which taps processing speed, speed of lexical access, and naming facility. The examinee is asked to quickly name a series of simple pictures under timed conditions.

The measures of Picture Vocabulary and Verbal Analogies largely tap Comprehension-Knowledge and Fluid Reasoning, respectively, which are the two highest-order factors of general intelligence. It is also important to note that Sentence Repetition tests Listening Ability, a narrow ability of Comprehension-Knowledge.

The WJ IV ECAD further allows for an assessment of Expressive Language, an aspect of Oral Language functioning. An Expressive Language composite can be derived using Picture Vocabulary and Sentence Repetition. These two tests are also needed to derive the GIA (noted above). These tests measure oral language development and word knowledge, in addition to auditory memory span and listening ability.

With respect to other academic domains separate from reading-writing ability, administration of the ECAD permits an assessment of early mathematics skills. **Number Sense** taps an examinee's quantitative knowledge. Items on this task assess whether the examinee comprehends how numbers relate to other numbers, in addition to the vocabulary and concepts needed to compare, judge, and estimate.

Once an examiner has administered all tests of interest from the ECAD, they can derive a series of scores unique to the battery including: *Developmental Zone, Months Delay, Percentage Delay*, and *Standard Deviation Delay*. The Developmental Zone score is a unique application of the *Relative Proficiency Index* (RPI) that identifies where along a developmental scale an examinee's present level of functioning falls. In turn, the delay scores may be of interest to agencies and jurisdictions who require such scores for reporting and eligibility purposes.

Furthermore, examiners can conduct procedures to determine the presence and significance of strengths and weaknesses in a child's cognitive and academic abilities. Specifically, Intra-Cognitive and Intra-Achievement variations can be conducted to identify specific cognitive and academic strengths and weaknesses in a child's profile. Examiners can review this profile of strengths and weaknesses to better determine if a child's performances align with the characteristics of Dyslexia. An ability to achievement comparison procedure can also be conducted. It can be used to determine the presence and severity of a discrepancy between general intelligence and a composite of early academic skills.

More details regarding the tests and scores available on the ECAD can be read here:

Early Childhood Assessment: Utility of the WJ IV ECAD® (riversideinsights.com).



GRAY ORAL READING TEST, FIFTH EDITION (GORT-5)

The GORT-5 allows examiners to engage in targeted assessment of reading fluency (reading rate + reading accuracy), a primary reading achievement area in the assessment of Dyslexia for those at least 6 years of age. Examiners also can test reading comprehension, a secondary reading achievement area in a Dyslexia evaluation.

Administration of the GORT-5 yields scores in the following areas:

- **Rate** is determined by the number of seconds a student takes to read a story aloud.
- Accuracy is derived from the number of words the student reads correctly while reading a passage aloud.
- Fluency is computed as a combination of a student's rate and accuracy on the stories administered.
- Comprehension is tapped via questions about each story that the student answers correctly. Note that the examinee is not permitted to re-read the story when answering the comprehension questions.
- An Oral Reading Index can be derived as a composite score, which is comprised of an examinee's fluency and comprehension scores. It serves as a measure of total oral reading ability.

In addition to the scores noted above, the GORT-5 allows for a miscue analysis. This allows examiners to analyze reading errors and tailor interventions to the specific needs of their examinee. The GORT-5 further permits an informal review of an examinee's prosody, the patterns of stress and intonation while speaking. Examinees are rated on a scale of 1 to 4 in the areas of expression, volume, phrasing, smoothness, and pacing.



DIAGNOSTIC ASSESSMENTS OF READING, SECOND EDITION (DAR-2)

The DAR-2 is an instrument designed to identity reading difficulties in individuals aged 5 to adulthood. It is recommended for use when assessing cases that are too young to be administered the GORT-5. The DAR-2 allows examiners to engage in targeted assessment of oral reading accuracy and fluency, in addition to silent reading comprehension skills. The DAR-2 can be paired with the Trial Teaching Strategies online resource, which offers instructional strategies to address a student's specific reading needs determined by the administration of the DAR-2.

PHONOLOGICAL AWARENESS TEST-2: NORMATIVE UPDATE (PAT-2:NU)

The PAT-2: NU is a standardized assessment of phonological awareness, phoneme-grapheme correspondence, and decoding capabilities. It has criterionpredicted validity when compared to the CTOPP-2 Phonological Awareness Composite. The PAT-2 assesses the strongest predictors for early reading success in kindergarten (rhyme, sound isolation, blending, and segmentation of 2-3 phonemes). Similarly, the PAT-2 allows for the assessment of the strongest predictors for early reading success in the first grade (phoneme segmentation and early aspects of sound manipulation- initial and final sound deletion). The PAT-2 has the most items assessing these skill areas. Overall, the PAT-2 allows for the evaluation of primary areas of reading achievement related to Dyslexia in addition to possible cognitive contributors (i.e., phonological awareness).





PHONOLOGICAL AWARENESS INDEX

- Rhyming is comprised of two tasks.
 - Discrimination- identifying rhyming pairs
 - Production- providing a rhyming word
- Segmentation is comprised of three tasks.
 - Sentences- dividing by words
 - Syllables- dividing by syllables
 - Phonemes- dividing at the phoneme level
- Isolation tests whether an examinee can identify sound positions in words (initial, medial, and final phonemes).
- Deletion taps an examinee's ability to manipulate root words, syllables, and phonemes in words.
- Substitution with Manipulatives tests if an examinee can isolate a phoneme in a word, then change it to a target phoneme to create a new word.
- Blending occurs at the syllable and phoneme level as part of this subtest, to determine if the examinee can blend units to form new words

PHONEME-GRAPHEME INDEX

- Phoneme-Grapheme Correspondence assesses knowledge of sound/ symbol correspondence for consonants, vowels, consonant blends, consonant digraphs, r-controlled vowels, vowel diagraphs, and diphthongs.
- Phonemic Decoding assesses general knowledge of sound/symbol correspondence to blend sounds when working with nonsense/nonreal words.

LETTER AND SOUND ASSESSMENT (EC-ELEMENTARY)

The Letter and Sound Assessment is a measure of upper-case letter identification, lower-case letter identification, and letter-sound correspondence. It requires a student to name all 26 letters in the English alphabet, in both upper- and lower-case form as well as provide the sound for lower-case consonants and vowels. According to the English Language Arts Common Core Standards¹, kindergarten students are expected to, "Demonstrate basic knowledge of one-to-one letter-sound correspondences by producing the primary sound or many of the most frequent sounds for each consonant" and "Associate the long and short sounds with the common spellings (graphemes) for the five major vowels." This assessment measures this component of the Common Core Standards, letter and sound association, which is a crucial skill for reading achievement. Notably, a persistent characteristic of many students with dyslexia is a deficiency in the application of phonics to both reading and spelling². Atypical performance depends on the developmental appropriateness of any errors committed. For example, if a 5- or 6-year-old commits a reversal error with letters b, d, p, q, that can be considered an expected mistake considering reversals are developmentally appropriate until age 7. For other letters/sounds, 2+ errors may signify atypical performance. It is possible to divide the number incorrect by the total numbers to calculate the percentage correct. This percentage can be compared to other sources of data (e.g., curriculum benchmarks, prior letter identification assessment performance, etc.) to determine if performance is atypical in relation to established standards. Generally, the expectation is for students to demonstrate no errors at 7+ years of age.

¹ National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards for English language arts standards-reading: foundational skills.* Washington, DC: Authors.

² Proctor, C.M., Mather, N., & Stephens, T.L. (2015). *Use of the Woodcock-Johnson IV for the Assessment of Dyslexia* (Woodcock-Johnson IV Assessment Service Bulletin No. 6). Rolling Meadows, IL: Riverside Publishing.

Selective Measures

Selective Testing refers to the careful selection of instruments to further assess skill areas pertinent to the referral concerns, when deemed necessary based on clinical judgment. Selective Testing allows an examiner to obtain the most diagnostic information in the least amount of testing time, for any given individual's unique needs. Selective Testing may also be conducted based on an individual's functional profile (e.g., pattern of strengths and weaknesses that emerges during testing) to provide further information that can be used for diagnostic purposes and educational program planning.

BATTELLE DEVELOPMENTAL INVENTORY, THIRD EDITION (BDI-3)

The BDI-3 measures mastery of developmental milestones in the domains of Communication, Social-Emotional, Adaptive, Motor, and Cognitive functioning. Of interest to a Dyslexia evaluation is the Cognitive domain, which has subdomains assessing General Knowledge and Academic Knowledge: **Reasoning and Academic Skills** and **Perception of Concepts** which can be administered when it is still unclear after administering the aforementioned measures whether an examinee's reading skills are unexpected in the context of their other abilities.

- Reasoning and Academic Skills assesses critical thinking skills needed to perceive, identify, and solve problems. Furthermore, items within this subdomain tap the ability to analyze and appraise situational elements; identify missing components, contradictions, and inconsistencies; and judge and evaluate ideas, processes, and products. The items within this subdomain also measure foundational abilities needed for reading, writing, spelling, and mathematical achievement.
- Perception and Concepts has latter items which assess a child's ability to conceptualize and discriminate object features, determine relationships among them, and selectively respond to them.







PTONI

The Primary Test of Nonverbal Intelligence is a theoretically and empirically supported measure of nonverbal reasoning skills designed to be used with children three years of age through nine years of age. An examinee's nonverbal reasoning skills are assessed by a pointing-response format. Mode of administration is simple and low in linguistic demands as there are minimal oral directions, and the child is directed to identify their responses by pointing. Given its low linguistic and motor demands, the PTONI can serve as an effective assessment for children who have language impairments or have limited verbal ability, and for those with motoric deficits.. Users working with diverse populations can also utilize the PTONI, as prompts and directives are available in eight alternative languages. Many traditional cognitive composites are derived, in part, from verbally mediated and languageloaded tasks. For individuals who have, or are suspected of, language differences or disorders, these cognitive composites may underestimate their true reasoning and thinking abilities. The PTONI may allow for a more accurate estimation of an individual's functioning in these cases, as it eliminates the traditional language demands placed on an examinee.

During administration, examinees are required to look at a series of pictures and identify a target picture amongst distractors. Earlier items assess lower order reasoning skills (e.g., visual-spatial perception), whereas later items assess more advanced reasoning abilities (e.g., analogical thinking, sequential reasoning). Administration yields a Nonverbal Index (measured in standard scores), a percentile rank, and an age equivalent score.

