CELF® PRESCHOOL 3

Clinical Evaluation of Language Fundamentals–PRESCHOOL

MANUAL

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Dedication

To the children of the future.

Acknowledgments

The creation of an assessment is a long process that requires the collaboration of a large group of professionals working as a team. We would like to thank everyone from the Pearson family who provided input and dedication over the course of developing the Clinical Evaluation of Language Fundamentals Preschool (3rd ed.; CELF Preschool–3).

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Elisabeth Wiig and Wayne Secord

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TEST OVERVIEW

The Clinical Evaluation of Language Fundamentals® Preschool (3rd ed.; CELF® Preschool–3) is an individually administered, norm-referenced instrument that can be used to assess the language and communication skills of children ages 3–6 years. The CELF Preschool–3, a downward extension of the Clinical Evaluation of Language Fundamentals (5th ed.; CELF–5; Wiig et al., 2013), is a practical and efficient clinical tool for the identification, diagnosis, and follow-up evaluation of language and communication deficits in preschool-age children. The CELF Preschool–3 subtests parallel the CELF–5 tests. To increase the ceiling of the CELF Preschool–3 and facilitate score consistency at ages 5–6 years (the ages shared by the two tests), the CELF Preschool–3 and the CELF–5 share some test items. Like the CELF–5, the Core Language Score, the Receptive Language Index, and/or the Expressive Language Index scores can be reported as part of a comprehensive assessment that includes additional measures (e.g., parent/teacher interviews, observations, language sampling, dynamic assessment, etc.) to support a diagnostic decision. Because children ages 3–6 are at an early stage of language development, do not use a single subtest scaled score as the sole support for a diagnostic decision.

APPLICATIONS FOR THE CELF PRESCHOOL–3

The CELF Preschool–3 can be used to evaluate a child's general language ability and obtain information that assists in determining if the child has a language impairment. Once it has been determined that a child has a language impairment, the assessment process can be extended to determine

- the nature of the impairment (strengths, weaknesses, affected language modalities, content areas, and conditions that enable the child to communicate most effectively);
- early classroom and literacy fundamentals; and
- communication in context.

The CELF Preschool–3 provides a flexible, multiperspective assessment process for pinpointing a child's language and communication strengths and weaknesses and for making relevant recommendations for intervention and accommodation. Possible approaches to using the CELF Preschool–3 assessment process are illustrated in Figures 1.1 and 1.2. Subtests can be administered entirely in sequential order or selected specifically to meet the evaluation or assessment objective. This assessment model was developed to be efficient and flexible so that only those subtests and checklists that respond directly to the objectives for assessment and evaluation are administered.

The subtests administered to a child depend on the professional's clinical judgment, the child's functional language performance, and the referral questions that must be answered.

Figure 1.1 The CELF Preschool–3 Assessment Process (Sequential Order)

Identify whether or not there is a language impairment

norm-referenced Core Language Score

Describe the nature of the impairment

norm-referenced index scores Receptive Language Index, Expressive Langugage Index, Language Content Index, Language Structure Index, and supplemental Connected Speech Sample

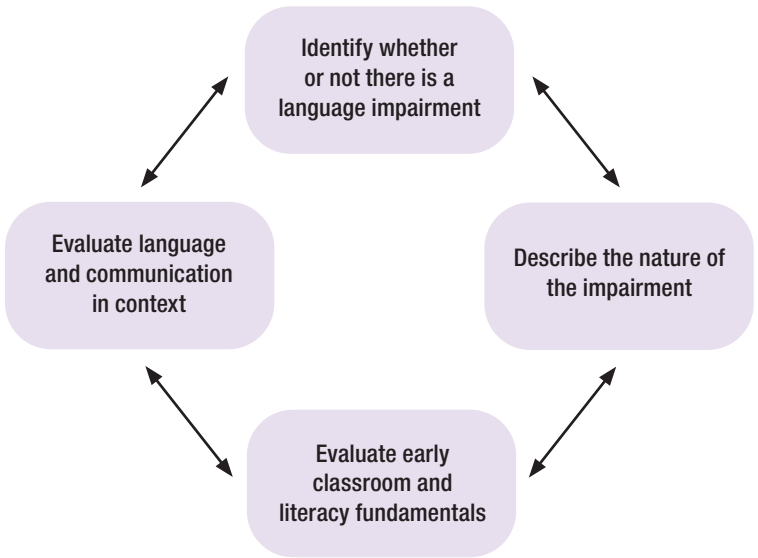
Evaluate early classroom and literacy fundamentals

norm-referenced index scores
Academic Language Readiness Index and Early Literacy Index

Evaluate language and communication in context

norm-referenced scaled score Descriptive Pragmatics Profile and supplemental Pragmatic Activities Checklist

Figure 1.2 The CELF Preschool–3 Assessment Process (Flexible Order)



As an example, the initial step in the assessment process may begin by obtaining information about a child's social language performance at home, in a day care setting, or in the preschool classroom by administering the Descriptive Pragmatics Profile (DPP) and the Pragmatic Activities Checklist (PAC). In other instances, the assessment may begin with the Preliteracy Rating Scale (PRS) and the Phonological Awareness (PA) subtests if there are concerns about the child's early literacy development. In other cases, administering all subtests sequentially as part of the assessment process may be appropriate. See Figure 1.3 for the subtests that can be administered based on the goal of the assessment.

Figure 1.3 Subtests Administered Based on Assessment Goals

Ages 3–4	Ages 5–6
Identifying an impairment and determining eligibility	***Identifying an impairment and determining eligibility***
Core Language Score (CLS) Sentence Comprehension Word Structure Expressive Vocabulary	**Core Language Score (CLS)** Sentence Comprehension Word Structure Expressive Vocabulary
Describing the nature of the impairment	***Describing the nature of the impairment***
Receptive Language Index (RLI) Sentence Comprehension Following Directions Basic Concepts	**Receptive Language Index (RLI)** Sentence Comprehension Following Directions Word Classes
Expressive Language Index (ELI) Word Structure Expressive Vocabulary Recalling Sentences	**Expressive Language Index (ELI)** Word Structure Expressive Vocabulary Recalling Sentences
Language Content Index (LCI) Expressive Vocabulary Following Directions Basic Concepts	**Language Content Index (LCI)** Expressive Vocabulary Following Directions Word Classes
Language Structure Index (LSI) Sentence Comprehension Word Structure Recalling Sentences	**Language Structure Index (LSI)** Sentence Comprehension Word Structure Recalling Sentences
Evaluating early classroom and literacy fundamentals	***Evaluating early classroom and literacy fundamentals***
Academic Language Readiness Index (ALRI) Expressive Vocabulary Following Directions Descriptive Pragmatics Profile	**Academic Language Readiness Index (ALRI)** Expressive Vocabulary Following Directions Descriptive Pragmatics Profile
Early Literacy Index (ErLI) (Age 4) Phonological Awareness (Age 4) Preliteracy Rating Scale	**Early Literacy Index (ErLI)** Phonological Awareness Preliteracy Rating Scale
Evaluating language and communication in context	***Evaluating language and communication in context***
Descriptive Pragmatics Profile Pragmatic Activities Checklist	Descriptive Pragmatics Profile Pragmatic Activities Checklist

USER QUALIFICATIONS

The CELF Preschool–3 may be administered and scored by speech-language pathologists; school, clinical, and developmental psychologists; educational diagnosticians; and special educators provided that they have an in-depth knowledge of language structure rules, are thoroughly familiar with the test materials, have received training in procedures for individual test administration, and have carefully read the methods for computing the CELF Preschool–3 raw scores and using the norm tables in this Manual to obtain derived scores. It is important that all potential examiners practice administering and scoring the CELF Preschool–3 before using it as a standardized measure. Individuals who lack extensive training and experience in using individually administered tests should be supervised by an experienced examiner during practice sessions.

Interpreting the CELF Preschool–3 scores is a more complex task than administering and scoring the test. To explain test results properly, a professional must have successfully completed formal coursework in language assessment. It is important for the diagnostic professional to know the strengths and limitations of various test formats (i.e., structured, semi-structured, observational), as well as the different types of derived scores, and to understand errors of measurement.

REVISION GOALS

Using current state and federal legislation and feedback from diagnostic professionals, the CELF Preschool–3 was redesigned and the following development goals were established:

1. Strengthen the evidence of the CELF Preschool–3 as a reliable and valid test for the diagnosis and classification of a language impairment in young children.
2. Expand the floor of the test to provide greater diagnostic value for children ages 3–4 years.
3. Expand the ceiling of the test to provide greater diagnostic value for children ages 5–6 years.
4. Respond to current trends in the preschool and early school experience by adding index scores to measure academic language readiness and early literacy skills.
5. Increase diagnostic support by adding a Connected Speech Sample (CSS) subtest and analysis.
6. Expand the CELF Preschool–3 to assist in assessing communication in context by adding the Pragmatic Activities Checklist (PAC).

CONTENT AND STRUCTURE

The CELF Preschool–3 enables professionals to better respond to state regulations using the Individuals with Disabilities Education Act (IDEA) that was reauthorized by Congress in 2004 and amended through the Every Student Succeeds Act, Public Law 114-95, in 2015. The law states that improving educational results for children with disabilities is an essential element of our national policy. IDEA promotes early identification and ensures early provision of services for young children with disabilities and their families (U.S. Department of Education, 2020). The earlier that services are delivered, the more likely children are to develop effective communication skills and achieve successful learning outcomes (Guralnick, 2011).

The CELF Preschool–3 is an important part of a complete assessment process in which a diagnostic professional collects evidence about a child's communication abilities in multiple contexts. As a diagnostic battery, the CELF Preschool–3 continues to offer a balance of items across receptive and expressive modalities, as well as language content and structure. Additionally, the CELF Preschool–3 now offers normative scores for early literacy skills and pragmatic skills. Standardized test scores and composite scores (i.e., the Core Language Score, index scores), as well as observational and interactive tasks, enhance clinical decision-making and descriptions of communication skills and academic readiness. Growth scale values (GSVs) have been added to help measure a child's progress over time.

The CELF Preschool–3 includes revised subtests from previous editions and new subtests to evaluate vocabulary and word relationships (semantics), word and sentence structure (morphology and syntax), and the skills used in responding to and conveying messages (pragmatics). Additionally, the CELF Preschool–3 includes standardized, norm-based measures of early literacy and pragmatic skills to enhance the professional's ability to compare a child's skills in these areas to his or her same-age peers. Table 1.1 lists a description of the subtests.

Table 1.1 Descriptions of the CELF Preschool–3 Subtests

Subtest	Task performed
Sentence Comprehension (SC)	The child identifies a picture that matches the sentence read aloud by the examiner.
Word Structure (WS)	The child completes a sentence (cloze procedure) with the target structure(s).
Expressive Vocabulary (EV)	The child names an object, person, or activity portrayed in a picture.
Following Directions (FD)	The child points to pictures in response to oral directions.
Recalling Sentences (RS)	The child imitates sentences presented by the examiner.
Basic Concepts (BC)	The child points to a picture that illustrates the target concept presented by the examiner.
Word Classes (WC)	The child chooses two words/pictures that are related from a choice of three or four words/pictures.
Phonological Awareness (PA)	The child rhymes words and blends and identifies sounds and syllables.
Descriptive Pragmatics Profile (DPP)	The examiner provides or elicits information from a respondent about the child's social language skills.
Preliteracy Rating Scale (PRS)	The examiner provides or elicits information from a respondent about the child's early reading and writing skills.
Connected Speech Sample (CSS)	The child retells a story read aloud by the examiner.
Pragmatic Activities Checklist (PAC)	The examiner elicits information about the child's interactions by initiating at least three suggested activities.

Test Scores

The CELF Preschool–3 offers 10 norm-referenced subtests that yield scaled scores and two supplementary subtests that yield criterion-referenced scores. Norm-referenced subtests are grouped based on theory and empirical research to yield composite scores. The CELF Preschool–3 battery retains the following composite scores from the Clinical Evaluation of Language Fundamentals Preschool (2nd ed.; CELF Preschool–2; Wiig et al., 2004): the Core Language Score (CLS), the Receptive Language Index (RLI), the Expressive Language Index (ELI), the Language Content Index (LCI), and the Language Structure Index (LSI). Additionally, the CELF Preschool–3 offers the Academic Language Readiness Index (ALRI) and the Early Literacy Index (ErLI). Refer to Figure 1.3 to determine which subtests make up a composite score.

The CELF Preschool–3 yields standard scores, age equivalents, percentile ranks, and growth scale values, which are presented in Appendixes B, C, D, E, and F.

Subtests that yield criterion-referenced scores can be used to gain information about the child's skills outside of the formal testing situation. Criterion-referenced scores are presented in Appendixes G and H.

Administration Time

Administration time for the three subtests required to determine the Core Language Score is 15–20 minutes, depending on the child's age and responsiveness. The time it takes to administer the remaining subtests varies depending on the child's age, language ability, level of motivation, and the subtests selected.

TEST COMPONENTS

Manual

This Manual contains guidelines for scoring all the subtests; directions for interpreting test performance; a detailed description of the test's purpose, design, and development; technical information (evidence of reliability and validity); and normative data. Chapter 2 includes Item Analysis tables to determine a child's error patterns. The error patterns revealed through the subtests' item analyses may serve as a guide to determine areas for extension testing, intervention, or follow-up.

Stimulus Book

The Stimulus Book contains the directions and visual stimuli needed to administer all the subtests and includes tabbed dividers to easily identify each subtest. The page after each tabbed divider presents the general information needed to administer that subtest. As the pages are flipped, the visual stimulus faces the child and the information needed to administer the item is on the page facing the examiner. Subtest names and item numbers are abbreviated at the bottom corners of each page to be less distracting to the child.

No Juice! Book

The *No Juice!* Book contains the illustrations that accompany the story for the Connected Speech Sample (CSS) subtest. The book contains limited text to facilitate a story retell. The small size and storybook layout are designed to be interesting and easy for a child to manipulate.

Record Form

The Record Form contains familiarization or demonstration, trial, and test item choices, as well as space for recording responses and test results. Detailed Item Analysis tables are presented for each subtest to aid in determining a child's error patterns, areas for extension testing, and potential targets for intervention and follow-up. A Behavioral Observation Checklist is also provided in the Record Form to use to describe a child's behavior during the assessment.

Pragmatics Profile and Preliteracy Pad

The Descriptive Pragmatics Profile (DPP) and the Preliteracy Rating Scale (PRS) are provided as part of the Record Form and may also be purchased separately as an easy-to-use tear-off pad. People who are familiar with the child and his or her background/culture (e.g., an examiner, a caregiver, a teacher) may complete these subtests. The pad is designed so that the Descriptive Pragmatics Profile (DPP) is printed on one side of the sheet and the Preliteracy Rating Scale (PRS) is printed on the other side.

DIGITAL OPTIONS

Digital options are available on two digital platforms: Q-global® and Q-interactive®. Because digital products are updated frequently, refer to www.PearsonAssessments.com for the most current information.

CELF Preschool–3 on Q-Global

The CELF Preschool–3 scoring is available on Q-global, a web-based digital platform that calculates all scores and presents test results in an easy-to-understand narrative report that can be downloaded to a word processing program and incorporated into clinical reports. The CELF Preschool–3 Q-global Score Reports are a separate component from the CELF Preschool–3 kit; the reports may be purchased individually or as an unlimited subscription annually. In addition, a digital version of the CELF Preschool–3 Manual and the Stimulus Book are available on Q-global.

The CELF Preschool-3 on Q-global may be used for assessments in face-to-face or in telepractice settings. If an assessment is administered via telepractice, remain mindful to:

- Follow ASHA's best practice recommendations and the Code of Ethics (ASHA, 2016).
- Follow telepractice regulations and legal requirements from federal, state, and local authorities; licensing boards; professional liability insurance providers; and payors (ASHA, 2020c).
- Develop competence with assessment via telepractice through activities such as practicing, studying, consulting with other professionals, and engaging in professional development.

CELF Preschool–3 on Q-Interactive

The CELF Preschool–3 is also available for purchase on Q-interactive, a digital platform that allows the administration and scoring of a test using two digital tablets that work together through a Bluetooth® connection. An examiner uses one tablet to give instructions to the child, record and score responses, take notes, and control visual stimuli presentation. The child uses the other tablet to view and respond to subtest items.

DIFFERENCES BETWEEN THE CELF PRESCHOOL–3 AND THE CELF PRESCHOOL–2

For children in early intervention settings, current IDEA (2004) legislation requires that a comprehensive assessment be based on various measures using a range of tools in a variety of contexts (American Speech-Language-Hearing Association [ASHA], 2008). A comprehensive assessment includes more than a standardized evaluation; it usually encompasses more in-depth observations, information collected from various sources, and a comprehensive set of activities to inform clinical decisions (Crais, 2011; Raver & Childress, 2015).

For children in the school setting, most current educational practices require that a child's performance be evaluated in classroom settings and that classroom strategies—including accommodations, modifications, and dynamic assessment—be employed to address performance concerns before an individual, standardized assessment begins. An assessment process should include multiple sources of evidence of a language impairment including observation-based measures, authentic assessment, and norm-referenced data.

To better reflect current diagnostic and assessment practices in various settings, the CELF Preschool–3 offers a revised assessment process in comparison to the CELF Preschool–2. The CELF Preschool–3 assessment process does not include numerical sequencing. However, the revised assessment process continues to give professionals flexibility in selecting and administering only those subtests relevant to the specific objectives of their evaluation.

The differences between the CELF Preschool–3 and the CELF Preschool–2 are summarized in the following points:

- Separate assessment of semantic concepts and following directions by revising items in the Basic Concepts (BC) and Following Directions (FD) subtests. This change allows more precise assessment and analysis of the target concepts in both measures.
- The Following Directions (FD) subtest includes a new task of following directions by pointing to body parts. This developmentally easier task improved the floor of the subtest, allowing children with emerging skills to participate. Children ages 5–6 begin the subtest at a later start point and follow directions by pointing to animals.
- The CELF Preschool–3 Word Classes (WC) subtest no longer includes an expressive section where a child explains the relationship between the selected word pair; this allows continuous administration throughout the subtest. The expressive portion was repurposed as an extension testing procedure for exploring a child's strengths and weaknesses.
- Administration directions were added for demonstration items between test items in the Word Structure (WS) subtest to improve a child's understanding of the expectations of the task.
- The CELF Preschool–3 subtests included in the CELF Preschool–2 battery were broadened in scope; easier and more difficult items were added to more adequately cover the range of developmental skills.

- The CELF Preschool–3 offers three additional subtests that yield scaled scores (i.e., Phonological Awareness [PA], Preliteracy Rating Scale [PRS], Descriptive Pragmatics Profile [DPP]) allowing professionals to easily compare a child's performance to those of typically developing peers.
- The CELF Preschool–3 features two new index scores: the Academic Language Readiness Index, a measure of the functional language and socialization skills needed to succeed in a classroom setting, and the Early Literacy Index, a measure of early reading and early writing skills.
- The CELF Preschool–3 discontinue rules have been reduced or retained to minimize formal testing time.
- The CELF Preschool–3 features two new subtests that can be used independently and are not required to obtain index scores:
    - The Connected Speech Sample (CSS) subtest was designed to evaluate language skills in the context of a language sample. The macrostructure and microstructure of a narrative may be evaluated using scoring tables and rubrics provided in the Record Form. Examples are also in this Manual. Professionals may choose to use all the tables provided or select features of the child's language sample to evaluate.
    - The Pragmatic Activities Checklist (PAC) was designed to identify atypical social communication behaviors that may interfere with a child's interactions and performance in various settings. Information may be collected from multiple sources to provide more detailed information about a child's overall pragmatic language abilities.
- The CELF Preschool–2 Stimulus Books were reformatted and repurposed; the CELF Preschool–3 includes one Stimulus Book that contains verbal and visual stimuli and administration directions for each subtest except for the Descriptive Pragmatics Profile (DPP), Preliteracy Rating Scale (PRS), and Pragmatic Activities Checklist (PAC) subtests. The CELF Preschool–3 also includes a *No Juice!* Book that is used to elicit a narrative for the Connected Speech Sample (CSS) subtest.

USER RESPONSIBILITIES AND TEST SECURITY

It is the test user's responsibility to ensure that test materials, including completed assessment protocols and reports, remain secure and are released only to professionals who will safeguard their proper use. Although review of test results with parents/caregivers and other stakeholders (e.g., school personnel) is appropriate, this review should not include disclosure or copying of test items, Record Forms, or other test materials that would compromise the security, validity, or value of the CELF Preschool–3 as a measurement tool. Under no circumstances should test materials be resold or displayed in locations where unqualified individuals can purchase or view partial or complete portions of the test. This restriction includes personal and educational Internet websites and Internet auction sites.

Because all test items, norms, and other testing materials are copyrighted, Pearson, the copyright owner, must approve in writing the copying or reproduction of any test materials. The only exception to this requirement is copying a completed Record Form for the purpose of conveying a child's records to another qualified professional. These user responsibilities, copyright restrictions, and test security issues are consistent with the guidelines set forth in the *Standards for Educational and Psychological Testing* (American Educational Research Association [AERA], American Psychological Association [APA], & National Council Measurement in Education [NCME], 2014).

Administration and Scoring

This chapter includes testing guidelines, along with the specific administration, recording, and scoring procedures for each subtest in the CELF Preschool–3. Digital administration information for the CELF Preschool–3 is included on the Q-global and Q-interactive platforms. This new edition incorporates numerous revisions, so it is important to review the administration procedures, items and picture stimuli, and scoring rules for each subtest. The CELF Preschool–3 normative scores are based on a nationally representative sample of children's responses to these revisions. Without appropriate subtest administration procedures, the scores lose significance as indicators of a child's communication and language skills. Obtain valid scores by

- studying the administration and scoring directions thoroughly for each subtest administered,
- practicing the administration of each subtest,
- observing the child's response behaviors,
- recording and scoring responses correctly, and
- following guidelines to interpret the scores.

When evaluated in conjunction with other assessments and observations of the child's skills, the CELF Preschool–3 results provide a profile of the child's language and communication skills.

GENERAL TESTING GUIDELINES

Examiners should be trained and experienced in the administration and interpretation of standardized tests and have an in-depth knowledge of English language structure rules before attempting to administer, score, or interpret the CELF Preschool–3. Examiners should also have experience or training in testing children whose ages, linguistic and cultural backgrounds, and clinical history are similar to those of the children assessed using the CELF Preschool–3. Refer to ASHA's Cultural Competence Professional Issues statement for more information (ASHA, 2020a).

Read this Manual before administering the CELF Preschool–3. Become familiar with each subtest's administration guidelines listed in this chapter and practice administering each subtest before administering this test for the first time. To facilitate correct administration, general administration guidelines are also provided on the first page of each subtest in the Stimulus Book. Follow all instructions precisely to make appropriate comparisons and interpretations based on the standardization results. Failure to follow standardized administration procedures may invalidate score results. Exceptions to this are discussed in the Special Testing Considerations section in this chapter.

Support test results with additional information about the child's use of language in social and academic contexts. This can be accomplished by collecting language samples (in both languages, if the child is bilingual); extension testing; caregiver and teacher interviews; and observations of the child in the classroom, on the playground, and in other interactive situations.

Testing Environment

Take steps to provide a supportive, friendly test environment.

In the Home

If working with early childhood intervention programs or in a home health setting, administer the CELF Preschool–3 in the child's home and select an area that is familiar and comfortable for the child. Choose a quiet area with plenty of light and minimal distractions. Remove extraneous stimuli (e.g., toys or electronic devices) from the area where testing. Try to schedule the assessment at a time when the child is most alert and interactive.

In a Clinical/School Setting

When testing in a clinical or school setting, choose a quiet, well-lit, and well-ventilated room. It is best to use a room where there are few distracting elements.

Physical Arrangements

The physical arrangement for presenting each subtest will be determined, to some degree, by the child. A very young child may want to have his or her caregiver in the room and choose to sit in the caregiver's lap during the test session. Other young children may feel more comfortable sitting on the floor, standing, or sitting in a child-size chair at a low table. Regardless of the physical arrangement, it is important for the examiner to be positioned at a right angle to the child, making sure the examiner's writing hand is on the side opposite of the child. A right-handed examiner would sit on the child's right side; a left-handed examiner would sit on the child's left side. This positioning allows the picture stimuli to be easily visible to the child and easy for the examiner to control. It also allows the examiner to observe and record the child's responses while keeping his or her writing hand and the Record Form out of the child's direct view.

Establishing and Maintaining Rapport

Establish and maintain a rapport with each child tested, especially with young children who are not familiar with testing situations. Doing so will facilitate the child's interest and cooperation during testing. Take time to make the child comfortable by talking with the child or engaging him or her in play before beginning test administration. Perhaps begin the assessment process with one or more of the activities listed from the Pragmatic Activities Checklist (PAC).

Encouragement/Reinforcement

Some children may need encouragement throughout the CELF Preschool–3 administration. Praise the child's testing behavior by making comments such as, "You're doing well" or "I like the way you're working." Do not tell the child whether a response is correct or incorrect. If asked, simply say, "That is a good answer."

If a parent/caregiver accompanies the child to the testing session, advise the adult to sit out of the child's view and to refrain from talking, repeating, or rewording questions. Reassure the parent/caregiver that any concerns or questions will be discussed after the session.

Rest Periods/Breaks

To get optimal cooperation from a child, be aware of when he or she needs a brief change of pace. Allow time for getting a drink of water, resting briefly, or going to the bathroom, if necessary. Hurrying a child or insisting on his or her participation will result in less than optimal performance and may result in inaccurate test scores.

If the child needs a short break, do not stop in the middle of a subtest. Take the break at the end of a subtest, so administration is uninterrupted. If taking a break during a subtest is unavoidable, it may or may not be necessary to administer the demonstration and trial items again when resuming administration depending on the subtest, the child's age, and the examiner's clinical judgment. Ensure that the child remembers the task before continuing testing.

Cultural Diversity

Each child comes to the testing situation with a unique profile of skills and behaviors influenced by cultural background and life experiences. The term cultural diversity does not refer specifically to racial/ethnic group affiliations; it also refers to children who have cultural experiences that vary from mainstream culture. For example, children who are administered the CELF Preschool–3 may include those who speak dialects of American English other than Standard American English (SAE), they may come from family units other than a two-parent father/mother household, they may live in a small rural community, or they may have experiences associated with poverty.

The great diversity and dynamic nature of American culture and the many languages spoken in the United States preclude compiling a list of test considerations for children from various linguistic and cultural backgrounds. When evaluating or making recommendations for intervention for a child from a nonmainstream cultural or linguistic background, be sensitive to any issues that may affect that child and his or her family to provide the most appropriate and effective service. Developing cultural competence requires an ongoing self-assessment and continuous expansion of one's cultural knowledge (ASHA, 2017). Experts describe a number of different factors related to test administration and interpretation that examiners should be aware of to obtain accurate test results and make appropriate recommendations for children from culturally and linguistically diverse backgrounds (ASHA, 2017; Battle, 2012; Charity Hudley & Mallinson, 2011; Kaderavek, 2015; Kohnert, 2013; Rosa-Lugo et al., 2012; Roseberry-McKibbin, 2018; Wyatt, 2012).

Differences between the examiner's communication style and that of the child may cause misinterpretations of communication behaviors and, ultimately, result in scores and observations that do not truly reflect the child's abilities. To obtain the best results,

- determine if the child speaks a dialect other than SAE,
- determine how familiar the child and the child's family are with mainstream cultural values and attitudes,
- learn about family attitudes toward disability and treatment,
- learn about the narrative style and social communication behaviors of the child's culture,
- understand second language acquisition patterns,
- understand the diagnostic process to differentiate a dialectal difference from a language impairment, and
- include the child's family in the decision-making process.

To increase the opportunity for a child to give his or her best performance during testing, it may be helpful to administer the CELF Preschool–3 using accommodations. Refer to the Special Testing Considerations section for a list of accommodations; note any accommodations in the Record Form.

Dialectal Variations

Responses to the Word Structure (WS), Expressive Vocabulary (EV), Recalling Sentences (RS), and Connected Speech Sample (CSS) subtests may contain regional and cultural patterns or variations that reflect dialectal differences from SAE. Record any such variations verbatim and score them as part of the child's response. Become familiar with the language used in the child's home and community to determine if a response is an appropriate variation for the child. If a variation is appropriate to the child's language background, score it as correct.

Do not assume that a child is a dialect speaker because of his or her background or ethnicity. It is important to be aware that children who speak a dialect other than SAE may not apply all the dialect rules consistently (Gleason & Ratner, 2017; Owens, 2020). Unless a child is immersed in an environment in which everyone speaks the dialect, the child will be exposed to individuals who model the dialect pattern and individuals who model SAE. Furthermore, if the examiner is not a dialect speaker, the child may feel uncomfortable using the dialect and may attempt to switch to SAE, in which he or she may be less proficient (Godley & Escher, 2012; Gutiérrez-Clellen et al., 2009). For more detailed information about assessing children who speak a dialect other than SAE, refer to Owens (2020), Roseberry-McKibbin (2018), and Wyatt (2012).

Selected dialectal patterns are presented in Appendix A along with examples of responses to items in selected CELF Preschool–3 subtests that are considered appropriate for dialects other than SAE.

Special Testing Considerations

Children are referred for testing for various reasons and come to the testing situation with different attitudes, abilities, and experiences. It is important to respect the diverse circumstances of a child while maintaining the consistency required of a standardized instrument. Working with children with special needs demands skill and sensitivity to the dynamics of the testing situation. It is recommended to supplement test results with language sampling, observations, parent/caregiver or teacher interviews, and/or dynamic assessment to provide additional evidence of the child's language skills.

Accommodations and Modifications

Children with physical, sensory, or cognitive impairments may need specific accommodations and/or modifications to participate in a language assessment. Children from culturally and linguistically diverse backgrounds may show a lack of familiarity with item contexts (i.e., pictures, vocabulary, questions, topics) and tasks. There may be test items that reflect values and beliefs that are culturally specific and do not apply to the child's background. To increase the opportunity for a child to give his or her best performance during testing, it may be helpful to consider using the following accommodations and modifications.

Accommodations

Depending on the child's special circumstances, it may be necessary to adapt administration procedures to accommodate the child's needs; otherwise, the test results may not represent his or her true language ability. For example, a child with a motor impairment may be at a disadvantage if he or she is unable to respond adequately to subtests that require fine motor abilities (e.g., pointing to a picture). Many test accommodations do not change the standardized test stimuli or procedures and, therefore, do not affect scoring. For example, if a child names picture A, B, C, or D instead of pointing to the selected response in the Sentence Comprehension (SC), Basic Concepts (BC), or Word Classes (WC) subtests, the norm-referenced scores are still appropriate. Further accommodations to consider include:

- Explaining to the child the reason for being tested
- Allowing extra time for responses
- Increasing the number of trial (practice) items
- Continuing to test beyond the ceiling (Do not add score points for items beyond the discontinue point, even if the child's responses would have earned credit)

When using these accommodations with a child, using the normative data is appropriate.

Modifications

There may be times when, using professional judgment, accommodations do not appear to elicit a best performance from the child. If necessary, modify the CELF Preschool–3 test procedures to determine if the child's performance improves. Modifications to the CELF Preschool–3 procedures might include:

- Rewording test instructions
- Asking a child to explain incorrect responses
- Presenting administration instructions in both English and the child's first language
- Using alternative scoring procedures such as giving credit to a correct grammatical form after providing additional prompts or administering the item in the child's first language

When the standardized test procedures are modified, using the normative data is not appropriate and the child's performance should be used as descriptive information only in reporting test results. Do not use the results to derive scaled scores, standard scores, percentile ranks, or age equivalents. Use the subtest raw scores only as information about the items presented (e.g., completed 10 out of 24 Basic Concepts [BC] items correctly). The test results may be used to provide qualitative information about the child's language abilities. Reports of test performance from nonstandard administration must indicate the conditions under which the test was administered. Make sure to note all modifications in the Record Form. Describe in the assessment report the language behaviors that the child can and cannot do with specific modifications.

Additional suggestions for test adaptation and modification can be found in Kohnert (2013), Pieretti & Roseberry-McKibbin (2016) and Roseberry-McKibbin (2018). It is important to include a cautionary statement and descriptions of the adaptations and modifications made during testing (Kohnert, 2013).

Out-of-Age-Range Administration

There may be a need to test a child who is not in the chronological age range for the CELF Preschool–3 but who appears to be functioning at a higher or lower age level developmentally. Use the subtest raw scores as information about the child's performance on the test items presented. For example, when a child's chronological age (e.g., a 9-year-old) is outside of the age range for the respective norms table (e.g., Word Structure [WS] subtest norms are only for ages 3–6), raw scores cannot be translated to age-appropriate standard scores or percentile ranks. However, age equivalents represent the average age in years and months typical for a given total raw score. Therefore, the child's age equivalent from the raw score may be obtained from the out-of-age-range test administration. Growth scale values (GSVs) may also be obtained using these raw scores. (See Chapter 5 for more information about the CELF Preschool–3 age equivalents and GSVs.)

Testing for Reevaluation

There are occasions when a child's language skills need to be reevaluated. Depending on the length of time between the initial test and the retest, an evaluation using the same test may raise concerns about practice effects. *Practice effect* describes a gain in score points from test to retest, which is a result of learning from the administration of the initial test and not from an increase in the ability assessed by the test. With young children, rapid language acquisition can produce real score gains because of further development of language skills. A CELF Preschool–3 test–retest study used an interval of 14–31 days between test administrations for the purpose of establishing the stability of test scores, not to identify an appropriate retest time interval. See Chapter 4 for a report of this study. The shortest test–retest interval that will not result in significant practice effects on the CELF Preschool–3 has not been determined. Retesting may be appropriate when the following factors have been considered.

1. Always consider the amount of time that has passed between testing sessions and consider changes in performance in relation to practice effects. If retesting is required before this time, interpret changes in performance in comparison to mean differences between original and retest scores obtained in the test–retest study (see Chapter 4).
2. There is reason to believe the child has made progress since the previous test administration. If the goal of retesting is to measure progress, see the discussion in Chapter 5 regarding using GSVs.
3. The child's age at testing requires using the next age norms table to score.
4. The accuracy of the previous test results is questionable because of factors negatively affecting the child's performance (e.g., illness, inattention).

ADMINISTRATION GUIDELINES FOR THE CELF PRESCHOOL–3

This chapter contains administration and scoring directions for each subtest. The Record Form presents select abbreviated administration directions for each subtest. The Stimulus Book presents general administration directions, all the directions read to the child, and contains visual stimuli needed to present specific items. This arrangement enables examiners to read verbal stimuli directly from the Stimulus Book and record responses in the Record Form as the child views the stimuli. The Recalling Sentences (RS) and Phonological Awareness (PA) subtests do not have accompanying visual stimuli; however, the general subtest directions and specific instructions for administering the trial items can be found in the Stimulus Book for both subtests. When presenting the verbal stimuli for these two subtests, blank pages face the child.

Administration and scoring directions for subtests that factor into the Core Language Score are presented first in this chapter, followed by administration directions for subtests that factor into the index scores. The results of a specific group of subtests that derive an index score provide a description of the child's performance across modality and content areas, as well as language strengths and weaknesses. These results can provide information to answer questions related to the presence of a language impairment, the nature of the impairment and content areas involved, and eligibility for special services. Finally, administration and scoring directions for measures that yield information about early classroom and literacy fundamentals and communication in context are presented. These results can provide information to answer questions related to intervention plans that may be appropriate for the child.

Recording Identifying Information

Before testing, fill in the identifying information about the child on the front cover of the Record Form (see Figure 2.1). The child's dialect is important to note when making scoring decisions and interpreting results. It may also be helpful to document the reason for administering the CELF Preschool–3 such as "referral for language disorder" or "assessing social communication." Be sure to verify the child's birth date; this date is critical in calculating the chronological age correctly.

Figure 2.1 Completed Information Section of a CELF Preschool–3 Record Form

Child's name A. Child
Address 123 Fifth Street
Age 3:11 Sex: ☑ Female ☐ Male Grade ____ School Spring Day Care
Dialect: ☑ Standard American English (SAE) ☐ Other ____
Examiner M. Lee
Reason for testing referred for language impairment

Calculating Chronological Age

To calculate the child's chronological age, subtract his or her birth date from the test date, using the following rules:

1. When borrowing days of the month, always borrow 30 days, regardless of the month.
2. When borrowing months, always borrow 12 months.
3. Do not round the child's age to the next year.

For example, the chronological age of a child tested on September 10, 2020, and born on September 19, 2016, is 3 years 11 months and 21 days (see Figure 2.2). Do not round the child's age up to 4 years 0 months; administer the subtests appropriate for children who are age 3 years and compare this child to age-level peers by using the norms tables for children ages 3:6–3:11.

Figure 2.2 Calculating Chronological Age

	Year	Month	Day
Date tested	~~2020~~ 2019	~~09~~ 20 ~~08~~	~~10~~ 40
Date of birth	2016	09	19
Age	3	11	21

Note. In this Manual, a colon between two numbers indicates a child's specific age in years and months (e.g., a child age 3:11 = a child age 3 years 11 months).

Subtest Administration Order

It may be helpful to administer subtests that make up the Core Language Score in the order they appear in the Record Form. This order ensures that the first subtest administered does not require the child to provide novel verbal responses. Other subtests may be administered in any order to obtain index scores or in an order that provides variety and maintains the child's interest.

Familiarization, Demonstration, and Trial Items

Before administering any subtest items, administer the familiarization, demonstration, and trial items. The Following Directions (FD) subtest includes familiarization items to determine if the child can identify the body parts and/or animals that are used in the subtest items. If the child is not familiar with the concepts in the familiarization items, indicate the information in the Record Form, and do not administer subsequent test items. The demonstration and trial items in each subtest were developed so the child can become familiar with the stimuli and practice the task. For any subtest, if the child gives no response or responds incorrectly to trial items, use these items as an opportunity to teach the subtest task. Encourage, demonstrate, repeat, and prompt for responses and provide correct responses to these items as necessary. If the child still does not respond to the trial items or does not understand the task, indicate this information in the Record Form and do not administer that subtest.

Recording Responses

Recording verbatim responses for some subtests, such as Recalling Sentences (RS) or Connected Speech Sample (CSS), may be time-consuming. Another option is to audio record the administration of these subtests and transcribe and score the responses later. If audio recording, make sure that the recording device is in good working order and that the volume control is set at an appropriate level before administering the subtest. When audio recording responses for the Recalling Sentences (RS) subtest, consider testing beyond the child's ceiling to ensure that the discontinue rule is met.

Self-Corrections

Sometimes a child will revise his or her response to a subtest item or self-correct. If the child changes his or her response before you present the next subtest item, circle or record the revised response as the child's choice and score it.

Scoring Responses

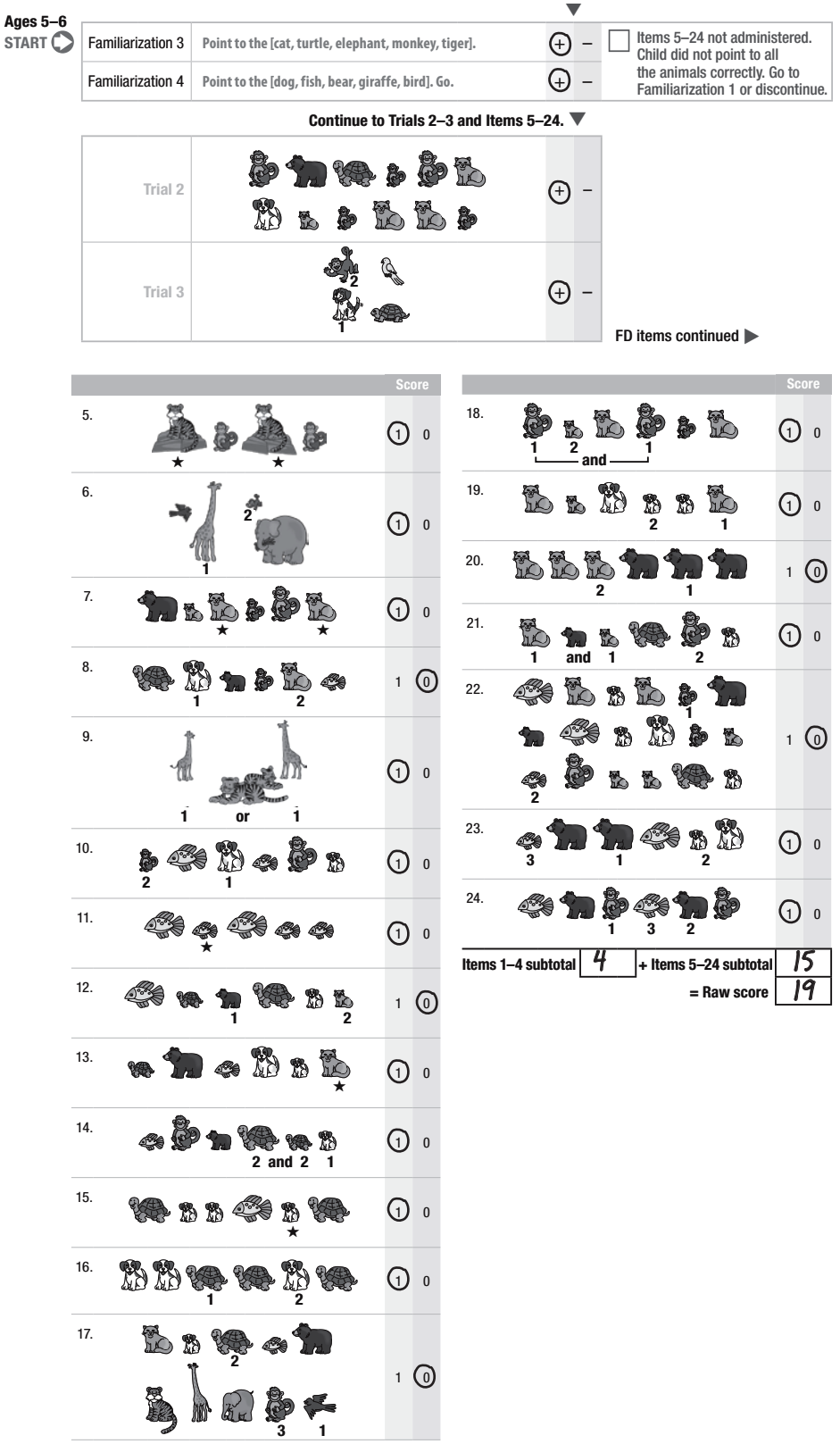
Review each subtest's scoring guidelines before administering the CELF Preschool–3 to become familiar with the single-point or multipoint scoring systems. For subtests that require item responses, if a child does not respond to an item presented or responds by saying "I don't know" or something similar, score the item as 0. Scoring guidelines for each subtest can be found later in this chapter.

Start Points

When administering age-appropriate subtests, most children start testing at the earliest start point. For children ages 5–6, unique start points were developed for the Following Directions (FD) and Basic Concepts (BC) subtests to avoid boredom and fatigue. Start points are indicated in the Stimulus Book and in the Record Form by a circled arrow (see Figure 2.3). For children who start at a later start point and meet a basal (see next section), give credit for earlier items not administered when calculating a total raw score.

It is acceptable to begin administration at an earlier start point when administering the Following Directions (FD) or Basic Concepts (BC) subtests to children ages 5–6 with significant language concerns to obtain as much information as possible. Adhere to standard scoring procedures when beginning at an earlier start point for children ages 5–6. Refer to the Basal Rules section for more information on scoring subtests when beginning at an earlier start point.

Figure 2.3 Example of Beginning at an Age-Based Start Point for a Child Age 5:2 on Following Directions



Basal Rules

All subtests begin at Item 1 except for Following Directions (FD) and Basic Concepts (BC). Basal rules were developed to give the child an opportunity to demonstrate his or her skills at the appropriate item-level difficulty. Following Directions (FD) and Basic Concepts (BC) require a child who begins at a later start point to meet a basal or follow the reversal rule. A basal is considered met when a child correctly responds to the first three items administered. For children in the youngest age group (ages 3–4), test administration begins at the earliest start point, so establishing a basal is not necessary. In situations where a basal cannot be established, continue testing forward until the discontinue rule is met.

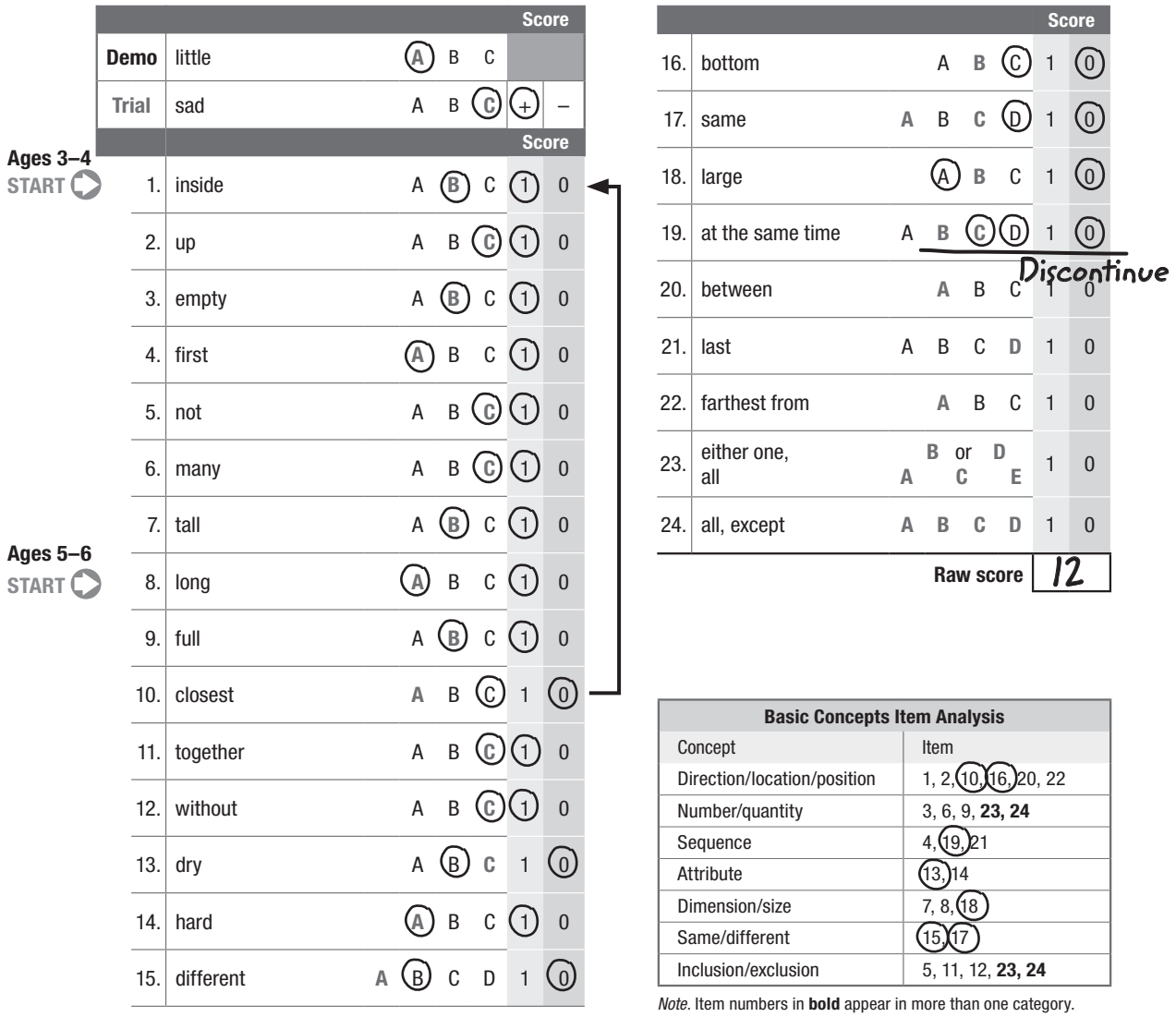
When testing at an earlier start point and the child obtains a basal at the age-appropriate start point, award all score points preceding the age-appropriate start point. For example, if a child ages 5–6 begins the Basic Concepts (BC) subtest at Item 1 and responds correctly to Items 8, 9, and 10, award the correct score points for Items 1–7 regardless of if the child answered Items 1–7 correctly. If the child missed items preceding the basal, it is recommended that the performance be noted and discussed in the evaluation report. If a child does not obtain a basal at the appropriate age-based start point, calculate the raw score by summing the correct responses to all of the test items administered. Scoring rules remain consistent for all children who are administered CELF Preschool–3 regardless of whether they begin testing at the age-appropriate start point or at Item 1.

Reversal Rule

A reversal rule was developed for the Following Directions (FD) and Basic Concepts (BC) subtests because these subtests have later start points for children ages 5–6. If a child begins a subtest at a later start point, he or she must respond correctly to the first three consecutive test items administered. If a child does not meet the basal, reverse and start testing at the earlier start point.

In Figure 2.4, a child age 5:5 taking the Basic Concepts (BC) subtest scored 1 point on the start point (Item 8) and 1 point on Item 9 but scored 0 points on Item 10. The examiner reversed to Item 1 and administered Items 1–7. Items 8–10 were not administered again, so the examiner proceeded to Item 11 to continue testing. The reversal rule for Following Directions (FD), described later in this chapter, is unique and requires special attention.

Figure 2.4 Example of Following a Reversal Rule and a Discontinue Rule



			Score	
Demo	little	A B C		
Trial	sad	A B C	+	–

			Score	
Ages 3–4 START	1.	inside	A B C	1	0
	2.	up	A B C	1	0
	3.	empty	A B C	1	0
	4.	first	A B C	1	0
	5.	not	A B C	1	0
	6.	many	A B C	1	0
	7.	tall	A B C	1	0
Ages 5–6 START	8.	long	A B C	1	0
	9.	full	A B C	1	0
	10.	closest	A B C	1	0
	11.	together	A B C	1	0
	12.	without	A B C	1	0
	13.	dry	A B C	1	0
	14.	hard	A B C	1	0
	15.	different	A B C D	1	0
	16.	bottom	A B C	1	0
	17.	same	A B C D	1	0
	18.	large	A B C	1	0
	19.	at the same time	A B C D	1	0
	20.	between	A B C	1	0
	21.	last	A B C D	1	0
	22.	farthest from	A B C	1	0
	23.	either one, all	A B or C or D or E	1	0
	24.	all, except	A B C D	1	0

Discontinue

Raw score 12

Basic Concepts Item Analysis

Concept	Item
Direction/location/position	1, 2, 10, 16, 20, 22
Number/quantity	3, 6, 9, **23, 24**
Sequence	4, 19, 21
Attribute	13, 14
Dimension/size	7, 8, 18
Same/different	15, 17
Inclusion/exclusion	5, 11, 12, **23, 24**

Note. Item numbers in **bold** appear in more than one category.

Discontinue Rules

The CELF Preschool–3 subtests have discontinue rules to shorten testing time and to avoid fatigue or boredom in the child. Discontinue rules indicate when to stop testing and are designed to minimize testing time and obtain information about a child's performance. Discontinue rules are clearly indicated with a red hand icon in the Record Form and in the Stimulus Book at the beginning of each subtest. In Figure 2.4, a child age 5:5 obtained scores of 0 on Items 15–19, meeting the discontinue rule of five consecutive 0 scores.

Make a note in the margin below the last item administered to indicate that the subtest was discontinued. Do not discontinue prematurely. If unsure how to score a response and unable to decide if discontinuing a subtest is appropriate, administer more items until you are certain the discontinue rule has been met. If more items have been administered beyond the discontinue point, do not score the items beyond the correct discontinue point even if the child's responses were correct.

The discontinue rules differ between subtests and typically require a specified number of consecutive 0 scores before discontinuing administration. The Following Directions (FD), Recalling Sentences (RS), and Phonological Awareness (PA) subtests have unique discontinue rules; pay special attention to these subtests when reviewing the discontinue rules before administering the CELF Preschool–3.

Repetitions

Subtests designed to evaluate the ability to process, interpret, and recall or imitate auditory information do not permit repetition of item stimuli. Do not repeat test items in the Following Directions (FD) and Recalling Sentences (RS) subtests or any part of the story in the Connected Speech Sample (CSS) subtest.

For all other subtests, one repetition of the verbal stimuli is allowed, as noted in this Manual, in the Stimulus Book, and in the Record Form. For those subtests, test items may be repeated at the child's request or when it appears that the child was inattentive during that item's presentation. Inattentive children may move excessively (e.g., fidgety, squirmy, swinging legs, etc.) or may be distracted by some other sound or sight. They may also look out the window, yawn, rub their eyes, etc. If inattentive behaviors impede the administration of the CELF Preschool–3, consider stopping administration at the end of a subtest and continuing after a break. Do not repeat a test item when the child's first response to that item is incorrect.

SUBTEST ADMINISTRATION

The subtests that form the Core Language Score are consistent between ages; however, the subtests that form the index scores differ by age, as listed in Table 2.1. Administer the appropriate subtests for the child's age based on the reason for testing.

Each of the following subtests' description includes

- a statement of the subtest objectives,
- what the performance results may mean in relation to a child's school curriculum and classroom activities,
- administration directions and instructions for scoring responses,
- how to perform item analysis, and
- suggestions for extension testing procedures or possible targets for intervention.

Extension Testing

After testing and interpreting the CELF Preschool–3 results, consider using extension testing to learn more about the factors that may have contributed to a child's errors. Extension testing involves systematically varying subtest content, directions, and the responses required to determine where and when the child's ability to respond correctly begins to break down. His or her errors may result from task or format novelty, task complexity, length or complexity of instructions, linguistic content of subtest items, or type of response required. In effect, use extension testing to establish conditions under which the child can perform successfully. Extension testing results allow for making judgments about the degree of difference between the conditions under which the child performs the skill proficiently and his or her performance in real-life and academic situations.

Table 2.1 Subtests Administered by Age

Age 3	Ages 4–6
Sentence Comprehension (SC)	Sentence Comprehension (SC)
Word Structure (WS)	Word Structure (WS)
Expressive Vocabulary (EV)	Expressive Vocabulary (EV)
Following Directions (FD)	Following Directions (FD)
Recalling Sentences (RS)	Recalling Sentences (RS)
Basic Concepts (BC)	Basic Concepts (BC)
Descriptive Pragmatics Profile (DPP)	Word Classes (WC)
Preliteracy Rating Scale (PRS)	Phonological Awareness (PA)
Connected Speech Sample (CSS)	Descriptive Pragmatics Profile (DPP)
Pragmatic Activities Checklist (PAC)	Preliteracy Rating Scale (PRS)
	Connected Speech Sample (CSS)
	Pragmatic Activities Checklist (PAC)

Sentence Comprehension

Materials
Stimulus Book
Record Form
Start
Ages 3–6: Item 1
Repetitions
One allowed for test items
Discontinue
After five consecutive 0 scores
Objective
To evaluate the child's ability to interpret spoken sentences of increasing length and complexity.
Relationship to Developmental Skills and Curriculum
The abilities evaluated relate to early-acquired sentence formation rules. Preschool and early elementary school curriculum objectives include creating meaning and context in response to a picture, identifying contexts for spoken sentences, and understanding stories.
Relationship to Home and Classroom Activities
At home, understanding spoken sentences is an integral feature of developing conversational skills, participating in interactive storytelling, and following directions. In the classroom, sentence comprehension and understanding the relationship between spoken language and real-life references and situations is emphasized in listening to stories and descriptions of events and matching pictured references to spoken or read stimuli.

Administration Directions

Administration directions are in the Stimulus Book.

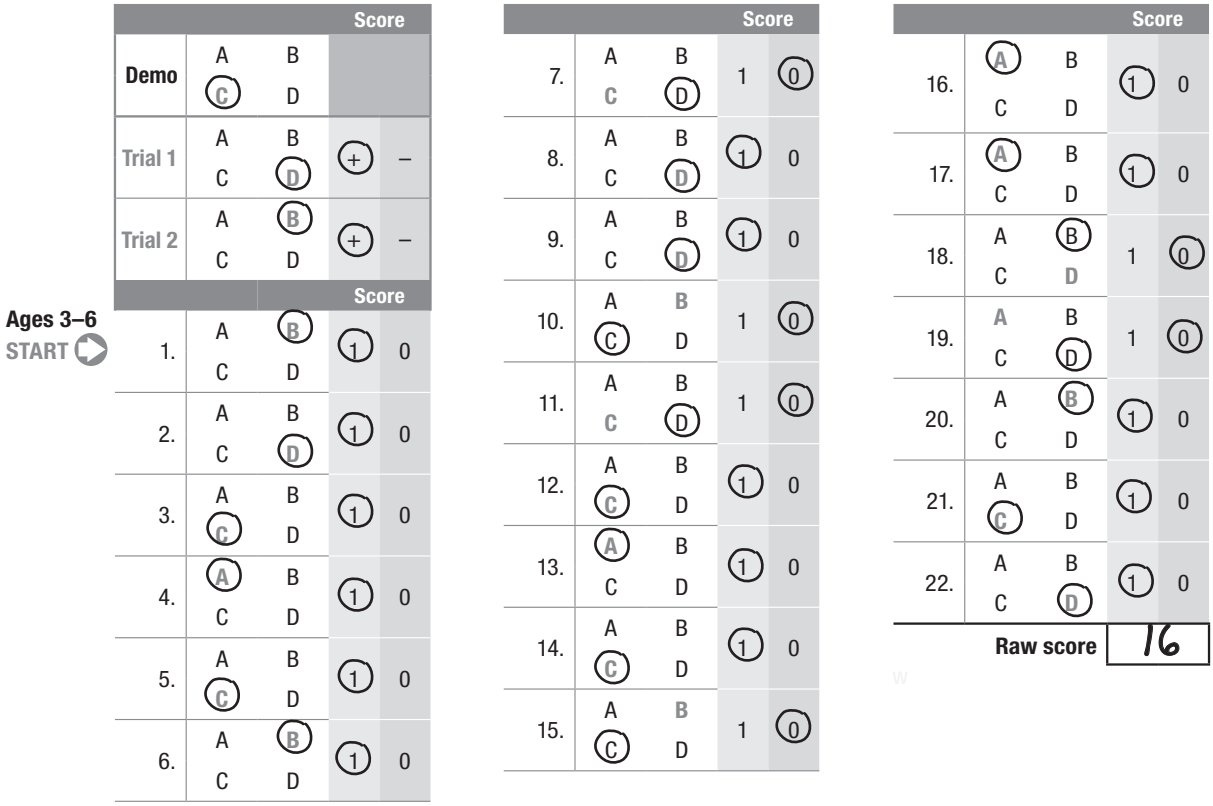
Scoring the Items

Circle the letter corresponding to the child's response. The correct responses are in the Stimulus Book and in color in the Record Form. Score 1 if the child's response is correct and score 0 if the response is incorrect or if the child makes no response, says "I don't know," or gives a similar response.

Scoring the Subtest

Compute the raw score by adding the scores of all test items administered. See Figure 2.5 for a completed example. Record the subtest raw score on page 2 of the Record Form.

Figure 2.5 Example of Scored Sentence Comprehension Items



			Score	
Demo	A B C D			
Trial 1	A B C D		+	–
Trial 2	A B C D		+	–
Ages 3–6 START			Score	
1.	A B C D		1	0
2.	A B C D		1	0
3.	A B C D		1	0
4.	A B C D		1	0
5.	A B C D		1	0
6.	A B C D		1	0
7.	A B C D		1	0
8.	A B C D		1	0
9.	A B C D		1	0
10.	A B C D		1	0
11.	A B C D		1	0
12.	A B C D		1	0
13.	A B C D		1	0
14.	A B C D		1	0
15.	A B C D		1	0
16.	A B C D		1	0
17.	A B C D		1	0
18.	A B C D		1	0
19.	A B C D		1	0
20.	A B C D		1	0
21.	A B C D		1	0
22.	A B C D		1	0
		Raw score	16	

Sentence Comprehension Item Analysis			
Structure	**Item**	**Structure**	**Item**
Adjective	1 (sleepy), **21** (ready)	Relative clause	13 (who is standing in the front of the line), 14 (who is holding the baby)
Prepositional phrase	2 (in the basket), **5** (in the box), 15 (toward the girl), **17** (in line)	Passive voice	11 (is being followed), 18 (is being pushed)
Verb condition	3 (is running), 8 (will find), 12 (can get)	Compound sentence	10 (She is climbing, and he is swinging.), **17** (The first two children are in line, but the third child is still playing.)
Noun modification	**5** (spotted puppy), 7 (little ball), 9 (big, spotted, black-and-white dog), **17** (first two, third)	Indirect object	16 (the dog)
Infinitive	6 (to bake), **21** (to go)	Indirect request	19 (Shouldn't you wear your jacket?)
Negation	4 (not)	Subordinate clause	20 (although she doesn't need it), 22 (before she ate the sandwich)

Sentence Comprehension Item Analysis

An analysis of the child's responses can provide a preliminary description of the sentence structures that the child understands. Use the Sentence Comprehension Item Analysis table on page 3 of the Record Form to determine error patterns in the child's responses. Circle the item numbers that were scored incorrect on the Item Analysis table at the end of the subtest. Analyze the categories and target structures that are in error and make decisions about how to proceed based on factors such as the child's age, developmental expectations, experiences, and culture.

Extension Testing for Sentence Comprehension

Use extension testing to further examine the child's comprehension of the sentence structures presented and to analyze syntactic features of error responses.

Before extension testing, review the subtest item analysis to determine if there was a pattern of errors based on the categories of syntax elements. Analyze the child's syntactic skills by examining the morphosyntax used in each item the child missed.

Compare the child's performance on Sentence Comprehension (SC) to his or her performance on Recalling Sentences (RS), another subtest that focuses on syntactic abilities, to see if there are any discernible patterns to target for further assessment. If the child had difficulty identifying concepts within sentence structures, compare the child's performance on Sentence Comprehension (SC) to his or her performance on Basic Concepts (BC) for any obvious error patterns.

Suggested Modifications

1. Readminister the items in error, repeating the stimulus to check for facilitation of auditory memory.
2. Decrease the complexity of sentences to reduce memory requirements.

Lay out two picture cards with minimally contrasting actions, comic strips with minimally contrasting action frames, or use picture books that depict scenes with familiar themes. Depending on the child's responses during formal testing, ask the child to identify

- which character is involved in the stated action;
- which object is involved and manipulated by the character;
- which characteristic is described by a modifier; and/or
- the relationships expressed by coordinated phrases, clauses, and subordinate clauses.

Compare the results of extension testing to the results of formal testing to identify accommodations and/or modifications that the child may need to be successful in a classroom environment.

Word Structure

Materials
Stimulus Book
Record Form
Start
Ages 3–6: Item 1
Repetitions
One allowed for test items
Discontinue
After five consecutive 0 scores
Objective
To evaluate the child's ability to (a) apply word structure rules (morphology) to mark inflections, derivations, and comparison and (b) select and use appropriate pronouns to refer to people, objects, and possessive relationships.
Relationship to Developmental Skills and Curriculum
The abilities evaluated relate to early acquired morphological forms. Preschool and early elementary objectives include using word structure rules (morphology) to extend word meanings by adding inflectional, derivational, or comparative and superlative suffixes; derive new words from base words; and use referential pronouns.
Relationship to Home and Classroom Activities
At home, the use of word structure rules facilitates family members' comprehension of the child's spoken messages and intentions by adding to the precision of language. In the classroom, the use of word structure rules is emphasized by matching word forms to pictures; substituting nouns for pronouns; indicating number, time, and possessive relationships; making comparisons of characteristics; describing pictures and events; and other related tasks.

Administration Directions

Administration directions are in the Stimulus Book.

Scoring the Items

Some of the correct responses are in the Record Form and in the Stimulus Book. Score 1 if the child's response is correct and score 0 if the response is incorrect or if the child makes no response, says "I don't know," or gives a similar response. If the child gives a response that is different from the target response, but demonstrates the target structure and is meaningful to the context of the item, record the response and score the item as correct. The target structure for each item is printed above the item prompt in the Stimulus Book. For example, Item 1 targets progressive (-ing) and the target response is *sleeping*. If the child's response is *lying in bed,* score the response as correct. If the child gives a response considered an appropriate regional or dialectal variation for that child, record the response, indicate that it is dialectal, and score it as correct. Similarly, for children who are not exposed to binary gender (i.e., masculine/feminine) pronouns, accept gender-neutral pronouns or nouns as correct responses. Note alternate responses in the Record Form and score the child's response as correct if it is meaningful and reflects the child's culture. See Appendix A for information on gender-neutral language and examples of dialectal variations for the Word Structure (WS) subtest.

> *Note*. When scoring responses, words in parentheses are considered extraneous information and are not required to receive credit.

Scoring the Subtest

Compute the raw score by adding the scores of all test items administered. See Figure 2.6 for a completed example. Record the subtest raw score on page 2 of the Record Form.

Figure 2.6 Example of Scored Word Structure Items

		Score	
Demo	is a girl		
Trial 1	sitting	+	–
Trial 2	dogs	+	–

Ages 3–6
START

		Score	
1.	sleeping	1	0
2.	in/inside (the box)	1	0
3.	walking	1	0
4.	on (the chair)	1	0
5.	her	1	0
6.	It is/It's big	1	0
7.	hers	1	0
8.	horses	1	0
9.	dog's/doggy's	1	0
10.	him	1	0
11.	sleeps naps	1	0
12.	flies	1	0
13.	singer	1	0
D.	big, bigger, biggest		
14.	faster	1	0
15.	fastest fast	1	0
16.	She does	1	0
17.	He is (standing)	1	0
D.	jumped		
18.	climbed went up	1	0
19.	She is	1	0
20.	They are	1	0
21.	herself	1	0
22.	blew (the bubble) blowed	1	0
D.	will paint		
23.	will slide/will be sliding	1	0
D.	rode		
24.	fell felled	1	0
	Raw score	19	

Word Structure Item Analysis

Category	Item	Category	Item
Preposition	2 (in), 4 (on)	Copula	6 (it is big), 19 (she is), 20 (they are)
Regular plural	8 (horses)	Pronoun	
Possessive noun	9 (dog's)	Objective	5 (her), 10 (him)
Verb tense		Possessive	7 (hers)
Progressive (-ing)	1 (sleeping), 3 (walking)	Subjective	16 (she does), 17 (he is)
Third person singular	11 (sleeps), 12 (flies)	Reflexive	21 (herself)
Future tense	23 (will slide)	Derivational form	
Regular past tense	18 (climbed)	Noun derivation	13 (singer)
Irregular past tense	22 (blew), 24 (fell)	Comparative and superlative	14 (faster), 15 (fastest)

Word Structure Item Analysis

An analysis of the child's responses can provide a preliminary description of the word structure rules (morphology) that the child has learned and internalized. Use the Word Structure Item Analysis table on page 4 of the Record Form to determine error patterns in the child's responses. Circle the item numbers that were scored incorrect on the Item Analysis table at the end of the subtest. Analyze the categories and target structures that are in error and make decisions about how to proceed based on factors such as the child's age, developmental expectations, experiences, and culture.

Extension Testing for Word Structure

Use extension testing to further assess the child's ability to apply the morphological forms presented in the Word Structure (WS) subtest under varying conditions.

Before extension testing, categorize the child's errors according to the morphological rule categories (e.g., regular plural, possessive). Compare performance on Word Structure (WS) to the child's performance on a language sample of at least 50 utterances. Pavelko & Owens (2017) report that 50 utterances are the recommended minimum to obtain valid and reliable measures of children's semantic and syntactic skills. To obtain this sample, consider administering the Connected Speech Sample (CSS) subtest. This analysis can assist in determining if the child understands the syntactic environment in which to include the morphological form(s) and if the child's use of a form is acceptable, emerging, or beginning.

Suggested Modifications

1. Provide a direct example of the target structure before readministering an item in error.
2. Use indirect imitation to elicit a target structure.

Find two pictures or objects and develop stimulus sentences that parallel the target structure in the items the child missed. Make a statement about one picture or object and then about the other. Ask the child to repeat the statement while pointing to each picture or object. For example, say, **Let's look at some of these pictures. I'll point to each picture and say something about it, then you tell me exactly what I said about the picture. Let's try one. The dog is running** (point)**. The dogs are running** (point)**. Tell me what this one shows** (point to the picture of one dog running)**. Now tell me about this one** (point to the picture of two dogs running)**.**

Provide the child with toys that can be set up in a familiar scenario (e.g., farm, zoo, cooking). During play, expand upon the child's utterances. Then ask the child to repeat what was said via an open-ended request. For example, if the child comments, "The dogs running," expand the utterance by saying, **Yes, the dogs are running. What's happening?** Wait for the child's response, then portray another action. **What's happening now?**

Compare the results of extension testing to the results of formal testing to identify accommodations and/or modifications that the child may need to be successful in a classroom environment.

Expressive Vocabulary

Materials
Stimulus Book
Record Form
Start
Ages 3–6: Item 1
Repetitions
One allowed for test items
Discontinue
After five consecutive 0 scores
Objective
To evaluate the child's ability to label images of people, objects, attributes, and actions (referential naming).
Relationship to Developmental Skills and Curriculum
Labeling and remembering names for nouns (people and objects) and verbs (actions) that relate to expressing concise meaning in home and academic settings. Preschool and early elementary objectives include using and understanding a wide variety of words to label and describe people, places, things, and actions.
Relationship to Home and Classroom Activities
At home, appropriate labeling of people, objects, and actions facilitates communication in conversation, games, play, and interactive storytelling. In the classroom, the precise use of words to create meaning is emphasized in telling stories, giving descriptions of events, and labeling real-life and pictured references.

Administration Directions

Administration directions are in the Stimulus Book.

Scoring the Items

Correct responses (2 points and 1 point) are listed in the Stimulus Book and in the Record Form. Circle the child's response in the Record Form and the corresponding score point(s). If the child's response is not listed, record it verbatim in the space provided for later scoring consideration. If the child's response reflects accepted regional vocabulary or wording and is appropriate to the context, score the response as correct.

> *Note*. When scoring responses, words in parentheses are considered extraneous information and are not required to receive credit.

Scoring criteria for 2- and 1-point responses for each item listed in the Stimulus Book and in the Record Form reflect responses commonly given by children during standardization. Although the scoring criteria are based off of sample responses obtained through the development of this subtest, a child may give responses that are not listed in the Stimulus Book or in the Record Form. When this occurs, refer to the following guidelines and use clinical judgment in scoring those items.

2 points

The response to the stimulus is the target response or another response that is semantically and morphologically correct or appropriate to the region.

1 point

The response to the stimulus is somewhat related to, but not the same as, the target response. Note that acceptable 1-point responses also include the same part of speech as the target vocabulary. For example, a noun cannot be described by its function and receive credit on the Expressive Vocabulary (EV) subtest; however, a synonym or category response may receive partial credit (i.e., 1 point). It is an accurate description of the activity or object but does not incorporate the target vocabulary. These responses often use "weak verbs," such as making/doing/fixing/getting/putting, with appropriate nouns or objects. For instance, if a child responds to Item 12 by saying "putting paper on the box," score the response 1 point because it describes the target response (wrapping).

0 points

The response is semantically inappropriate, does not demonstrate sufficient familiarity with necessary vocabulary, or is in no way related to the target word.

Scoring the Subtest

Compute the raw score by adding the scores of all test items administered. See Figure 2.7 for a completed example. Record the subtest raw score on page 2 of the Record Form.

Figure 2.7 Example of Scored Expressive Vocabulary Items

		Score	
Demo	bird		
Trial 1	sock	+	–
Trial 2	crying	+	–

Ages 3–6 START

	2 points	1 point	Score
1.	carrot		2 1 0
2.	riding (a bike)/biking/pedaling	ride a bike	2 1 0
3.	guitar	instrument	2 1 0
4.	ladder		2 1 0
5.	umbrella		2 1 0
6.	triangle	shape	2 1 0
7.	pouring	getting juice/pour the juice/putting juice in	2 1 0
8.	firefighter/fireman	fire truck man	2 1 0
9.	zipper		2 1 0
10.	(elephant) trunk Nose		2 1 0
11.	telescope		2 1 0
12.	wrapping	covering the present/putting paper on the box/wrap it up	2 1 0
13.	footprint	foot step	2 1 0
14.	(tree) branch/(tree) limb		2 1 0
15.	wheelchair rolls away		2 1 0
16.	calendar		2 1 0
17.	binoculars/noculars/blinoculars/minoculars		2 1 0
18.	medal	award	2 1 0
19.	veterinarian/vet	pet doctor/animal doctor doctor	2 1 0
20.	audience	listeners/spectators crowd	2 1 0
21.	scale/(weighing/weight) scale		2 1 0
		Raw score	29

Expressive Vocabulary Item Analysis			
Category	Item	Category	Item
Verbs	2 (riding), 7 (pouring), 12 (wrapping)	Science	**10** (trunk), **11** (telescope), 13 (footprint), **14** (branch), **17** (binoculars)
Food	1 (carrot)	Sports	18 (medal)
Tools	4 (ladder), 5 (umbrella), **11** (telescope), **17** (binoculars), **21** (scale)	Part/whole relationships	9 (zipper), **10** (trunk), **14** (branch)
Occupations/people	8 (firefighter), **19** (veterinarian), 20 (audience)	Math	6 (triangle), 16 (calendar)
Music/instruments	3 (guitar)	Medical/health care	15 (wheelchair), **19** (veterinarian), **21** (scale)

Note. Item numbers in **bold** appear in more than one category.

Expressive Vocabulary Item Analysis

An analysis of the child's responses can provide a preliminary description of the child's expressive vocabulary. Use the Expressive Vocabulary Item Analysis table on page 5 of the Record Form to determine error patterns in the child's responses. Circle the item numbers that were scored incorrect on the Item Analysis table at the end of the subtest. Analyze the categories and target words that are in error and make decisions about how to proceed based on factors such as the child's age, developmental expectations, experiences, and culture.

> *Note*. The Item Analysis table in Figure 2.7 does not account for 1-point responses; however, it is acceptable to mark up items that received partial credit. If preferred, circle the items that received partial credit or distinguish them by marking them with a slash. Use the Item Analysis table to assist with the analysis and interpretation of the child's performance.

Extension Testing for Expressive Vocabulary

Use extension testing to further assess a child's vocabulary and establish a baseline by parts of speech or semantic categories depending on the results of the item analysis. Other formal assessment tools, such as the Peabody Picture Vocabulary Test (5th ed.; PPVT™–5; Dunn, 2019) or the Expressive Vocabulary Test (3rd ed.; EVT™–3; Williams, 2019), may be used for in-depth information on receptive and expressive vocabulary.

Suggested Modifications

1. Use photographs, toys, or actual objects in the child's environment for labeling.
2. Determine if the child can identify vocabulary words given a choice of two, three, or four pictures, photos, toys, or objects for information on the child's receptive vocabulary.
3. Categorization, recategorization, comparing and contrasting meanings, and developing definitions for words and concepts with guided questioning can be used to determine current vocabulary skill levels.

Gather photos, pictures, toys, or objects that are related to the child's home and preschool environment. Ask the child to identify each and to categorize them according to like features or functions (e.g., place all fruits in one pile, all animals in another).

To test the child's ability to label actions, use objects that can be manipulated to perform the actions and ask the child to name the actions demonstrated or have the child perform the actions named (either on the objects or by themselves).

Occasionally, children cannot generalize a label to all forms (i.e., pictures, objects, actions). If the child has difficulty grouping stimulus items according to a given semantic label, present the items individually in a hierarchal progression of difficulty from hardest to easiest: pictures, photos, toys, actual objects. This helps determine start points for intervention. Compare the results of extension testing to the results of formal testing to identify accommodations and/or modifications that the child may need to be successful in a classroom environment.

> ***Professional's Note.*** Intervention goals should include establishing rich meaning bases for vocabulary words that are critical for the child to express his or her needs and wants at home and for early classroom performance. Caregivers, day care and classroom teachers, and speech-language pathologists can work collaboratively to determine vocabulary needs. Encourage the use of new vocabulary words in both the home and school environments to facilitate generalization.

Following Directions

Materials
Stimulus Book
Record Form
Start
Ages 3–4: Familiarization 1
Ages 5–6: Familiarization 3
Repetitions
Not allowed for test items
Reversal
For children ages 5–6: Score of 0 on any of the first three test items administered, go to Familiarization 1
Discontinue
Items 1–4: Do not discontinue
Items 5–24: After five consecutive 0 scores
Objective
To evaluate the child's ability to (a) interpret spoken directions of increasing length and complexity; (b) remember the names, characteristics, and order of mention of pictures; and (c) identify the targets from among several choices.
Relationship to Developmental Skills and Curriculum
The abilities evaluated relate to understanding spoken directions and following instructions. These abilities reflect short-term and procedural memory capacities. Preschool and early elementary school curriculum objectives include following directions for classroom assignments and projects, remembering assigned tasks, and following teacher instructions for managing classroom activities and interactions.
Relationship to Home and Classroom Activities
At home, following directions facilitates behavior management, interactive games and physical activities, and organization of the child's environments in space and time. In the classroom, comprehension, recall, and ability to act upon spoken directions are essential for success in all subject areas and for internalizing scripts and rules for behavior. The ability to follow directions is required for most early classroom activities.

Administration Directions

Administration directions are in the Stimulus Book.

For children ages 3–4, administer Familiarization Items 1–2 and Trial Item 1, then administer Items 1–4. Continue to administer Familiarization Items 3–4 and Trial Items 2–3. If the child responds correctly to Familiarization Items 3–4 and Trial Items 2–3, go to Item 5. For children ages 5–6, begin by administering Familiarization Items 3–4 and Trial Items 2–3. Then, administer Items 5–24. If the child is unable to move past Familiarization Items 3–4 and Trial Items 2–3 or is unable to respond to the first three consecutive test items after Item 5, follow the reversal rule and administer Familiarization Item 1 and test forward.

Special Considerations

Wait until you are *certain* that the child has completed his or her response to an item before presenting the next item.

Familiarization Items

The purpose of the familiarization items is to ensure that the child knows the names of the body parts and/or animals presented in the test items. If the child is unable to identify a body part in Familiarization Items 1–2, demonstrate by pointing to the body part for the child until he or she is familiar with the body part and can readily point to it when requested. Likewise, for Familiarization Items 3–4, if a child is unable to identify an animal correctly during the first presentation of the familiarization item, repeat the animal name until the child is familiar with the animal and can readily point to it when requested. If a child is unable to identify all body parts presented in Familiarization Items 1–2 after prompting and teaching, do not continue to administer the Following Directions (FD) subtest. If a child is unable to identify all the animals presented in Familiarization Items 3–4 after prompting and teaching, do not administer Items 5–24; reverse to Familiarization Items 1–2 if they have not been administered.

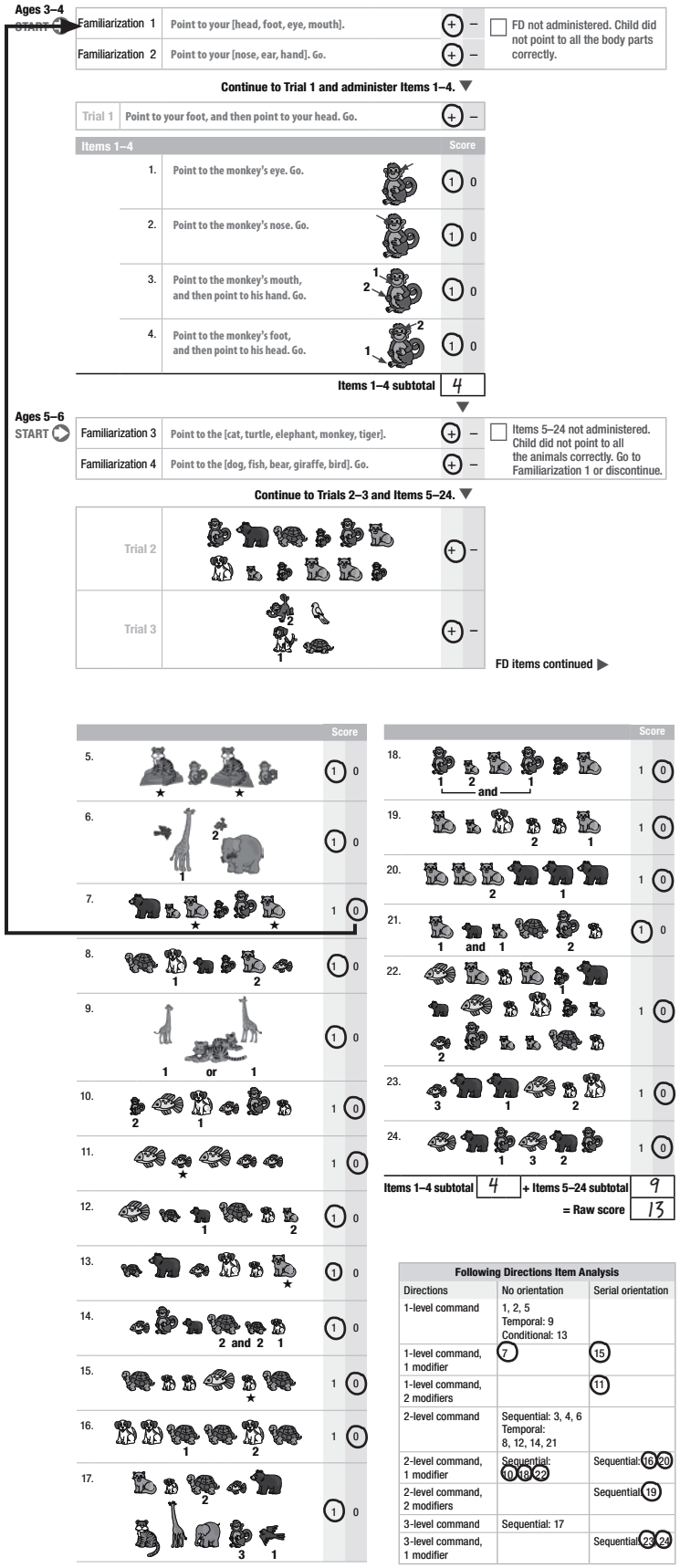
Scoring the Items

A reduced version of the visual stimuli with a key for interpreting the correct response order is presented with the items in the Record Form. Score 1 if the child's response is correct and score 0 if the response is incorrect or the child makes no response, says "I don't know," or gives a similar response.

Scoring the Subtest

Compute the raw score for the subtest by adding the scores of all test items administered. If scoring began at Item 5, and the first three test items administered (Items 5–7) were correct, be sure to give credit for Items 1–4 by adding 4 raw score points to the total raw score. See Figure 2.8 for an example of a scored subtest using the reversal rule. Record the subtest raw score on page 2 of the Record Form.

Figure 2.8 Example of Scored Following Directions Items Using the Reversal Rule



Following Directions Item Analysis

Directions	No orientation	Serial orientation
1-level command	1, 2, 5 Temporal: 9 Conditional: 13	
1-level command, 1 modifier	(7)	(15)
1-level command, 2 modifiers		(11)
2-level command	Sequential: 3, 4, 6 Temporal: 8, 12, 14, 21	
2-level command, 1 modifier	Sequential: (10) (18) (22)	Sequential: (16) (20)
2-level command, 2 modifiers		Sequential: (19)
3-level command	Sequential: 17	
3-level command, 1 modifier		Sequential: (23) (24)

Following Directions Item Analysis

An analysis of the child's responses can provide a preliminary description of the level of complexity of instruction that the child is able to understand. Use the Following Directions Item Analysis table on page 7 of the Record Form to determine error patterns in the child's responses. Circle the item numbers that were scored incorrect on the Item Analysis table at the end of the subtest. Analyze the complexity of the items that are in error and make decisions about how to proceed based on factors such as the child's age, developmental expectations, experiences, and culture.

Extension Testing for Following Directions

Use extension testing to further examine the child's ability to interpret, recall, and execute when given spoken directions. Before extension testing, categorize the child's errors according to the variables in the Item Analysis table. Count errors on 1-, 2-, and 3-level commands; errors related to orientation; and errors related to the number of internal modifiers. Review and compare the child's performance on the Recalling Sentences (RS) subtest to analyze the child's content memory. Review and compare the child's performance on the Basic Concepts (BC) subtest to analyze the child's knowledge of linguistic concepts. Base the extension testing on the error patterns observed and select one or more of the extension testing options suggested below.

Suggested Modifications

1. Readminister the items the child missed and repeat the stimulus directions, if necessary. If a child responds correctly to some of the repeated items, repeating verbal instructions for this child may be a valuable strategy for the home and preschool classroom.
2. Use common objects familiar to the child and available in his or her environment (e.g., toys, blocks, cars).
3. Change one aspect of an item at a time to test the effects of modifications in sentence length and content and to determine if less complex directions improve performance. For example, simplify a multiple-level item by presenting a 1-level command or reduce the modifiers in items with multiple modifiers. Another option is to simplify an item with multiple modifiers by presenting the item with only one modifier. See the following examples.

   Example 1: Place a ball, toy car, and stuffed bear on the table.
   2-level command: Point to the car and the ball.
   1-level command: Point to the bear.

   Example 2: Place a big, white ball; a small, white ball; and a small, red ball on the table.
   Multiple modifiers: Point to the small, white ball.
   One modifier: Point to a small ball.

Compare the results of extension testing to the results of formal testing to identify accommodations/modifications that the child may need to be successful in a classroom environment.

Recalling Sentences

Materials

Stimulus Book

Record Form

Start

Ages 3–6: Item 1

Repetitions

Not allowed for test items

Discontinue

After three consecutive 0 scores

Objective

To evaluate the child's ability to listen to spoken sentences of increasing length and complexity and repeat the sentences without changing word meanings, inflections, derivations or comparisons (morphology), or sentence structure (syntax). Assessing the ability to imitate sentences has long been used to discriminate between normal and disordered language development. See Chapter 3 for more information about the role of sentence repetition in assessment of language impairments.

Relationship to Developmental Skills and Curriculum

The abilities evaluated relate to internalizing simple and complex sentence structures to facilitate accurate recall of the meaning, structure, and intent of spoken sentences, directions, or instructions. The child's response will indicate if critical meaning or structural features (e.g., specific word use, complex verb forms, embedded clauses) are internalized for recall. Preschool and early elementary curriculum objectives include maintaining a conversation, retelling a story, and engaging in meaningful classroom interactions.

Relationship to Home and Classroom Activities

At home, the ability to remember spoken sentences of increasing complexity in meaning and structure is required in following directions and leisure activities such as playing games. Classroom activities include following academic instructions, learning vocabulary, understanding subject content, playing imitation games, and role-playing.

Administration Directions

Administration directions are in the Stimulus Book.

Recording Responses

Circle the score "3" in the No errors column if the child repeats the sentence *verbatim*. If the response is not an exact repetition, record the response *verbatim* in the space provided or edit the printed stimulus sentence to reflect the child's response and then circle the score ("2," "1," "0") that corresponds to the number of errors in the child's response. Use the following editing symbols to indicate differences between the child's responses and the printed stimuli. Another option is to audio record the child's responses and then transcribe and score them after the test session. If choosing to audio record this subtest, consider testing beyond the discontinue rule to ensure that the discontinue criteria is met.

Editing Symbols

Use the following symbols to indicate differences between the child's responses and the printed items in the Record Form. An abbreviated key to the editing symbols is printed in the Record Form. A sample child response follows each editing symbol.

1. **Omission**

   Mark a line (—) through each word or part of a word that is omitted.

   Stimulus: Was the teacher followed by the children?

   Child's response: Was the teacher follow by the children?

   Record: Was the teacher follow~~ed~~ by the children?

2. **Repetition**

   Underline each word that is repeated with a wavy line (~~).

   Stimulus: The play castle was built by the girls and boys.

   Child's response: The play castle was built built by the girls and boys.

   Record: The play castle was built by the girls and boys.

3. **Addition**

   Use a caret (^) to indicate the addition of a word or words. Write the added word(s) above or below the caret.

   Stimulus: The baby has a soft blanket.

   Child's response: The baby has a very soft blanket.

   Record: The baby has a very ^ soft blanket.

4. **Transposition**

   Use an *S* curve ( ) to indicate transposed words.

   Stimulus: Didn't the boys eat the apples?

   Child's response: The boys didn't eat the apples.

   Record: Didn't the boys eat the apples?

5. **Substitution**

   To indicate a substitution, mark a line through each word that is omitted and write the substituted word above or below it.

   Stimulus: They play with blocks.

   Child's response: They play with cars.

   Record: They play with cars ~~blocks~~.

Scoring the Items

Score each item by comparing the response to the stimulus sentence. Count the number of errors in the response and classify it according to the following rules:

No errors	Sentence repeated verbatim. Circle "3" in the No errors column.
Words in error	Count each single word that was omitted, added, or substituted as one error.

Circle the score based on the number of errors in the child's response.

Scoring Procedures

a. Look at the whole sentence. Count any word that is omitted, added, or substituted as one error. Do *not* count repetitions of words (e.g., dysfluency or stuttering) as errors.

b. Count each transposition that *changes the meaning* of the sentence as two errors. For example:

Item 14 The dad bought a book for his son who likes funny stories.
The son bought a book for his dad who likes funny stories.

c. Count each transposition that *does not change* the meaning of the sentence as one error. For example:

Item 11 The play castle was built by the girls and boys.
The play castle was built by the boys and girls.

d. Count contractions as two words. For example, *won't* for *didn't,* equals one error (*will* not for *did* not), but *couldn't* for *did* equals two errors (*could not* for *did*). For example:

Item 7 Didn't the boys eat the apples?
Can the boys eat the apples? = 2 errors (one substitution: *can* for *did* + one omission: *n't*)

Item 7 Didn't the boys eat the apples?
Won't the boys eat the apples? = 1 error (one substitution: *will* for *did*)

e. Using an appropriate contracted form (or noncontracted form) is acceptable and should not be counted as an error. For example:

Item 9 The rabbit was not put in the cage by the girl.
The rabbit wasn't put in the cage by the girl.

f. Responses that reflect regional and cultural patterns or variations that reflect dialectal differences from SAE are acceptable if they are part of the child's language system.

Note. It is common for some children to substitute *that* for *who* in sentences with relative clauses (Items 14 and 15) that require using the personal pronoun *who* rather than the demonstrative pronoun *that*. For some children this response is regional or colloquial, and if so, it should not be counted as an error. Both *that* and *who* are relative pronouns that enable the child to embed another unit of meaning in the same sentence. Therefore, using either word demonstrates the child's ability to embed the appropriate units of meaning into the sentence and hold them in working memory. For more information on dialectal differences, refer to Appendix A.

Scoring the Subtest

Write the column subtotals in the boxes at the bottom of each column. Then add the subtotals to compute the raw score for the subtest. See Figure 2.9 for a completed example. Record the subtest raw score on page 2 of the Record Form.

Figure 2.9 Example of Scored Recalling Sentences Items

		Score	
Trial 1	The dog is eating.	+	–
Trial 2	What is in the box?	+	–

Ages 3–6

START

		No errors	1 error	2–3 errors	4+ errors
1.	He is nice.	(3)	2	1	0
2.	The ball is in the box.	(3)	2	1	0
3.	They play with block~~s~~.	3	(2)	1	0
4.	The cat is sleeping ~~on the pillow~~.	3	2	(1)	0
5.	The baby has a soft blanket.	(3)	2	1	0
6.	I wash my hands with soap and water.	(3)	2	1	0
7.	Didn't the boys eat ~~the apples?~~	3	2	(1)	0
8.	~~Was~~ were the teacher followed by the children?	3	2	(1)	0
9.	The rabbit was ~~not~~ put in the cage ~~by the girl~~.	3	2	1	(0)
10.	The big, brown dog ate all of the ~~cat~~'s food.	3	(2)	1	0
11.	The ~~play~~ castle was ~~built by the girls and boys~~ at the beach.	3	2	1	(0)
12.	~~Because~~ tomorrow is Saturday so we can stay up late tonight.	3	2	(1)	0
13.	The toy was ~~not~~ returned ~~to the shelf by the girl~~.	3	2	1	(0)
14.	The dad bought a book ~~for his son who likes~~ of funny stories.	3	2	1	(0)
15.	The girl ~~who won the prize at the school party was very excited~~. happy	3	2	1	(0)
	Column subtotals	12	4	4	0
	Sum of column subtotals = Raw score	20			

Recalling Sentences Item Analysis			
Category	Item	Category	Item
Active declarative	1, 3	Active interrogative with negative	7
Active declarative with		Passive declarative with	
Prepositional phrase	2, 4	Negative	(9), (13)
Coordination	6	Coordination	(11)
Noun modification	5, 10	Passive interrogative	8
Subordinate clause	12		
Relative clause	(14), (15)		

Recalling Sentences Item Analysis

An analysis of the child's responses can provide a preliminary description of the language content and sentence structures that the child has internalized and is able to use. Use the Recalling Sentences Item Analysis table on page 8 of the Record Form to determine error patterns in the child's responses. Circle the item numbers that were scored incorrect on the Item Analysis table at the end of the subtest. Analyze the items that are in error by syntactic structure category and make decisions about how to proceed based on factors such as the child's age, developmental expectations, experiences, and culture.

> *Note*. The Item Analysis table in Figure 2.9 does not account for 2- and 1-point responses; however, it is acceptable to mark up items that received partial credit. If preferred, circle the items that received partial credit or distinguish them by marking them with a slash. Use the Item Analysis table to assist with the analysis and interpretation of the child's performance.

Extension Testing for Recalling Sentences

Use extension testing to further analyze what semantic content and syntactic structures the child can repeat. Before extension testing, categorize errors according to the Item Analysis table. Determine if the child's responses reflect difficulties with the semantic or syntactic content. A child who has difficulties primarily with semantic content will have problems repeating the content words; a child who has difficulty primarily with the language structure (morphology and syntax) will usually recall the words and meaning of the sentence but make errors in verb tense, subject-verb agreement, pronoun number, case, and gender. Compare the child's performance on Recalling Sentences (RS) to his or her performance on other subtests that focus on syntactic abilities (i.e., Sentence Comprehension [SC], Following Directions [FD]).

Suggested Modifications

1. If appropriate, simplify the language of sentences the child missed to examine his or her ability to recall sentences of reduced length and syntactic complexity (e.g., modify the length, structure, order, and complexity of items the child missed).
   Example (Item 8): Was the teacher followed by the children?
   Structure reduction: Did the children follow the teacher?

   Example (Item 12): Because tomorrow is Saturday, we can stay up late tonight.
   Reverse order: We can stay up late tonight because tomorrow is Saturday.
2. To facilitate recall of verbal information, present photos or pictures that relate to the sentence that the child is asked to repeat.

For intervention targets, focus on unfamiliar syntactic structures by creating sentences and asking the child to draw pictures to associate visuals with verbal information. Another option is to present a sentence with an unfamiliar syntactic structure and ask the child to generate sentences following the same structure and meaning. Use visuals or printed words to scaffold, if necessary. Compare the results of extension testing to the results of formal testing to identify accommodations/modifications that the child may need to be successful in a classroom environment.

Basic Concepts

Materials
Stimulus Book
Record Form
Start
Ages 3–4: Item 1
Ages 5–6: Item 8
Repetitions
One allowed for test items
Reversal
Ages 5–6: Score of 0 on any of the first three test items administered, go to Item 1 and administer in a forward sequence.
Discontinue
After five consecutive 0 scores
Objective
To evaluate the child's knowledge of concepts including direction/location/position, number/quantity, sequence, attributes, dimension/size, same/different and inclusion/exclusion.
Relationship to Developmental Skills and Curriculum
An understanding of basic semantic concepts is usually acquired during experiences with manipulating objects in the environment. The preschool and early elementary curriculum objectives include understanding basic concepts for use during preliteracy and early math activities.
Relationship to Home and Classroom Activities
At home, understanding basic concepts facilitates following directions, participating in games and physical activities, and locating specific objects and people in the environment. In the preschool and early elementary grades, understanding basic concepts is crucial for classroom assignments, preliteracy activities, and understanding relationships in stories. Understanding basic concepts also facilitates the child's participation in recreational group activities such as team sports.

Administration Directions

Administration directions are in the Stimulus Book.

Special Considerations

Although Basic Concepts (BC) may be administered to children ages 5–6, the scaled score is not used to derive an index score. Use the scaled score to determine how well the child understands basic semantic concepts.

Scoring the Items

Circle the letter corresponding to the child's response. The correct responses are in the Stimulus Book and in color in the Record Form. Score 1 if the child's response is correct and score 0 if the response is incorrect or the child makes no response, says "I don't know," or gives a similar response. Items 17, 19, 23, and 24 require more than one correct response to earn a score of 1.

Scoring the Subtest

Compute the raw score by adding the scores of all test items administered. If a child began testing at Item 8 and responded correctly on the first three items administered, be sure to give credit for Items 1–7 by adding 7 raw score points to the raw score. Record the subtest raw score on page 2 of the Record Form. See Figure 2.10 for a completed example.

Figure 2.10 Example of Scored Basic Concepts Items

			Score	
Demo	little	A B C		
Trial	sad	A B C	+	–

			Score	
Ages 3–4 START				
1.	inside	A B C	1	0
2.	up	A B C	1	0
3.	empty	A B C	1	0
4.	first	A B C	1	0
5.	not	A B C	1	0
6.	many	A B C	1	0
7.	tall	A B C	1	0
Ages 5–6 START				
8.	long	A B C	1	0
9.	full	A B C	1	0
10.	closest	A B C	1	0
11.	together	A B C	1	0
12.	without	A B C	1	0
13.	dry	A B C	1	0
14.	hard	A B C	1	0
15.	different	A B C D	1	0
16.	bottom	A B C	1	0
17.	same	A B C D	1	0
18.	large	A B C	1	0
19.	at the same time	A B C D	1	0
20.	between	A B C	1	0
21.	last	A B C D	1	0
22.	farthest from	A B C	1	0
23.	either one, all	A B or C D E	1	0
24.	all, except	A B C D	1	0
			Raw score	17

Basic Concepts Item Analysis	
Concept	Item
Direction/location/position	1, 2, 10, 16, 20, 22
Number/quantity	3, 6, 9, **23**, **24**
Sequence	4, 19, 21
Attribute	13, 14
Dimension/size	7, 8, 18
Same/different	15, 17
Inclusion/exclusion	5, 11, 12, **23**, **24**

Note. Item numbers in **bold** appear in more than one category.

Basic Concepts Item Analysis

An analysis of the child's responses can provide a preliminary description of concepts that the child understands. Use the Basic Concepts Item Analysis table on page 9 of the Record Form to determine error patterns in the child's responses. Circle the item numbers that were scored incorrect on the Item Analysis table at the end of the subtest. Analyze the items that are in error by the category of concepts and make decisions about how to proceed based on factors such as the child's age, developmental expectations, experiences, and culture.

Extension Testing for Basic Concepts

Use extension testing to examine the child's comprehension of basic concepts and to analyze semantic features of incorrect responses. Before extension testing, categorize errors according to the item analysis table. Review and compare the child's performance on other subtests that focus on language content (e.g., Expressive Vocabulary [EV], Following Directions [FD], Word Classes [WC]) for a more in-depth analysis of the child's understanding of semantic concepts.

Suggested Modifications

1. Give the child fewer choices. Instead of three to four choices, narrow down the selection of choices to two or three. Make note of the child's ability to maintain attention to the task and the accuracy of his or her responses with this modification.
2. Depending upon how much difficulty the child has with basic concepts, consider breaking the task down by level of difficulty (e.g., if the child cannot identify the target concept in a picture, try using photographs or actual objects with contrasting features and characteristics).

Find photos, pictures, toys, or other objects to demonstrate the target concept in each item (e.g., two wind-up toys—one slow and one fast). Place the pictures or objects in front of the child to demonstrate the target concept in each item. Ask the child to find the picture or object that matches the concept described.

Compare the results of extension testing to the results of formal testing to identify accommodations and/or modifications that the child may need to be successful in a classroom environment.

> ***Professional's Note.*** To further evaluate a child's understanding of basic concepts, administer the Boehm Test of Basic Concepts (3rd ed.; Boehm, 2001a), the Boehm Test of Basic Concepts–Preschool (3rd ed.; Boehm, 2001b), the Bracken Basic Concept Scale: Receptive (3rd ed.; Bracken, 2006a) or the Bracken Basic Concept Scale: Expressive (Bracken, 2006b).

Word Classes

Materials
Stimulus Book
Record Form
Start
Ages 4–6: Item 1
Repetitions
One allowed for test items
Discontinue
After five consecutive 0 scores
Objective
To evaluate the child's ability to perceive relationships between words that are related by semantic class features.
Relationship to Developmental Skills and Curriculum
The abilities evaluated relate to the understanding of word relationships which facilitate the development of categorization skills and semantic networks. Preschool and early elementary curriculum objectives focus on word associations to extend word meaning.
Relationship to Home and Classroom Activities
At home, the use of semantic relationships occurs in daily activities such as rephrasing or elaborating on the child's spoken utterances, storytelling, and role-playing. In the classroom, the use of associations is emphasized in pairing words with shared or opposite meanings and substituting synonyms for earlier acquired words.

Administration Directions

Administration directions are included in the Stimulus Book.

Special Considerations

Although Word Classes (WC) may be administered to children age 4, the scaled score is not used to derive an index score. Use the scaled score to determine how well the child understands relationships between related words.

Scoring the Items

Circle the words that the child gives in response to each item presented. The correct responses are in the Stimulus Book and in color in the Record Form. The child must respond by saying or indicating both correct responses to receive credit for that item. Score 1 if the child's response is correct and score 0 if the response is incorrect or the child makes no response, says "I don't know," or gives a similar response.

Scoring the Subtest

Sum the scores to compute the Word Classes (WC) raw score. See Figure 2.11 for an example. Then, record the subtest raw score on page 2 of the Record Form.

Figure 2.11 Example of Scored Word Classes Items

					Score	
Demo	A.) bread	B.) shoe	C.) apple			
Trial 1	A.) cat	B.) lamp	C.) dog		+	–
Trial 2	A.) clock	B.) paintbrush	C.) paint		+	–
Ages 4–6						**Score**
START 1.	A.) blankets	B.) brick	C.) pillow		1	0
2.	A.) book	B.) shovel	C.) pail/bucket		1	0
3.	A.) key	B.) door	C.) box		1	0
4.	A.) fork	B.) pencil	C.) crayon		1	0
5.	A.) pants	B.) toothbrush	C.) coat		1	0
6.	A.) slide	B.) swing	C.) flag		1	0
7.	A.) shoe	B.) hat	C.) sock		1	0
8.	A.) circle	B.) 5	C.) square		1	0
9.	A.) milk	B.) strawberry	C.) juice		1	0
10.	A.) watch	B.) table	C.) chair		1	0
11.	A.) foot	B.) hand	C.) belt		1	0
12.	A.) car	B.) bus	C.) plane		1	0
13.	A.) sweater	B.) ball	C.) blocks		1	0
14.	A.) orange	B.) cracker	C.) grapes		1	0
15.	A.) 3	B.) C	C.) M		1	0
16.	A.) key	B.) bat	C.) hammer	D.) nail	1	0
17.	A.) caterpillar	B.) alligator	C.) butterfly	D.) sun	1	0
18.	A.) picture	B.) bed	C.) sink	D.) couch/sofa	1	0
19.	A.) soap	B.) comb	C.) brush	D.) tissues	1	0
20.	A.) basket	B.) box	C.) boot	D.) bell	1	0
					Raw score	16

Word Classes Item Analysis			
Category	Item	Category	Item
Toys/leisure	2, 6, 13	Food and drink	9, 14
Home	1, 3, 10, 16, 18, 19, 20	Body parts	11
Clothing	5, 7	Transportation	12
School	4, 8, 15	Animals	17

Word Classes Item Analysis

An analysis of the child's responses can provide a preliminary description of the semantic class relationships that the child understands. Use the Word Classes Item Analysis table on page 10 of the Record Form to determine error patterns in the child's responses. Circle the item numbers that were scored incorrect on the Item Analysis table at the end of the subtest. Analyze the semantic category of the items that are in error and make decisions about how to proceed based on factors such as the child's age, developmental expectations, experiences, and culture.

Extension Testing for Word Classes

Use extension testing to further examine the child's comprehension of word relationships by semantic class. Before extension testing, review the items in error and note any pattern of errors by semantic category. Consider asking the child to explain how the selected items go together for each test item response. Use the child's responses given during the standard administration (whether the responses were correct or incorrect) to understand why the child made each selection. Compare the child's performance on other subtests that examine semantic knowledge (e.g., Expressive Vocabulary [EV], Following Directions [FD], Basic Concepts [BC]).

Suggested Modifications

Ask the child to categorize and classify pictures, photos, toys, or other objects by semantic categories (e.g., fruits, vegetables, liquids, meats, furniture, clothing, tools, toys, body parts). Then, ask the child to reclassify the pictures by selected characteristics, attributes, or conditions (e.g., hard, soft, hot, cold, big, small). This activity allows the child to demonstrate an understanding of several semantic relationships as well as mental flexibility in the ability to recategorize.

Compare the results of extension testing to the results of formal testing to identify accommodations/modifications that the child may need to be successful in a classroom environment.

Phonological Awareness

Materials
Stimulus Book
Record Form
Start
Ages 4–6: Item 1
Repetitions
One allowed for test items
Discontinue
After three consecutive Item Set scores of 0
Objective
To evaluate the child's knowledge of the sound structure of language and ability to manipulate sound through compound word and syllable blending, sentence and syllable segmentation, and rhyme awareness and production.
Relationship to Developmental Skills and Curriculum
The phonological skills evaluated are required for prereading and early reading acquisition. Preschool and early elementary curriculum objectives include manipulating sounds and producing rhymes.
Relationship to Home and Classroom Activities
At home, word play, such as rhyming or substituting sounds in words, is embedded in children's stories, nursery rhymes, jingles, and other word games. These activities are important in developing the prerequisite phonological awareness expected for preschool and early elementary literacy activities. In the preschool and early elementary classroom, the ability to process speech sounds, syllables, and words and to manipulate sound components is emphasized in rhyming, sound identification, and production in pre-reading and reading activities.

When to Administer Phonological Awareness

Consider administering this subtest to children ages 4–6 years whose literacy skills are not emerging as expected. Candidates for taking the Phonological Awareness (PA) subtest include children with language, articulation, and/or a

phonological disorder; children whose Preliteracy Rating Scale (PRS) score fell below the average range; children with a history of ear infections or hearing loss; and children who have not been exposed to preliteracy activities at home and/or preschool.

Administration Directions

The Phonological Awareness (PA) subtest consists of six Item Sets, each of which has specific administration directions (included in the Stimulus Book) and demonstration and trial items. For Item Sets C and D, demonstrate clapping or tapping, if necessary, to help the child understand the task.

Scoring the Items

Score 1 if the child's response is correct and 0 if the response is incorrect or the child makes no response, says "I don't know," or gives a similar response. Give credit to the production of nonsense words in the rhyme production task if the word(s) produced rhyme with the target presented.

Scoring the Subtest

Compute the raw score by adding the scores of each of the Item Sets. Add the scores of all the Item Sets to get the raw score. See Figure 2.12 for a completed example.

Figure 2.12 Example of Scored Phonological Awareness Items

Ages 4–6
START

A. Compound words			Item Set score
Demo	pan cake ✓		
Trial 1	rain bow	⊕ –	
Trial 2	back yard	⊕ –	
1.	bed room	1 0	
2.	in side	1 0	
3.	sun glasses	1 0	
4.	flower pot	1 (0)	3 /4

B. Syllable blending			
Demo	ki tten ✓		
Trial 1	pa per	⊕ –	
Trial 2	chi cken	⊕ –	
5.	can dy	1 0	
6.	pu ppy	1 0	
7.	e le phant	1 0	
8.	bi cy cle	1 0	4 /4

C. Sentence segmentation			
Demo	I like cats. (3) ✓		
Trial 1	We sing. (2)	⊕ –	
Trial 2	I play. (2)	⊕ –	
9.	See me. (2)	1 0	
10.	He plays games. (3)	1 (0)	
11.	Cats are soft. (3)	1 0	
12.	I like to eat cake. (5)	1 0	3 /4

D. Syllable segmentation			Item Set score
Demo	table (2) ✓		
Trial 1	bunny (2)	⊕ –	
Trial 2	open (2) (1)	+ ⊖	
13.	cookie (2)	1 0	
14.	apple (2)	1 (0)	
15.	butterfly (3)	1 (0)	
16.	banana (3)	1 (0)	1 /4

E. Rhyme detection			
Demo	nap–cap ✓		
Trial 1	cat–hat	⊕ –	
Trial 2	seat–meat	⊕ –	
17.	cake–lake	1 0	
18.	bib–sick	1 0	
19.	nut–hut	1 (0)	
20.	sit–bit	1 (0)	2 /4

F. Rhyme production			
Demo	fan ✓		
Trial 1	cap	⊕ –	
Trial 2	pen	⊕ –	
21.	hat	1 (0)	
22.	book	1 (0)	
23.	bed	1 (0)	
24.	top	1 (0)	0 /4

Raw score 13

Phonological Awareness Item Analysis

An analysis of the child's responses can provide a preliminary description of the child's ability to manipulate sounds and syllables in words and words in compound words. Determine error patterns in the child's responses by noting the number of incorrect responses in each Phonological Awareness (PA) task (Item Sets A–F). Analyze the task and complexity of the items in error to make decisions about how to proceed based on factors such as the child's age, developmental expectations, literacy level, experiences, and culture.

An in-depth medical history is also useful to make recommendations based on the child's performance. Children with chronic ear infections and/or hearing loss may have delays in phonological awareness. Children with severe articulation impairments may have problems with phonological awareness that target the phonemes on which they also have phonological or articulation errors.

Extension Testing for Phonological Awareness

Use extension testing to further examine the child's ability to manipulate sounds, syllables, and words. Before extension testing, review the performance recorded on the Preliteracy Rating Scale (PRS). Some children may perform poorly because they have not been exposed to phonological awareness or preliteracy tasks. Extension testing is an opportunity to teach the child the expectations of phonological awareness tasks and make observations on his or her performance given explicit instructions and multiple opportunities.

Suggested Modifications

1. Use a variety of books with rhyming patterns to expose children to sound and syllable manipulation.
2. Create word walls or word trees with similar-sounding words such as rhyming words or word families. Provide cards or lists of printed words for the child to repeat or have the child generate words following a directed pattern.

Compare the results of extension testing to the results of formal testing to identify accommodations and/or modifications that the child may need to be successful in a classroom environment.

Descriptive Pragmatics Profile

Materials
Record Form
Start
Ages 3–6: Item 1
Objective
To identify nonverbal and verbal pragmatic skills that may influence social and academic communication in context.
Relationship to Developmental Skills and Curriculum
The abilities evaluated are common daily skills observed across ages and genders in home and classroom situations that are necessary for expressing intentions and obtaining, responding to, and giving information.
Relationship to Home and Classroom Activities
Appropriate language use, interpretation of nonverbal communication skills, knowledge of social scripts (situations), and an understanding of both implied and explicitly taught rules are required in curricular and noncurricular activities, such as games, sports, and other collaborative activities, at home and in classroom situations.

When to Complete the Descriptive Pragmatics Profile

Consider completing this measure for children whose pragmatic skills are not emerging as expected (e.g., a child who demonstrates nonverbal pragmatic deficits that negatively influence communication with family in the home/community and peers/teachers in academic settings). The profile can be completed after a child has been diagnosed with a language impairment to determine the presence and extent of nonverbal or verbal communication difficulties in context and to plan appropriate intervention. The Descriptive Pragmatics Profile (DPP) may also be used with a child who has not been identified with a language impairment to obtain information for referral for additional testing.

Completing the Descriptive Pragmatics Profile

The Descriptive Pragmatics Profile (DPP) is completed by an adult who is familiar with the child's interactions and social skills in the context being observed (home, school, or other). Elicit information from a respondent (e.g., primary caregiver, teacher) who is familiar with the child and the child's culture. Another option may be to complete the Descriptive Pragmatics Profile (DPP) in an interview with the child's primary caregiver or teacher. Review and explain the profile to respondents who may be unfamiliar with the terms used (e.g., nonverbal direction, gestural cue) to ensure understanding of all items. If the primary caregiver or teacher is not available, the profile may also be completed by the examiner.

> *Note*. Ratings 3 and 0 merit special explanation. Circle 3 if the child always or almost always demonstrates the skill or consistently demonstrates skills in the same category but at a more advanced level. Circle 0 if the child never or almost never demonstrates the skill or is not old enough to demonstrate the skill.

Some special instruction is necessary to complete the profile. Be sure the respondent understands the following:

- If the behavior is not appropriate for the child (e.g., is not part of the child's culture or language background, the child is orthopedically impaired and unable to use gestures) circle NA for not appropriate and do not score the subtest. Use this information to report pragmatic skills qualitatively.
- Young children are not expected to be able to perform all skills on the Descriptive Pragmatics Profile (DPP).
- Rate items if the respondent has observed the target behavior even if he or she did not observe the behavior on the day the form is completed.
- There may be pragmatic skills not included in the Descriptive Pragmatics Profile (DPP) that may need to be added. Add, or have the respondent add, any information or comments that will be helpful to know about the child.

The great diversity and dynamic nature of American culture precludes compiling a list of social communication and preschool or classroom interaction behaviors that applies to all preschool children. The Descriptive Pragmatics Profile (DPP) addresses verbal and nonverbal behaviors that are expected for play, social, and early school interactions based on curriculum objectives of American preschool and early school classrooms.

Scoring the Descriptive Pragmatics Profile

The score for each item is the rating (number) that was circled to describe the frequency of occurrence for each skill (i.e., 3 = Always or Almost Always, 2 = Often, 1 = Sometimes, 0 = Never or Almost Never). Add the scores for each column in the Subtotals boxes. Sum the scores and write the total in the Raw score box. See Figure 2.13 for a completed Descriptive Pragmatics Profile (DPP) example.

- 3-point scores (Always or Almost Always) indicate appropriate development and use of the target skill.
- 2-point scores (Often) indicate that the target skill is emerging and that the only requirement may be to monitor the child to ensure that development continues.
- 1-point scores (Sometimes) also indicate that the skill is emerging but is not observed as consistently as those skills that are scored 2 points.
- 0-point scores (Never or Almost Never) indicate the target skill has not been observed and likely is not developed.

  Note. NA (not appropriate) indicates that the skill is inappropriate for the child because of cultural or language differences or because of physical limitations.

If any item is rated NA, the total score cannot be computed and the child's performance cannot be compared to that of his or her same-age peers. In this case, the Descriptive Pragmatics Profile (DPP) can be used as a comprehensive list of pragmatic skills and behaviors.

Figure 2.13 Example of a Completed Descriptive Pragmatics Profile

Descriptive Pragmatics Profile (DPP)

MATERIALS
Record Form

SCORES:
Academic Language Readiness Index

RESPONDENT:
☐ Primary caregiver ☐ Teacher ☑ Examiner

DIRECTIONS: Circle the number that best describes how often the child demonstrates each behavior. If the behavior is not culturally appropriate for the child, circle NA for not appropriate. See Chapter 2 in the CELF Preschool–3 Manual for scoring guidelines.

RATINGS: 3 = **A**lways or Almost Always 2 = **O**ften 1 = **S**ometimes 0 = **N**ever or Almost Never NA = **N**ot **A**ppropriate

Nonverbal Communication Skills					
The child appropriately responds to a familiar person's…	**A**	**O**	**S**	**N**	**NA**
1. facial expression (e.g., smiles, frowns, looks of surprise).	(3)	2	1	0	NA
2. tone of voice (e.g., angry, happy, sad).	3	2	(1)	0	NA
3. gaze when they reference an object in the immediate environment.	(3)	2	1	0	NA
4. nonverbal request such as outreached arms for a hug or being waved over to indicate "come here."	3	(2)	1	0	NA
5. nonverbal direction such as a finger raised to the lips to mean "be quiet" (or other nonverbally expressed rules of home and classroom).	3	2	1	(0)	NA
The child appropriately…					
6. uses facial expressions (e.g., smiles, frowns, demonstrates surprise).	3	2	(1)	0	NA
7. uses gestures to request objects (e.g., pointing to the object).	(3)	2	1	0	NA
8. uses gestures to reject objects (e.g., shakes head "no").	(3)	2	1	0	NA
Subtotals	12	2	2	0	

Conversational Routines and Skills					
The child appropriately…	**A**	**O**	**S**	**N**	**NA**
9. varies tone of voice (e.g., angry, happy, sad).	(3)	2	1	0	NA
10. greets others (i.e., waves or says hello/goodbye).	(3)	2	1	0	NA
11. looks at the person to whom he or she is speaking (i.e., maintains appropriate eye contact).	(3)	2	1	0	NA
12. initiates conversations with family and friends on a regular basis.	3	(2)	1	0	NA
13. engages in pretend play (e.g., pretend feeding, role-playing).	3	(2)	1	0	NA
14. demonstrates etiquette when expressing appreciation (e.g., "Thank you"), giving praise (e.g., "Good job"), or apologizing (e.g., "I'm sorry").	3	2	(1)	0	NA
15. engages in symbolic play (e.g., using a block as a phone, crayon as a microphone).	3	2	1	(0)	NA
16. demonstrates turn-taking rules during play and/or in the classroom for a minimum of 2 turns at a time.	3	2	1	(0)	NA
17. introduces new conversation topics.	3	(2)	1	0	NA
18. maintains attention while another person speaks.	3	(2)	1	0	NA
19. gains the attention of others appropriately (e.g., raises hand in the classroom to signal when he/she has something to say).	(3)	2	1	0	NA
20. interrupts by saying "excuse me," or in another acceptable manner.	(3)	2	1	0	NA
Subtotals	15	8	1	0	

Asking for, Giving, and Responding to Information					
The child appropriately…	**A**	**O**	**S**	**N**	**NA**
21. gives hugs or offers other expressions of affection.	3	2	(1)	0	NA
22. follows commands with a gestural cue (e.g., "Bring me the book" while pointing to the book).	3	2	(1)	0	NA
23. follows commands without a gestural cue (e.g., "Bring me the book").	3	(2)	1	0	NA
24. asks for help from others.	3	(2)	1	0	NA
25. stops a behavior, such as tapping a foot, when asked.	3	(2)	1	0	NA
26. asks questions if he or she is confused.	(3)	2	1	0	NA
27. offers to help others.	(3)	2	1	0	NA
28. tells details of an experience or story in the order they occurred.	(3)	2	1	0	NA
Subtotals	9	6	2	0	
Raw score	57				

Professional's Note. Skills targeted in items that are scored 0 are either not age appropriate for the child or are likely targets for direct intervention, skills targeted in items that are scored 1 are likely targets for either direct or indirect intervention, and skills targeted by items that are scored 2 are likely targets for monitoring and rechecking for continued development.

It may be helpful in developing intervention targets to determine why weaknesses or delays in the child's pragmatic repertoire exist. Draw potential conclusions about the child's language skills that are relevant to his or her performance in the home and classroom by compiling the Descriptive Pragmatics Profile (DPP) results, including added items, with the CELF Preschool–3 subtest results.

Preliteracy Rating Scale

Materials
Age-appropriate storybook with text
Writing instrument
Blank paper
Record Form
Start
Ages 3–6: Item 1
Objective
To identify preliteracy skills that may influence development of reading and writing skills.
Relationship to Developmental Skills and Curriculum
The abilities evaluated reflect milestones seen in the normal development of literacy skills in children ages 3–6.
Relationship to Home and Classroom Activities
At home, activities that foster preliteracy skills are developed in interactive situations such as story reading, role-playing, games, drawing, and other childhood activities. In preschool and kindergarten classrooms, school and reading readiness activities include storytelling, workbook assignments, sing-along, fingerplays, and other activities that combine speaking or singing with symbol learning and use.

Special Considerations

Although the Preliteracy Rating Scale (PRS) may be administered to children age 3, the scaled score is not used to derive an index score. Use the scaled score to determine how well the child is acquiring preliteracy skills.

When to Complete the Preliteracy Rating Scale

Consider completing this measure for children whose literacy skills are not emerging as expected (e.g., a child who demonstrates no interest in being read to by a caregiver, a child with a language impairment). Unlike the Phonological Awareness (PA) subtest, the Preliteracy Rating Scale (PRS) can be completed for a child who is too young (age 3) or whose language skills are too impaired to be administered the Phonological Awareness (PA) subtest.

Completing the Preliteracy Rating Scale

The Preliteracy Rating Scale (PRS) is a form completed by an adult who is familiar with the child's early reading and writing skills. Some of the items may be elicited for initial information; however, it is important to have familiarity with the child and the child's culture. If not, elicit or confirm information from a respondent (e.g., primary caregiver, teacher) who is familiar with the child. The Preliteracy Rating Scale (PRS) may also be completed in an interview with the child's primary caregiver or teacher. Review and explain the form to respondents who may be unfamiliar with some of the terms used (e.g., self-corrects) to ensure understanding of all items.

> *Note*. Ratings 3 and 0 merit special explanation. Circle 3 if the child always or almost always demonstrates the skill or consistently demonstrates skills in the same category but at a more advanced level (e.g., on Item 21, the child writes his or her name instead of scribbling). Circle 0 if the child never or almost never demonstrates the skill or is not old enough to demonstrate the skill.

Some special instruction is necessary for the respondent to complete the form. Be sure the respondent understands the following:

- If the skill is not appropriate for the child (e.g., is not part of the child's culture or language background, the child is orthopedically impaired and unable to turn pages or write) circle NA for not appropriate and do not score the subtest. Use this information to report preliteracy skills qualitatively.
- Young children are not expected to perform skills listed at higher levels on the rating scale. In this situation, respondents may be inclined to circle NA. However, when deriving a score, rescore these items as Never or 0.
- Rate items if the respondent has observed the target behavior even if he or she did not observe the behavior on the day the form is completed.
- There may be early literacy skills not included in the Preliteracy Rating Scale (PRS) that may need examination. Add, or have the respondent add, any information or comments that will be helpful in evaluating a child's early reading and writing skills.

Scoring the Preliteracy Rating Scale

The score for each item is the rating (number) that was circled to describe the frequency of occurrence for each skill (i.e., 3 = Always or Almost Always, 2 = Often, 1 = Sometimes, 0 = Never or Almost Never). Add the scores for each column in the Subtotals boxes. Sum the scores and write the total in the Raw score box. See Figure 2.14 for an example of a completed Preliteracy Rating Scale (PRS).

- 3-point scores (Always or Almost Always) indicate appropriate development and use of the target skill.
- 2-point scores (Often) indicate that the target skill is emerging but is not a consistently established behavior.
- 1-point scores (Sometimes) indicate that the skill is emerging but is not observed as consistently as those skills that are scored 2 points.
- 0-point scores (Never or Almost Never) indicate that the target skill has not been observed and likely is not developed.

  Note. NA (not appropriate) indicates that the skill is inappropriate for the child because of cultural differences or physical limitations.

If any item is rated NA, the total score cannot be computed, and the child's performance cannot be compared to that of his or her same-age peers. In this case, use the Preliteracy Rating Scale (PRS) as a comprehensive list of behaviors that the child demonstrates.

Figure 2.14 Example of a Completed Preliteracy Rating Scale

Preliteracy Rating Scale (PRS)

MATERIALS
Storybook with text
Writing instrument
Blank paper
Record Form

SCORES:
Early Literacy Index

RESPONDENT:
☐ Primary caregiver ☑ Teacher ☐ Examiner

DIRECTIONS: Circle the number that best describes how often the child demonstrates each behavior. If the behavior is not culturally appropriate for the child, circle NA for not appropriate. See Chapter 2 in the CELF Preschool–3 Manual for scoring guidelines.

RATINGS: 3 = **A**lways or Almost Always 2 = **O**ften 1 = **S**ometimes 0 = **N**ever or Almost Never NA = **N**ot **A**ppropriate

Early Reading Skills

The child…	A	O	S	N	NA
1. holds a book right side up.	(3)	2	1	0	NA
2. points to the book's title when asked.	(3)	2	1	0	NA
3. points to the author's name when asked.	(3)	2	1	0	NA
4. turns the pages in books one at a time in front-to-back order.	(3)	2	1	0	NA
5. indicates where to start reading (i.e., points to the first word in a sentence).	3	(2)	1	0	NA
6. indicates where to stop reading (i.e., points to the last word in a sentence or points to the punctuation mark).	3	(2)	1	0	NA
7. pretends to read by pointing to words and making up a sentence in the story.	(3)	2	1	0	NA
8. can point to a picture when an adult names it.	(3)	2	1	0	NA
9. understands that a group of letters forms a word.	(3)	2	1	0	NA
10. can tell what happened first, next, and last in a familiar story (recalls a sequence of events).	(3)	2	1	0	NA
11. identifies 5 or more printed numbers.	(3)	2	1	0	NA
12. names 5 or more printed numbers.	3	(2)	1	0	NA
13. identifies 5 or more letters of the alphabet.	(3)	2	1	0	NA
14. names 5 or more letters of the alphabet.	(3)	2	1	0	NA
15. recognizes own printed name and familiar printed words (e.g., "dad," "mom," "dog," or "cat").	3	(2)	1	0	NA
16. says the sound that 5 or more familiar letters make (e.g., when asked what sound an "s" makes, the child says "s-s-s").	3	2	(1)	0	NA
17. joins 2 letters to make a syllable or word (e.g., combining "a" and "t" to say "at").	3	2	1	(0)	NA
18. joins 3 letters to make a syllable or word (e.g., combining "c," "a," and "t" to say "cat").	3	(2)	1	0	NA
Subtotals	33	10	1	0	

Early Writing Skills

The child…	A	O	S	N	NA
19. writes, draws, and/or scribbles to imitate writing.	3	2	(1)	0	NA
20. copies circles and squares.	(3)	2	1	0	NA
21. writes and/or scribbles from the left to the right side of a page.	(3)	2	1	0	NA
22. draws and/or writes within the space provided.	3	2	1	(0)	NA
23. produces recognizable simple drawings.	3	2	(1)	0	NA
24. copies own name accurately.	3	(2)	1	0	NA
25. writes own name accurately.	3	(2)	1	0	NA
26. copies numbers from 1–5 accurately.	3	(2)	1	0	NA
27. writes numbers from 1–5 accurately.	3	(2)	1	0	NA
28. copies 5 or more single letters accurately.	3	(2)	1	0	NA
29. writes 5 or more single letters accurately.	(3)	2	1	0	NA
30. writes most letters accurately.	(3)	2	1	0	NA
31. uses correct spacing between letters or words (i.e., letters are not written on top of or joined to other letters).	3	2	(1)	0	NA
32. writes on printed lines when provided.	3	2	(1)	0	NA
33. copies short words from the board accurately (e.g., "go," "dog").	3	2	1	(0)	NA
34. writes letters and numbers correctly (e.g., not reversed, as in "d" for "b").	3	(2)	1	0	NA
35. self-corrects errors if letters or numbers are copied incorrectly.	3	(2)	1	0	NA
Subtotals	12	14	4	0	
Raw score	74				

Professional's Note. Skills targeted in items that are scored 0 are either not age appropriate for the child or are likely targets for direct intervention, skills targeted in items that are scored 1 are likely targets for either direct or indirect intervention, and skills targeted by items that are scored 2 are likely targets for monitoring and rechecking for continued development.

Connected Speech Sample

Materials
Stimulus Book
Record Form
No Juice! Book
Start
Ages 3–6: Page 1 of the *No Juice!* Book
Objective
To assess elements of macrostructure and microstructure in narrative production. The macrostructure of a narrative refers to the key components and overall organization of the story. A score for the use of story grammar and qualitative descriptions of story organization and recall are provided as part of the Connected Speech Sample (CSS) analysis. Alternatively, the microstructure examines the linguistic productivity and complexity at the level of utterances and/or sentences. A table is provided in the Record Form for professionals to note the use of linguistic structures and compare with the child's performance on the Word Structure (WS) subtest. The CELF Preschool–3 Connected Speech Sample (CSS) scoring provided can be used in conjunction with a further analysis based on the professional's clinical judgment.
Relationship to Developmental Skills and Curriculum
As part of the classroom literacy curriculum, children are frequently exposed to the fiction genre and are encouraged to share stories that fit a particular model (Gleason & Ratner, 2017). Although preschoolers' narrative skills are limited because of their young age, most children demonstrate some use of story structure.
Relationship to Home and Classroom Activities
As children develop, narratives become increasingly embedded in home and classroom activities. Narratives are used to socialize with peers, script pretend play, regulate through processes with self-talk, and interact with adults (Miller, 2016).

When to Complete the Connected Speech Sample

Consider completing this measure for children whose language skills are not emerging as expected. The Connected Speech Sample (CSS) analysis can be completed after a child has been diagnosed with a language impairment to determine or confirm overall areas of need and to plan appropriate intervention. The Connected Speech Sample (CSS) subtest can also be used with a child who has not been identified with a language impairment to obtain information on academic language readiness based on the child's familiarity with narrative structures.

Administration Directions

The administration directions for this subtest can be found in the Stimulus Book along with the story text that is read aloud to the child.

Record the Child's Narrative

Use the space provided in the Record Form to transcribe the child's story retell verbatim. Another option is to audio record the child's story retell and transcribe it later. If choosing to audio record this subtest, please make sure that the recording equipment is in working order before beginning.

Analyzing and Scoring Macrostructure

The table at the bottom of page 14 in the Record Form provides descriptions of story organization and recalling facts and details. The overall categories are Acceptable, Emerging, and Beginning. Circle the description that most accurately describes the child's narrative to provide qualitative information about the child's overall story organization and ability to recall facts and details (see Figure 2.15).

The Story Grammar scoring table on page 15 in the Record Form can be used to score the following story components: title, setting, characters, main idea, and events in the beginning, middle, and end. Circle each component that the child used in his or her narrative and score each story grammar component according to the point values found in the scoring table. Sum the score points to compute the total raw score for the subtest. See Figure 2.15 for a completed example. Record the story grammar raw score on page 15 of the Record Form.

Figure 2.15 Example of Completed Connected Speech Sample Story Grammar Scoring Tables

DIRECTIONS: Circle the text below that most accurately describes the child's narrative.

	Acceptable	Emerging	Beginning
Story organization	• Adequately developed and organized • Story parts and details are organized in a recognizable pattern with a clear beginning, middle, and end.	• Developing and partially organized • Story parts and details are organized in an emerging pattern in either the beginning, middle, or end.	• Inadequately developed with little or no organization • Story parts and details are jumbled and do not follow any recognizable pattern of organization. Outcomes are not clear.
Recalling facts and details	• Adequately recalled • Story parts and supporting details are adequately recalled in the beginning, middle, and end of the story retell.	• Developing and partially recalled • Story parts and some details are recalled but they are inconsistently distributed among the beginning, middle, and end.	• Inadequate and minimally recalled • Story parts are minimally recalled and supporting details are generally missing in the beginning, middle, and end.

Story Grammar			
	2 points for each response	1 point for each response	Score
Title (max 2 points)	No Juice Juice		2 /2
Setting	lunch/lunchtime home/house kitchen store		4 /8
Characters	Mom Tim Sally Alex Grandma manager	brother boy sister girl lady man	6 /12
Main idea (max 2 points)	no juice/(food item) do not have X		2 /2
Events			
Beginning	make lunch Mom asks X to get (food item) X can't find (food item) get in car put on seat belts		10/10
Middle	go to store push cart get out (grocery) list get juice/(food item) hear (Grandma's) voice fall drop juice clean up get a new/another juice carry (food item) put (food item) in cart see Grandma		6 /24
End	go home carry (food/groceries) Grandma come over eat lunch		2 /8
		Raw score	32

The child may include details in his or her narrative that are not included in the scoring rubric. In this instance, add comments or notes about these observations to discuss in a report of the child's performance. It is important to note that children from different language and cultural communities structure their narratives in diverse ways

(Gleason & Ratner, 2017). Because of this, it's important to understand a child's cultural and linguistic background to adequately interpret the narrative style used. Refer to the Cultural Diversity section of this chapter for more information on cultural considerations.

Analyzing Microstructure

The analysis of the child's linguistic structures for the Connected Speech Sample (CSS) provides a description of the child's narrative microstructure. Narrative microstructure is defined as the internal linguistic features that occur in narratives (Kaderavek, 2015). These features include, but are not limited to, a child's word structures (morphemes). Use the Language Structures table on page 15 of the Record Form that includes an adapted list of Brown's (1973) grammatical morphemes and other structures to rate the child's level of mastery as Acceptable, Emerging, or Beginning for each structure listed. Acceptable use of a language structure indicates that the child uses the language structure at a mastery level of 90%–100% accuracy (Brown 1973). Emerging use of a language structure indicates that the child is in a transitional stage of development and demonstrates at least one correct production. Beginning use of a language structure indicates that the child has not yet developed the skill and is unable to apply the structure in appropriate situations.

To assign an appropriate rating, count how many times the child correctly produced a specific structure and the amount of times that structure was required in the child's narrative (obligatory context) or produced incorrectly to obtain a percentage of accuracy. For example, if a child correctly used the regular past tense (-ed) four times in his or her narrative and should have used the (-ed) form a total of six times, that child's accuracy for that structure is 67% or Emerging. An Emerging rating for this structure may or may not be a concern based on the child's age and when mastery of this language structure is expected. For example, because the regular past tense form is expected to be mastered between the ages of 3:0–3:6, an accuracy of 67% may not be a concern for a child who is 3:1 but is a concern for a child who is 5:1. Refer to Chapter 5 for the ages of mastery expected for the language structures analyzed. Figure 2.16 shows an example of a completed language structures table.

Figure 2.16 Example of Completed Connected Speech Sample Language Structures Table

Language Structures

KEY:	Acceptable: ≥ 90% correct	Emerging: At least 1 correct production	Beginning: 0% correct

	Word Structure item	Examples from "No Juice!" story retell	Acceptable	Emerging	Beginning
			check ✔		
Progressive (-ing) 9/10 = 90%	1 (sleeping), 3 (walking)	is walking	✓		
Preposition (in) 3/3 = 100%	2 (in)	in basket	✓		
Preposition (on) 1/1	4 (on)	on table		✓	
Regular plural 4/5 = 80%	8 (horses)	fruits, kids, boxes		✓	
Irregular past tense 1/1	22 (blew), 24 (fell)	fell, ran, came		✓	
Possessive ('s) 2/3 = 67%	9 (dog's)	Mommy's list, boy's juice		✓	
Articles (a, the) 18/20 = 90%		a girl, the store	✓		
Regular past tense (-ed) 4/6 = 67%	18 (climbed)	grabbed, slipped		✓	
Regular third person singular (-s) 0/3 = 0%	11 (sleeps), 12 (flies)	walks, runs			✓
Irregular third person singular 0/1	*	does, has			
Copula (main verb "to be") 7/7 = 100%	6 (it is big), 19 (she is), 20 (they are)	he is tired, he's tired	✓		
Auxiliary (helping verb "to be") 14/14 = 100%		Grandma is eating, Grandma's eating	✓		
Objective pronoun 6/8 = 75%	5 (her), 10 (him)	me, you, him, her, it, us, them		✓	
Possessive pronoun 2/2	7 (hers)	my, your, his, her, its, our, their		✓	
Subjective pronoun 6/7 = 86%	16 (she does), 17 (he is)	I, you, he, she, it, we, they		✓	
Reflexive pronoun 0	21 (herself)	myself, yourself, himself, herself, itself, ourselves, themselves			
Noun derivation 0	13 (singer)	manager			
Comparative and superlative 0	14 (faster), 15 (fastest)				

*Structures not included in the WS subtest.

Note. Refer to Chapter 5 of the CELF Preschool–3 Manual for interpretation.

Use caution when assigning levels of development because there may not be enough obligatory contexts to demonstrate acceptable or beginning use of a structure in one narrative sample. It is recommended that at least three obligatory contexts be present in the child's narrative before assigning a rating of Acceptable or Beginning (Balason & Dollaghan, 2002). Consider collecting more language samples to obtain higher levels of accurate performance. Do not assign a rating of Acceptable to structures that resulted in fewer than three obligatory contexts. An Emerging rating may be assigned where there is at least one correct production of a target structure in the child's narrative. Do not assign a rating of Beginning to structures that were not observed. Use a Beginning rating to describe incorrect use of a structure in at least three obligatory contexts to indicate that the structure has not been developed.

The Language Structures table in the Record Form includes a side-by-side view of the Word Structure (WS) item analysis so that the child's performance on the CELF Preschool–3 Word Structure (WS) subtest can be compared to his or her performance on the use of language structures in the narrative sample. Note that not all structures in the Word Structures (WS) subtest overlap with Brown's grammatical morphemes, but the majority of the structures can be analyzed and compared. Determine if the child's performance was similar in different contexts. Include the information in a comprehensive profile of the child's language abilities.

For additional information, use the child's narrative to calculate the mean length of utterance (MLU). MLU can be calculated by dividing the number of morphemes by the total number of utterances. Refer to Chapter 5 for information on the age expectancies for MLU and corresponding stages of syntax development. Use age expectations, observations, the child's overall performance during testing, and clinical judgment to make recommendations on areas of need.

Pragmatic Activities Checklist

Materials
Record Form
Gather materials for selected activities
Start
Ages 3–6: Item 1
Objective
To provide an opportunity to observe the child's functional communication skills during authentic conversational interactions to identify verbal and nonverbal behaviors that may negatively influence social and academic communication.
Relationship to Developmental Skills and Curriculum
The behaviors observed across ages and genders in home and school situations that are necessary for effective communication.
Relationship to Home and Classroom Activities
The interpretation of nonverbal and verbal communication behaviors, knowledge of social scripts (common situations) and routines, and the understanding of both implied and explicitly taught communication rules are required in home and classroom activities.

The Pragmatic Activities Checklist (PAC) provides a checklist of communication behaviors. Observe the child while taking part in these activities and throughout the time with him or her (e.g., meeting the child, walking with him or her back to the testing room, during the administration of any of the CELF Preschool–3 subtests). Each behavior on this checklist is noted as not acquired. Check any behaviors *not* observed during testing. The behaviors are developmental; depending on the child's age, a checked item may not necessarily be a concern.

Engage the child in three activities to complete the checklist. Choose activities from the list of six provided in the Record Form. When preparing to engage the child in the activities, note the following:

- Each activity is designed to take 3–5 minutes.
- Use professional judgment to determine when and how to engage the child in each activity. One possibility is to begin with one or all three activities to establish rapport with a child before beginning standard testing. Other possibilities include presenting each activity as a "break" between administrations of other CELF Preschool–3 subtests or presenting all three activities after completing the administration of all the CELF Preschool–3 subtests.
- Carefully review the checklist before working with the child to identify the behaviors to observe and provide the child with frequent opportunities to demonstrate the behaviors.
- During each activity, take advantage of every opportunity to converse with the child to better observe him or her changing topics, picking up on or ignoring conversational cues, joining in conversational topics, taking appropriate conversational turns, using eye gaze appropriately, etc.

- Because it is important to be an active participant in each pragmatic activity, do not mark the checklist during the activity sessions or while interacting with the child during the CELF Preschool–3 testing session. Marking the checklist or making notes during the activity will not provide authentic communication interactions. Be keenly aware of the child's verbal responses and observe nonverbal behaviors and record these after the testing session.

Violating Conversation Rules

During any of the pragmatic activities, it may be possible to violate conversation rules that create opportunities for the child to repair conversation, request clarification, or direct and redirect the activity. Violating the rule of a conversation or interaction may cause a child to respond in the desired manner. The following are examples of how to violate conversation rules to elicit pragmatic behaviors:

- Suddenly change the topic of discussion when talking to the child to observe if the child acknowledges it and requests clarification or appears to be confused.
- While engaged in an activity, "forget" to provide the child one of the materials needed to complete the task (e.g., a puzzle piece, glue, scissors). Perhaps leave the material visible but out of reach.
- Make a mistake and give the child a different snack than the one requested.
- Begin talking before the child finishes talking.
- During the Teach and play a game activity, deliberately violate one of the rules to provide an opportunity to observe the child's response. For example, in the card game "Battle," the cards are shuffled and dealt face down so that they are distributed equally between two players. Each player takes a card from the top of his or her deck and places it face up next to the other player's card. The person with the highest number wins and adds the two cards to his or her pile. Violate the rules by taking the two cards when the child has won the "battle" to see how the child responds.

Example of Pragmatic Activity Interaction

The following table provides an example of how pragmatic activity interactions may proceed for the Have a snack activity. Please note, this is an abbreviated example of how the activity might proceed; it is not a script to follow.

Examples of interactions	Possible behaviors
Call the child's name if he or she is not looking at you. If the child does not respond, touch the child's hand and then call the child's name. Smile at the child.	Child turns to you. Child makes eye contact. Child smiles at you. Child's timing is appropriate or inappropriate.
Ask the child, "Would you like a snack?" If the child does not respond, say, "I want a snack. Do you want a snack too?"	Child responds verbally or nonverbally, gives no response, or demonstrates appropriate/inappropriate turn taking.
Say, "We can/I have cookies/crackers," and indicate containers. Continue by inviting the child to partake in the snack (vending machine, your bag, box, shelf, etc.) Turn to look at the containers, then turn to look at the child. If the child does not respond, point to the containers and say, "Look. There are some cookies and crackers."	Child's use of triadic gaze (child looks at you, then the referred object, then back at you). Child makes requests, comments, acknowledgments, etc.
Offer a snack more than once or give permission for the child to partake in the snack, if needed.	Child requests or makes other verbal or nonverbal responses.
Introduce topics about the snack (kind of cookies/pretzels, taste, brand) or introduce topics about related information that is not immediately present but appropriate (favorite snacks, what you/the child had for lunch) or ask questions related to state of satiety ("Do you want more?" "Are you hungry/not hungry?").	Child requests and makes other verbal or nonverbal responses.
Introduce a topic that the child may need to request clarification about. Look for an opportunity to request clarification about something the child said.	Child requests clarification verbally ("Huh?" "What?" "What is it?") or nonverbally (palms up, shrugs, changes facial expression). Child takes appropriate conversational turns. Child make requests.
Ask or tell about an event where a similar snack was served. Describe the event.	Child's responses, interests, and politeness, etc.

Pragmatic Activities

Consider each child's abilities; age; interests; gender; and cultural, socioeconomic, and experiential background when selecting the three pragmatic activities to use.

Art Activity (Color/Draw/Paint/Paste Stickers on a Page or Booklet)

Materials

Materials will vary.

Procedure

Invite the child to participate in the activity by saying something like, **Let's make a piece of art.**

Spend no more than 5 minutes on the activity. Converse with the child in a natural way during the activity. The following examples are possible topics of conversation:

- Selecting colors/materials for the art piece
- Planning what the child would like to make/create
- Favorite movie/TV/media characters that can be incorporated into the art either with stickers of those characters or by drawing them
- The child's previous experiences with art projects

Have a Snack

Materials

Materials will vary.

> *Note*. Before testing, check with the child's caregiver to make sure the child does not have any food allergies and that the caregiver has no objections to the child having a snack.

Procedure

Provide a snack for the child to eat or drink. Have the food/drink available in the room or invite/walk with the child to a vending machine (make sure to have money if choosing this option).

Invite the child to participate in the activity by saying something like, **Let's take a break. Why don't we get something to eat or drink?** or **Let's take a break now and go get something from the vending machine.**

Spend no more than 5 minutes on the activity. Converse with the child in a natural way during the activity. The following examples are possible topics of conversation:

- Preparing food (e.g., opening, cutting, pouring)
- Offering/sharing food
- Discussing this food and general food likes/dislikes
- Discussing traditions related to food or meals
- Discussing the day's breakfast/lunch
- Cleaning up (e.g., putting away, tidying up)

Play With Toys (Blow Bubbles/Roll a Ball or Toy Car)

Materials

Bubbles with a bubble wand or a ball/car that can be rolled back and forth

Procedure

Invite the child to participate in the activity by saying something like, **Do you want to see what I have?**

Spend no more than 5 minutes on the activity. Converse with the child in a natural way during the activity. The following examples are ways to elicit communication:

- Ask the child where (in what direction) to blow the bubbles or roll the ball/car.
- Give options for size (i.e., big bubbles, little bubbles), quantity (i.e., a few, a lot), speed (i.e., fast, slow), and location (i.e., here, there, under, in).
- Deliberately stop the activity and wait to see if the child requests recurrence.
- Make the object (i.e., bubbles, ball/car) go near and far from the child to observe joint attention skills.
- Gain the child's attention by calling his or her name.
- Ask about the child's previous experiences with the activity.

Construct Something (Make a Paper Airplane/Build a Simple Figure Out of Blocks/Put Together a Puzzle)

Materials

Materials will vary.

Procedure

Invite the child to participate in the activity by saying something like, **Let's make paper airplanes. I made one yesterday but couldn't get it to fly. Let's see if you have better luck than I did.**

Spend no more than 5 minutes on the activity. Converse with the child in a natural way during the activity.

If making a simple paper airplane with the child, the following examples are possible topics of conversation:

- Previous experiences the child has had with paper or model airplanes
- Experiences flying on an airplane (e.g., trips taken, trips family have taken)
- Different kinds of airplanes
- Occupations involving aviation (e.g., pilot, flight attendant)
- Possible reasons the paper airplane flies well or poorly once it is constructed

If choosing to assemble a simple block figure or a simple puzzle, the following examples are possible topics of conversation:

- Other block sets or puzzles the child has put together
- How easy or difficult the pieces are to put together
- How frustrating it can be to lose one of the pieces

Teach and Play a Game

Materials

Deck of cards (e.g., for Go Fish or Concentration), a simple board game, or writing utensils and a sheet of paper (e.g., for tic-tac-toe or connect the dots)

Procedure

Invite the child to participate in the activity by saying something like, **Let's play a game. Do you know how to play** [name of the game you have chosen]**?**

An alternate form of this activity is to have the child teach the game.

If the child does not know how to play the suggested game, teach it to him or her and play for a few minutes. If the child knows how to play the game, spend no more than 5 minutes playing and talking. Converse with the child in a natural way during the activity. The following examples are possible topics of conversation:

- Other favorite card or board games
- Rules of other games
- People the child likes to play games with
- Luck versus skill in games
- Favorite outdoor games
- Games the child has seen on television
- Made up games (novel games)
- Games the child can teach (with the materials on hand)

Talk About a Movie From a Website

Materials
Advertisements for movies playing in the area

The greater the variety of films advertised on the website, the better. (Or use TV listings.) Review the website before presenting it to the child to ensure all content is appropriate.

Procedure
Invite the child to participate in the activity by saying something like, **I need your help with something. My son/daughter/niece/nephew is about your age and I'm thinking of taking him/her to a movie this weekend. Can you look at this website with me and help me pick out a couple of good movies that you think he/she might like?**

Spend no more than 5 minutes on the activity. Converse with the child in a natural way during the activity. The following examples are possible topics of conversation:

- Selecting one of the movies
- Likes/dislikes about movies
- Pros/cons of one movie over another
- Movies you have/the child has seen recently
- Movies seen at home/school

Completing the Pragmatic Activities Checklist

Complete the checklist after observing the child's participation in these pragmatic activities, as well as his or her behavior during the CELF Preschool–3 subtest administration. When completing the checklist, include observations during *all* of the time spent with the child.

In the Record Form, indicate the three activities chosen to engage in with the child. Check the box next to an item if the child was not observed demonstrating a target behavior (e.g., use gestures). If the behavior is not appropriate given the child's age or cultural/linguistic background (e.g., personal space is closer for Asian culture than Western culture), make a note beside the item in the Record Form.

COMPLETING THE SCORING SUMMARY

Pages 1 and 2 of the Record Form present the scoring summaries for recording subtest raw scores, converted norm-referenced scores, confidence intervals, and a chart to show subtest performance. Figures 2.17 and 2.18 show completed examples of pages 1 and 2 of the Record Form.

Figure 2.17 Example of Completed Page 1 of the Record Form

CELF® PRESCHOOL 3

Clinical Evaluation of Language Fundamentals–PRESCHOOL

Record Form

	Year	Month	Day
Date tested	2020	~~4~~ 3	~~1~~ 31
Date of birth	2016	1	16
Age	4	2	15

Child's name B. Child

Address One St.

Age 4 Sex: ☐ Female ☑ Male Grade PK School Stallion Elementary

Dialect: ☑ Standard American English (SAE) ☐ Other

Examiner Mr. Clay

Reason for testing concerns with language and school readiness

1A

Subtest scaled score		Core Language Score 3–6	Receptive Language Index 3–4	Receptive Language Index 5–6	Expressive Language Index 3–6	Language Content Index 3–4	Language Content Index 5–6	Language Structure Index 3–6	Academic Language Readiness Index 3–6	Early Literacy Index 4–6
Sentence Comprehension	SC	8	8					8		
Word Structure	WS	6			6			6		
Expressive Vocabulary	EV	4			4	4			4	
Following Directions	FD		10			10			10	
Recalling Sentences	RS				4			4		
Basic Concepts	BC		5			5				
Word Classes	WC									
Phonological Awareness	PA									10
Descriptive Pragmatics Profile	DPP								10	
Preliteracy Rating Scale	PRS									8

1B

Core Language Score and indexes	Core Language Score	Receptive Language Index		Expressive Language Index	Language Content Index		Language Structure Index	Academic Language Readiness Index	Early Literacy Index
Sum of subtest scaled scores	18	23		14	19		18	24	18
Standard score	77	85		71	79		77	86	93
Standard score points –/+	7	5		6	6		5	7	5
Confidence interval (90 % level)	70 to 84	80 to 90	to	65 to 77	73 to 85	to	72 to 82	79 to 93	88 to 98
Percentile rank	6	16		3	8		6	18	32
Percentile rank confidence interval	2 to 14	9 to 25	to	1 to 6	4 to 16	to	3 to 12	8 to 32	21 to 45

1C

Composite Score Chart

Score	CLS 77	RLI 85	ELI 71	LCI 79	LSI 77	ALRI 86	ErLI 93
160							
155							
150							
145							
140							
135							
130							
125							
120							
115							
110							
105							
100							
95							[×]
90		[×]				[×]	
85							
80	[×]			[×]	[×]		
75							
70			[×]				
65							
60							
55							
50							
45							
40							

1D

Pairwise comparisons	Score 1	Score 2	Difference	Critical value	Significant difference (Y or N)	Prevalence in standardization sample	Statistically significant level
RLI–ELI	85	71	14	8.15	Y	>25%	.05/(.10)
LCI–LSI	79	77	2	8.15	N	>25%	.05/(.10)

Notes: Student received early intervention services in the home until age 3. Parents report that language skills are still a concern. Language assessment recommended to assist in educational programming decisions for Kindergarten.

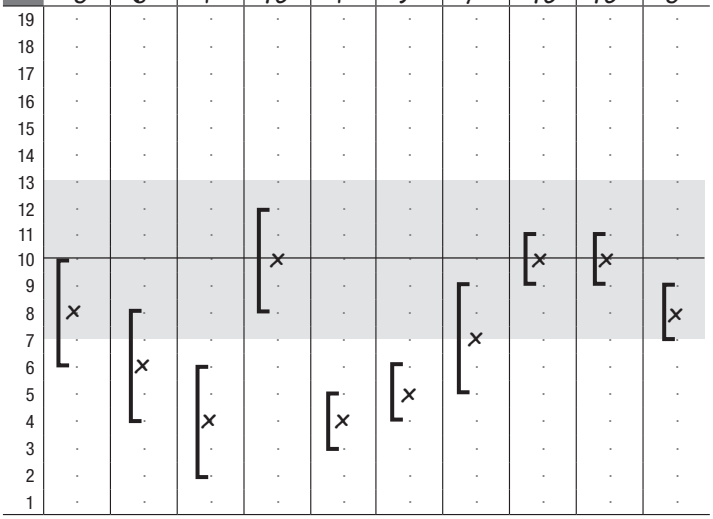
Figure 2.18 Example of Completed Page 2 of the Record Form

2A

Subtest scaled score		Raw score	Scaled score	Scaled score points –/+	Confidence interval (70% level)	Percentile rank	Percentile rank confidence interval	Age equivalent	Growth scale value
Sentence Comprehension	SC	11	8	2	6 to 10	25	9 to 50	3:8	505
Word Structure	WS	5	6	2	4 to 8	9	2 to 25	<3:0	451
Expressive Vocabulary	EV	7	4	2	2 to 6	2	0.4 to 9	<3:0	460
Following Directions	FD	13	10	2	8 to 12	50	25 to 75	4:5	517
Recalling Sentences	RS	5	4	1	3 to 5	2	1 to 5	<3:0	411
Basic Concepts	BC	9	5	1	4 to 6	5	2 to 9	<3:0	480
Word Classes (Ages 4–6)	WC	8	7	2	5 to 9	16	5 to 37	<4:0	487
Phonological Awareness (Ages 4–6)	PA	10	10	1	9 to 11	50	37 to 63	4:2	488
Descriptive Pragmatics Profile	DPP	74	10	1	9 to 11	50	37 to 63	3:11	551
Preliteracy Rating Scale	PRS	39	8	1	7 to 9	25	16 to 37	3:7	490

2B Scaled Score Chart

Score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS
	8	6	4	10	4	5	7	10	10	8



2C Behavioral Observation Checklist

Check the behaviors that you observed during testing. Consider the child's age as you respond to each item.

Physical activity level	
The child's activity level throughout the test was generally:	☑ appropriate ☐ too active ☐ not active enough
Overall, the child was fidgety/restless:	☐ never ☑ some of the time ☐ most of the time
Attention to task	
The child maintained attention:	☐ throughout testing ☑ most of the time ☐ some of the time ☐ never
The child's attention to the task generally lasted:	☑ more than 10 minutes ☐ 6 to 10 minutes ☐ 3 to 5 minutes ☐ less than 3 minutes
The child engaged in off-task behaviors:	☐ never ☑ occasionally ☐ often
Response latency	
Responses were generally given in:	☑ 0 to 15 seconds ☐ 16 to 30 seconds ☐ more than 30 seconds
Response rate was generally:	☑ appropriate ☐ too rapid ☐ too slow
Fatigue/boredom/frustration	
The child evidenced fatigue, boredom, and/or frustration during the test:	☐ never ☑ rarely ☐ often
Fatigue, boredom, and/or frustration became evident:	☐ never ☑ after 15 minutes ☐ after 10 minutes ☐ after 5 minutes
Level of interaction	
The child:	☑ participated willingly ☐ participated with prompts ☐ refused to cooperate
The child engaged in test-appropriate conversation:	☑ most of the time ☐ sometimes ☐ very little

2D Criterion Score

Connected Speech Sample

Story grammar — Raw score: 5

Age	Acceptable	Emerging	Beginning
3:0–4:11	≥ 6	(4–5)	0–3
5:0–6:11	≥ 14	10–13	0–9

2E Pragmatic Activities Checklist

Age	Total observations	Criterion score	Criterion
3:0–3:11		≤ 15	☐ Meets ☐ Does not meet
(4:0–4:11)	5	≤ 9	☑ Meets ☐ Does not meet
5:0–6:11		≤ 7	☐ Meets ☐ Does not meet

Recording Subtest Scores

The raw score for a subtest is the sum of the item scores. Record the raw score for each subtest administered in the appropriate box on page 2 of the Record Form (see 2A in Figure 2.18 for an example).

Using the Subtest Scaled Scores Tables

To convert a subtest raw score to a norm-referenced scaled score, use the age-appropriate table in Appendix B. Subtest scaled scores are reported for each 6-month age interval from 3 years 0 months (3:0) through 5 years 11 months (5:11) and a 1-year age interval from 6 years 0 months (6:0) through 6 years 11 months (6:11).

Raw scores for each subtest are listed below their respective abbreviations and the associated scaled scores are listed in the outer columns on the left and right sides.

Locate the child's raw score in the appropriate subtest column, then read across to the left or right to the number in the Scaled score column. This is the scaled score equivalent of the raw score for the subtest. Enter each subtest's scaled score in the Scaled score column of the table on page 2 of the Record Form (see 2A in Figure 2.18 for an example).

Subtest Confidence Intervals

Obtain a confidence interval for each subtest scaled score by using the lower section of each norms table. Select the level of confidence (68%, 90%, or 95%) and determine the number of scaled score points for each subtest. Record the number in the Scaled score points –/+ column on page 2 of the Record Form (see 2A in Figure 2.18 for an example). Compute the lower limit of the confidence interval by subtracting the number of points from the subtest's scaled score and compute the upper limit of the confidence interval by adding the number of points to the subtest's scaled score. Record both numbers in the Confidence interval column to the right of each scaled score.

Zero Scores

To convert a total subtest raw score of 0 to a subtest scaled score, the raw score must be an *earned* score of 0. An earned score means that items that were administered were scored 0 until the discontinue rule was met. A child who cannot be trained to take the subtest does not automatically receive a 0 score. See the Demonstration, Familiarization, and Trial Items section in this chapter.

If a child obtains a total raw score of 0 on a CELF Preschool–3 subtest, that score does not indicate that the child entirely lacks the ability measured by the subtest. It indicates, rather, that the child's ability cannot be determined by that particular set of subtest items. For example, a child may score 0 on the Expressive Vocabulary (EV) subtest but is still able to label some other words.

If a child obtains a raw score of 0 on only one of the subtests that form a composite score, a composite score can still be derived by using the appropriate norms tables. For example, if a child age 5:9 scores 0 on the Word Structure (WS) subtest, the scaled score is 1. Add the scaled score of 1 to the scaled scores of the other subtests that form the Core Language Score and convert the sum using the appropriate table in Appendix C. However, if two or three of the subtests that form a composite score have raw scores of 0, the composite score cannot be derived. For example, if the same child scores 0 on both the Word Structure (WS) and Expressive Vocabulary (EV) subtests, do not derive the Core Language Score.

Core Language Score and Index Scores

Page 1 of the Record Form shows the subtests required to compute the Core Language Score and index scores (composite scores) by age (see 1A in Figure 2.17). The subtests required for the Core Language Score are the three subtests above the bold line in the score table (i.e., Sentence Comprehension [SC], Word Structure [WS], Expressive Vocabulary [EV]). Transfer the subtest scaled scores from page 2 (see 2A in Figure 2.18) to the appropriate space on page 1 (see 1A in Figure 2.17). Add the unshaded subtest scaled scores below each composite score listed. For example, to compute the Core Language Score, add the Sentence Comprehension (SC), Word Structure (WS), and Expressive Vocabulary (EV) subtests' scaled scores.

Record the total in the row labeled Sum of subtest scaled scores in the Core Language Score column. Use the age-appropriate table in Appendix C to convert the sum to the Core Language Score. Repeat this procedure for each composite score: Receptive Language Index, Expressive Language Index, Language Content Index, Language Structure Index, Academic Language Readiness Index, and the Early Literacy Index.

Composite Score Confidence Intervals

Establish confidence intervals for the Core Language Score and each index score in the same way as establishing confidence intervals for the subtest scaled scores. Use the standard score –/+ points for the selected confidence level (located at the bottom of the tables in Appendix C) and subtract and add the points from the Core Language Score or index score. Record both the lower and upper limits of the confidence interval in the scoring summary on page 1 of the Record Form (see 1B in Figure 2.17 for an example).

Percentile Ranks and Percentile Rank Confidence Intervals

Convert each subtest scaled score and each composite standard score to a percentile rank by using the table in Appendix E. Locate the subtest scaled score in the first column and read across to the right to the Percentile rank column. Record the percentile rank for each subtest scaled score in the appropriate box on page 2 of the Record Form (see 2A in Figure 2.18 for an example). The percentile ranks for composite standard scores (Core Language Score and index scores) are also located in Appendix E. Locate the standard score in the second column and read across to the Percentile rank column. Record the percentile rank for each composite standard score on the scoring summary on page 1 of the Record Form (see 1B in Figure 2.17 for an example).

Establish a confidence interval around these percentile ranks by determining the percentile rank confidence interval. Record the percentile ranks associated with the lower and upper limits of a subtest scaled score or a composite standard score confidence interval on the scoring summary. For example, the confidence interval around an Expressive Language Index score of 71 for a child age 4:2 is 65–77 at the 90% confidence level. Using Appendix E, the percentile rank corresponding to a composite standard score of 71 is 3 and the percentile ranks corresponding to a standard score of 65 (lower limit of the confidence interval) and 77 (upper limit of the confidence interval) are 1 and 6, respectively. Therefore, the confidence interval around the percentile rank of 3 is percentile rank 1 to percentile rank 6. Completed subtest scaled scores, a Core Language Score, and index summaries from page 1 of the Record Form are shown in 1A and 1B in Figure 2.17.

Using Appendix B, the confidence interval around a Sentence Comprehension (SC) scaled score of 8 for a child age 4:2 is 6–10 at the 90% confidence level. Using Appendix E, the percentile rank corresponding to a subtest scaled score of 8 is 25, and the percentile ranks corresponding to a scaled score of 6 (lower limit of the confidence interval) and 10 (upper limit of the confidence interval) are 9 and 50, respectively. Therefore, the confidence interval around the percentile rank of 25 is percentile rank 9 to percentile rank 50. For an example of a completed subtest scaled score summary from page 2 of the Record Form, see 2A in Figure 2.18.

Age Equivalents

An age equivalent provides a gross estimate of a child's performance in relation to children of all ages tested in the normative sample. See Chapter 5 for information and cautions about using age equivalents.

Age equivalents for the CELF Preschool–3 subtests are reported in Appendix D. Raw scores for each subtest are listed below their subtest abbreviations and the associated age equivalents are listed in the outer columns on the left and right sides. Locate the child's raw score in the appropriate subtest column, then read across to the left or right to the number in the Age equivalent column. This is the age equivalent of the raw score for the subtest. Enter each subtest age equivalent score in the Age equivalent column of the table on page 2 of the Record Form (see 2A in Figure 2.18 to locate this column).

Growth Scale Values

GSVs provide an objective score for measuring changes in the CELF Preschool–3 performance over time. See Chapter 5 for information on how to interpret changes in GSVs.

GSVs for the CELF Preschool–3 subtests are reported in Appendix F. GSVs for each subtest are listed below their subtest abbreviations and the associated raw scores are listed in the outer columns on the left and right sides. Locate the child's raw score in the outer column and read across to the appropriate subtest column to obtain the GSV for that subtest. Enter each subtest GSV in the Growth scale value column of the table on page 2 of the Record Form (see 2A in Figure 2.18 to locate this column).

Plotting Subtest and Composite Scores

Plot the composite scores on the Composite Score Chart (Record Form page 1) and plot subtest scaled scores on the Scaled Score Chart (Record Form page 2). To plot the scores, place an X on the line that corresponds to the score in each column of the chart (see 1C in Figure 2.17 and 2B in Figure 2.18). Place bars at the upper and lower range of the scores to reflect the confidence interval around each score. Discrepancy score comparisons and interpretation of the CELF Preschool–3 scores are discussed in Chapter 5.

Pairwise Comparisons

The CELF Preschool–3 Record Form provides a section on page 1 called Pairwise comparisons for the purpose of evaluating score differences between index scores (see 1D in Figure 2.17 to locate the Pairwise comparisons table). The Receptive Language Index (RLI) score is recorded as Score 1 and the Expressive Language Index (ELI) score is recorded as Score 2 in the first row. Similarly, the Language Content Index (LCI) is recorded as Score 1 and the Language Structure Index (LSI) is recorded as Score 2 in the second row. Record the difference between the scores; the difference may be positive or negative. Use Table 5.5 in Chapter 5 of this Manual to choose the level of significance to use in comparing index scores. See Chapter 5 for information on how to interpret these score differences.

Criterion Scores

Use the Criterion Score table on page 2 of the Record Form to record scores for the Connected Speech Sample (CSS) and the Pragmatic Activities Checklist (PAC). Locate the Raw score box for Story grammar and record the child's raw score (from page 15 of the Record Form). Based on the child's age and raw score, circle whether the score is in the Acceptable, Emerging, or Beginning range (see 2D in Figure 2.18 for an example). For the Pragmatic Activities Checklist (PAC), locate the Total observations box based on the child's age and record the number of total observations (from page 16 of the Record Form). Based on the child's age and the number of total observations, check the box that notes whether the child Meets or Does not meet criteria (see 2E in Figure 2.18 for an example).

Behavioral Observation Checklist

Use the Behavioral Observation Checklist on page 2 of the Record Form to document observations of the child's behaviors during testing. This checklist provides descriptive information that can be compared to observations of the child made by caregivers or professionals. The checklist can be completed during or after testing. Check the choices that best describe behaviors observed. Consider the child's age compared to behaviors observed in typically developing children when completing the checklist (see 2C in Figure 2.18 for an example of a completed Behavioral Observation Checklist).

Development and Standardization

The CELF Preschool–3 is the third edition of the CELF–Preschool, originally published in 1992 (Wiig et al., 1992). Pearson test developers collaborated with the authors to create new subtest items and picture stimuli, update subtest items and picture stimuli to reflect more contemporary content, add supplemental subtests, add new item analysis and scoring tables, and update the norms for the CELF Preschool–3. The test developers defined the scope and design goals of the CELF Preschool–3 after consulting professionals who indicated they were familiar with the CELF Preschool–2. The test developers also reviewed the current literature pertaining to changes in professional practice and guidelines for the roles and responsibilities of diagnostic professionals. A local assessment lab, a nationwide pilot study, and a nationwide standardization were also conducted.

THEORY AND DESIGN

Like its prior editions, the CELF Preschool–3 is a performance-based, authentic assessment that has a strong relationship to language development milestones and preschool, kindergarten, and early elementary school curriculum. The purpose of this revision was to develop a more comprehensive, flexible, multiperspective assessment process for children ages 3–6. The CELF Preschool–3 can be used in the following ways:

- To identify a language impairment and determine eligibility for language services
- To identify relative language strengths and weaknesses in communication, language, and literacy
- To describe preliteracy skills that may impact future academic success
- To describe the use of communication in classroom/structured settings that may impact future academic performance
- To describe the use of communication in social settings that may impact future community involvement

The CELF–5 assessment process served as a guide for the development of the CELF Preschool–3 as a downward extension. These assessments overlap in age (5–6) to provide diagnostic professionals the option of administering either test based on the child's background and perceived abilities. The CELF Preschool–3 subtests are quick to administer with fewer items per subtest, colorful and whimsical visual stimuli, and child-friendly content.

FEEDBACK FROM TEST USERS AND OTHERS

Pearson test developers and the authors recognized the importance of obtaining feedback from test users to create a version of the CELF Preschool–3 that would best serve these users' needs. Before beginning development, the test developers asked diagnostic professionals from across the country who were current CELF Preschool–2 users to provide input about the test. They were invited to complete a questionnaire about the CELF Preschool–2 assessment process, the subtests offered, the subtest administration directions, the subtest items and picture stimuli, as well as the scoring and interpretation of items and subtests. In addition, test developers from Pearson's international offices in Australia, Canada, Germany, the Netherlands, and the United Kingdom reviewed the subtest items for cultural differences. Although test content is undeniably influenced by cultural differences, this review was intended to ensure that the majority of the CELF Preschool–3 subtest items were universal language concepts.

After reviewing the CELF Preschool–2 questionnaire and feedback from Pearson's international test developers, the CELF Preschool–3 subtests and items were developed. During the research phases, examiners who participated in the CELF Preschool–3 data collection were offered the opportunity to provide specific feedback about test content, picture stimuli, and administration directions. In addition, members of Pearson's speech-language advisory board also provided feedback on proposed content and design for normed subtests, checklists, and supplemental subtests. The feedback provided by the examiners, global test developers, and advisory board panel members helped shape the overall design and content of the CELF Preschool–3.

LITERATURE REVIEW

A comprehensive review of the literature was conducted to examine how professionals and researchers used the CELF Preschool–2 to assess language skills in children. The goal for this edition was to make changes that would broaden the scope of diagnostic measures and improve the test content but not alter the nature of the assessment. For this reason, the development of the CELF Preschool–3 was driven by a review of developmental language skills for children ages 2:6–6:11 because it was proposed to investigate extending the age range. Current research of the skills and abilities that distinguish children with a language impairment from typically developing children were also examined for these ages. Additionally, a review of current preschool and kindergarten curriculum shaped the development and enhancement of measures of preliteracy and pragmatic skills needed for future academic success. A thorough review of trends and research ensured that the CELF Preschool–3 is appropriate and provides utility in assessing communication difficulties.

CHANGES IN PROFESSIONAL PRACTICE

Legal reform, educational mandates, educational initiatives, reimbursement and health-care changes, and evolving professional practices continue to alter the rules and responsibilities of special education and diagnostic professionals in all settings. Key governmental actions, such as the No Child Left Behind Act of 2001 (NCLB, 2002), the Individuals with Disabilities Education Improvement Act of 2004 (IDEIA), and the Common Core State Standards (CCSS; National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010), represent some of the biggest influences on assessment in the past.

Additionally, in December 2015, the Every Student Succeeds Act (ESSA) was signed into law to replace NCLB as the federal legislation governing primary and secondary education in the United States. ESSA took effect in the 2017–2018 school year and presented a major shift in power away from federal authorities by giving states more autonomy to determine how to account for student achievement. Major changes to the law included revised formulas that dictate federal funding; a de-emphasis on testing requirements and the value of standardized test scores as a measure of school accountability; and improved student achievement plans for specific at-risk groups, including students with disabilities. The ESSA affords each state the flexibility to adopt a unique accountability system based on multiple measures, including at least one measure of school quality or student growth, that has substantially impacted the way U.S. children are educated and evaluated.

In nonschool settings, such as hospitals, rehabilitation facilities, or private practices, professionals also have noticed ongoing changes in practice patterns. The Centers for Medicare and Medicaid Services release routine updates to the reimbursement and coding procedures that affect key funding streams for providers and organizations. The emphasis on quality, outcomes, and cost influence clinical decisions by professional teams across the health-care continuum and demand consistent focus on efficiency, effectiveness, and efficacy measures. With the high utilization of Medicaid funding by school-based professionals, such as speech-language pathologists, these health-care changes impact school settings as well.

Continual changes in professional practice have mandated that professionals become knowledgeable of and work within the educational curricula of the children they serve, as well as the constraints of current health-care systems, policies, and procedures. Therefore, revisions to the CELF Preschool–3 were made to better help psychologists, speech-language pathologists, and other diagnostic professionals determine a child's strengths and areas of need, develop intervention plans, and monitor progress.

CONTENT AND BIAS REVIEW

Significant measures must be taken to minimize the presence of bias in a standardized test because a test that does not consider individuals' differences may yield inaccurate scores. Bias may be presented in the forms of gender bias, cultural/ethnic bias, regional bias, or socioeconomic bias.

Gender bias can be evident in items that consistently link certain characteristics as specific to males or females. For example, items that depict members of either sex exclusively in stereotyped activities, such as women cooking or cleaning the house, men working outside the home, boys playing sports, and girls playing with dolls, may perpetuate gender stereotypes. Items that depict members of either sex as experiencing stereotyped emotions (e.g., girls who are fearful or crying and boys who are brave or angry) or depicting either sex exclusively in stereotyped occupations (e.g., men as doctors or plumbers and women as nurses or teachers) may create bias in a test.

Although it is problematic to consistently portray males and females with stereotyped characteristics and roles, it is common to teach about community roles and occupations from the most familiar (canonical) to the least familiar instances when working with very young children and children who present with cognitive delays. The most familiar instances to a child are those instances that are most readily recognized in the child's environment. For example, it may be that all police officers or doctors with whom the child is familiar are male, whereas all nurses or teachers are female. For this reason, it is unnecessary to always present people in nontypical gender roles. The goal is to present a balance of test items depicting males and females in stereotypical and nonstereotypical roles that individuals readily identify.

A test may be considered ethnically or culturally biased if it lacks minority group representation and presents only the majority population. Items depicting situations that are unfamiliar to an ethnic or cultural group can also have the effect of bias. That is, lack of exposure can place an individual from certain cultures or groups at a disadvantage if he or she has not been exposed to unfamiliar vocabulary or situations portrayed in the test. For example, many children from rural communities are not familiar with activities commonly available in larger metropolitan areas, so a child from a small, rural town may not understand what is involved in going to a museum or a concert in the park. At the same time, it is biased to portray people from a specific ethnic background or culture in stereotypical roles or situations. When developing the CELF Preschool–3, ethnic and cultural bias was minimized by using item contexts that depicted activities of daily living or school activities that are generalized across cultures.

Bias may also occur if a test item references a situation that is unfamiliar to an individual from a specific socioeconomic group. For example, not all children have experienced flying in an airplane or dining in a sit-down restaurant with waitstaff. Conversely, some children may not understand saving money to buy new shoes.

To minimize bias, the CELF Preschool–3 test developers have purposefully shown individuals living in different kinds of settings. Items describe everyday home and school activities such as eating a meal, playing with a ball, and shopping for groceries. Additionally, the CELF Preschool–3 items depict a variety of groups performing a variety of

active, passive, leisure, and work activities. Individuals with physical disabilities are represented in various activities. No one group is overrepresented. If individuals are shown performing a stereotypical task, there are examples of like individuals in nonstereotypical contexts.

In addition to carefully constructing items to limit possible test bias for individuals, items were submitted to a panel of speech-language pathologists from across the country with expertise in assessment of diverse populations. The panel members appraised the administration directions, subtest items, and verbal and picture stimuli for each item to determine if they were appropriate for children of either sex, from diverse ethnic backgrounds, from different regions of the country, and from different socioeconomic levels. The following panel members reviewed the items:

Mariajosé Bosanko Garcia, MA, CCC-SLP
Baton Rouge, LA

Janna B. Oetting, PhD, CCC-SLP
Baton Rouge, LA

Barbara Rodríguez, PhD, CCC-SLP
Albuquerque, NM

Marie Sepúlveda, MA, CCC-SLP
Lakeland, FL

Li M. Sheng, PhD, CCC-SLP
Newark, DE

Lori E. Vaughn, MA, CCC-SLP
New Orleans, LA

Chien J. Wang, MA, CCC-SLP
San Antonio, TX

Carol Westby, PhD, CCC-SLP
Albuquerque, NM

The panel members provided written, detailed critiques of all verbal and picture stimuli and evaluations of the items and the administration procedures. The recommendations of panel members were reviewed and items with suggested bias from more than one panel member were revised or dropped from the final item set.

RESEARCH PHASES

A local assessment lab and a nationwide pilot study were conducted to introduce new subtests and tasks to explore extending the age range of the test, to field-test changes to existing subtests, and to add items to expand the floor and ceiling of selected subtests. A nationwide standardization and numerous research studies were conducted to develop normative data and provide evidence of reliability, validity, and clinical utility.

Assessment Lab

A local assessment lab was conducted to evaluate new subtests to expand the age range downward to 2:6 and to include new item formats and items to expand the floor of the Following Directions (FD) subtest and the Recalling Sentences (RS) subtest. Assessment lab testing was conducted in October 2017 through December 2017 by Pearson development staff. The CELF Preschool–3 assessment lab testing involved a local (San Antonio, TX) sample of 16 children ages 2:6–2:11 and 15 children ages 3:0–4:5. After testing, a comprehensive review of assessment results was conducted to examine how to proceed to the pilot phase of development. Subtests designed for children ages 2:6–2:11 with the most successful design and formats used in assessment lab were included in the pilot phase. Subtests presented to children ages 2:6–2:11 included a Basic Vocabulary (BV) subtest to measure receptive and expressive vocabulary as well as a Connected Speech Sample (CSS) subtest to elicit phrases and sentences. These subtests were formatted in a storybook using thick pages with large pictures and colorful scenes to be more engaging and age appropriate for 2-year-olds. For children ages 3–6, the new item format for Following Directions (FD) and new items for Recalling Sentences (RS) were carried over to the pilot phase.

Pilot Research

Pilot research for the CELF Preschool–3 was conducted to evaluate new subtests and substantial revisions to existing subtests. The Pragmatic Activities Checklist (PAC) was introduced in pilot, the Word Structure (WS) subtest and Following Directions (FD) subtest had changes to administration directions, and all subtests included between 3 and 10 new items.

The pilot research objectives were to

- evaluate the performance differences between a typical and language delay/at-risk sample of children ages 2:6–2:11,
- ensure that the subtest items developed were familiar to a diverse population of children,
- evaluate if the verbal and picture stimuli readily elicited target responses,
- determine the relative difficulty of new items, and
- determine which items to include in the standardization edition.

Pilot testing for the CELF Preschool–3 was conducted from July 2018 through December 2018 by 43 speech-language pathologists, school psychologists, educational diagnosticians, and special educators who were experienced in administering standardized tests. Examiners are acknowledged for their participation in Appendix I.

Completed tests were reviewed for administration and recording responses accuracy on an ongoing basis by Pearson development and field research staff. If there were errors in administration, a member of Pearson's field research or development team contacted the examiner to discuss how to administer, record, and score responses. Throughout pilot testing, examiners received written and telephone support to clarify administration and scoring issues. All examiners were emailed newsletters that included information on potential testing problems and testing progress. After testing, examiners were asked to complete an electronic questionnaire via email regarding the appropriateness of content revisions and additions, the effectiveness of demonstration items, the ease of administration, and the clarity of instructions.

Pilot Research Sample

The CELF Preschool–3 pilot testing involved a sample of 167 typically developing children from 16 states across the country. The children in this sample included 86 females and 78 males, ages 2:6–6:11. None of the children had been diagnosed with a language impairment or hearing deficits. The sample consisted of 11% African American children, 1% Asian children, 17% Hispanic children, 64% White children, and 7% from other racial/ethnic groups. The sample represented four education levels determined by the highest grade completed by the child's primary parent/caregiver. In this sample, 8% completed 0–12 years of school but had no diploma, 17% had a high school diploma or equivalent, 33% had some college or technical school or an associate degree, and 42% had a bachelor's degree or more extensive education.

In addition to the children included in the pilot sample, a clinical study was conducted with 11 children ages 3–4 who had been identified with a language impairment. Children in the clinical sample must have been diagnosed with a mixed receptive and expressive language impairment (i.e., receptive and expressive scores both below 1.5 standard deviations [*SD*s] on a standardized measure). Scores must have been obtained within 6 months for children age 3 and within 1 year for children age 4. A clinical study was attempted for children ages 2:6–2:11 using the criteria that they must speak in at least two-word utterances and must have been identified as at risk or language delayed based on a standardized measure and enrolled in a language remediation program; however, no clinical sample in this age range was obtained. All children in the typically developing and clinical samples reportedly spoke English as their primary language, defined as the language used most often in their home.

Piloted Subtests

For children ages 2:6–2:11, two new subtests were piloted: Basic Vocabulary (BV) and Connected Speech Sample (CSS). For children ages 3–6, each subtest contained between 3 and 10 new items to expand the range of item difficulty. The subtests included Sentence Comprehension (SC), Word Structure (WS), Expressive Vocabulary (EV), Following Directions (FD), Recalling Sentences (RS), and Basic Concepts (BC). Additionally, the Word Structure (WS) subtest administration directions were revised to include new directions for presenting demonstration items within the subtest. In the Following Directions (FD) subtest, items that target concepts were removed and new items and item formats were created to expand the progression of complex directions. The Descriptive Pragmatics Profile (DPP) and the Pragmatic Activities Checklist (PAC) were piloted with the entire CELF Preschool–3 pilot sample. New items and revised items were included in the Descriptive Pragmatics Profile (DPP). The Pragmatic Activities Checklist (PAC) was piloted as a downward extension of the CELF–5 Pragmatic Activities Checklist with revised items, appropriate for assessing pragmatic skills in preschool-age children.

Statistical Analysis

During pilot data analysis, all items were submitted to several statistical procedures such as classical test theory (CTT), item response theory (IRT) fit statistics, item logistic regression, and differential item function (DIF) bias analysis. The percentage of children who passed each item (*p* values), as well as subtest total score correlations were calculated for each age group. Review of the pilot data informed decisions on which subtests to retain for the standardization phase based on the quality of the administration directions for the examiner, verbal and visual stimuli for the child, reliability, item content and order, and test floors and ceilings. For those subtests retained, refinements were made to item order based on estimates of relative difficulty.

Pilot Research Results

The results from the pilot research were used to evaluate administration directions, subtest tasks, item content, and age suitability of items and subtests. The 2:6–2:11 age range was dropped from the next stage of development because typically developing children at this age have a high variability of language development and differentiation was not obtained. As a result, the Basic Vocabulary (BV) subtest was dropped from further development. The Connected Speech Sample (CSS) subtest was retained and refined for standardization for children ages 3–6. For subtest items that appeared unclear, verbal and picture stimuli were modified. The mean value (i.e., average score value) by age group for each item was used to determine the relative difficulty. Using the pilot results and developmental data as guides, test developers established the item set and item order in each subtest to use for the standardization research phase.

Standardization Research

Standardization research was conducted to collect normative data and gather reliability and validity evidence. All subtests except for Basic Vocabulary (BV) were carried through from pilot to standardization. Word Classes (WC), Phonological Awareness (PA), and Connected Speech Sample (CSS; for children ages 3–6 using the *No Juice!* Book) were added in standardization. The CELF Preschool–3 standardization testing began in March 2019 and was completed in January 2020. The standardization edition of the CELF Preschool–3 was administered by 240 examiners in 41 states. Twenty-three sites located in rural, suburban, and urban areas around the country participated in data collection. The examiners consisted of clinical, developmental, and school psychologists; educational diagnosticians; and speech-language pathologists who were experienced in administering standardized tests. Appendix I lists the examiners who participated in collecting research for this assessment.

Examiners' initial completed tests were reviewed to verify whether administration directions were followed and if the responses were recorded along with scores. If the first test included errors, a member of Pearson's development or field research team contacted the examiner to discuss how to administer, record, and score responses. A second assigned test was carefully reviewed again when returned to Pearson. Examiners were retained, retrained, or released based on results of the second test. Also, as in the pilot phase, examiners received detailed written and telephone support throughout testing, including periodic newsletters featuring information about potential testing problems and progress of the research.

Standardization Research Sample

The CELF Preschool–3 standardization research involved a normative sample of 700 children and additional samples for reliability and validity studies. The normative sample for each age band (3:0–3:5, 3:6–3:11, 4:0–4:5, 4:6–4:11, 5:0–5:5, 5:6–5:11, 6:0–6:11) included 100 children. According to the inclusion and exclusion specifications for the normative sample, the children included did not meet the diagnosis criteria for a language impairment, a learning disorder in reading or writing, or a hearing impairment. All children spoke English as their primary (used most often in the home) language.

The sample was stratified by age, sex, race/ethnicity, geographic region, and parent/caregiver education level and was matched to a U.S. population as determined by the American Community Survey from the U.S. Census Bureau (Ruggles et al., 2017). The demographic subgroups that most influence language development (i.e., race/ethnicity, parent/caregiver education level) were represented by large proportions within 5% of the U.S. population at the time the normative data were collected (Kirk & Vigeland, 2014). Table 3.1 reports the demographic characteristics of the sample by percentages, along with the national census figures by percentages. For sampling purposes, the ethnic categories of American Indian, Eskimo, Aleut, and Pacific Islander were collapsed and combined into the Other category. Each child in the normative sample was identified by his or her parents/caregivers as belonging to one of the listed racial/ethnic groups.

The CELF Preschool–3 normative sample was stratified according to the following four parent/caregiver education level categories:

- 0–12 years of school, no diploma
- High school diploma or equivalent
- Some college or technical school or associate degree
- Bachelor's degree or more

Parent included natural parent, guardian, or primary caregiver. Information about parent education level was obtained from responses to a question that asked to specify the highest grade completed by each parent and to specify which parent is the primary caregiver. The primary caregiver's education level was used as the stratification variable. Table 3.1 reports the distribution of the education level of primary caregivers of children in the normative sample.

To be included in the normative sample, children had to meet the following requirements:

- The child must be able to take the test in a standard manner without modifications.
- The child must use spoken language to communicate.
- The child must understand and speak English as his or her primary (used most often in the home) language.
- Of the sample, 11% was reported as bilingual by the parents/caregivers. Of the group identified as bilingual, the following languages were reported: Cantonese, Creole, French, German, Greek, Hungarian, Italian, Korean, Portuguese, Spanish, Swiss, Tagalog, Tamil, and Yiddish.

To reflect the variability in learning needs that naturally occur in the general population, a limited number of children with special education placement were included in the normative sample. Approximately 8% of the children in the normative sample were reported as receiving special services: less than 1% for gifted and talented, 1.3% for occupational or physical therapy, 2% early childhood or other services, and an overlapping 4% received services for both speech and language.

In the normative sample, 2.6% of the children were reported as enrolled in Head Start, 37% were enrolled in other types of preschool programs, 24% were about to attend or were in kindergarten, 10.7% were about to attend or were in first grade, and less than 1% were about to or attended second grade.

Table 3.1 Demographics of the Normative Sample

		Parent/caregiver education				Race/ethnicity					Region				Sex	
Age		1	2	3	4	African American	Asian	Hispanic	Other	White	Midwest	Northeast	South	West	Female	Male
3:0–3:5	U.S. population %	8.7	22.0	32.4	37.0	14.1	4.3	22.2	7.2	52.1	21.4	15.8	38.9	23.9	50.0	50.0
	Normative sample %	9.0	20.0	32.0	39.0	12.0	1.0	23.0	7.0	57.0	26.0	13.0	41.0	20.0	50.0	50.0
3:6–3:11	U.S. population %	8.7	22.0	32.4	37.0	14.1	4.3	22.2	7.2	52.1	21.4	15.8	38.9	23.9	50.0	50.0
	Normative sample %	6.0	21.0	31.0	42.0	14.0	3.0	16.0	9.0	58.0	23.0	20.0	45.0	12.0	49.0	51.0
4:0–4:5	U.S. population %	8.7	21.9	33.0	36.4	14.0	4.2	21.6	7.3	52.8	21.6	15.9	38.3	24.1	50.0	50.0
	Normative sample %	10.0	20.0	33.0	37.0	13.0	3.0	23.0	9.0	52.0	24.0	18.0	38.0	20.0	51.0	49.0
4:6–4:11	U.S. population %	8.7	21.9	33.0	36.4	14.0	4.2	21.6	7.3	52.8	21.6	15.9	38.3	24.1	50.0	50.0
	Normative sample %	6.0	21.0	36.0	37.0	13.0	3.0	20.0	6.0	58.0	23.0	17.0	40.0	20.0	50.0	50.0
5:0–5:5	U.S. population %	9.9	22.1	32.3	35.7	13.2	5.0	23.5	7.1	51.2	21.6	15.9	38.4	24.1	50.0	50.0
	Normative sample %	6.0	21.0	29.0	44.0	14.0	0.0	24.0	6.0	56.0	21.0	16.0	46.0	17.0	53.0	47.0
5:6–5:11	U.S. population %	9.9	22.1	32.3	35.7	13.2	5.0	23.5	7.1	51.2	21.6	15.9	38.4	24.1	50.0	50.0
	Normative sample %	11.0	19.0	33.0	37.0	10.0	0.0	23.0	10.0	57.0	19.0	15.0	51.0	15.0	45.0	55.0
6:0–6:11	U.S. population %	11.6	21.9	32.0	34.5	13.4	4.7	24.7	7.1	50.0	21.2	15.7	38.8	24.3	50.0	50.0
	Normative sample %	11.0	23.0	32.0	34.0	13.0	4.0	29.0	3.0	51.0	23.0	12.0	44.0	21.0	52.0	48.0

Standardization Scoring Studies

Scoring rules for the Connected Speech Sample (CSS) subtest were developed after standardization data collection. Two scorers, both speech-language pathologists with in-depth knowledge of children's language development and story grammar, were trained to score the elements of story grammar using new scoring rules developed by the authors and Pearson test developers. Approximately 5% of the language samples used in the study were scored by both scorers. The results of the two scorers were compared and discrepancies in scores were flagged and reported. Discrepancies were resolved by an agreement between scorers and a revision of the scoring rules. Interscorer agreement was excellent at over 90% agreement between scorers. Because of this high level of interscorer agreement, test developers were confident in allowing a single scorer to score the remaining 95% of the samples.

Standardization Research Results

In preparation for data analysis, data cleanup was conducted to resolve out-of-range score values or missing data. Items were analyzed for difficulty, discrimination, differential item functioning, and ease and reliability of scoring. Items were then reordered based on a combination of item content and item difficulty. A final item set for each subtest was determined based on statistical analyses and examiners' feedback.

START POINTS, BASAL RULES, AND DISCONTINUE RULES

Because the CELF Preschool–3 is designed for children ages 3–6, some items were considered too difficult for the younger children and other items were too easy for the older children. To minimize administration time, start points and discontinue rules were determined. Start points are incorporated to avoid administering easier items that older children are expected to pass. The discontinue rule for each subtest allows a child to attempt more items than he or she might pass yet limit the number of items presented to reduce frustration of too long of an administration.

For children ages 5–6, the age-based start points were developed using the percentages of children in each age group who passed the items. If 90% or more of the children in an age group passed the first several items administered, the starting point for that age group was moved to a more difficult item. Similarly, basal rules were developed so that 90% or more of the normative sample responded correctly to the first three items after the start point. Children in the youngest age group (ages 3–4) were assigned to begin testing with Item 1 in each age-appropriate subtest. As described for each subtest in Chapter 2, all children begin at a designated start point to try to establish a basal by responding correctly to the first three consecutive numbered items administered or by reversing to Item 1. There may be instances when, even after reversing to Item 1, a child is not able to respond correctly to the first three subtest items. In situations where a basal is not established, continue testing forward until the discontinue rule is met.

Standardization testing included a longer-than-normal discontinue rule for all subtests except for Phonological Awareness (PA) which retained its discontinue rule based on the performance of Item Sets. A longer discontinue rule enabled the collection of as much item-specific data as possible without administering too many items beyond the child's ability. A discontinue rule study focused on the probability of a child earning additional points after each of several possible rules were applied. The final discontinue rule for each subtest was established by selecting the point at which the probability of children responding correctly after reaching the ceiling was minimized.

CELF PRESCHOOL–3 NORMATIVE DATA REPORTED

The following normative data are reported for the CELF Preschool–3 in this Manual:

- Appendix B: Subtest scaled score equivalents of raw scores by age
- Appendix C: Core Language Score and index standard scores corresponding to the sums of specific subtest scaled scores
- Appendix D: Subtest age equivalents corresponding to subtest raw scores
- Appendix E: Percentile ranks, normal curve equivalents, and stanines for scaled and standard scores
- Appendix F: Growth scale values corresponding to subtest raw scores
- Appendix G: Criterion scores for the Connected Speech Sample: Story Grammar
- Appendix H: Criterion scores for the Pragmatic Activities Checklist

Core Language Score

The CELF Preschool–3 uses three subtests for ages 3–6 to compose the Core Language Score; those selected for the Core Language Score are the most discriminating and clinically sensitive in identifying a language impairment. Use these subtests to obtain norm-referenced information to assist in identifying a language impairment within a shorter time frame (15–20 min) rather than administering the entire battery of subtests.

Index Scores

Index scores are derived from a composite of subtest standard scores that are grouped based on similar measures assessed. The CELF Preschool–3 battery uses the Receptive Language Index (RLI), the Expressive Language Index (ELI), the Language Content Index (LCI), and the Language Structure Index (LSI) to enable professionals to describe the nature of a language impairment, as well as specific strengths and weaknesses in language and communication.

Because factor analysis supported retaining the CELF Preschool–2 receptive and expressive language indexes, as well as language structure and content indexes, these scores were kept for the CELF Preschool–3. For children ages 3–4 years, the Receptive Language Index (RLI) consists of the Sentence Comprehension (SC), Following Directions (FD), and Basic Concepts (BC) subtests. For children ages 5–6 years, the RLI consists of the Sentence Comprehension (SC), Following Directions (FD), and Word Classes (WC) subtests. The Expressive Language Index (ELI) is composed of the Word Structure (WS), Expressive Vocabulary (EV), and Recalling Sentences (RS) subtests. For children ages 3–4 years, the Language Content Index (LCI) consists of the Expressive Vocabulary (EV), Following Directions (FD), and Basic Concepts (BC) subtests. For children ages 5–6 years, the LCI consists of the Expressive Vocabulary (EV), Following Directions (FD), and Word Classes (WC) subtests. The Language Structure Index (LSI) is composed of the Sentence Comprehension (SC), Word Structure (WS), and Recalling Sentences (RS) subtests.

Additionally, the CELF Preschool–3 offers the Academic Language Readiness Index (ALRI) and the Early Literacy Index (ErLI). The ALRI score may be obtained for children ages 3–6 and is composed of the Expressive Vocabulary (EV), Following Directions (FD), and Descriptive Pragmatics Profile (DPP) subtests. The ErLI score may be obtained for children ages 4–6 and consists of the Phonological Awareness (PA) and Preliteracy Rating Scale (PRS) subtests.

These scores enable diagnostic professionals to make connections between functional language skills and skills required for future academic success. The additional index scores also enable professionals to respond to referral questions and concerns adequately and appropriately by providing quantitative evidence to support observations.

Development of Scores

The normative data presented in Appendixes B and C are reported in 6-month intervals for ages 3–5 and in a 1-year interval for age 6. The CELF Preschool–3 normative information was developed using the inferential norming method (Wilkins et al., 2005; Zhu & Chen, 2011). Various moments of distribution (i.e., means, *SD*s, skewness) of each subtest were calculated for each age group of the normative sample. The moments were plotted across age and various polynomial regressions (ranging from linear to 4th degree polynomials) and were fit to the normative data.

The prediction function for each moment was selected based on consistency with underlying theoretical expectations and the pattern of growth curves observed in the normative sample. For each subtest, the selected functions were used to derive estimates of the population moments. The estimated moments were then used to generate theoretical distributions for each of the reported normative age groups, yielding midpoint percentiles for each raw score. These percentiles were converted to standard scores with a mean of 10, an *SD* of 3, and a range of 1 to 19. The irregularities associated with sampling error were eliminated by smoothing. Appendix B of this Manual presents the scaled score equivalents of the subtest total raw scores for each age group.

Standard scores for all composites (i.e., Core Language Score, Receptive Language Index, Expressive Language Index, Language Content Index, Language Structure Index, Academic Language Readiness Index, Early Literacy Index) were derived from the sums of age-corrected subtest scaled scores. The sum of scaled scores for a given composite was calculated for each child in the normative sample using the subtest scaled scores contributing to the composite. For each composite, the distribution of the sum of scaled scores was used to derive corresponding percentiles that were converted to index scores with a mean of 100 and an *SD* of 15. The resulting composite score distributions were smoothed to remove minor irregularities and to ensure that the distribution was approximately normal. Appendix C of this Manual presents the composite standard score equivalents corresponding to the sums of specific subtest scaled scores.

Subtest Age Equivalents

Age equivalents were derived for each subtest to provide the approximate age at which a given subtest total raw score is typically obtained by a child. Raw scores that corresponded to the median scaled score were obtained and assigned to the midpoint of that group's age range for each subtest for each age interval. Raw scores in the range were then smoothed among the adjacent age groups by months. Subtest age equivalents corresponding to subtest raw scores are presented in Appendix D of this Manual.

Growth Scale Values

The GSVs for each subtest were developed using the performances of the children in the normative sample. Rasch, or the one-parameter item response theory (IRT) model, was used to obtain IRT-based ability scores (thetas) using WINSTEPS 3.61 and the concurrent calibration method (Hambleton et al., 1991; Linacre, 2005). These ability scores were then rescaled to form GSVs with a mean of 500 and an *SD* of 25 for each scale. GSVs corresponding to the scaled raw scores are presented in Appendix F of this Manual.

Criterion Scores

Criterion-Referenced Scores

Criterion-referenced scores provide a way to compare a child's performance to a standard (criterion) of performance. The scores for the Pragmatic Activities Checklist (PAC) and the Connected Speech Sample (CSS) subtests reflect a criterion established for performance rather than a measure of the accuracy of performance. For the Pragmatic Activities Checklist (PAC), a criterion score is reported for ages 3, 4, and 5–6. For the Connected Speech Sample (CSS) story grammar, criterion scores are offered for two age groups (ages 3–4 and ages 5–6).

For the Connected Speech Sample (CSS) story grammar, frequency distributions of the raw scores for the children in the 200 stratified cases were examined by age. These frequency distributions were compared with frequency distributions for a group of 20 children who were identified with a language impairment. The criterion scores for the Connected Speech Sample (CSS) story grammar were based on 1.5 and 2 *SD*s below the mean of the sample of stratified cases and reflect scores in the Emerging and Beginning categories, respectively.

The criterion scores for the Pragmatic Activities Checklist (PAC) were determined by maximizing the sensitivity and the specificity between the matched sample from the normative group and the language impairment sample.

Supplemental Measures

In addition to a criterion score for the use of story grammar, the Connected Speech Sample (CSS) subtest can be used as a supplemental measure for further analysis of connected speech. To obtain well-rounded information from this analysis, overall story organization and the ability to recall facts and details as well as individual language structures within the child's narrative can be rated Acceptable, Emerging, or Beginning.

CELF PRESCHOOL–3 SUBTEST DESIGN

Sentence Comprehension

Children with a language impairment frequently have trouble mastering syntactic structures (Montgomery et al., 2016; Montgomery et al., 2018). They have problems processing and interpreting spoken sentences when the structural complexity is increased (sentence transformations) and in syntactic compression (idea density; Owens, 2020). This seems especially evident for spoken sentences that contain subordinate or relative clauses (Leonard et al., 2013; Montgomery et al., 2016; Montgomery et al., 2018; Owens, 2014). The Sentence Comprehension (SC) subtest focuses specifically on syntax at the spoken sentence level.

- Sentence Comprehension (SC) was called Sentence Structure (SS) in the CELF Preschool–2. The new name reflects a more accurate description of the task required.
- Items were added to improve the range of difficulty represented in the test and its reliability.
- This subtest must be administered to derive the Core Language Score and the Receptive Language Index and Language Structure Index scores.

Word Structure

Children with a language impairment may have difficulty mastering word structure rules (Owens, 2014). They may have trouble with the semantic distinctions of number, case, tense, aspect, and comparison; the phonological conditioning rules for inflectional morphemes; and the distinctions in the syntactic roles of words.

In studies comparing the performance differences between children with a language impairment and children with typically developing language, the most consistently noted differences were with finite verb inflections and copula and auxiliary forms requiring agreement. Children with a language impairment showed lower percentages of verb use in obligatory contexts, higher frequency of verb phrase errors (e.g., omission of copula and auxiliary "be" forms), and a slower rate of achieving mastery of the morphological forms (Abel et al., 2015; Rice, 2020).

- Administration directions were revised for items with unique demonstrations to increase children's understanding of the expected task.
- Chapter 2 and Appendix A of this Manual provide examples of responses containing dialects of American English other than SAE and the morphosyntactic rules on which scoring those responses is based.
- This subtest must be administered to derive the Core Language Score and the Expressive Language Index and Language Structure Index scores.

Expressive Vocabulary

Children with a language impairment often demonstrate a delay in development of semantic skills essential for communication. The Expressive Vocabulary (EV) subtest evaluates a child's ability to label people, objects, and actions (i.e., verbs). As language develops, a child's vocabulary grows rapidly. Expanding vocabulary enables the child to move from general naming to precise word use (e.g., *birdie* to *robin*). This subtest measures a skill that children need in preacademic contexts to respond to pictures, tell stories, describe events, label pictured references, and express concise meaning in spontaneous language.

Children with a language delay acquire their first words later but in the same manner as children with typically developing language skills. By the time children start combining words into multiword utterances, the lexical abilities of children with a language impairment and children with typical language development differ beyond a time lag. Hadley et al. (2016) found that preschool-age children with a language impairment were more limited in the types of verbs they used. They were more dependent on nonspecific verbs (e.g., *do, go, get*). Children with a language impairment require more exposure to new vocabulary, including objects, actions, attributes, and affective states, before they can associate the words to their referents (Kan & Windsor, 2010). They also are less successful in retaining the meanings of verbs or words that refer to actions (Abel et al., 2015; Gray, 2005).

Additionally, vocabulary development is associated with development of written language skills. The National Reading Panel (2000) considers vocabulary knowledge to be an important factor in becoming a successful reader. A child is more successful at applying decoding strategies if he or she has a rich vocabulary base to draw upon.

- Items were revised to reflect contemporary contexts.
- The subtest items target semantic categories (e.g., verbs, occupations, science) that reflect typical language experiences of children ages 3–6 years.
- Expressive Vocabulary (EV) retains the 2, 1, 0 scoring system used in the CELF Preschool–2 that allows the child to receive partial credit for emerging vocabulary.
- This subtest must be administered to calculate the Core Language Score and the Expressive Language Index, Language Content Index, and Academic Language Readiness Index scores.

Following Directions

A child's inability to follow oral directions at home, in a preschool classroom, and in other daily living situations can indicate a possible underlying language impairment (Tomlinson, 2014). This difficulty may manifest itself in a variety of educationally and linguistically related tasks such as delays in:

  - Sequencing: understanding sequential directions or completing tasks according to a specified sequence
  - Temporal relationships: interpreting and following time sequences or order of actions in instructions
  - Conditional relationships: interpreting and following conditions stated in instructions or directions

- This subtest was modified from the CELF Preschool–2 Concepts & Following Directions (C&FD) subtest to focus on the ability to follow spoken directions of increasing complexity rather than measure concept knowledge, which is addressed in the Basic Concepts (BC) subtest.
- Easier items were added to expand the floor of the subtest and allow children with emerging skills to participate in the task.
- Age-dependent start points were added to minimize administration time.
- Items were added to improve the range of difficulty and evaluate the child's ability to interpret oral directions of increasing complexity and spatial, temporal, and conditional relations.
- This subtest must be administered to derive the Receptive Language Index, Language Content Index, and Academic Language Readiness Index scores.

Recalling Sentences

Children with a language impairment frequently have trouble remembering and repeating spoken sentences. These difficulties relate to structural complexity, word length, and idea density of the information to remember. For example, children with a language impairment may have trouble recalling propositions or intents expressed in passive voice as indirect object transformations and as relative clause transformations (Leonard, 2014).

Deficits in sentence imitation are widely regarded as potential markers for English-speaking children with a specific language impairment (SLI) as demonstrated by the inclusion of this task in many diagnostic language tests (e.g., Comprehensive Assessment of Spoken Language™ [2nd ed.; CASL™-2; Carrow-Woolfolk, 2017]; Test of Language Development–Primary [5th ed.; TOLD-P:5; Newcomer & Hammill, 2019]; and Preschool Language Scales [5th ed.; PLS™–5; Zimmerman et al., 2011]. Sentence imitation appears to tap both children's linguistic knowledge and their phonological working memories, making sentence repetition tasks important indicators of a specific language impairment. As early as 1964, researchers began using sentence repetition tasks to discriminate between typical and disordered language development in children (Menyuk, 1964; Menyuk & Looney, 1972).

Other investigators have demonstrated that children's imitative language is essentially the same in content and structure as their spontaneous language (Brown & Bellugi, 1964; Ervin, 1964; Slobin & Welsh, 1973). Slobin and Welsh (1973) indicate that children translate sentences into their own language system and then repeat the sentences using their own language rules. To these researchers, imitation is seen as a valuable tool for providing information about a child's language abilities. According to Slobin and Welsh, features of a child's language system can be evaluated using imitation only if the stimulus sentences are long enough to tax the child's memory, because a child will imitate perfectly any sentence if the length of the sentence is within the child's memory capacity.

- Recalling Sentences (RS) retains the 4-point scoring scale (3, 2, 1, 0) used in the CELF Preschool–2; this scale enables children who repeat sentences with a few variations from the stimulus sentence to earn at least 1 point for their response.
- Items were added to improve the subtest floor and range of difficulty.
- This subtest must be administered to calculate the Expressive Language Index and Language Structure Index scores.

Basic Concepts

Children with a language impairment frequently have difficulty understanding basic concepts. Basic concepts are the foundation of early childhood knowledge (Bracken, 2006a). Basic concepts are frequently used in everyday conversation and are heavily incorporated into the early classroom curriculum. A child's understanding of basic concepts is strongly related to his or her early academic success (Balat, 2009; Bracken & Panter, 2011; Vitiello et al., 2011). Because teachers and caregivers typically teach children only a relatively small number of basic concepts, basic concept knowledge tends to be incidentally acquired rather than explicitly taught; children with a language impairment may not be able to acquire basic concepts without direct intervention. For these children, it is important to identify their difficulties early, so that concepts may be systematically taught, improving the child's chances for early academic success.

- Some items in the Basic Concepts (BC) subtest have been revised or dropped to provide the most effective clinical utility. New items were added using Linguistic Concepts from CELF–5 to expand the ceiling and provide a link between assessments.
- This subtest must be administered to children ages 3–4 years to derive the Receptive Language Index and the Language Content Index scores.

Word Classes

Children with a language impairment often have difficulty understanding that words belong to specific categories (McGregor et al., 2013; Sheng & McGregor, 2010). The ability to perceive associations among words depends on a child's ability to identify the dimensions of a relationship between the words (e.g., whether the words belong to the same word class and/or another underlying relationship) and expand that relationship to include like constructs.

- The Word Classes (WC) subtest yields one scaled score. Like the CELF–5 Word Classes subtest, the score is obtained from the child's performance on the receptive task (selecting the two words that go together best).
- The expressive task in the CELF Preschool–2, in which the child explained how the two chosen words go together best, is now part of the extension testing procedures.
- This subtest must be administered to calculate the Receptive Language Index and Language Content Index scores for children ages 5–6 years.

Phonological Awareness

Phonological awareness may be defined as the explicit awareness of the sound system of a language including word, syllable, and phoneme awareness. The predictive relationship between learning to read and phonological awareness has been clearly established across multiple studies (Boets et al., 2011; Bridges & Catts, 2011; Gellert & Elbro, 2017). The National Reading Panel (2000) recommends assessment and intervention for phonological awareness as components of literacy programs. Difficulty with phonological awareness tasks is often one of the primary processing

issues presented by children with reading difficulties. Researchers recommend identifying children who are at risk for reading difficulties as early as possible so they can receive early literacy skills instruction in preschool and kindergarten classrooms to prepare them for reading instruction in first grade (Gellert & Elbro, 2017; van Kleeck & Schuele, 2010).

Because phonological awareness skills are often impaired in children with a language impairment (Thatcher, 2010), it was important to retain a measure of phonological awareness skills in the CELF Preschool–3. In addition to its relationship to literacy, phonological awareness ability can have an impact on articulation, relate to auditory processing, and support the development of word production and word knowledge.

- Phonological Awareness (PA) is designed to provide a preliminary evaluation of a child's phonological awareness skills across six tasks. Items were updated for contemporary context.
- Administer this subtest to all early elementary children who exhibit delays in literacy, specifically in letter/sound decoding and spelling. Evaluate children with early histories of speech and language delays or hearing loss as they approach literacy in school. This subtest provides preliminary diagnostic information about processing skills that are closely linked to reading and spelling and help practitioners develop specific goals for intervention.
- Results of this subtest provide a description of some of the specific skills or processes that the child has attained and which areas are emerging or not present.
- This subtest now yields a norm-based scaled score for children ages 4–6 years.
- This subtest must be administered for children ages 4–6 years to obtain an Early Literacy Index score.

Descriptive Pragmatics Profile

Pragmatics is one of the primary domains of language, and a pragmatics disorder may or may not co-occur with other disorders in which language is affected. Because many children with a language impairment have difficulty with social communication skills, it was appropriate to retain this measure in the CELF Preschool–3. Children with a language impairment may have difficulty formulating various communicative acts (e.g., gesturing, greeting, asking) because of specific language delays. Children with a language impairment are also at risk for social failure among their peers. They do not have strong conversational skills because their first attempts at initiating conversations are frequently unsuccessful. These children are highly sensitive to their repeated communicative difficulties and seek adults to mediate their interactions with peers. As a result, they restrict their socialization experiences with their peers and miss out on opportunities that contribute to social development (e.g., sharing toys, requesting a turn) (Liiva & Cleave, 2005; McCormack et al., 2011).

A child's reluctance to interact with peers can be perceived as social immaturity. Consequently, the child may be at risk for retention in his or her school program because some teachers routinely rely on estimates of social maturity when making retention decisions (Hart et al., 2004).

In addition, there are many children who have well-developed language skills in the domains of syntax, morphology, and semantics but who cannot apply this knowledge to communicate effectively. Others may exhibit specific delays in nonverbal components of language that affect their overall ability to communicate.

- The Descriptive Pragmatics Profile (DPP) was retained from the CELF Preschool–2 and was designed to help professionals develop a quick profile of a child's overall pragmatic development.
- The Descriptive Pragmatics Profile (DPP) is a list of speech intentions that are typically expected skills for home, preschool, early elementary, and other social interactions in the United States. It is a downward extension of the CELF–5 Pragmatics Profile.
- A respondent (i.e., primary caregiver, teacher, examiner) who is familiar with the child's social behaviors and classroom interaction skills completes this subtest.
- This subtest now yields a norm-based scaled score.
- This subtest must be administered to obtain an Academic Language Readiness Index score.

Preliteracy Rating Scale

Reading is a complex process involving many aspects of language. To learn to read, children need to have good vocabulary skills and an understanding of sentence structure. In addition to good verbal skills, children who are likely to succeed in school are those who also have strong skills in phonological awareness, letter knowledge, and the basic fundamentals of reading and writing. These children understand how books work and that print on the pages represents words; they can identify the parts of a book and their functions.

Children enter school with unevenly developed skills in early reading because of varying levels of direct and indirect exposure to literacy. Reading skills are developed in a predictable manner by typically developing children who have been exposed to reading (van Kleeck & Schuele, 2010). Children are at greater risk for reading difficulties if they have not developed familiarity with the basic purposes and mechanisms of reading and letter knowledge or have a language impairment (Thatcher, 2010; van Kleeck & Schuele, 2010).

The Preliteracy Rating Scale (PRS) surveys early reading skills such as book handling; identifying letters, numbers, and familiar words in print; recognizing the sounds that letters make; and joining letters to make syllables or words. It also surveys early writing skills such as copying and forming shapes, writing letters, numbers, and simple words, as well as familiarity with basic writing principles (e.g., writing from the left to the right side of the page, drawing within the space provided).

Complete the Preliteracy Rating Scale (PRS) for early elementary children who exhibit delays in literacy. Evaluate children with early histories of speech and language delays as they approach literacy in school. This form provides preliminary diagnostic information and can help practitioners develop specific goals for intervention.

Because many children with a language impairment have difficulty learning to read and write, it was appropriate to retain this measure in the CELF Preschool–3. Early identification of children with poor preliteracy skills enables professionals to provide intervention that improves reading readiness.

- The Preliteracy Rating Scale (PRS) is a form that reflects milestones seen in early literacy skills development.
- The items were revised to rate skills individually rather than in groups to provide a clearer description of the child's current preliteracy abilities.
- A respondent (i.e., primary caregiver, teacher, examiner) who is familiar with the child's early reading and writing skills may complete the subtest.
- This subtest now yields a norm-based scaled score for children ages 3–6 years.
- This subtest must be administered for children ages 4–6 years to obtain an Early Literacy Index score.

Connected Speech Sample (Supplementary Subtest)

Preschoolers' oral narrative abilities are important indicators of future social and academic success (Gleason & Ratner, 2017; Miller, 2016). The Connected Speech Sample (CSS) subtest provides an opportunity to elicit a sample of the child's language within the context of a story retell. The "No Juice!" story, used for the CELF Preschool–2 Recalling Sentences in Context (RSC) subtest, was modified to a complete narrative and used for the CELF Preschool–3 Connected Speech Sample (CSS) subtest. After a story retell is obtained and transcribed, an examiner may choose to analyze the child's narrative based on the reason for referral or observations made during formal testing tasks.

- The child's story organization and ability to recall information and details can be rated as Acceptable, Emerging, or Beginning based on descriptions provided on page 14 of the Record Form.
- Story grammar components included in the child's narrative may be scored using the scoring rubric provided on page 15 of the Record Form.
- The child's use of linguistic structures may also be rated as Acceptable, Emerging, or Beginning based on the number of correct productions and compared to the child's performance on the Word Structure (WS) subtest.

Pragmatic Activities Checklist (Supplementary Subtest)

The purpose of the Pragmatic Activities Checklist (PAC) is to identify verbal and nonverbal behaviors that a child exhibits in social interactions that may interfere with effective communication in home and school settings. There are several standardized tests that assess children's pragmatic skills. However, the results from standardized tests frequently fail to provide information about specific skills the child lacks. Many children with social language deficits learn the superficial social codes and can answer the social knowledge test questions, thereby receiving "normal" test scores (Crooke et al., 2008; Winner, 2007). These same children may be unable to successfully engage in routine social interactions with teachers and peers and may not possess the skills needed to successfully participate in classroom activities (e.g., ask for help or for more information or clarification). Authentic assessment using hands-on activities suggested in the Pragmatic Activities Checklist (PAC) reflects a child's pragmatic abilities to appropriately interact with others in the real world.

- Responses recorded on the Pragmatic Activities Checklist (PAC) can be compared with information from the Descriptive Pragmatics Profile (DPP) to create a more comprehensive picture of a child's social and conversational interactions.
- The Pragmatic Activities Checklist (PAC) provides opportunities for authentic assessment of a child's language skills that can be used to inform intervention planning.

Evidence of Reliability and Validity

When using a standardized, norm-referenced measure like the CELF Preschool–3, the scores obtained must be reliable and valid indicators of performance in the areas the test measures. The statistical properties provide evidence to support the test's interpretations and intended uses resulting in greater confidence in treatment planning. Psychometric properties that are critical to interpreting test scores include reliability and validity. Reliability in scores is demonstrated through reliability coefficients including internal consistency (standard errors of measurement [*SEM*] and confidence intervals) and stability (test–retest). The CELF Preschool–3 validity is demonstrated by providing evidence based on test content, response processes, relationships with the prior edition of the test and other tests that measure similar constructs, and on a clinical group study.

EVIDENCE OF RELIABILITY

The reliability of a test refers to the accuracy, consistency, and stability of test scores across repeated testing under identical situations (Sattler, 2018; Urbina, 2014). Although this theoretical situation can never be attained absolutely, various estimates of reliability can be obtained in practice. The difference between a child's hypothetical true score and obtained score is called measurement error. A reliable test has relatively small measurement error and provides consistent scores within and across administrations. Always consider the reliability of a test score when interpreting a child's obtained test scores and in the differences between his or her test scores on multiple occasions. The reliability of the CELF Preschool–3 was evaluated using internal consistency and test–retest stability.

Evidence of Internal Consistency

Internal consistency is a measure of how consistently the items of the test measure one construct. Internal consistency reliability coefficients are used to describe the homogeneity of the items in a test. The internal consistency of the CELF Preschool–3 test scores was examined using split-half reliability.

The split-half reliability coefficient is the correlation between the total scores of two half-tests, corrected by the Spearman-Brown formula for the full test (Crocker & Algina, 1986; Li et al., 1996; Thompson et al., 2010; Yang & Green, 2011). This procedure used the item difficulty values from a calibration of the entire test. The average reliability coefficients (r_{xx}) were calculated using Fisher's *z* transformation and are the average across age ranges (Silver & Dunlap, 1987; Strube, 1988).

Reliability of Subtest Scores

The data in Table 4.1 indicate that for the overall normative sample, the average split-half reliability coefficients of the CELF Preschool–3 subtests range from .80 for Sentence Comprehension (SC) to .97 for the Preliteracy Rating Scale (PRS). The coefficients are excellent ($r_{xx} \geq .90$) for the Recalling Sentences (RS), Phonological Awareness (PA), Descriptive Pragmatics Profile (DPP), and Preliteracy Rating Scale (PRS) subtests, ranging from .90 to .97. The coefficients are good for the Sentence Comprehension (SC), Word Structure (WS), Expressive Vocabulary (EV), Following Directions (FD), Basic Concepts (BC), and Word Classes (WC) subtests, ranging from .80 to .88. Overall, reliabilities for each age group are good to excellent. Lower reliabilities are still acceptable and may be due to factors such as limited variance (i.e., older children respond correctly to almost all items).

Table 4.1 Reliability of the Normative and Clinical Samples

	Normative sample								Clinical sample
	Age								
Score	3:0–3:5	3:6–3:11	4:0–4:5	4:6–4:11	5:0–5:5	5:6–5:11	6:0–6:11	Average r_{xx}	Language impairment
SC	.81	.83	.85	.75	.75	.82	.73	.80	.92
WS	.91	.90	.89	.89	.83	.86	.82	.88	.89
EV	.88	.79	.82	.84	.80	.86	.82	.83	.89
FD	.90	.90	.85	.89	.83	.84	.85	.87	.94
RS	.95	.94	.92	.92	.87	.91	.85	.91	.96
BC	.88	.86	.93	.88	.79	.75	.90	.87	.97
WC			.85	.86	.86	.84	.84	.85	.97
PA			.93	.94	.87	.90	.83	.90	.99
DPP	.95	.95	.93	.94	.91	.88	.91	.93	.98
PRS	.97	.98	.96	.98	.97	.98	.92	.97	.99
CLS	.94	.93	.93	.91	.90	.93	.90	.92	
RLI	.94	.94	.95	.92	.90	.91	.90	.93	
ELI	.96	.95	.94	.94	.92	.95	.93	.94	
LCI	.95	.93	.94	.94	.91	.92	.92	.93	
LSI	.95	.95	.95	.93	.91	.94	.91	.94	
ALRI	.95	.93	.93	.94	.91	.90	.92	.93	
ErLI			.95	.97	.95	.96	.90	.95	

Reliability of Composite Scores

The average reliability coefficients are excellent ($r_{xx} \geq .90$) for all composite scores (i.e., Core Language Score, Receptive Language Index, Expressive Language Index, Language Content Index, Language Structure Index, Academic Language Readiness Index, Early Literacy Index). The reliability coefficient of the composite scores is higher than the individual subtests that compose the composite. This difference occurs because each subtest represents only a narrow portion of a child's language skills. Higher reliability of composite scores is expected because the composite scores are based on more items than are tested in a single subtest. The composite scores summarize the child's performance on a broader sample of language skills.

Evidence of Reliability for the Clinical Group

Reliability information was also examined for a group of children (n = 79) with the clinical diagnosis of a language impairment (LI). See Table 4.2 for detailed demographic information for this clinical group.

Table 4.1 also provides internal consistency reliability coefficients of subtests for the clinical group. The reliability coefficients were calculated using the same procedure described for the normative sample. As shown in Table 4.1, the subtest reliability coefficient for the clinical group is higher than the coefficients reported for the normative sample as is expected given the higher variability in performance typically seen in clinical populations. This initial evidence suggests that the CELF Preschool–3 is reliable for measuring children's language skills whether the children come from the general population or are children diagnosed with a language impairment.

Table 4.2 Demographics of the Reliability, Validity, and Clinical Group Study

	Reliability	Validity			Clinical group
	Test–retest	PLS–5	CELF Preschool–2	CELF–5	Language impairment
N	66	70	74	49	79
Age					
Mean	4.6	4.9	4.9	6.0	4.8
SD	1.0	1.1	1.1	0.5	1.1
Range	3–6	3–6	3–6	5–6	3–6
Test interval					
Mean	21	20	20	19	
Range	12–31	14–31	14–30	14–30	
Parent/caregiver education %					
0–12 years of school, no diploma	12.1	11.4	13.5	14.3	16.5
High school diploma or equivalent	22.7	17.1	25.7	14.3	38.0
Some college or technical school, associate degree	33.3	30.0	24.3	34.7	26.6
Bachelor's degree	31.8	41.4	36.5	36.7	19.0
Race/ethnicity %					
African American	10.6	18.6	10.8	8.2	16.5
Asian	—	5.7	1.4	4.1	6.3
Hispanic	13.6	15.7	21.6	14.3	17.7
Other	9.1	7.1	5.4	14.3	10.1
White	66.7	52.9	60.8	59.2	49.4
Region %					
Midwest	27.3	28.6	12.2	30.6	26.6
Northeast	13.6	8.6	12.2	14.3	10.1
South	43.9	54.3	56.8	34.7	58.2
West	15.2	8.6	18.9	20.4	5.1
Sex %					
Female	51.5	57.1	51.4	59.2	26.6
Male	48.5	42.9	48.6	40.8	73.4

Standard Error of Measurement and Confidence Intervals

Reliability coefficients are useful for evaluating a test's consistency of measurement for a group of children, but they are not directly applicable to interpret individual test scores. The *SEM* provides an estimate of the amount of error in a child's observed test score. The *SEM* is inversely related to the reliability of a test; so, the greater the reliability, the smaller the *SEM* and the greater the confidence in the precision of the child's theoretical true score. In other words, the *SEM* indicates how much a child's scores may vary if he or she were repeatedly tested on the same instrument under identical circumstances. Because of this, the *SEM* of a test helps users gain a sense of how much the child's score is likely to differ from his or her true score. Measurement error is commonly expressed in terms of *SD* units; that is, the *SEM* is the *SD* of the measurement error distribution. The *SEM* is calculated with the formula:

$$SEM = SD\sqrt{1 - r_{xx}}$$

The reliability coefficients reported in Table 4.1 and the population *SD* were used to derive the *SEM* for the CELF Preschool–3. The *SEM* can also be used to calculate critical values which can then be used to calculate a confidence interval around the child's score. Confidence intervals establish the range within which one can have confidence that the score would occur again if the test were administered to the same child again (i.e., the range of scores within which the child's true score is likely to be). Table 4.3 reports the *SEM*s of the CELF Preschool–3 scores in scaled score and standard score units.

Critical values for developing confidence intervals at 68%, 90%, and 95% are reported in Appendix B. Suggestions for interpreting test results using confidence intervals are presented in Chapter 5.

Table 4.3 Standard Errors of Measurement of the Normative Sample

	Age							Average
Score	3:0–3:5	3:6–3:11	4:0–4:5	4:6–4:11	5:0–5:5	5:6–5:11	6:0–6:11	*SEM*
SC	1.31	1.24	1.16	1.50	1.50	1.27	1.56	1.37
WS	0.90	0.95	0.99	0.99	1.24	1.12	1.27	1.07
EV	1.04	1.37	1.27	1.20	1.34	1.12	1.27	1.23
FD	0.95	0.95	1.16	0.99	1.24	1.20	1.16	1.10
RS	0.67	0.73	0.85	0.85	1.08	0.90	1.16	0.91
BC	1.04	1.12	0.79	1.04	1.37	1.50	0.95	1.14
WC			1.16	1.12	1.12	1.20	1.20	1.16
PA			0.79	0.73	1.08	0.95	1.24	0.98
DPP	0.67	0.67	0.79	0.73	0.90	1.04	0.90	0.82
PRS	0.52	0.42	0.60	0.42	0.52	0.42	0.85	0.55
CLS	3.67	3.97	3.97	4.50	4.74	3.97	4.74	4.24
RLI	3.67	3.67	3.35	4.24	4.74	4.50	4.74	4.16
ELI	3.00	3.35	3.67	3.67	4.24	3.35	3.97	3.63
LCI	3.35	3.97	3.67	3.67	4.50	4.24	4.24	3.97
LSI	3.35	3.35	3.35	3.97	4.50	3.67	4.50	3.84
ALRI	3.35	3.97	3.97	3.67	4.50	4.74	4.24	4.09
ErLI			3.35	2.60	3.35	3.00	4.74	3.48

Evidence of Test–Retest Stability

Another way of estimating the reliability of a test is to examine its test–retest stability. Test–retest stability is the correlation between test and retest scores. To examine test–retest stability, a child is given the same test twice, each time under conditions that are as similar as possible.

The CELF Preschool–3 test–retest stability was evaluated by administering the test to a sample of children on two separate occasions and then comparing the scores. The sample used to assess the stability of the CELF Preschool–3 scores over time included 66 children from ages 3–6. Refer to Table 4.2 for demographic details for this sample.

After these children were tested as part of the standardization sample, they repeated the test within 12–31 days, with both tests administered by the same examiner. Refer to Table 4.2 for the mean test interval. The test–retest stability was estimated using Pearson's product-moment correlation coefficient. The mean test scores and *SD*s are presented in Table 4.4. The test–retest coefficients for the overall sample were calculated using Fisher's *z* transformation. Table 4.4 reports the correlation coefficients corrected for the variability of the standardization sample (Allen & Yen, 2002; Magnusson, 1967). The table also reports the standard differences (i.e., effect sizes) between the first and second testing. The standard difference was calculated using the mean score difference between two testing sessions divided by the pooled *SD* (Cohen, 1988).

Table 4.4 Test–Retest Reliability, All Ages

	First testing		Second testing				
Score	Mean	*SD*	Mean	*SD*	*r*	Corrected *r*	Standard difference
SC	10.3	2.9	11.8	2.8	.57	.60	.53
WS	10.2	2.9	11.4	2.9	.79	.80	.41
EV	10.1	3.0	10.8	3.2	.83	.83	.23
FD	10.1	2.9	10.8	2.9	.73	.75	.24
RS	10.0	2.9	11.2	3.4	.72	.74	.38
BC	10.1	2.8	11.0	3.0	.73	.76	.31
WC	9.8	2.9	11.2	2.8	.75	.77	.49
PA	9.7	2.9	10.3	2.5	.71	.73	.22
DPP	10.2	3.0	10.7	3.1	.66	.66	.16
PRS	9.6	3.1	10.3	3.3	.84	.83	.22
CLS	101.1	15.1	108.1	16.5	.89	.89	.44
RLI	100.7	14.4	107.4	15.5	.82	.83	.45
ELI	100.4	15.3	106.8	16.3	.89	.89	.40
LCI	100.3	15.1	105.1	15.7	.93	.93	.31
LSI	100.9	14.8	109.2	16.5	.80	.81	.53
ALRI	100.5	15.7	104.5	15.5	.82	.80	.26
ErLI	96.0	14.0	100.4	13.1	.77	.80	.32

As the data in Table 4.4 indicate, the CELF Preschool–3 test scores possess good stability across time. The data also indicate the mean retest scores are higher than the scores from the first testing, with the effect sizes ranging from .16–.53. This finding is a common occurrence that may be attributed to the child's familiarization with the testing format and administration. Overall results indicate consistent performance on different testing occasions.

EVIDENCE OF VALIDITY

A test is valid to the extent that it measures what it is intended to measure. There are multiple sources of information required in the process of test validation. Evidence of test validity refers to the degree to which specific data, research, or theory support that a test measures the construct or content it purports to measure and is applicable to the intended population (AERA et al., 2014). Different sources of evidence represent different aspects of validity; however, these sources do not represent distinct types of validity.

The evidence for valid application of a test includes evaluation of previous versions of the test, evaluation of the updated version of the test, and research that evaluates the utility of the new measure in clinical contexts. The process of validating a test is ongoing and occurs throughout the life of the instrument. The applicability of the test also extends to clinical contexts beyond those studied as part of the initial phase of validation. The studies reported here provide evidence of validity of the CELF Preschool–3 as a measure of children's language skills.

Evidence Based on Test Content

Evidence of content validity is based on the degree to which the test items adequately represent and relate to the content being considered. The goal of content validation is to ensure that the test content reflects the constructs it intends to measure and relates to the proposed application and interpretation of the test. The content of tests used with children must also appropriately reflect developmental aspects of the constructs the test intends to measure. Test content also involves the wording and format of items, as well as the procedures for administering and scoring the test. The developmental appropriateness of the assessment is a central aspect of test validity for instruments used with young children.

The CELF Preschool–3 content sampling and subtest construction was designed to address a significant portion of language content appropriate for children ages 3–6. The goal of the revision was to ensure that the subtests adequately assess children's language skills in the areas of semantics, syntax, morphology, pragmatics, and early literacy. Evidence of validity based on the CELF Preschool–3 content was gathered in numerous ways, including literature review, author's review of item content, users' feedback, national and international expert review and suggestions about the content areas and concepts that the test should address, as well as the breadth and appropriateness of the test and item coverage. Descriptions of the literature review; user surveys; and content, bias, and item reviews are included in Chapter 3.

Evidence Based on Response Processes

Evidence of validity based on response processes is evidence that shows the fit between the construct being tested and the format used to elicit the desired behavior (AERA et al., 2014). This type of evidence may be provided by theoretical sources or psychometric analysis and can include an analysis of the intended construct to assess and an analysis of the children's responses.

Additional evidence of validity was accumulated through empirical and qualitative examination of response processes during the test's development. Children's responses to all the CELF Preschool–3 subtests were analyzed to determine if the administration directions and/or picture stimuli needed modification. Discrepancies in the response mode of children within a subtest were evaluated, and items for each subtest were either modified or deleted based on the information obtained.

Evidence Based on Internal Structure

The internal structure of a test refers to the degree to which relationships of items and subtests support the test's ability to measure the intended construct. The relationship among subtests may vary in clinical groups of children with deficits in a specific aspect of language.

Intercorrelation Analyses

Patterns of intercorrelations reflect the degree to which subtests are related. Subtests that measure similar skills are expected to be moderately to highly correlated. Moderate to high intercorrelations are one source of convergent validity evidence. It was hypothesized that there would be moderate to high correlations among all the CELF Preschool–3 subtests because each subtest is a measure that contributes to children's overall language skills.

The correlations between subtest and composite scores are affected by the degree to which a subtest contributes to the composite score. These correlations should be high because they represent part to whole correlations that are statistically dependent. This concept also applies to the correlations between the Core Language Score and index scores. For example, a high correlation between the Core Language Score and the Expressive Language Index is expected because both composites measure similar skills. More moderate correlations were anticipated between subtests and the composites that do not overlap or measure similar skills (i.e., Early Literacy Index). Table 4.5 presents the intercorrelations between subtests and composites for the CELF Preschool–3 normative sample for ages 3–4 and 5–6. Corrected coefficients appear above the diagonal in the shaded area, and uncorrected coefficients appear below the diagonal.

Table 4.5 Score Intercorrelations, All Ages

Ages 3–4

Score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
SC											.64	.64			.60		
WS	.59										.69		.71		.70		
EV	.56	.62									.67		.64	.64		.56	
FD	.56	.63	.58									.67		.68		.54	
RS	.48	.62	.52	.62									.63		.62		
BC	.59	.62	.59	.63	.61							.69		.69			
WC	.34	.37	.33	.44	.42	.42											
PA	.44	.43	.35	.48	.42	.43	.26										.34
DPP	.28	.35	.33	.31	.39	.27	.15	.23								.36	
PRS	.36	.45	.43	.44	.42	.40	.36	.34	.43								.34
CLS	.83	.87	.85	.69	.63	.70	.41	.48	.36	.49							
RLI	.83	.71	.67	.86	.67	.87	.47	.53	.33	.46	.86						
ELI	.63	.88	.83	.71	.84	.71	.44	.46	.41	.51	.92	.80					
LCI	.66	.72	.84	.86	.68	.87	.47	.50	.35	.49	.87	.93	.88				
LSI	.81	.87	.67	.71	.83	.71	.45	.49	.39	.49	.92	.87	.93	.81			
ALRI	.59	.68	.81	.81	.65	.63	.39	.45	.70	.56	.81	.79	.83	.87	.75		
ErLI	.42	.49	.44	.54	.48	.46	.37	.81	.35	.82	.53	.55	.54	.56	.55	.57	
Mean	10.1	9.9	9.9	9.8	9.9	9.9	9.7	9.8	10.1	9.9	99.6	99.8	99.2	99.8	99.6	99.5	99.4
SD	3.0	3.1	3.0	3.1	3.1	3.2	3.0	3.3	3.1	3.2	15.4	15.2	15.3	15.3	15.4	15.9	16.1

Ages 5–6

Score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
SC											.62	.54			.61		
WS	.58										.68		.71		.71		
EV	.54	.61									.64		.68	.57		.45	
FD	.50	.58	.52									.55		.55		.47	
RS	.54	.67	.64	.59									.73		.68		
BC	.56	.61	.53	.55	.56												
WC	.42	.42	.44	.41	.39	.38						.47		.49			
PA	.44	.50	.48	.44	.47	.55	.38										.46
DPP	.18	.17	.18	.20	.23	.27	.19	.16								.21	
PRS	.29	.39	.36	.44	.41	.37	.37	.46	.42								.46
CLS	.83	.85	.85	.62	.71	.65	.50	.55	.21	.40							
RLI	.80	.65	.62	.79	.62	.60	.77	.52	.22	.45	.82						
ELI	.62	.86	.87	.65	.88	.63	.48	.54	.22	.44	.92	.72					
LCI	.58	.66	.82	.80	.66	.57	.76	.52	.23	.48	.81	.90	.83				
LSI	.83	.87	.69	.65	.85	.66	.47	.54	.22	.41	.94	.82	.92	.74			
ALRI	.54	.62	.78	.78	.66	.61	.48	.50	.61	.55	.77	.75	.79	.85	.71		
ErLI	.42	.51	.48	.50	.50	.53	.44	.85	.35	.85	.55	.57	.56	.58	.55	.60	
Mean	9.9	10.1	10.1	10.2	10.2	10.1	10.3	10.1	9.9	10.1	100.2	99.8	100.7	100.1	100.3	100.4	100.3
SD	3.0	2.9	3.0	2.9	2.9	2.7	2.9	2.8	2.8	2.8	15.0	14.7	15.1	15.1	14.9	14.1	14.3

There is a high correlation (.81–.94) between the Core Language Score and the Receptive Language Index, Expressive Language Index, Language Content Index, and Language Structure Index across all ages. This is expected because the language concepts for each composite represent children's overall language development. That is, for children who are developing language normally, all language areas, such as semantics, syntax, and morphology, are expected to develop equally well and in tandem. There is a high to moderate correlation (.81 for ages 3–4 and .77 for ages 5–6) between the Core Language Score and the Academic Language Readiness Index as expected because of the similar language constructs that are measured as part of each composite score. However, the Academic Language Readiness Index score also measures pragmatic skills that are not included as part of the measure of the Core Language Score. In general, higher correlations reflect relations between composites that measure similar or related constructs and lower correlations are observed between composites that do not share or measure similar constructs. Based on this information, it is expected that the correlation between the Core Language Score and the Early Literacy Index is low because these composites do not have overlapping constructs. Although it can be predicted that language influences literacy abilities, early literacy skills may also be influenced by the environment. That is, language skills are developed while literacy skills are acquired. At the subtest level, the intercorrelations across all ages vary. The subtest that least correlates with others is the Descriptive Pragmatics Profile (DPP) because this subtest measures social communication skills rather than semantics, morphology, or syntax. Children who may have well-developed semantic, morphology, and syntax skills may still have difficulty with socializing with others. The Preliteracy Rating Scale (PRS) has a low correlation to other subtests as well because this subtest measures early reading and early writing skills rather than language skills. Children who may have well-developed language skills may lack exposure to literacy or may still have difficulty learning to read and write.

Confirmatory Factor Analytic Studies

Confirmatory factor analysis is designed to evaluate a factor structure specified by researchers based on theory and empirical research. In this sense, confirmatory factor analysis is different from an exploratory approach because the grouping of tests is made in advance rather than generated by a statistical algorithm. The specific relationships between observed variables (e.g., individual subtests) and latent variables (e.g., expressive communication ability)—and among the latent variables—are specified in advance. These groupings are then reviewed to determine whether they reasonably explain the actual covariance among the observed variables. Confirmatory factor analysis is preferred to exploratory factor analysis when an explicit theory of the factor structure is present or when there are competing models in the research literature (Pituch & Stevens, 2015). Most of the goodness-of-fit measures used to evaluate factor models are based on the chi-square statistic (x^2). Because of the sensitivity of the chi-square statistic to large sample sizes, the rescaled chi-square statistic (x^2/df) is also reported. Other commonly reported model fit statistics include the adjusted goodness-of-fit index (AGFI; Jöreskog & Sörbom, 1993), the comparative fit index (CFI), the Tucker-Lewis non-normed fit index (TLI; Tucker & Lewis, 1973), the root mean square error of approximation (RMSEA), the Akaike's information criterion (AIC), and the Bayesian information criterion (BIC).

The development of the CELF Preschool–3 was based on the theoretical assumption that the test provides an estimate of general language ability in the form of the Core Language Score. Within the domain of general language ability (or core language ability), a receptive and expressive domain and a content and structure domain exist. Table 4.6 presents fit indexes for confirmatory factor analyses of the CELF Preschool–3 models by three age groups: 3–4, 5–6, and 4–6. For the 3–4 and 5–6 age groups, the goodness of fit for two structural models was tested.

Ages 3–4

Model 1:

One second-order factor (Core Language Score)

Two first-order factors (Receptive Language Index and Expressive Language Index)

Sentence Comprehension (SC), Following Directions (FD), and Basic Concepts (BC) load on the Receptive Language Index

Word Structure (WS), Expressive Vocabulary (EV), and Recalling Sentences (RS) load on the Expressive Language Index

Model 2:

One second-order factor (Core Language Score)

Two first-order factors (Language Content Index and Language Structure Index)

Expressive Vocabulary (EV), Following Directions (FD), and Basic Concepts (BC) load on the Language Content Index

Sentence Comprehension (SC), Word Structure (WS), and Recalling Sentences (RS) load on the Language Structure Index

Ages 5–6

Model 1:

One second-order factor (Core Language Score)

Two first-order factors (Receptive Language Index and Expressive Language Index)

Sentence Comprehension (SC), Following Directions (FD), and Word Classes (WC) load on the Receptive Language Index

Word Structure (WS), Expressive Vocabulary (EV), and Recalling Sentences (RS) load on the Expressive Language Index

Model 2:

One second-order factor (Core Language Score)

Two first-order factors (Language Content Index and Language Structure Index)

Expressive Vocabulary (EV), Following Directions (FD), and Word Classes (WC) load on the Language Content Index

Sentence Comprehension (SC), Word Structure (WS), and Recalling Sentences (RS) load on the Language Structure Index

Table 4.6 Confirmatory Factor Analysis

		Goodness of fit						
Age	**Model**	x^2	***df***	**CFI**	**TLI**	**RMSEA**	**AIC**	**BIC**
3–4	Model 1	18.3	5	.99	.97	.08	50	114
	Model 2	18.7	7	.99	.98	.06	47	103
5–6	Model 1	9.2	5	.99	.98	.05	41	100
	Model 2	11.2	7	.99	.98	.06	43	102
4–6	Model 1	39.9	4	.93	.83	.13	62	108

The CELF Preschool–3 provides two new ability estimates related to language ability: an Early Literacy Index score and an Academic Language Readiness Index score for ages 4–6. The goodness of fit for this model was tested.

Ages 4–6

Model 1:

Two first-order factors (Early Literacy Index and Academic Language Readiness Index)

Preliteracy Rating Scale (PRS) and Phonological Awareness (PA) load on the Early Literacy Index

Expressive Vocabulary (EV), Following Directions (FD), and Descriptive Pragmatics Profile (DPP) load on the Academic Language Readiness Index

The results in Table 4.6 indicate that for each age group, the two models for the Core Language Score show adequate to good fit statistics. The models for the Early Literacy Index score and the Academic Language Readiness Index score also show adequate to good fit statistics. Therefore, experts can confidently interpret the measurement results of the CELF Preschool–3 using any of the models presented according to their theoretical and clinical considerations.

Evidence Based on Relationships With Other Variables

Understanding how a test relates to other tests designed to measure the same or similar constructs provides additional evidence of the test's validity. It is important to understand how the CELF Preschool–3 relates to the previous version (CELF Preschool–2), as well as other concurrently administered tests of language ability.

Three studies were conducted concurrently with the standardization of CELF Preschool–3 to examine the relationship between the CELF Preschool–3 scores and other measures of language ability. The relationships between the CELF Preschool–3 and the CELF Preschool–2, the CELF Preschool–3 and the CELF–5, and the CELF Preschool–3 and the PLS–5 were examined.

Correlations With the CELF Preschool–2

The CELF Preschool–3, like its predecessor the CELF Preschool–2, is designed to measure young children's understanding and use of language in the areas of semantics, syntax, morphology, pragmatics, and early literacy. Because the CELF Preschool–3 is a revision, the scores on the two tests should be very similar because they measure the same universe of content (i.e., language). The CELF Preschool–3 and the CELF Preschool–2 were administered to 74 typically developing children ages 3–6. The demographic characteristics of the sample are shown in Table 4.2. The CELF Preschool–3 and the CELF Preschool–2 were administered using a counterbalanced design. Approximately half the sample completed the CELF Preschool–3 first and the other half completed the CELF Preschool–2 first. Test sessions were completed 14–30 days apart (mean [*M*] = 20 days). Correlations were computed separately for each counterbalanced administration order and corrected for the variability of the CELF Preschool–3 normative sample (Brennan, 2006; Guilford & Fruchter, 1978). The average correlation coefficient across both administration orders was obtained using Fisher's *z* transformation. The standard difference is the difference of the two tests' means divided by the square root of the pooled variance, computed using Cohen's (1996) formula 10.4. Test correlation data are reported in Table 4.7. Based on the design and application of the CELF Preschool–3 and the CELF Preschool–2, it was anticipated that there would be a high positive correlation between the subtest and composite scores of the two tests.

Table 4.7 Correlation With the CELF Preschool–2

	CELF Preschool–3		CELF Preschool–2				
Score	Mean	*SD*	Mean	*SD*	*r*	Corrected *r*	Standard difference
SC	10.3	2.9	10.7	2.6	.44	.47	0.15
WS	10.5	2.8	10.2	3.0	.81	.84	0.10
EV	10.2	2.9	9.1	2.4	.72	.79	0.41
FD	10.1	2.7	10.4	2.7	.56	.60	0.11
RS	10.9	2.7	10.5	2.6	.74	.81	0.15
BC	10.0	2.9	10.2	2.8	.67	.70	0.07
WC	10.7	2.5	10.3	2.1	.50	.56	0.17
CLS	101.8	13.8	100.1	12.5	.82	.86	0.13
RLI	101.3	13.1	102.8	12.6	.69	.75	0.12
ELI	103.1	14.0	99.6	12.5	.81	.86	0.26
LCI	97.3	13.2	98.7	11.7	.71	.77	0.11
LSI	103.3	13.8	102.7	12.6	.80	.85	0.05

Correlations (corrected for restriction in range) between the CELF Preschool–3 and the CELF Preschool–2 subtest scores range from .47 to .84. The highest subtest correlations are found with the Word Structure (WS; .84) and Recalling Sentences (RS; .81) subtests. As expected, the corrected correlations of the CELF Preschool–3 and the CELF Preschool–2 composite scores are high to moderate (e.g., Core Language Score is .86). Typically, composite scores are used to make diagnostic and service-related decisions; therefore, this high correlation between composite scores is a good indication that children's classifications would be similar when taking the CELF Preschool–2 and the CELF Preschool–3.

Correlations With the CELF–5

The CELF–5 is an individually administered diagnostic battery that evaluates general language ability and provides information about a child's linguistic strengths and weaknesses in morphology, syntax, semantics, and pragmatics. The CELF–5 and the CELF Preschool–3 are in the same assessment family, measuring the same language skills by referencing the same language development concepts and linguistic rules. Therefore, an overall moderate to high correlation between the CELF Preschool–3 and the CELF–5 was expected. Participants in this study were administered the CELF Preschool–3 and the CELF–5 subtests that most overlap in skill and age level (i.e., Sentence Comprehension [SC], Linguistic Concepts [LC], Word Structure [WS], Word Classes [WC], Following Directions [FD], Formulating Sentences [FS], Recalling Sentences [RS], Understanding Spoken Paragraphs [USP], Pragmatics Profile [PP]).

This study included a total of 49 children identified as typically developing (ages 5–6) who were tested with the CELF Preschool–3 and the CELF–5 using a counterbalance design. The CELF Preschool–3 and the CELF–5 test sessions were completed 14–30 days apart (*M* = 19 days). Approximately half of the sample was administered the CELF Preschool–3 first and half of the sample was administered the CELF–5 first. The demographic characteristics for this sample are presented in Table 4.2.

Comparison statistics are presented in Table 4.8. As previously discussed, subtests and composites that measure similar constructs generally have high correlations. The Pragmatics Profile (PP) subtest on CELF–5 is the only subtest that measures pragmatic skills; therefore, a low correlation is expected. Study results show moderate correlations ranging from (.68–.79) between the CELF Preschool–3 Core Language Score and index scores with the respective CELF–5 Core Language Score and index scores. These results may be partly because children ages 5 and 6 are the oldest ages to be administered CELF Preschool–3 and the youngest ages to be administered the CELF–5; there may be more range in item difficulty for children in these ages on the CELF–5.

Table 4.8 Correlation With the CELF–5

CELF Preschool–3 score	CELF–5														CELF Preschool–3	
	SC	LC	WS	WC	FD	FS	RS	USP	PP	CLS	RLI	ELI	LCI	LSI	Mean	*SD*
SC	.60	.39	.27	.38	.45	.24	.50	.41	–.04	.53	.63	.44	.50	.54	9.2	3.2
WS	.61	.48	.39	.25	.37	.29	.62	.30	–.16	.58	.54	.54	.44	.59	10.2	2.7
EV	.49	.48	.58	.23	.29	.25	.61	.40	.06	.57	.44	.55	.41	.58	9.7	3.1
FD	.67	.58	.39	.37	.63	.51	.50	.46	–.06	.72	.71	.69	.65	.72	9.4	2.8
RS	.60	.45	.41	.38	.45	.40	.81	.56	.04	.69	.62	.67	.52	.69	9.1	3.0
BC	.56	.67	.45	.39	.40	.37	.43	.33	–.21	.54	.57	.50	.59	.54	9.4	2.8
WC	.37	.37	.17	.41	.20	.32	.16	.14	–.17	.33	.41	.30	.39	.33	9.4	2.4
PA	.37	.51	.40	.31	.41	.36	.53	.45	–.25	.50	.46	.51	.50	.49	9.8	3.0
DPP	.17	.06	.06	–.10	–.04	–.07	.16	.30	.47	.08	.02	.01	–.02	.08	8.8	2.5
PRS	.24	.05	–.12	.08	.10	–.01	.15	.07	.36	.19	.18	.16	.08	.20	9.8	2.2
CLS	.68	.53	.50	.34	.45	.32	.70	.46	–.04	.68	.64	.62	.54	.69	98.1	14.9
RLI	.75	.58	.40	.52	.61	.50	.56	.49	–.12	.73	.79	.66	.68	.73	94.6	13.0
ELI	.64	.52	.53	.32	.41	.36	.78	.49	.00	.71	.59	.68	.51	.71	98.0	14.9
LCI	.76	.67	.58	.47	.57	.55	.66	.51	–.05	.80	.75	.76	.68	.81	95.3	12.4
LSI	.67	.47	.40	.39	.49	.37	.74	.49	–.04	.69	.67	.64	.55	.69	97.0	15.0
ALRI	.75	.65	.63	.33	.54	.44	.74	.66	.22	.79	.69	.74	.61	.79	94.9	12.1
ErLI	.41	.41	.29	.27	.39	.29	.51	.41	.01	.46	.45	.45	.44	.46	98.4	12.3
CELF–5																
Mean	9.9	9.4	9.6	10.4	10.4	9.3	9.6	9.3	10.1	98.3	101.7	98.1	100.5	98.2		
SD	3.2	2.9	2.3	2.8	3.1	3.9	2.7	3.3	1.9	14.3	14.7	12.7	14.1	14.3		

Correlations With the PLS–5

The PLS–5 is an individually administered test used to identify children with a language delay or a language disorder. Both the CELF Preschool–3 and the PLS–5 measure aspects of language development and there is some overlap in the concepts assessed (e.g., basic concepts, expressive vocabulary, sentence structure), so it was expected that there would be a moderate to high correlation between the two tests' scores. Participants in this study were administered the CELF Preschool–3 and the PLS–5 subtests/scales that make up each tests' total language score (i.e., CELF Preschool–3 Core Language Score, PLS–5 Total Language Score [TLS]) and index scores. For the CELF Preschool–3, index scores to compare include the Receptive Language Index and the Expressive Language Index. For the PLS–5, index scores include the Auditory Comprehension (AC) Scale and the Expressive Communication (EC) Scale.

This study included a total of 70 children (ages 3–6) who were administered the tests in counterbalanced order; approximately half of the children took the CELF Preschool–3 first and half of the children took the PLS–5 first. The between-test interval ranged from 14–31 days (M = 20 days). The demographic characteristics for this sample are presented in Table 4.2.

Comparison statistics are presented in Table 4.9. Study results show low to moderate correlations between the CELF Preschool–3 and the PLS–5 composite scores. The scores do not show high correlations because the construction of the PLS–5 includes a few items that measure similar skills across a broad age range whereas the CELF Preschool–3 subtests measure skills in more depth across the 3–6 year age range. However, children's PLS–5 composite scores were very similar to their CELF Preschool–3 composite scores, indicating that a child who performs poorly on the PLS–5 is likely to score poorly on the CELF Preschool–3.

Table 4.9 Correlation With the PLS–5

CELF Preschool–3 score	PLS–5			CELF Preschool–3	
	TLS	AC	EC	Mean	*SD*
SC	.53	.54	.45	10.7	3.0
WS	.48	.40	.50	10.6	2.9
EV	.43	.39	.40	10.3	3.3
FD	.56	.52	.53	10.3	2.9
RS	.55	.50	.52	10.1	2.9
BC	.61	.54	.60	9.9	3.1
WC	.50	.56	.37	11.0	2.9
PA	.46	.46	.40	10.0	3.3
DPP	.07	.04	.09	10.1	2.7
PRS	.19	.17	.18	10.7	3.3
CLS	.52	.48	.48	103.2	16.0
RLI	.65	.62	.57	103.3	15.5
ELI	.52	.46	.50	102.0	15.7
LCI	.59	.55	.54	102.5	15.8
LSI	.58	.54	.54	102.7	15.1
ALRI	.47	.42	.44	101.4	15.1
ErLI	.36	.35	.31	101.3	16.7
PLS–5					
Mean	102.0	102.0	101.7		
SD	13.9	14.0	13.8		

Evidence Based on a Clinical Group Study (Children Diagnosed With a Language Impairment)

Evidence of a test's validity based on data from clinical and special groups is critical when a test's results are part of a comprehensive assessment. Speech-language pathologists may use the CELF Preschool–3 to evaluate a varied population of children for evidence of a language impairment that may warrant appropriate interventions. Other users of the CELF Preschool–3, including educational diagnosticians and psychologists, evaluate children who have been diagnosed with developmental and/or psychological disorders that might affect the normal development of language skills. Some of these children will exhibit developmental delays only in language, whereas others may exhibit global impairments in cognitive development or delayed development in multiple behavioral domains. Specific types of language impairments may be identified or language abilities may be globally impaired.

Children who are evaluated with the CELF Preschool–3 and subsequently receive intervention may be diagnosed with a specific language impairment or a language impairment that is related to other clinical conditions. For children with a specific language impairment, the CELF Preschool–3 is designed to identify varying degrees of a language impairment related to severity and language areas (e.g., morphology and syntax, semantics, pragmatics) that are negatively impacted. Other children with pronounced language impairments related to clinical conditions, such as hearing loss or autism spectrum disorder, are referred to a speech-language pathologist. The CELF Preschool–3 is not designed to diagnose these conditions or syndromes but is sensitive to the language difficulties exhibited by children with these clinical conditions. This section presents the results of clinical research that evaluates the language abilities of children diagnosed with a language impairment.

A language impairment study was completed as part of the validation of the CELF Preschool–3. A sample of 79 children (ages 3–6), diagnosed with a language impairment were tested as part of the CELF Preschool–3 standardization validity research. Refer to Table 4.2 for the demographic characteristics of the language impairment clinical group. The inclusion criteria for admittance to this clinical study required that each child demonstrate a language impairment as evidenced by performance at 1.5 *SD*s or more below the mean on the total or core language score and the receptive and expressive scores of a standardized test of language abilities. Of the 79 clinical cases, examiners reported using the following assessments to qualify for inclusion in the clinical study:

CELF–5 = 3%

CELF Preschool–2 = 22%

Comprehensive Assessment of Spoken Language (CASL; Carrow-Woolfolk, 1999) = 1%

Oral and Written Language Scales (2nd ed.; OWLS™-II; Carrow-Woolfolk, 2011) = 5%

PLS–5 = 66%

Preschool Language Scales (4th ed.; PLS–4; Zimmerman et al., 2002) = 1%

Receptive and Expressive Emergent Language Test (3rd ed.; REEL-3; Bzoch et al., 2003) = 1%

Test of Language Development–Primary (4th ed.; TOLD-P:4; Newcomer & Hammill, 2008) = 3%

> *Note*. The total percentage of assessments equals 102% because some children qualified for this study based on the results of more than one of the tests listed. All the children were enrolled in a language therapy program at the time this study was conducted.

A matched control sample was selected to match each child in the language impairment (LI) group with a child with typically developing language ability from the normative sample based on age, race/ethnicity, parent/caregiver education level, and sex. A child with typical language ability was defined as a child who had not previously been diagnosed with a language impairment and was not currently receiving speech and language services.

The study compares the performance, in standard scores, between the two groups of children. The standard difference (Cohen's *d*) is the effect size, which expresses the difference between two scores in *SD* units. This allows for comparison of discrepancy scores across tests. The effect size is computed as the difference of the two tests' means divided by the square root of the pooled variance (Cohen, 1988). Effect sizes of .50 are considered moderate and those of .80 and above are considered large.

As indicated in Table 4.10, the effect size (standard difference) is large. These results highlight the ability of the CELF Preschool–3 to discriminate between children who are developing language typically and those who present with a language impairment.

Table 4.10 Language Impairment Compared to Matched Control

	LI		Matched control					
Score	Mean	*SD*	Mean	*SD*	Difference	*t* value	*p* value	Standard difference
SC	4.8	2.9	9.4	2.8	4.66	9.90	< .01	1.63
WS	3.8	2.0	9.6	2.8	5.87	14.90	< .01	2.41
EV	4.4	2.5	9.4	3.2	5.01	12.27	< .01	1.74
FD	4.8	2.5	10.1	2.9	5.32	12.38	< .01	1.96
RS	4.1	2.6	9.5	3.0	5.35	11.55	< .01	1.91
BC	4.4	2.2	9.5	2.9	5.11	11.02	< .01	1.99
WC	5.3	3.3	10.0	2.8	4.68	8.89	<.01	1.53
PA	4.7	3.1	10.2	3.3	5.51	8.67	<.01	1.72
DPP	6.1	3.1	9.3	2.8	3.20	6.52	<.01	1.08
PRS	5.3	2.6	9.5	3.0	4.24	9.33	<.01	1.51
CLS	68.1	12.3	94.8	13.9	26.66	11.83	<.01	2.03
RLI	71.3	14.1	97.6	13.4	26.30	10.43	<.01	1.91
ELI	66.2	12.7	96.1	15.3	29.97	12.53	<.01	2.13
LCI	69.6	12.7	98.8	15.5	29.22	11.68	<.01	2.06
LSI	68.6	13.3	96.1	13.6	27.45	11.76	< .01	2.04
ALRI	70.3	11.5	97.2	15.6	26.90	11.45	< .01	1.96
ErLI	72.7	15.0	98.5	16.3	25.81	8.32	< .01	1.65

Diagnostic Accuracy

Another means for evaluating the clinical utility of a test is to analyze the test's ability to accurately identify individuals with a specific clinical condition of interest and to rule out that diagnosis. Specific to the CELF Preschool–3, the clinical condition of interest is a language impairment. Classification results based upon the setting of specific diagnostic cut scores, such as –1.5 *SD*s, is presented as positive predictive power (PPP) and negative predictive power (NPP). Classification varies as a function of the cut score used, as well as the base rate for the clinical condition of interest. The base rate is most commonly thought of as the prevalence of the clinical condition in the population, but it is more clinically useful to think of it as the a priori probability that someone in the diagnostic professional's own referral population will have the condition. This varies widely depending on the clinical setting. Norbury et al. (2016) found the percentage of children with a language disorder at school entry to be approximately 10%. As Table 4.11 indicates, 10% was selected as a base rate for screening the population of preschool- and school-age children and base rates of 80%, 70%, and 60% were selected for referral populations. This table provides the clinical validity statistics for a language impairment based on four cut scores and five base rates using the CELF Preschool–3 standard score. Values of PPP and NPP are provided for five different base rates: 10%, 80%, 70%, 60%, and 50% (for the matched sample).

Table 4.11 Clinical Validity Statistics

CLS, RLI, or ELI score from mean	Standard score cut	Sensitivity	Specificity	Predictive power	Base rate: Screening 10%	80%	Referral 70%	60%	Matched sample 50%
–1.0 *SD*	85	.96	.70	PPP	.26	.93	.88	.83	.76
				NPP	.99	.80	.88	.92	.94
–1.3 *SD*	80	.93	.81	PPP	.36	.95	.92	.88	.83
				NPP	.99	.74	.83	.88	.92
–1.5 *SD*	77	.89	.84	PPP	.39	.96	.93	.89	.85
				NPP	.99	.65	.76	.83	.88
–2.0 *SD*	70	.74	.96	PPP	.66	.99	.98	.96	.95
				NPP	.97	.48	.61	.71	.79

Figure 4.1 shows the possible outcomes of a classification using a test. In the figure, I represents someone truly with an impairment and NI represents someone truly without an impairment. The test outcomes are either + for prediction of impairment or – for prediction of no impairment.

Figure 4.1 Possible Test Outcomes of Positive Predictive Power (+) and Negative Predictive Power (–)

	+	–
I	a	b
NI	c	d

Sensitivity and specificity are two additional diagnostic validity statistics that describe how a test performs.

Sensitivity is computed as

$$a \div (a + b)$$

Specificity is computed as

$$d \div (c + d)$$

Sensitivity indicates the probability that someone with the condition will test positive for it. Specificity indicates the probability that someone without the condition will test negative. These values do not depend on the base rate. This means sensitivity and specificity provide overall summary statistics of how well the test can classify an individual, although this overall summary can be misleading for specific base rates. For example, a test might have both high sensitivity and specificity, yet still have a large false positive rate for conditions with high base rates. The accuracy of test results depends on the base rate, as well as the cut score, which is why PPP and NPP are used.

PPP is calculated using the formula:

$$PPP = (a \times br) \div [(a \times br) + (1 - br) \times c]$$

where *a* and *c* represent the frequencies indicated in Figure 4.1 and *br* is the base rate. PPP is interpreted as the likelihood that a person with the impairment receives a positive test result.

NPP is calculated using the formula:

$$NPP = [d \times (1 - br)] \div [(d \times (1 - br)) + (b \times br)]$$

where *d* and *b* represent the frequencies indicated in Figure 4.1 and *br* is the base rate. NPP is interpreted as the likelihood that someone without an impairment receives a negative test result. A PPP = 1 indicates no false positives and a PPP = 0.5 indicates a 50% false positive rate. Similarly, an NPP = 1 indicates no false negatives, whereas an NPP = 0.5 indicates a 50% false negative rate.

For example, if the base rate is low, such as 10% with a cut score of –1.0 *SD*, then PPP = .26. This means that 26% of those who are identified with a language impairment have an impairment. This means that 74% false positives may be acceptable in a screening situation where the concern is more on minimizing false negatives. The NPP in this instance is .99 meaning that 99% of those who are classified without a language impairment, indeed, do not have an impairment, leaving only 1% false negatives. Conversely, if the base rate is .50 (half of the children referred with a language impairment), then the PPP is .76, meaning 24% of those classified with a language impairment are misclassified. As the cut score becomes more extreme (more *SD*s below the mean), the PPP becomes higher and the NPP gets lower. As the base rate becomes higher, the PPP becomes higher and the NPP gets lower.

Table 4.11 reports the clinical validity statistics for children with a language impairment. The results indicate average to excellent sensitivity and specificity with cut scores at –1 *SD*, –1.3 *SD*s, –1.5 *SD*s, and –2 *SD*s. With a cut score at –1.3 *SD*s, sensitivity is excellent at .93 and specificity is good at .81. Referring to Table 4.11 and using the cut score of 1.5 *SD*s below the mean, regardless of base rate, 89% of children with a language impairment will be identified with a language impairment and 84% of those without a language impairment will be correctly classified without a language impairment by the CELF Preschool–3.

As Table 4.11 indicates, the cut score of 77 (at –1.5 *SD*s from the mean) results in the best balance between the sensitivity and specificity measures—the optimal cut score. Using this cut point resulted in a sensitivity of 89% (.89) and specificity of 84% (.84). This means that using the cut score of 77, 11% of children with a language impairment were missed and 16% of children without a language impairment were incorrectly identified with a language impairment. The children in this sample who were identified with a language impairment most commonly associated with impaired morphology and syntactic language structures. With this in mind, the sensitivity and specificity values indicate that the CELF Preschool–3 is a good tool for identifying children with a possible language impairment when used in conjunction with other measures.

SUMMARY OF RELIABILITY AND VALIDITY EVIDENCE

The effect of using different diagnostic criteria in relation to the rate of the impairment is illustrated in this chapter and enables examiners to determine which criteria are the most appropriate for their clinical practice. The evidence provides strong support for the clinical utility of the CELF Preschool–3 when used as a screening instrument or part of an assessment battery. Examiners may evaluate this evidence regarding their clinical practice and expertise to make the most appropriate use of the CELF Preschool–3.

Test Interpretation

Norm-referenced tests are generally considered appropriate and necessary to identify speech and language impairments. When properly interpreted, tests serve an important function in assessing preschool-age children with special needs (Bagnato et al., 2010; McLean et al., 2004). Keep the advantages and limitations of norm-referenced tests in mind when interpreting the CELF Preschool–3 results and when recommending additional assessment or enrollment in a remediation program.

Because standardized tests are administered and scored using specified procedures, they tend to be more objective than informal observations. Estimates of reliability and evidence of validity provide a degree of confidence that the CELF Preschool–3 can be used to make reliable and valid inferences about a child's language ability. Because the CELF Preschool–3 is a norm-referenced language test, it can be used to compare a child's language skills to the skills of his or her same-age peers. Use this assessment to pinpoint areas of relative strengths or weaknesses within a relatively short time.

Although young children may at times perform poorly in structured test situations (Bagnato et al., 2010), the CELF Preschool–3 offers the advantage of quick administration and provides the flexibility of optional subtest administration. Using the norm-referenced scores is not possible if there is any deviation from the standardized testing procedures discussed in Chapter 2 (i.e., administering the subtests in a nonstandard manner); however, testing can still yield important clinical information about the child.

In addition, it is only possible to compare the scores of a child who was tested in the normative sample if the characteristics of the sample are comparable to the child being tested. For example, a child with a hearing impairment may perform differently based on his or her level of hearing loss and whether he or she is aided at the time of assessment. Under these conditions, it is important to note any observations of the child during testing in the Notes section on page 1 or on the Behavioral Observation Checklist on page 2 of the Record Form and report these observations in the written evaluation.

This chapter provides an explanation for how scaled scores, composite scores, percentile ranks, age equivalents, growth scale values, and criterion scores are interpreted. Methods for determining and describing a child's language strengths and needs and strategies for comparing and interpreting differences in index scores are presented later in this chapter. See Table 5.1 for the type of scores the CELF Preschool–3 subtests and composites yield by age.

Table 5.1 CELF Preschool–3 Scores by Age

Subtest/composite	Scaled score (subtest)	Standard score (composite)	Age equivalent	GSV	Criterion score
Sentence Comprehension	3–6		3–6	3–6	
Word Structure	3–6		3–6	3–6	
Expressive Vocabulary	3–6		3–6	3–6	
Following Directions	3–6		3–6	3–6	
Recalling Sentences	3–6		3–6	3–6	
Basic Concepts	3–6		3–6	3–6	
Word Classes	4–6		4–6	4–6	
Phonological Awareness	4–6		4–6	4–6	
Descriptive Pragmatics Profile	3–6		3–6	3–6	
Preliteracy Rating Scale	3–6		3–6	3–6	
Connected Speech Sample					3–6
Pragmatic Activities Checklist					3–6
Core Language Score		3–6			
Receptive Language Index		3–6			
Expressive Language Index		3–6			
Language Content Index		3–6			
Language Structure Index		3–6			
Academic Language Readiness Index		3–6			
Early Literacy Index		4–6			

Use the following description of the CELF Preschool–3 results and interpretation guidelines to derive the most useful and meaningful information and recommendations.

DESCRIPTION OF THE CELF PRESCHOOL–3 SCORES

The CELF Preschool–3 subtest scaled scores and composite standard scores are norm-referenced scores. The Core Language Score and the index scores are composite scores. The CELF Preschool–3 composite scores are standard scores based on sums of various subtest scaled scores. Each composite score is formed by summing the scaled scores of two or three selected subtests that measure similar features and converting the sum to a standard score. Summing the subtest scaled scores rather than the subtest raw scores ensures that the CELF Preschool–3 Core Language Score and index scores represent an equal weighting of each subtest score.

Subtest Scaled Scores

Subtest scaled scores provide performance information about the language constructs or academic skills that each subtest targets. Scaled scores are available for the following 10 subtests:

- Sentence Comprehension
- Word Structure
- Expressive Vocabulary
- Following Directions
- Recalling Sentences

- Basic Concepts
- Word Classes
- Phonological Awareness
- Descriptive Pragmatics Profile
- Preliteracy Rating Scale

The CELF Preschool–3 subtest scaled scores provide a measure of specific aspects of language form, content, and use depending on the subtest task and the child's response. Subtest scaled scores are used to compare the child's performance to the typical performances of the same-age normative group. These scores are derived from the subtest total raw scores and are on a normalized score scale that has a mean of 10 and an *SD* of 3 scaled score points.

A scaled score of 10 describes the average of a given age. Scores of 7 and 13 are 1 *SD* below and above the mean, respectively. About two-thirds of all children with typical language development earn subtest scaled scores between 7 and 13, the range of average performance. Table 5.2 shows the relationship of the CELF Preschool–3 subtest scaled scores and percentile ranks to distances from the mean, expressed in *SD* units.

Table 5.2 Distances From the Mean of Subtest Scaled Scores

Scaled score	Distance from the mean	Percentile rank
19	+3 *SD*s	99.9
16	+2 *SD*s	98
13	+1 *SD*	84
10	Mean	50
7	–1 *SD*	16
4	–2 *SD*s	2
1	–3 *SD*s	0.1

Different combinations of subtest scaled scores compose the Core Language Score and the following index scores: Receptive Language Index, Expressive Language Index, Language Content Index, Language Structure Index, Academic Language Readiness Index, and Early Literacy Index.

Core Language Score

The Core Language Score is a measure of general language ability that quantifies a child's overall language performance and is used to make decisions about the presence or absence of a language impairment. The Core Language Score is derived by summing the scaled scores from the three subtests that best discriminate performances of children with typical language development from performances of children with impaired language. The Core Language Score is on a scale of 40 to 160 to provide a range of scores for diagnostic purposes.

Index Scores

The CELF Preschool–3 index scores provide information about a child's strengths and weaknesses across receptive and expressive modalities, language content, and language structure. The Receptive Language Index is a measure of listening and auditory comprehension. The Expressive Language Index is an overall measure of expressive language skills. The Receptive Language Index and Expressive Language Index scores meet state or regional requirements to report separate scores for receptive and expressive language or, where appropriate, analogous distinctions such as listening and speaking or listening comprehension and oral expression. Paul et al. (2018) suggests that once a language impairment is identified, it needs to be described according to the modalities that are affected by the impairment and the aspects or domains that are affected within these modalities. Both the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*®; American Psychiatric Association, 2013) and the *International Classification of Diseases* (11th ed.; ICD–11; World Health Organization, 2019) define and classify language disorders based on the affected modality.

The Language Content Index is a measure of various aspects of semantic development. This index measures vocabulary and the ability to interpret the meaning of concepts in simple and complex instructions, as well as the ability to comprehend associations and relationships among words. The Language Structure Index is an overall measure of the understanding and use of language form. This index measures the ability to interpret and produce word and sentence structures.

Index scores that are new to the CELF Preschool–3 include the Early Literacy Index and the Academic Language Readiness Index; both indexes provide information about skills needed to be successful in a school setting. The index scores are composite scores formed from the scores of two to three subtests. The subtest scores that compose each index score have been confirmed by factor analyses (statistical procedures that identify and structure relationships between subtests). See Chapter 4 for a description of how the Core Language Score and the factor-based index scores were developed.

Norm-Referenced Standard Scores

The Core Language Score and the index scores are norm-referenced standard scores that allow comparison of a child's performance to the performances of other same-age children. The normative sample serves as the reference population to which a child's performance is measured. The Core Language Score and index scores are on a normalized standard score scale that has a mean of 100 and an *SD* of 15. This scale is commonly used in language, psychological, and educational testing. A standard score of 100 on this scale represents the performance of a typical child of a given age. Figure 5.1 shows the relationship between the CELF Preschool–3 Core Language Score and index scores and a normal distribution of scores. Scores of 85 and 115 correspond to 1 *SD* below and above the mean, respectively. Table 5.3 shows the relationship of the CELF Preschool–3 standard scores and percentile ranks to distances from the mean, expressed in *SD* units.

Figure 5.1 The Normal Curve With the CELF Preschool–3 Standard Scores and Percentile Ranks

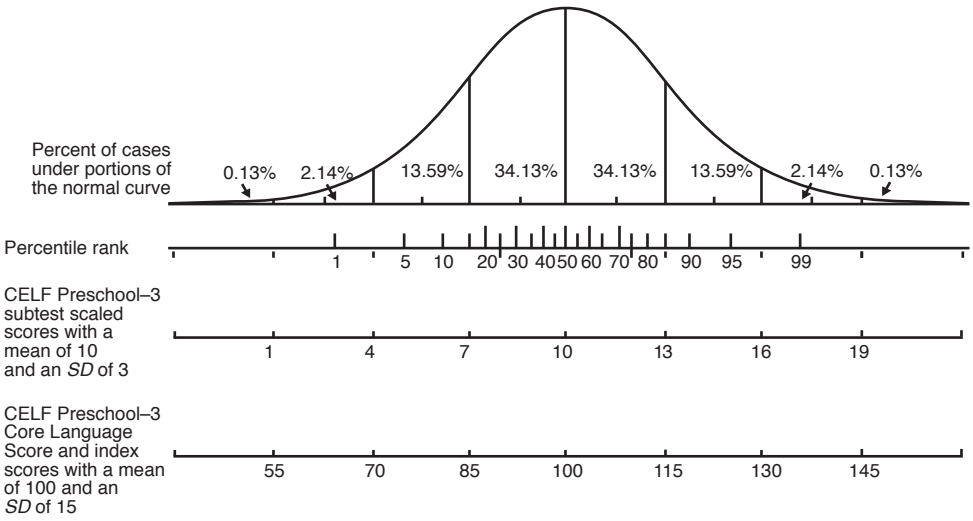


Table 5.3 Distances From the Mean of Selected Standard Scores

Standard score	Distance from the mean	Percentile rank
145	+3 *SD*s	99.9
130	+2 *SD*s	98
115	+1 *SD*	84
100	Mean	50
85	–1 *SD*	16
70	–2 *SD*s	2
55	–3 *SD*s	0.1

Confidence Intervals

Some degree of error is reflected in the score a child obtains on any test. If a test were perfectly reliable and without any measurement error, a child who had no improvements to his or her language skills would always obtain the same score if given the test repeatedly. This score is a hypothetical true score. Because no test is perfectly reliable, the true score is predicted to be within a range of scores (plus or minus the measurement error) around the obtained score.

One of the strengths of a norm-referenced test is that it specifies the size of the expected measurement error. Consider the *SEM* (the amount of error [in standard score points]) when interpreting a child's scores. The smaller the *SEM*, the more confidence there is in the accuracy of the test score. The *SEM* is used to calculate the confidence intervals for the standard scores a child obtained on the CELF Preschool–3. The confidence intervals for the standard scores were derived using a child's estimated true score and the standard error of estimation (*SEE*), which centers the confidence interval around the estimated true score rather than the observed score. Using confidence intervals rather than a specific single score allows for the ability to state the degree of confidence in making a classification, eligibility, or placement decision based on test results.

Each subtest and composite score is subject to a greater or lesser degree of measurement error, depending on the precision of the particular subtest score or composite score for a given age. Because the *SEM* may be different for each subtest score or composite score at a given age, the confidence interval (or range) will also be different at that age. The critical values in scaled score points required for the 68%, 90%, and 95% confidence levels for each subtest have been computed and are presented in the lower section of each Subtest Scaled Scores tables in Appendix B. The critical values in standard score points required for the 68%, 90%, and 95% confidence levels for each composite score are presented in the lower section of each Core Language Score and Index Standard Scores tables in Appendix C.

The higher the confidence level applied to a score, the larger the critical value and the greater the range of scores around the obtained score. Establishing and using confidence intervals around the CELF Preschool–3 scores ensures greater accuracy when interpreting scores. Figure 5.2 shows part of a table in Appendix B of the critical value (scaled score points) for each subtest. Figure 5.2 also shows part of a table in Appendix C of the critical value in standard score points used to determine confidence intervals for the Core Language Score and index scores.

Figure 5.2 Examples of Critical Values in Standard Score Points Used to Build Confidence Intervals From Appendixes B and C Norms Tables

	SC	WS	EV	FD	RS	BC	DPP	PRS
68% confidence level = +/–	1	1	1	1	1	1	1	1
90% confidence level = +/–	2	1	2	2	1	2	1	1
95% confidence level = +/–	3	2	2	2	1	2	1	1

	CLS	RLI	ELI	LCI	LSI	ALRI
68% confidence level = +/–	4	4	3	3	3	3
90% confidence level = +/–	6	6	5	5	5	5
95% confidence level = +/–	7	7	6	7	7	7

Select the confidence level that is appropriate for the purpose of the assessment. The 95% confidence level results in the broadest band of scores and provides the highest degree of confidence that the true score is in the range specified. The 90% and 95% confidence levels are most commonly used by decision-making teams to draw diagnostic conclusions and determine eligibility for services. Consider using the 90% or 95% confidence level to make similar decisions about language status and intervention needs. The 68% confidence level results in a narrower band of scores and is particularly useful for comparing discrepancies between index scores when identifying a child's areas of relative strengths and weaknesses.

Percentile Ranks

The CELF Preschool–3 provides age-based percentile ranks for subtest scores and composite scores. Figure 5.1 shows percentile ranks in a normal distribution. Percentile ranks indicate a child's standing relative to others of the same age in the normative sample; they reflect the percentage of children from the normative sample that scored at or below a given score. The mean standard score of 100 is at the 50th percentile rank for all ages. The CELF Preschool–3 percentile ranks range from < 0.1 to > 99.9, with 50 as the median score point. A child who achieves a percentile rank of 25 performs as well or better than 25% of other same-age children in the normative sample (or lower than 75% of the children in the normative sample).

Percentile ranks are easy to understand and useful for explaining a child's performance on the CELF Preschool–3 relative to the performances of others. Percentile ranks do not have equal intervals like scaled scores or standard scores and they cluster near the median—the 50th percentile. Consequently, for a child who scores within the average range, a change of 1 or 2 total raw score points may produce a large change in his or her percentile rank. Conversely, for a child who scores very low or very high on the CELF Preschool–3, a change of 1 or 2 raw score points is not likely to produce a large change in his or her percentile rank. Table 5.2 shows percentile ranks that correspond to selected scaled scores and their distances from the mean expressed in *SD* units. The mean scaled score of 10 is at the 50th percentile rank for all ages. Table 5.3 shows percentile ranks that correspond to selected standard score points for the Core Language Score and index scores and their distances from the mean expressed in *SD* units. The mean standard score of 100 is at the 50th percentile rank for all ages.

Age Equivalents

The CELF Preschool–3 provides age equivalents for all subtests except those that are criterion referenced (i.e., Connected Speech Sample [CSS], Pragmatic Activities Checklist [PAC]). Age equivalents represent the average age in years and months typical for a given total raw score. For example, a total raw score of 13 on the Word Structure (WS) subtest corresponds to an age equivalent of 4:2. Age equivalents for the CELF Preschool–3 subtests are provided in Appendix D. Diagnostic professionals report they use age equivalents to explain a child's performance on standardized tests to caregivers and teachers. Professionals also report that age equivalents are often mandated by agencies at the local, state, and federal level for eligibility and funding purposes. Although age equivalents have been widely used and appear to be useful for describing a child's language skills in comparison to typically functioning children of various ages, they are easily misinterpreted and have several psychometric limitations.

Limitation 1

Age equivalents do not reflect a child's relative rank or standing within a group of same-age peers; therefore, they lack the precise information that within-group norms provide about rank within an age range. Use standard scores or percentile ranks to make judgments about a child's standing relative to same-age peers (Lawrence, 1992; McCauley & Swisher, 1984; Wiig et al., 2013). Because an age equivalent does not give information about the range of scores for a child in a specific age group, it does not provide the information needed to determine if a child has a language impairment.

Limitation 2

Small raw score changes may result in large changes in age equivalents. There may be large differences between age equivalents and a child's chronological age but interpreting the child's language skills as far below or far above average for his or her age may be unwarranted because the range of average scores overlaps at adjacent age groups. For example, Children A and B are both age 3:10 and were administered the Following Directions (FD) subtest. Using Appendix D, Child A earned a total raw score of 10 points and an age equivalent of 3:8. Child B earned a total raw score of 12 points and an age equivalent of 4:2. This does not mean that Child B's skill is 6 months more advanced than Child A's. In fact, Child A's and Child B's scaled scores are 10 and 12, respectively, both in the average range compared with their same-age peers.

Limitation 3

Age equivalents may not be comparable across subtests. A child's corresponding percentile ranks for two subtests with the same age equivalents may differ substantially. For example, a child age 5:5 obtains an age equivalent of 4:5 on both the Sentence Comprehension (SC) and Word Structure (WS) subtests; however, the respective percentile ranks for these subtests are 16 and 25.

Limitation 4

An extreme age equivalent (much lower or much higher than chronological age) does not signify that the child's language functioning resembles that of the extreme age group in every way. In addition, age equivalents at the most extreme ends of the age range are particularly difficult to interpret because they may be reported simply as less than 3 years 0 months (< 3:0) or greater than 7 years 0 months (> 7:0).

Because of these limitations, it is not recommended to use age equivalents as the primary scores for diagnosis. Use standard scores, scaled scores, or percentile ranks to compare a child's performance to others of the same age. Make diagnostic decisions from a review of the child's standard scores and other background and qualitative information such as language samples, primary caregiver/teacher interviews, and observations of the child in different language contexts. It is not best practice to base diagnosis or placement decisions only on age equivalents or on any one type of score.

Calculating Percent Delay From an Age Equivalent

Some states and agencies that require quantitative criteria for placing preschool children in special services will accept a percent of chronological age as a measurement of delay (Early Childhood Technical Assistance Center, 2015). Calculating percent delay is most often done by dividing the age at which an obtained raw score is the median (the age equivalent) by the child's chronological age and subtracting the resulting percentage from 100. Thus, a child who is 5:0 with an age equivalent of 4:6 would either be performing at 90% ability or be considered to have a 10% delay. If the child's school district required a 25% delay as the criterion for receiving special services, a child with a 10% delay would not be recommended for services based on the calculated percent delay. Because of the problems inherent in using age equivalents, it is recommended to avoid using percent delay to qualify children for services and instead use standard scores or percentile ranks.

Growth Scale Values

The CELF Preschool–3 provides GSVs for all subtests except those that are criterion referenced (i.e., Connected Speech Sample [CSS], Pragmatic Activities Checklist [PAC]). GSVs were developed using the performance of children in the normative sample and can be used to quantify small improvements in the language skills of children assessed using the CELF Preschool–3. The GSV is an IRT-based ability score with an equal interval scale that can be used to compare changes in a child's score across multiple administrations. It is a transformation of the raw score and is superior to raw scores for making comparisons for clinical evaluation because raw score totals do not account for differences in item difficulty. In a subsequent administration, a child could have answered three more items correct, but those three items could have been easy or hard items. Increases in GSVs are adjusted such that an increase of 3 points represents the same amount of progress anywhere on the growth scale for the respective subtest. GSVs corresponding to subtest raw score totals are presented in Appendix F.

Use GSVs to quantify limited growth in language skills of a child with language skills that are below or well below expected for his or her age. Use the CELF Preschool–3 GSVs to

- track a child's skill development on specific subtests,
- determine if the child has gained additional language skills since a previous administration of the CELF Preschool–3, and
- measure the efficacy of an intervention protocol that has been implemented for the child.

The GSV is not a normative score because it does not involve comparison with a norm group. Standard scores, percentile ranks, stanines, and normal curve equivalents (NCEs) compare a child's performance with that of a reference group representing others of the same age (the normative sample). In contrast, the GSV measures a child's skills with respect to an absolute scale. As the child's skill level grows, the GSV increases.

The advantage of using GSVs rather than standard scores to assess improvement in a child's language skills is that the GSV provides a quantifiable measure of a child's changes in ability, even if the amount of change is not sufficient to narrow the gap between the child's language skills and those of his or her same-age peers. That is, GSVs provide an estimate of language skills based on the range of performance of the entire normative sample rather than that of a child's peer group. The GSV means the same even if the child's age upon retesting would place him or her into a new age band. The scores increase as the child demonstrates new abilities. GSVs were calculated based on a mean of 500 and an *SD* of 25.

> *Note*. The CELF Preschool–3 GSVs were developed based on the CELF Preschool–3 sample only. The GSVs cannot be used to compare the CELF Preschool–3 assessment results with results from the CELF Preschool–2 or the CELF–5.

Criterion-Referenced Scores

The Connected Speech Sample (CSS) story grammar and the Pragmatic Activities Checklist (PAC) are criterion-referenced measures; a child's performance on these measures is reported as criterion-referenced cut scores rather than norm-referenced standard scores. Criterion-referenced scores provide a way to compare a child's performance to a standard (i.e., criterion) of performance. These scores are not dependent on an approximately normal distribution of raw scores. The raw scores may be skewed, with the curve deviating greatly from the normal distribution. In practice, this tends to be the case when measuring skills that are not dependent upon learning but reflect maturity based on developmental behavior relationships. Although scaled scores reflect learning and acquisition, and therefore measure the accuracy of performance, criterion-referenced scores reflect different criteria established for performance (e.g., acceptable, emerging, beginning).

The Connected Speech Sample (CSS) story grammar cut scores reflect the results of the age-based performance of 200 children in the normative sample and 20 children in the clinical sample. Cut scores are reported for ages 3–4 and ages 5–6 and provide the following descriptors of performance: acceptable, emerging, beginning. The Pragmatic Activities Checklist (PAC) cut scores reflect the age-based performance of children in the normative sample. Cut scores are reported for ages 3, 4, and 5–6 and are based on whether the child meets or does not meet the criteria.

INTERPRETATION OF THE CELF PRESCHOOL–3

Use the following interpretation guidelines to derive the most useful and meaningful educational information and intervention programming recommendations from a child's CELF Preschool–3 results.

Determining Evidence of a Language Impairment

Parents, caregivers, and teachers may ask if a child's language difficulties (e.g., difficulty communicating with family and friends, not responding to classroom learning strategies) indicate that he or she has a language impairment. The CELF Preschool–3 provides norm-referenced information to use as part of a total assessment process to help answer these questions.

Examining the Core Language Score in combination with the Receptive Language Index and the Expressive Language Index scores is recommended as best clinical practice yielding the most accurate diagnostic information. The six subtests that make up the Core Language Score and the Receptive Language Index and Expressive Language Index scores best discriminate language performance typical of average or above average language users from language performance observed in children with a language impairment. Using this combination of scores, sensitivity at –1.3 *SD*s is .93 and .89 at –1.5 *SD*s. Specificity at –1.3 *SD*s is .81 and .84 at –1.5 *SD*s, as shown in Table 4.11. Examine these scores first when interpreting test results to identify a language impairment and to determine if a child is eligible for special services.

An optimal cut score of –1.5 *SD*s (standard score of 77) for the Core Language Score, Receptive Language Index score, and Expressive Language Index score was calculated. Using 77 as the cut score produces the best balance between accurately identifying a language impairment (sensitivity of .89) and false positive identification (specificity of .84).

Report the Core Language Score, Receptive Language Index score, and Expressive Language Index score with their confidence intervals and corresponding percentile ranks. See Chapter 4 for a description of the sensitivity and specificity of the Receptive Language Index and Expressive Language Index scores used in conjunction with the Core Language Score at –1, –1.3, –1.5, and –2 *SD*s.

If the Core Language Score, Receptive Language Index score, and Expressive Language Index score are 86 or above (less than 1 *SD* below the mean of the comparison group), further testing is not necessary unless there is other evidence of a language impairment (e.g., other test results, language sample analysis, teacher observations, parent/caregiver reports, diagnostic professional's clinical judgment). If any one of these scores— the Core Language Score, the Receptive Language Index score, or the Expressive Language Index score—is 85 or below (1 or more *SD* below the mean) or if there is other evidence of a language impairment, additional testing is warranted to further identify specific weaknesses.

The severity of a language impairment is determined by the deviation of a child's scores from the mean of 100. Table 5.4 presents descriptions of the severity of language impairments based on the CELF Preschool–3 results.

Table 5.4 Guidelines for Describing the Severity of a Language Impairment

Core Language Score, Receptive Language Index, or Expressive Language Index	Classification	Relationship to the mean
115 and above	Above average	+1 *SD* and above
86 to 114	Average	Within + or – 1 *SD*
78 to 85	Marginal/below average/mild	Within –1 to –1.5 *SD*s
71 to 77	Low/moderate	Within –1.5 to –2 *SD*s
70 and below	Very low/severe	–2 *SD*s and below

Scores within 1 *SD* of the mean (between 86 and 114) are considered average. Scores below –1 *SD* indicate that the child demonstrates below average to very low language abilities relative to same-age peers, which may or may not significantly impact participation in home/classroom activities and academic achievement.

The criteria for identifying a child with a language impairment vary among treatment programs and school districts. Some agencies use 1 *SD* below the mean as the criterion to qualify a child for enrollment in an intervention program and others use 1.5 or 2 *SD*s below the mean. Plan how to address the child's needs within the framework established by the local education agency or institution.

Describing the Nature of the Impairment

If a child is diagnosed with a language impairment, more information is needed about the child's language skills, including information about how his or her language modalities, language content, and language structure are affected. Additionally, examine how a child's preliteracy skills or pragmatic skills impact his or her success in the classroom and other social contexts. Choose to continue the evaluation several ways, including:

- Administer the subtests required to compute the Language Content Index and Language Structure Index scores to evaluate performance across specific language domains.
- Administer the subtests required to compute the Academic Language Readiness Index and the Early Literacy Index scores to evaluate skills needed for successful performance in the classroom.
- Use the Connected Speech Sample (CSS) subtest to evaluate a child's narrative abilities regarding macrostructure and microstructure.
- Use the Pragmatic Activities Checklist (PAC) to learn about the child's language and communication skills in social contexts and in the classroom.

Compare the Receptive Language Index score and the Expressive Language Index score to evaluate performance across language modalities. Use the Language Content Index score and the Language Structure Index score to describe language strengths, weaknesses, and needs measured by the CELF Preschool–3.

Interpreting Differences in Index Scores

The CELF Preschool–3 index scores provide information about the nature of a child's language impairment. Use this information to describe the child's language impairment by examining the patterns of performance or by comparing the child's score patterns to the appropriate norm-referenced group. These comparisons can help identify potentially meaningful patterns of strengths and weaknesses, which may be important in describing a language impairment and how it affects the child's ability to function in different settings. This information can help prepare educational programs, accommodations, and interventions.

The CELF Preschool–3 Record Form is designed to help analyze a child's scores and interpret test results. The Record Form provides a section called Pairwise comparisons to evaluate index score differences. Differences between selected index scores were observed for most children in the normative sample and patterns of differences were consistent. Using Table 5.5, the difference between the Receptive Language Index and the Expressive Language Index and the Language Content Index and the Language Structure Index can by analyzed by age band. For example, for children between the ages of 4:6–4:11, ≤ 25% of the normative sample had a difference greater than 10 standard score points between the Receptive Language Index and the Expressive Language Index. Also, for children between the ages of 4:6–4:11, ≤ 25% of the normative sample had a Language Content Index score 10 standard score points or greater than a Language Structure Index score or a Language Structure Index score 12 standard score points or greater than a Language Content Index score. It is expected that most of the children who are administered the CELF Preschool–3 will exhibit some difference between the index scores; however, it is important to note if the differences are atypical. Differences obtained by ≤ 5% of the normative sample are considered rare.

To determine if a language deficit is generalized across receptive and expressive skills or if it is primarily a receptive or expressive deficit, evaluate the difference between the two index scores to determine if the difference is significant. Similarly, to determine if the nature of the impairment is generalized across language content and language structure or if it is primarily a language content or language structure deficit, evaluate the difference between the two index scores to determine if the difference is significant. Compare the child's relative performance on the Receptive Language Index

and Expressive Language Index scores as well as the Language Content Index and the Language Structure Index scores before making diagnostic and educational decisions about the overall nature of the language impairment. Use the following procedure to determine if there is a true difference between the index scores rather than a difference because of measurement error or random fluctuations.

Comparing the Index Scores

First, compare the index scores to determine if the difference between them is statistically significant. Table 5.5 shows the minimum differences between index scores that are required for statistical significance at the .05 and .10 levels by age. Choose the level of significance to use in comparing index scores. The .05 level of significance is a narrower indicator and is more stringent. The .10 level of significance is a broader indicator of difference between index scores. Compare the index scores to determine the following:

- When the difference between two scores is equal to or larger than the value listed in Table 5.5, the difference is considered a true difference rather than because of measurement error or random fluctuation.
- If the two scores are not significantly different, the child's abilities in these modalities (i.e., content areas) can be considered somewhat equally developed.

Table 5.5 Statistics for Pairwise Comparisons of Index Scores

		Significance level		Base rate									
				≤ 25%		≤ 15%		≤ 10%		≤ 5%		≤ 2%	
Age	Comparison	.05	.10	(+)	(–)	(+)	(–)	(+)	(–)	(+)	(–)	(+)	(–)
3:0–3:5	RLI–ELI	9.29	7.77	12	11	13	12	15	15	20	17	26	19
	LCI–LSI	9.29	7.77	12	10	15	11	17	14	19	29	—	34
3:6–3:11	RLI–ELI	9.74	8.15	12	11	13	16	14	18	17	20	20	28
	LCI–LSI	10.18	8.52	10	8	12	10	14	11	18	12	19	15
4:0–4:5	RLI–ELI	9.74	8.15	15	12	17	15	19	16	21	18	26	20
	LCI–LSI	9.74	8.15	11	13	16	15	18	17	22	20	23	24
4:6–4:11	RLI–ELI	10.99	9.20	10	10	14	14	15	15	17	20	20	25
	LCI–LSI	10.60	8.87	10	12	13	15	15	19	16	20	29	24
5:0–5:5	RLI–ELI	12.46	10.43	14	15	16	18	17	20	27	23	31	25
	LCI–LSI	12.47	10.44	14	14	18	17	22	21	23	25	26	34
5:6–5:11	RLI–ELI	11.00	9.20	14	11	16	13	21	16	24	20	31	23
	LCI–LSI	10.99	9.20	12	13	14	16	—	18	18	25	19	28
6:0–6:11	RLI–ELI	12.12	10.14	11	13	13	18	14	—	19	22	23	28
	LCI–LSI	12.12	10.14	12	11	15	12	19	16	—	19	22	20

Next, if there is a significant difference, evaluate how rare the score difference is in the general population. Use Table 5.5 to determine how prevalent the score difference was in the normative sample. The less often a score difference occurs, the greater the chance that the difference may have an impact on intervention and educational modifications and accommodations.

Compare the child's performance on the Receptive Language Index and Expressive Language Index scores or the Language Content Index and Language Structure Index scores. Use the Pairwise comparisons section on page 1 of the Record Form and Table 5.5 to determine if the score difference is statistically significant and then judge how rare the difference is.

The base rate columns in Table 5.5 list the score point differences between the index pairs (i.e., RLI–ELI, LCI–LSI) that were obtained by ≤ 25%, ≤ 15%, ≤ 10%, ≤ 5%, and ≤ 2% of the normative sample. The scores are compared in both directions for each index pair (e.g., the Receptive Language Index is less than the Expressive Language Index [–] and the Receptive Language Index is greater than the Expressive Language Index [+]). To determine if a percentage is ≤ 25% of the normative sample obtained a particular score point difference, look for the score point difference in the (+) or (–) column of the index pairs and then find the corresponding percentage.

For example, if a child age 4:6 has a standard score of 85 on the Receptive Language Index and a standard score of 70 on the Expressive Language Index, the difference between scores is 15 points. Look up the child's age band and RLI–ELI row. Read across to locate 15 in the (+) Base rate column to see that ≤ 10% of the normative sample had a discrepancy of 15 points between those two index scores.

Interpreting the Academic Language Readiness Index

The Academic Language Readiness Index score is a composite score that can be obtained for children ages 3–6 and consists of the Expressive Vocabulary (EV), Following Directions (FD), and Descriptive Pragmatics Profile (DPP) subtests. These curriculum-relevant assessment measures are not intended to assign a diagnostic category but can be used to describe the language and socialization skills needed in the classroom. Children who have poor language skills and socialization skills may struggle in the classroom without direct intervention and modifications or accommodations in place. Children who have poor language skills and adequate socialization skills may need direct language intervention, as well as academic modifications or accommodations. Children who have adequate language skills and poor socialization skills may do well academically but still require direct services and accommodations to foster and encourage positive social interactions with peers. The Academic Language Readiness Index score can help to make recommendations for the classroom setting and help multidisciplinary teams design appropriate instruction.

Along with the results of the Academic Language Readiness Index, it is recommended to review the results of the Behavioral Observation Checklist located on page 2 of the Record Form to further inform a multidisciplinary team. The combination of results allows teams to develop and plan facilitating techniques to improve a child's performance in the classroom.

Interpreting the Early Literacy Index

The Phonological Awareness (PA) and the Preliteracy Rating Scale (PRS) subtests were designed to provide an organized observation of the child's early literacy skills required by many local education agencies as a measure of school quality or student growth under the Every Student Succeeds Act of 2015. The Early Literacy Index score can be obtained for children ages 4–6 who are administered the Phonological Awareness (PA) and Preliteracy Rating Scale (PRS) subtests. When interpreting the results of the Early Literacy Index score, evaluate the potential impact of the child's early literacy and/or preschool experiences on test results. It is recognized that phonological awareness and preliteracy development are critical components of future literacy success; however, there is insufficient longitudinal evidence in the literature about patterns of reading and writing development in typically developing preschool children to determine exactly which early literacy skills impact future reading and writing ability and to what degree (Yatvin et al., 2003).

Interpreting Criterion-Referenced Measures

Although state regulations often require quantitative measures such as standardized, norm-referenced instruments to establish eligibility for services, descriptive performance assessment measures are also needed as part of a comprehensive assessment to assess language performance under different conditions (e.g., social interactions) or contexts (e.g., home or community settings) to describe classroom language performance and to design appropriate instruction. These descriptive and curriculum-relevant measures enable diagnostic professionals to focus on the classroom as a communication and language-learning environment and to evaluate how a child uses language for socialization and literacy learning. These performance assessment procedures are not used to assign children to diagnostic categories for placement purposes; however, they are essential in providing information about a child's unique communicative strengths and weaknesses for use in planning intervention (Losardo & Syverson, 2011; Merritt & Culatta, 1998).

Interpreting the Pragmatic Activities Checklist

For the Pragmatic Activities Checklist (PAC) subtest, a single criterion score is reported for ages 3, 4, and 5–6. When the criterion is not met, these results indicate that the child exhibits more atypical social communication behaviors than the average same-age child and further evaluation may include completion of the Descriptive Pragmatics Profile (DPP): observations of the child in multiple contexts, with multiple communication partners, and administration of additional dynamic or interactive measures of social communication skills (Winner, 2007). See Chapter 2 for information about administering and scoring the Pragmatic Activities Checklist (PAC).

Interpreting the Connected Speech Sample Subtest

The Connected Speech Sample (CSS) subtest provides a way to analyze a child's language skills in connected speech using a narrative produced by the child in the context of a story retell task. Children may be able to apply emerging language skills when the language demands are decreased (e.g., completing a sentence or labeling a picture). However, when language demands increase in a task that requires organization, recall, and perspective-taking, such as in a story retell, children may not be able to apply the skills as frequently or consistently as they would in shorter response tasks (Kaderavek, 2015). An analysis of the child's performance on the Connected Speech Sample (CSS) subtest, also referred to as a language sample analysis, can be used to confirm and elaborate on the information gained from the CELF Preschool–3.

The Connected Speech Sample (CSS) subtest provides a scoring rubric for analyzing the macrostructure (or story grammar) elements of the child's narrative, as well as descriptors for rating organization and recall of facts and details. The Story Grammar table found within the Connected Speech Sample (CSS) subtest in the Record Form contains three cut scores for children ages 3–4 and 5–6 that place them into three categories: green (Acceptable), yellow (Emerging), or red (Beginning). The green category, Acceptable, indicates that a child's skills are considered acceptable for his or her age and educational level. The yellow category, Emerging, indicates that the child's skills are transitioning from a beginning level to an acceptable level. The red category, Beginning, explains the beginning stage of development and indicates that the specific skill is inadequately developed based on the child's age.

When interpreting story grammar scores within the red and yellow ranges, it is important to note that a child who does not include many of the elements scored as part of his or her overall narrative structure may not necessarily have a language impairment based on the story grammar rating alone.

Consider these results with the results of the other CELF Preschool–3 subtests, observations, and dynamic assessment because the ability to narrate well and to use other forms of extended discourse is an important precursor to literacy and continues to be linked to literacy achievement throughout the school years (Gleason & Ratner, 2017). Furthermore, most classroom instruction, participation, and assessment from preschool years and beyond occurs within the context of narrative discourse, so children with advanced narrative comprehension and composition skills are more likely to participate and succeed within the academic environment (Allen et al., 2012; Barnes, 2015; Colozzo et al., 2011).

Additionally, the Connected Speech Sample (CSS) subtest includes a table in the Record Form to analyze elements of microstructure in the child's narrative. The Language Structures table includes morphosyntactic components included in the Word Structure (WS) subtest for comparison between formal testing and the child's self-generated narrative. The use of all or specific structures analyzed in the Language Structures table can be rated quantitatively, based on the number of accurate productions, using the same green, yellow, and red categories that were used when rating story organization and recalling facts and details. Keep in mind that not all language structures are expected to be in the Acceptable level for children ages 3–6. It is expected that some of the language structures of a child as young as age 3 would be rated as Beginning. Table 5.6 shows the ages at which the language structures analyzed should be mastered.

Table 5.6 Stages of Language Development

Age of mastery	Language structure	Mean length of utterance (MLU) and language stage
2:0–2:6	Progressive (-ing)	2.0–2.5
	Preposition (in)	Stage II
	Preposition (on)	
	Regular plural	
2:6–3:0	Irregular past tense	2.5–3.0
	Possessive ('s)	Stage III
3:0–3:6	Articles (a, the)	3.0–3.75
	Regular past tense (-ed)	Stage IV
	Regular third person singular (-s)	
3:6–5:0	Irregular third person singular	3.75–4+
	Copula (main verb "to be")	Stage V–V+
	Auxiliary (helping verb "to be")	
4:5–5:0	Subjective pronoun	
5:0–5:5	Objective pronoun	
	Possessive pronoun	
> 6:11	Reflexive pronoun	
	Noun derivation	
6:0–6:11	Comparative	
> 6:11	Superlative	

Note. Adapted from Kaderavek (2015) using Brown's Stages of Language Development (1973) and CELF Preschool–3 standardization data. Kaderavek, J. N. (2015). *Language disorders in children: Fundamental concepts of assessment and intervention* (2nd ed.). Pearson. Reproduced by permission of Pearson Education, Inc., New York, NY.

If the child only produced a few obligatory contexts in his or her narrative, this may not be an indication that this skill is inadequately developed. If there is concern that a child did not produce enough language structures to determine an overall skill level, use the extension testing suggestions provided for the Word Structure (WS) or Recalling Sentences (RS) subtests in Chapter 2 of this Manual.

The information gathered from the Connected Speech Sample (CSS) subtest along with the results of the CELF Preschool–3 can provide information needed to develop appropriate intervention goals and plans. Refer to Table 5.7 for suggested recommendations based on these test results.

Table 5.7 Suggested Recommendations for Services Based on Test Results

Adequately developed	Development in transition	Inadequately developed
Connected Speech Sample (CSS) story grammar scores are acceptable and/or developmentally appropriate.	Connected Speech Sample (CSS) story grammar scores are beginning or emerging slower than expected for the child's age.	Connected Speech Sample (CSS) story grammar scores are beginning or emerging slower than expected for the child's age.
Connected Speech Sample (CSS) language structures results appear to be acceptable and/or developmentally appropriate.	Connected Speech Sample (CSS) language structures results appear to be beginning or emerging slower than expected for age.	Connected Speech Sample (CSS) language structures results appear to be beginning or emerging slower than expected for the child's age.
The CELF Preschool–3 standard scores are in the average or above average range.	The CELF Preschool–3 standard scores are in the marginal/below average/mild range.	The CELF Preschool–3 standard scores are in the low or very low range.
▼	▼	▼
No special services required.	Classroom intervention/intervention in the home is recommended. Consider SLP direct services or consult with classroom teacher/family for indirect services.	SLP direct intervention is recommended. Consider providing classroom intervention/ intervention in the home in addition to direct SLP services.

To conclude, there are several assessment techniques and procedures available for gathering information about a child using the CELF Preschool–3. During the assessment process, norm-referenced data, information from parent/caregiver interviews, observations, language sampling, and the results of dynamic assessment are all factors to consider when recommending special services.

Interpreting Growth Scale Values

While conducting periodic assessment with the CELF Preschool–3, record GSVs and compare changes in the child's performance from one assessment to the next. Use the Growth Scale Values Tracking Form provided in Appendix J to record the GSVs of multiple administrations. Comparing the scores from two CELF Preschool–3 administrations will result in one of three patterns: the GSV from the most recent test administration will either increase, remain approximately the same, or decrease.

Scores Increase

GSVs increase when the child earns additional raw score points. Score increases, even small increases, can usually be attributed to refinement or mastery of additional developmental language skills that the child did not demonstrate during the previous test administration.

When interpreting the testing results, keep in mind that there may be reasons other than the mastery of additional language skills for the increase in GSVs. The child could have been shy, sick, tired, distracted, or frustrated during the first test administration and didn't perform at his or her best. When this is the case, it is possible that the previously administered CELF Preschool–3 test score was depressed and did not reflect the child's true language skills.

The child may have guessed the correct response to one or more test items. On some standardized tests, a child may receive a higher raw score by guessing correctly on a multiple-choice item. The possibility of a child achieving a higher raw score from guessing on the CELF Preschool–3 is minimized because there are few subtest items with opportunities to guess the correct answer, particularly on the subtests that require the child to respond verbally.

The items for which a child can guess the correct response are more likely to be receptive language subtests that provide multiple-choice response items (e.g., Sentence Comprehension ([SC], Word Classes [WC]). If there is a question of GSV score increases because of guessing, compare scores on related subtests that are not multiple choice to determine if the improved scores also occurred on those items. Increases in GSVs that only occur on multiple-choice tests suggest chance contributions instead of an increase in skills or abilities.

Scores Stay About the Same

In some cases, a child's GSV may change very little. There are several possible reasons:

- The child may have been tested before additional language skills have been acquired (i.e., a younger child [ages 3–4]) may reasonably be tested every 6 months because children develop many language skills quickly at this age. However, a child older than age 5 may or may not be expected to show a difference in skills in 6 months' time. It is not recommended to administer a complete CELF Preschool–3 test every 3 months to track progress. Alternative assessments and forms of assessment (e.g., language sampling, dynamic assessment) are preferable rather than frequent additional administrations of the CELF Preschool–3 subtests. Frequently repeated administrations of most subtests may result in inflated scores because of practice effects. See Chapter 2 for a discussion of retesting time considerations.
- The child may have plateaued for certain language skills. Children who are developing language typically plateau for certain types of language skills. Acquisition of morphological markers, for example, does not necessarily proceed at a continuous pace. When this is the case, there might not be progress for certain types of skills. Children with a language impairment, like their typically developing peers, may experience plateaus in their language development for certain types of language skills.
- The child may not have been in therapy for enough time for change to occur because of intervention (e.g., the child is only in the fourth week of an 8-week intensive language therapy program).

Scores Decrease

GSVs may decrease for a child who is sick, tired, or distracted during the second test session. In this situation, if the child does not demonstrate a best performance, it would be erroneous to interpret a lower score as evidence that the child is losing language skills.

In some cases, a child may have a progressive or degenerative condition in which he or she loses previously acquired language skills. A child who has suffered a traumatic event (e.g., head injury) or an illness (e.g., meningitis or a sudden onset of a seizure disorder) may also lose previously acquired vocabulary knowledge.

Interpreting Growth Scale Values Relative to Standard Scores

To obtain a complete picture for the child's performance since his or her last assessment with the CELF Preschool–3, examine both scaled scores and GSVs. Changes in scaled scores provide information about how the child is performing compared to other same-age children. Changes in GSVs provide information about the gains the child has made since his or her last assessment.

Record both scores on page 2 of the Record Form. Table 5.8 presents descriptions of different performance patterns that may be observed based on the changes in the child's scaled scores and GSVs over time. Scaled scores for a child with a moderate or severe language impairment may show little change over time even though the child is acquiring new language skills. GSVs are more likely to reflect the changes the child has made as a result of intervention.

Table 5.8 Interpreting Change in a Child's Scaled Scores and Growth Scale Values Over Time

Score pattern	Scaled score interpretation	GSV interpretation
Both scaled score and GSV increase.	If the child's scaled score on the first administration was below average (≤ 7), the gap between the child's performance and the performance of typically developing children of the same age has narrowed.	The child is acquiring new language skills.
Scaled score does not change and GSV increases.	The child's ranking relative to same-age children has not changed.	The child is acquiring new language skills.
Scaled score does not change and GSV increases very little.	The child's ranking relative to same-age children has not changed.	The child is acquiring new skills at a slow rate.
Scaled score decreases and GSV increases.	The child is not acquiring new skills as quickly as other same-age children. The gap between the child's performance and the performance of typically developing children of the same age has widened.	The child is acquiring new language skills.
Both scaled score and GSV decrease.	The child is not acquiring skills as quickly as other same-age children. The gap between the child's performance and the performance of typically developing children of the same age has widened.	The child did not demonstrate his or her best performance during testing (e.g., because of illness, inattention, or behavior issues) or the child is regressing—losing previously mastered language skills—because of a progressive condition or late onset of a condition (e.g., seizure disorder) or an accident or injury (e.g., traumatic brain injury).

QUALITATIVE INTERPRETATION

Qualitative analysis of the CELF Preschool–3 subtest results can supplement quantitative information provided by standard scores and may assist in developing hypotheses about a child's test performance and language abilities. Subtests can be described based on the modality of language (i.e., receptive, expressive) and the nature of the language constructs measured (i.e., content, structure, pragmatics, literacy). Consider how the child performed overall based on his or her raw score or specifically on categories of items within a CELF Preschool–3 subtest. For example, on the Expressive Vocabulary (EV) subtest, the child was able to label 15/21 pictures presented and, of those 21 pictures, he or she labeled 1/3 verbs. If appropriate, describe how the child performed on one subtest in comparison to another. For example, on the Sentence Comprehension (SC) subtest, the child was able to identify 2/2 items containing relative clauses and on the Recalling Sentences (RS) subtest, the child imitated 0/2

sentences with relative clauses. Differences in performance on certain skills across subtests are not unusual. Noting the contexts where a child is able to perform a task successfully may suggest emerging language skills or that something about the task supports better performance. This information can be used to provide guidance for planning intervention and to provide parents/primary caregivers and teachers with suggestions to improve the child's ability to use the language skill at home and in the classroom. Use the Item Analysis tables provided at the end of each subtest in the Record Form or use Chapter 2 of this Manual to provide descriptions of the skills in which a child may need further instruction. The Item Analysis tables are designed to determine error patterns in a child's responses for possible intervention planning. The Phonological Awareness (PA), Descriptive Pragmatics Profile (DPP), Preliteracy Rating Scale (PRS), and Pragmatic Activities Checklist (PAC) subtests do not include Item Analysis tables because the items are categorized within each of the subtests. A qualitative analysis at the item level may offer helpful insights into a child's language strengths and needs based on the CELF Preschool–3 subtests administered.

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Appendix A. Language Differences and Cultural Sensitivity

BIAS REVIEW

Bias in a standardized test is undesirable not only because it does not take into account individual differences, but also because it can result in inaccurate evaluations of performance. According to Kohnert (2013), a test is considered biased when it contains any element that leads to an unfair or distorted representation of the child's performance and, therefore, an unfair interpretation of test results. Kohnert recognizes two types of bias that can be present in an assessment: content bias and linguistic bias. Content bias occurs when any part of the test administration is culturally unfamiliar to the child or presents tasks that are outside his or her realm of experience. Linguistic bias situations occur when the language or dialect of the assessment is fundamentally different from the language or dialect the child speaks. Linguistic bias can occur when the dialect presented within a test or the dialect spoken by the professional or paraprofessional administering the test differs from that of the child being tested. The American Speech-Language-Hearing Association (ASHA, 2003) asserts that no dialectal variety of American English is a disorder or a pathological form of speech or language. Each dialect is adequate as a functional and effective variety of American English.

Because many factors affect educational success, it is imperative to evaluate a child's language skills in light of his or her language and dialectal background, community, cultural orientation, and ethnicity. In addition, these variables can have an impact on how a child's performance is reported, especially to his or her parents/caregivers. The following is a brief list of resources that can provide more information about cultural and linguistic differences and culture-specific social and language practices:

- Cultural Competence (ASHA, 2020a)
- Self-Assessment for Cultural Competence (ASHA, 2020b)

To make the CELF Preschool–3 as fair as possible to all children, bias reviews of the pilot and standardization editions were conducted. Eight speech-language pathologists, who are experts in multicultural issues, reviewed test content for ethnic, gender, cultural, socioeconomic, and regional bias. The panel members represent expertise in Hispanic, African American, Asian, and Native American interests, as well as men's and women's issues. Each member of the panel reviewed items, subtest tasks, administration directions, stimulus pictures, and possible child responses for potential bias. Their feedback was carefully considered when building the standardization edition and final version of this test. For more information on bias review and analysis of the CELF Preschool–3, see Chapter 3.

Dr. Janna Oetting of the Department of Communication Sciences and Disorders at Louisiana State University, Baton Rouge, and a bias review panel member for the CELF Preschool–3, noted in her 2013 bias review of CELF–5:

> Reviewing the [test] content for bias is very important when working with culturally and linguistically diverse children. However, you also should not incorrectly assume that all speakers of a given dialect, language, or culture will respond in a particular way to a test item just because a response has been documented for the given dialect, language, or culture, especially when the documentation has come from studies of adults or studies of speakers engaged in a narrow range of genres such as informal conversation. Ideally, speech-language pathologists should seek to understand the range of test responses that are provided by children within the given dialect, language, or culture who are developing language typically. Test responses from these typically developing children should then be used as a benchmark from which to evaluate the test responses of children for whom language ability status is less clear.

GENDER-NEUTRAL LANGUAGE

It is important to be aware of the child's culture and whether the child is exposed to binary gender (i.e., masculine/feminine) pronouns. For items that specifically target the use of binary gender pronouns in the Word Structure (WS) subtest, do not score the items incorrectly if the child uses a gender-neutral pronoun or responds in a way that is appropriate for the child's background and culture. It is important to have a clear understanding of the child's background and culture through information collected before the assessment (e.g., parent/caregiver interviews, medical records, etc.) to administer, score, and interpret results appropriately.

DIALECTAL VARIATIONS

This appendix provides descriptions of possible phonemic and grammatical productions that have been documented for common nonmainstream dialects of English, including African American English (Oetting & McDonald, 2001; Owens, 2020), Southern English (Oetting & McDonald, 2001), Spanish-influenced English (Owens, 2020), and Asian-influenced English (Anderson & Shames, 2011; Owens 2020). Finally, a listing of alternate responses to the items in the Word Structure (WS) subtest by speakers of various dialects is included (reviewed by Dr. Janna Oetting, Communication Sciences and Disorders/Linguistics, Louisiana State University, Baton Rouge, LA; Marie Sepulveda, CCC-SLP, Lakeland, FL; and Chien J. Wang, CCC-SLP, San Antonio, TX). These tables are neither exhaustive nor universal but represent some of the most common phonological and grammatical productions for a given dialect.

Table A.1 Common Phonemic Contrasts Between African American English and Standard American English

SAE phonemes	Position in word		
	Initial	Medial	Final*
/p/		Unaspirated /p/	Unaspirated /p/
/n/			Reliance on preceding nasalized vowel
/w/	Omitted in specific words (*I 'as, too!*)		
/b/		Unreleased /b/	Unreleased /b/
/g/		Unreleased /g/	Unreleased /g/
/k/		Unaspirated /k/	Unaspirated /k/
/d/	Omitted in specific words (*I 'on't know*)	Unreleased /d/	Unreleased /d/
/ŋ/		/n/	/n/
/t/		Unaspirated /t/	Unaspirated /t/
/l/		Omitted before labial consonants (*help-hep*)	"uh" following a vowel (*Bill-Biuh*)
/r/		Omitted or /ə/	Omitted or prolonged vowel or glide
/θ/	Unaspirated /t/ or /f/	Unaspirated /t/ or /f/ between vowels	Unaspirated /t/ or /f/ (*bath-baf*)
/v/	Sometimes /b/	/b/ before /m/ and /n/	Sometimes /b/
/ð/	/d/	/d/ or /v/ between vowels	/d/, /v/, /f/
/z/		Omitted or replaced by /d/ before nasal sound (*wasn't-wud'n*)	

Blends

/str/ becomes /skr/

/ʃr/ becomes /str/

/θr/ becomes /θ/

/pr/ becomes /p/

/br/ becomes /b/

/kr/ becomes /k/

/gr/ becomes /g/

Final consonant clusters (second consonant omitted when these clusters occur at the end of a word)

/sk/	/nd/	/sp/
/ft/	/ld/	/dʒd/
/st/	/sd/	/nt/

*Note weakening of final consonants.

Note. Owens, R. E. (2014). *Language disorders: A functional approach to assessment and intervention* (6th ed.). Pearson. Reproduced by permission of Pearson Education, Inc., New York, NY.

Table A.2 Common Grammatical Contrasts Between African American English and Standard American English

African American English grammatical structure	SAE grammatical structure
Possessive (-'s)	
Nonobligatory where word position expresses possession.	Obligatory regardless of position.
Get *mother* coat.	Get mother*'s* coat.
It be mother*'s.*	It's mother*'s.*
Plural (-s)	
Nonobligatory with numerical quantifier.	Obligatory regardless of numerical quantifier.
He got ten *dollar.*	He has ten dollar*s.*
Look at the cat*s.*	Look at the cat*s.*
Regular past (-ed)	
Nonobligatory; reduced as consonant cluster.	Obligatory.
Yesterday, I *walk* to school.	Yesterday, I walk*ed* to school.
Irregular past	
Case by case, some verbs inflected, others not.	All irregular verbs inflected.
I *see* him last week.	I *saw* him last week.
Regular present tense third-person singular (-s)	
Nonobligatory.	Obligatory.
She *eat* too much.	She eat*s* too much.
Irregular present tense third-person singular (-s)	
Nonobligatory.	Obligatory.
He *do* my job.	He *does* my job.
Indefinite (an)	
Use of indefinite *a.*	Use of *an* before nouns beginning with a vowel.
He ride in a airplane.	He rode in *an* airplane.
Pronouns	
Pronominal apposition: pronoun immediately follows noun.	Pronoun used elsewhere in sentence or in other sentence; not in apposition.
Momma *she* mad. She ...	Momma is mad. *She* ...
Future tense	
More frequent use of *be going to* (gonna).	More frequent use of *will.*
I *be going to* dance tonight.	I *will* dance tonight.
I *gonna* dance tonight.	I *am going to* dance tonight.
Omit *will* preceding *be.*	Obligatory use of *will.*
I *be* home later.	I *will* (I'll) *be* home later.
Negation	
Triple negative.	Absence of triple negative.
Nobody don't never like me.	*No* one ever likes me.
Use of *ain't.*	*Ain't* is unacceptable form.
I *ain't* going.	I *'m not* going.
Modals	
Double modals for such forms as *might, could,* and *should.*	Single modal use.
I *might could* go.	I *might be able to* go.
Questions	
Same form for direct and indirect.	Different forms for direct and indirect.
What *it is?*	What *is it?*
Do you know what *it is?*	Do you know what *it is?*

Table A.2 Common Grammatical Contrasts Between African American English and Standard American English *(continued)*

African American English grammatical structure	SAE grammatical structure
Relative pronouns	
Nonobligatory in most cases. He the one stole it. It the one you like.	Nonobligatory with *that* only. He's the one *who* stole it. It's the one (that) you like.
Conditional if	
Use of *do* for conditional *if.* I ask *did* she go.	Use of *if.* I asked *if* she went.
Perfect construction	
Been used for action in the distant past. He *been* gone.	*Been* not used. He left a long time ago.
Copula	
Nonobligatory when contractible. He sick.	Obligatory in contractible and uncontractible forms. He's sick.
Habitual or general state	
Marked with uninflected *be.* She *be* workin'.	Nonuse of *be;* verb inflected. She's *working* now.

Table A.3 Ten Most Common Nonstandard Grammatical Productions Documented in Southern English

Omission of copular and auxiliary forms of "be"
You in trouble.
You getting it.
Multiple negation
He ain't got no dogs.
'Cause she don't want no people on the rocks.
Omission of regular third person (-s, -es) marking
My momma wash her car.
Omission of auxiliary forms of "do" (do, does, did), especially in questions
How you get up here?
What you did?
Irregular third person forms of "don't" (also known as S-V agreement with don't)
She don't.
"Is" for "are" and "was" for "were" (also known as BE leveling)
When we is about to go to church.
They was fishing.
Appositive pronouns
But my friend, he. . .
Over-regularization of irregular past tense and past participle forms
Past tense: *We swimmed.*
Past participle: *I was beated with bullets.*
Alternative forms of irregular past tense and past participles (with past participle forms showing more variation than regular past tense)
Past tense: *I seen it.*
Past participle: *He should have go.* *He would have got ate.*
Alternative pronoun forms that can include nominative case marking. Often these are produced within compound noun phrases.
Me and him do it sometimes.
Me and Will went.
Him and Will went.

Note. Although Southern English dialects include over 30 nonstandard grammatical structures, this list above reflects the 10 most frequent nonstandard grammatical structures spoken by Southern English-speaking kindergarteners as documented in Oetting and McDonald (2001). The structures are listed in descending order of frequency within Southern English.

Table A.4 Common Phonemic Contrasts Between Spanish-Influenced English and Standard American English

	Position in word		
SAE phonemes	**Initial**	**Medial**	**Final***
/p/	Unaspirated /p/		Omitted or weakened
/m/			Omitted
/w/	/hu/		Omitted
/b/			Omitted, distorted, or /p/
/g/			Omitted, distorted, or /k/
/k/	Unaspirated or /g/		Omitted, distorted, or /g/
/f/			Omitted
/d/		Dentalized	Omitted, distorted, or /t/
/ŋ/	/n/	/d/	/n/ (*sing-sin*)
/j/	/d*/		
/t/			Omitted
/ʃ/	/tʃ/	/s/, /tʃ/	/tʃ/ (*wish-which*)
/tʃ/	/ʃ/ (*chair-share*)	/ʃ/	/ʃ/ (*watch-wash*)
/r/	Distorted	Distorted	Distorted
/dʒ/	/d/	/j/	/ʃ/
/θ/	/t/, /s/ (*thin-tin, sin*)	Omitted	/ʃ/, /t/, /s/
/v/	/b/ (*vat-bat*)	/b/	Distorted
/z/	/s/ (*zip-sip*)	/s/ (*razor-racer*)	/s/
/ð/	/d/ (*then-den*)	/d/, /θ/, /v/ (*lather-ladder*)	/d/
Blends			
/skw/ becomes /eskw/*			
/sl/ becomes /esl/*			
/st/ becomes /est/*			
Vowels			
/ɪ/ becomes /i/ (*bit-beet*)			

*Blends cluster into two syllables.

Table A.5 Common Grammatical Contrasts Between Spanish-Influenced English and Standard American English

Spanish-influenced English grammatical structure	SAE grammatical structure
Possessive (-'s)	
Use post-noun modifier.	Post-noun modifier used only rarely.
This is the homework *of my brother.*	This is my brother*'s* homework.
Article used with body parts.	Possessive pronoun used with body parts.
I cut *the* finger.	I cut *my* finger.
Plural (-s)	
Nonobligatory.	Obligatory, excluding exceptions.
The *girl* are playing.	The *girls* are playing.
The *sheep* are playing.	The *sheep* are playing.
Regular past (-ed)	
Nonobligatory, especially when understood.	Obligatory.
I *talk* to her yesterday.	I *talked* to her yesterday.
Regular third-person singular present tense (-s)	
Nonobligatory.	Obligatory.
She *eat* too much.	She *eats* too much.
Articles	
Often omitted.	Usually obligatory.
I am going to store.	I am going to *the* store.
I am going to school.	I am going to school.
Subject pronouns	
Omitted when subject has been identified in the previous sentence.	Obligatory.
Father is happy. Bought a new car.	Father is happy. *He* bought a new car.
Future tense	
Use *go* + *to*.	Use *be* + *going to*.
I *go to* dance.	I *am going to* the dance.
Negation	
Use *no* before the verb.	Use *not* (preceded by auxiliary verb where appropriate).
She *no* eat candy.	She does *not* eat candy.
Question	
Intonation: no noun-verb inversion.	Noun-verb inversion usually.
Maria is going?	*Is Maria* going?
Copula	
Occasional use of *have*.	Use of *be*.
I *have* ten years.	I *am* ten years old.
Negative imperatives	
No used for *don't*.	*Don't* used.
No throw stones.	*Don't* throw stones.
Do insertion	
Nonobligatory in questions.	Obligatory when no auxiliary verb.
You like ice cream?	*Do* you like ice cream?
Comparatives	
More frequent use of longer form (*more*).	More frequent use of shorter (-er).
He is *more* tall.	He is tall*er*.

Table A.6 Common Phonological Patterns in Asian-Influenced English

	Position in word		
SAE phonemes	**Initial**	**Medial**	**Final**
/p/	/b/****	/b/****	Omission
/s/	Distortion*	Distortion*	Omission
/z/	/s/**	/s/**	Omission
/t/	Distortion*	Distortion*	Omission
/tʃ/	/ʃ/****	/ʃ/****	Omission
/ʃ/	/s/**	/s/**	Omission
/r/, /l/	Confusion***	Confusion***	Omission
/θ/	/s/	/s/	Omission
/dʒ/	/d/ or /z/***	/d/ or /z/***	Omission
/v/	/f/***	/f/***	Omission
	/w/**	/w/**	Omission
/ð/	/z/*	/z/*	Omission
	/d/***	/d/***	Omission
Blends			
Addition of /ə/ between consonants***			
Omission of final consonant clusters****			
Vowels			
Shortening or lengthening of vowels (seat-sit, it-eat*)			
Difficulty with /l/, /ɔ/ and /æ/, and substitution of /e/ for /æ/**			
Difficulty with /l/, /æ/, /ɔ/, and /ə/****			

*Mandarin dialect of Chinese only.
**Cantonese dialect of Chinese only.
***Mandarin, Cantonese, and Japanese.
****Vietnamese only.

Table A.7 Grammatical Contrasts Between Asian-Influenced English and Standard American English

Asian-influenced English grammatical structure	SAE grammatical structure
Plural (-s)	
Not used with numerical adjective: *three cat*	Used regardless of numerical adjective: *three cats*
Used with irregular plural: *the sheeps*	Not used with irregular plural: *the sheep*
Auxiliaries *to be* and *to do*	
Omission: *I going home. She not want eat.*	Obligatory and inflected in the present progressive form:
Uninflected: *I is going. She do not want eat.*	*I am going home. She does not want to eat.*
Verb *have*	
Omission: *You been here.*	Obligatory and inflected: *You have been here.*
Uninflected: *He have one.*	*He has one.*
Regular past (-ed)	
Omission: *He talk yesterday.*	Obligatory, nonovergeneralization, and single-marking:
Overgeneralization: *I eated yesterday.*	*He talked yesterday. I ate yesterday. She didn't eat.*
Double-marking: *She didn't ate.*	
Interrogative	
Nonreversal: *You're late?*	Reversal and obligatory auxiliary: *Are you late?*
Omitted auxiliary: *You like ice cream?*	*Do you like ice cream?*
Perfect marker	
Omission: *I have write letter.*	Obligatory: *I have written a letter.*
Verb-noun agreement	
Nonagreement: *He go to school. You goes to school.*	Agreement: *He goes to school. You go to school.*
Article	
Omission: *Please give gift.*	Obligatory with certain nouns: *Please give the gift.*
Overgeneralization: *She go the school.*	*She went to school.*
Preposition	
Misuse: *I am in home.*	Obligatory specific use: *I am at home.*
Omission: *He go bus.*	*He goes by bus.*
Pronoun	
Subjective/objective confusion: *Him go quickly.*	Subjective/objective distinction: *He gave it to her.*
Possessive confusion: *It him book.*	Possessive distinction: *It's his book.*
Demonstrative	
Confusion: *I like those horse.*	Singular/plural distinction: *I like that horse.*
Conjunction	
Omission: *You I go together.*	Obligatory use between last two items in a series: *You and I are going together. Mary, John, and Carol went.*
Negation	
Double-marking: *I didn't see nobody.*	Single obligatory marking: *I didn't see anybody.*
Simplified form: *He no come.*	*He didn't come.*
Word order	
Adjective following noun (Vietnamese): *clothes new.*	Most noun modifiers precede noun: *new clothes.*
Possessive following noun (Vietnamese): *dress her.*	Possessive precedes noun: *her dress.*
Omission of object with transitive verb: *I want.*	Use of direct object with most transitive verbs: *I want it.*

Table A.8 Alternate Responses to Word Structure Items for Speakers of African American English, Southern English, Spanish-Influenced English, and Asian-Influenced English

	Word Structure item	African American English	Southern English	Spanish-influenced English	Asian-influenced English
Progressive (-ing)	1. Here a girl is playing. Here a girl is ____. (sleeping)	sleepin' asleep	sleepin'	/slipin/	
Preposition	2. The doll is out of the box. The doll is ___. (in/inside the box)			on (the box)	
Progressive (-ing)	3. Here is a baby. The baby is crawling. Here is a girl. The girl is _____. (walking)	walkin'	walkin'	/wɑkin/	
Preposition	4. The hat is under the chair. The hat is ____. (on the chair)			in (the chair)	
Objective pronoun	5. She is waving at him. He is waving at ____. (her)				interchangeable use in gender and case
Copula	6. Here is a shoe. It is small. Here is a shoe _____. (It is/It's big)	It big	It big		It big
Possessive pronoun	7. The cat is his. The dog is _____. (hers)	her		her	interchangeable use in gender and case
Regular plural	8. Here is one horse. Here are two _____. (horses)	horse	horse	horse	horse
Possessive noun	9. This is a dog. Whose food is it? It is the _____. (dog's)	dog food	dog food	dog food food of the dog	dog food
Objective pronoun	10. Here Jesse is giving a present to her. Here Jesse is giving a present to_____. (him)				interchangeable use in gender and case
Third person singular	11. This baby eats. This baby _____. (sleeps)	sleep asleep	sleep	sleep	sleep
Third person singular	12. Here the bird eats. Here the bird _____. (flies)	fly	fly	fly	fly
Comparative and superlative	14. This woman is a fast runner, but this woman is even ___, (faster)			more fast	more fast
Comparative and superlative	15. and this woman is the _____. (fastest)			more fast	more fast most fast
Subjective pronoun	16. Who has a hot dog? He does. Who has a hamburger? _____. (She does)	She do			interchangeable use in gender and case
Subjective pronoun	17. Who is sitting? She is sitting. Who is standing? _____. (He is standing)				interchangeable use in gender and case

Table A.8 Alternate Responses to Word Structure Items for Speakers of African American English, Southern English, Spanish-Influenced English, and Asian-Influenced English *(continued)*

	Word Structure item	African American English	Southern English	Spanish-influenced English	Asian-influenced English
Regular past tense	18. The man is climbing a ladder. This is the ladder he ____. (climbed)	climb had climb had climbed		climb	climb
Copula	19. Look at these children. Who is hot? He is. Who is hungry? ___. (She is)	Her She hungry Her is She be			She hungry Her hungry
Copula	20. Who is sleepy? ____. (They are)	Them Them two Them are Them is They be sleepy They is Those boys /d□m/ sleepy	Them two Them are Them is They is Those boys /d□m/ sleepy		interchangeable use of pronoun in gender and case + copula
Reflexive pronoun	21. He is feeding himself. She is dressing _____. (herself)				interchangeable use in gender and case
Irregular past tense	22. This is a ball. Yesterday he threw the ball. This is a bubble. Yesterday he ___. (blew the bubble)	blowed blewed had blow had blowed	blowed blewed		blow
Future tense	23. She is sliding now. Soon, he _____. (will slide/will be sliding/ is going to slide)	gon slide gonna slide /e/ slide /e/ be sliding	is gonna slide	go to slide	slide
Irregular past tense	24. The leaves are falling. Here are the leaves that ____. (fell)	falled felled had felled had falled had fall	falled felled		fall

Appendix B. Subtest Scaled Scores

Table B.1 Subtest Scaled Scores, Ages 3:0–3:5

Scaled score	SC	WS	EV	FD	RS	BC	DPP	PRS	Scaled score
19	21–22	24	37–42	22–24	40–45	24	—	100–105	19
18	20	22–23	34–36	21	37–39	23	—	94–99	18
17	19	21	31–33	19–20	34–36	22	84	86–93	17
16	18	19–20	27–30	17–18	30–33	21	83	78–85	16
15	17	17–18	24–26	15–16	27–29	19–20	81–82	70–77	15
14	15–16	15–16	21–23	13–14	24–26	18	80	61–69	14
13	14	13–14	19–20	12	20–23	16–17	78–79	52–60	13
12	13	11–12	17–18	10–11	17–19	14–15	76–77	43–51	12
11	11–12	9–10	14–16	9	14–16	13	73–75	35–42	11
10	9–10	7–8	11–13	7–8	11–13	11–12	69–72	28–34	10
9	7–8	6	9–10	6	8–10	9–10	65–68	22–27	9
8	6	4–5	7–8	5	5–7	7–8	59–64	17–21	8
7	4–5	3	5–6	4	3–4	6	52–58	13–16	7
6	3	2	3–4	3	2	5	46–51	10–12	6
5	2	1	2	2	1	4	40–45	7–9	5
4	1	0	1	1	0	2–3	34–39	4–6	4
3	0	—	—	0	—	1	28–33	2–3	3
2	—	—	0	—	—	0	21–27	1	2
1	—	—	—	—	—	—	0–20	0	1
68% confidence level = +/–	1	1	1	1	1	1	1	1	68% confidence level = +/–
90% confidence level = +/–	2	1	2	2	1	2	1	1	90% confidence level = +/–
95% confidence level = +/–	3	2	2	2	1	2	1	1	95% confidence level = +/–

Table B.2 Subtest Scaled Scores, Ages 3:6–3:11

Scaled score	SC	WS	EV	FD	RS	BC	DPP	PRS	Scaled score
19	22	—	40–42	23–24	42–45	—	—	104–105	19
18	21	24	38–39	22	40–41	24	—	101–103	18
17	20	23	36–37	21	37–39	—	84	97–100	17
16	19	21–22	33–35	19–20	34–36	23	83	91–96	16
15	18	20	30–32	18	32–33	22	82	84–90	15
14	17	18–19	27–29	17	30–31	21	81	76–83	14
13	16	17	24–26	15–16	28–29	20	80	68–75	13
12	15	15–16	22–23	13–14	25–27	19	78–79	60–67	12
11	13–14	13–14	20–21	12	22–24	17–18	75–77	50–59	11
10	11–12	11–12	18–19	10–11	18–21	16	71–74	40–49	10
9	10	9–10	15–17	9	15–17	14–15	67–70	32–39	9
8	8–9	6–8	12–14	7–8	12–14	12–13	61–66	26–31	8
7	7	4–5	9–11	6	8–11	10–11	55–60	20–25	7
6	6	3	7–8	4–5	6–7	8–9	48–54	15–19	6
5	4–5	2	5–6	3	4–5	6–7	42–47	11–14	5
4	2–3	1	3–4	2	2–3	3–5	36–41	7–10	4
3	1	0	2	1	1	2	30–35	4–6	3
2	0	—	1	0	0	1	23–29	2–3	2
1	—	—	0	—	—	0	0–22	0–1	1
68% confidence level = +/–	1	1	1	1	1	1	1	1	68% confidence level = +/–
90% confidence level = +/–	2	2	2	2	1	2	1	1	90% confidence level = +/–
95% confidence level = +/–	2	2	3	2	1	2	1	1	95% confidence level = +/–

Table B.3 Subtest Scaled Scores, Ages 4:0–4:5

Scaled score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Scaled score
19	—	—	41–42	24	44–45	—	—	—	—	105	19
18	22	24	40	23	42–43	—	20	24	—	103–104	18
17	21	23	38–39	22	40–41	24	—	23	—	100–102	17
16	20	22	35–37	21	37–39	—	19	21–22	84	96–99	16
15	19	21	33–34	19–20	35–36	—	—	20	83	92–95	15
14	18	20	31–32	18	34	23	18	18–19	82	86–91	14
13	17	18–19	28–30	17	32–33	22	17	16–17	81	79–85	13
12	16	17	26–27	15–16	29–31	21	16	15	79–80	71–78	12
11	15	15–16	24–25	14	26–28	20	15	13–14	76–78	62–70	11
10	13–14	13–14	22–23	12–13	23–25	19	14	10–12	73–75	53–61	10
9	12	11–12	19–21	11	21–22	17–18	12–13	8–9	69–72	45–52	9
8	11	9–10	17–18	9–10	18–20	16	10–11	6–7	63–68	38–44	8
7	10	7–8	14–16	8	14–17	13–15	8–9	5	57–62	31–37	7
6	8–9	5–6	11–13	6–7	11–13	11–12	6–7	3–4	51–56	24–30	6
5	7	3–4	9–10	4–5	8–10	8–10	4–5	2	45–50	17–23	5
4	5–6	2	6–8	3	5–7	5–7	2–3	1	39–44	11–16	4
3	3–4	1	4–5	2	3–4	3–4	1	0	33–38	6–10	3
2	1–2	0	2–3	1	1–2	1–2	0	—	26–32	3–5	2
1	0	—	0–1	0	0	0	—	—	0–25	0–2	1
68% confidence level = +/–	1	1	1	1	1	1	1	1	1	1	68% confidence level = +/–
90% confidence level = +/–	2	2	2	2	1	1	2	1	1	1	90% confidence level = +/–
95% confidence level = +/–	2	2	2	2	2	2	2	2	2	1	95% confidence level = +/–

Table B.4 Subtest Scaled Scores, Ages 4:6–4:11

Scaled score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Scaled score
19	—	—	42	—	45	—	—	—	—	—	19
18	—	—	41	24	44	—	—	—	—	104–105	18
17	22	24	39–40	23	43	—	20	24	—	102–103	17
16	21	23	37–38	22	41–42	24	—	23	—	99–101	16
15	—	22	36	21	39–40	—	19	22	84	96–98	15
14	20	21	34–35	20	37–38	—	—	21	83	92–95	14
13	19	19–20	32–33	19	35–36	23	18	20	82	87–91	13
12	18	18	29–31	18	33–34	—	17	18–19	80–81	81–86	12
11	17	17	27–28	16–17	31–32	22	16	16–17	78–79	73–80	11
10	15–16	15–16	25–26	14–15	28–30	21	15	13–15	75–77	64–72	10
9	14	14	23–24	13	25–27	20	14	11–12	71–74	56–63	9
8	13	12–13	21–22	11–12	22–24	18–19	12–13	9–10	66–70	49–55	8
7	12	9–11	18–20	9–10	19–21	17	10–11	7–8	60–65	41–48	7
6	11	7–8	15–17	8	15–18	15–16	8–9	5–6	54–59	34–40	6
5	9–10	5–6	12–14	6–7	11–14	12–14	6–7	3–4	48–53	26–33	5
4	7–8	3–4	8–11	4–5	8–10	8–11	3–5	2	42–47	18–25	4
3	5–6	2	6–7	3	6–7	5–7	1–2	1	36–41	11–17	3
2	3–4	1	3–5	2	3–5	2–4	0	0	30–35	5–10	2
1	0–2	0	0–2	0–1	0–2	0–1	—	—	0–29	0–4	1
68% confidence level = +/–	2	1	1	1	1	1	1	1	1	1	68% confidence level = +/–
90% confidence level = +/–	2	2	2	2	1	2	2	1	1	1	90% confidence level = +/–
95% confidence level = +/–	3	2	2	2	2	2	2	1	1	1	95% confidence level = +/–

Table B.5 Subtest Scaled Scores, Ages 5:0–5:5

Scaled score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Scaled score
19	—	—	—	—	—	—	—	—	—	—	19
18	—	—	42	—	45	—	—	—	—	—	18
17	—	—	40–41	24	44	—	—	—	—	—	17
16	22	24	38–39	—	43	—	20	24	—	105	16
15	—	23	37	23	42	24	—	—	—	104	15
14	21	22	36	22	40–41	—	19	23	84	102–103	14
13	20	21	34–35	20–21	38–39	—	—	22	83	100–101	13
12	19	20	32–33	19	36–37	23	18	21	81–82	95–99	12
11	18	19	30–31	18	34–35	—	17	20	79–80	89–94	11
10	17	18	28–29	16–17	31–33	22	16	18–19	77–78	80–88	10
9	16	16–17	25–27	15	28–30	—	15	16–17	74–76	71–79	9
8	15	14–15	23–24	14	25–27	21	14	13–15	69–73	63–70	8
7	14	11–13	20–22	12–13	23–24	19–20	12–13	11–12	63–68	55–62	7
6	13	9–10	17–19	10–11	20–22	17–18	9–11	8–10	57–62	46–54	6
5	11–12	7–8	14–16	8–9	16–19	14–16	6–8	5–7	51–56	37–45	5
4	9–10	4–6	10–13	6–7	12–15	11–13	4–5	3–4	45–50	28–36	4
3	7–8	2–3	7–9	4–5	9–11	7–10	2–3	2	39–44	19–27	3
2	5–6	1	4–6	3	6–8	3–6	1	1	34–38	11–18	2
1	0–4	0	0–3	0–2	0–5	0–2	0	0	0–33	0–10	1
68% confidence level = +/–	2	1	1	1	1	1	1	1	1	1	68% confidence level = +/–
90% confidence level = +/–	2	2	2	2	2	2	2	2	1	1	90% confidence level = +/–
95% confidence level = +/–	3	2	3	2	2	3	2	2	2	1	95% confidence level = +/–

Table B.6 Subtest Scaled Scores, Ages 5:6–5:11

Scaled score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Scaled score
19	—	—	—	—	—	—	—	—	—	—	19
18	—	—	42	—	45	—	—	—	—	—	18
17	—	—	41	—	—	—	—	—	—	—	17
16	—	24	40	24	44	—	—	—	—	—	16
15	22	—	39	—	43	—	—	24	—	—	15
14	—	23	37–38	23	41–42	—	20	—	—	105	14
13	21	22	36	22	40	24	—	23	83–84	103–104	13
12	—	21	34–35	20–21	38–39	—	19	22	82	100–102	12
11	20	20	32–33	19	36–37	23	18	21	80–81	96–99	11
10	19	19	30–31	18	34–35	—	17	20	78–79	90–95	10
9	17–18	17–18	27–29	17	31–33	22	16	18–19	76–77	83–89	9
8	16	15–16	25–26	15–16	28–30	—	15	16–17	72–75	76–82	8
7	15	13–14	22–24	14	26–27	21	13–14	14–15	66–71	69–75	7
6	14	11–12	19–21	12–13	23–25	19–20	10–12	11–13	60–65	60–68	6
5	13	8–10	16–18	10–11	19–22	17–18	7–9	8–10	54–59	50–59	5
4	11–12	5–7	12–15	8–9	15–18	14–16	4–6	5–7	49–53	39–49	4
3	9–10	3–4	9–11	6–7	12–14	10–13	2–3	3–4	44–48	29–38	3
2	7–8	2	6–8	4–5	9–11	5–9	1	1–2	38–43	20–28	2
1	0–6	0–1	0–5	0–3	0–8	0–4	0	0	0–37	0–19	1
68% confidence level = +/–	1	1	1	1	1	2	1	1	1	1	68% confidence level = +/–
90% confidence level = +/–	2	2	2	2	1	2	2	2	2	1	90% confidence level = +/–
95% confidence level = +/–	2	2	2	2	2	3	2	2	2	1	95% confidence level = +/–

Table B.7 Subtest Scaled Scores, Ages 6:0–6:11

Scaled score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Scaled score
19	—	—	—	—	—	—	—	—	—	—	19
18	—	—	—	—	—	—	—	—	—	—	18
17	—	—	—	—	45	—	—	—	—	—	17
16	—	—	42	—	44	—	—	—	—	—	16
15	22	—	41	—	—	—	—	—	—	—	15
14	—	24	40	24	43	—	—	24	—	—	14
13	—	23	38–39	23	41–42	—	20	—	84	105	13
12	21	22	37	22	39–40	24	—	23	82–83	104	12
11	—	21	35–36	21	38	—	19	—	81	102–103	11
10	20	20	33–34	19–20	36–37	—	18	22	79–80	100–101	10
9	19	19	30–32	18	33–35	23	17	21	77–78	96–99	9
8	18	17–18	28–29	17	30–32	—	16	20	74–76	91–95	8
7	17	15–16	25–27	16	27–29	22	14–15	18–19	69–73	85–90	7
6	15–16	12–14	22–24	14–15	25–26	21	12–13	15–17	64–68	76–84	6
5	14	9–11	19–21	12–13	22–24	19–20	10–11	11–14	58–63	65–75	5
4	13	6–8	15–18	10–11	19–21	16–18	7–9	8–10	52–57	53–64	4
3	11–12	4–5	12–14	8–9	15–18	12–15	4–6	5–7	47–51	41–52	3
2	9–10	2–3	8–11	6–7	12–14	8–11	2–3	2–4	41–46	30–40	2
1	0–8	0–1	0–7	0–5	0–11	0–7	0–1	0–1	0–40	0–29	1
68% confidence level = +/–	2	1	1	1	1	1	1	1	1	1	68% confidence level = +/–
90% confidence level = +/–	3	2	2	2	2	2	2	2	1	1	90% confidence level = +/–
95% confidence level = +/–	3	2	2	2	2	2	2	2	2	2	95% confidence level = +/–

Appendix C. Core Language Score and Index Standard Scores

Table C.1 Core Language Score and Index Standard Scores, Ages 3:0–3:5

Standard score	PR	Sum of test scaled scores					
		CLS	RLI	ELI	LCI	LSI	ALRI
40	< 0.1	3	—	—	—	—	—
41	< 0.1	—	—	—	—	—	—
42	< 0.1	—	—	—	—	—	—
43	< 0.1	—	—	—	—	—	—
44	< 0.1	—	—	—	—	—	—
45	< 0.1	—	—	3	3	3	3
46	< 0.1	—	—	—	—	—	—
47	< 0.1	—	—	4	—	—	—
48	< 0.1	4	—	—	—	—	4
49	< 0.1	—	3	—	4	4	—
50	< 0.1	—	—	5	—	—	—
51	0.1	—	—	—	—	—	5
52	0.1	5	4	—	—	—	—
53	0.1	—	—	—	5	5	—
54	0.1	—	5	6	—	—	6
55	0.1	—	—	—	—	—	—
56	0.2	6	6	—	6	6	7
57	0.2	—	—	7	—	—	8
58	0.3	—	7	—	7	—	—
59	0.3	7	—	—	—	7	9
60	0.4	—	8	8	8	—	—
61	0.5	8	—	—	—	8	10
62	1	—	9	9	9	—	—
63	1	—	—	—	—	9	11
64	1	9	10	10	10	—	—
65	1	—	—	—	—	10	12
66	1	10	11	11	11	—	—
67	1	11	—	—	—	11	13
68	2	12	12	12	12	—	—
69	2	—	—	13	—	12	14
70	2	13	—	—	13	13	15
71	3	14	13	14	—	—	—
72	3	—	—	—	14	14	16
73	4	15	14	15	—	15	17
74	4	16	15	16	15	—	18
75	5	—	16	—	16	16	—
76	5	17	17	17	17	17	19
77	6	18	18	18	18	18	—
78	7	19	—	—	—	—	20
79	8	—	19	19	19	19	—
80	9	20	20	—	20	20	21
81	10	21	—	20	—	—	—
68% confidence level = +/–		4	4	3	3	3	3
90% confidence level = +/–		6	6	5	5	5	5
95% confidence level = +/–		7	7	6	7	7	7

Table C.1 Core Language Score and Index Standard Scores, Ages 3:0–3:5 *(continued)*

Standard score	PR	Sum of test scaled scores					
		CLS	RLI	ELI	LCI	LSI	ALRI
82	12	—	21	21	21	21	22
83	13	22	22	—	—	—	—
84	14	—	—	22	22	22	23
85	16	23	23	—	—	—	—
86	18	—	—	23	23	23	24
87	19	24	—	—	—	—	—
88	21	—	24	24	24	24	25
89	23	25	—	—	—	25	—
90	25	—	25	25	25	—	26
91	27	26	—	26	—	26	—
92	30	—	26	—	—	—	27
93	32	27	—	27	26	27	—
94	34	—	27	—	—	—	—
95	37	28	—	28	27	28	28
96	39	—	28	—	—	—	—
97	42	29	—	29	28	29	29
98	45	—	29	—	29	30	—
99	47	30	—	30	—	—	30
100	50	—	30	—	30	31	—
101	53	31	—	31	—	—	31
102	55	—	31	—	31	—	—
103	58	32	—	32	—	32	—
104	61	—	32	—	32	—	32
105	63	—	—	—	—	33	—
106	66	33	33	33	33	—	33
107	68	—	—	—	—	—	—
108	70	34	34	34	34	34	34
109	73	—	—	35	—	—	—
110	75	35	35	—	35	35	—
111	77	—	—	36	—	—	35
112	79	36	36	—	36	36	—
113	81	—	—	37	—	—	36
114	82	37	37	—	37	37	—
115	84	—	—	38	—	—	—
116	86	38	38	—	38	38	37
117	87	—	—	—	—	—	—
118	88	39	39	39	39	39	—
119	90	—	—	—	—	—	38
120	91	40	40	40	40	—	—
121	92	—	—	—	—	40	39
122	93	41	41	41	41	—	—
123	94	—	—	—	—	41	40
68% confidence level = +/–		4	4	3	3	3	3
90% confidence level = +/–		6	6	5	5	5	5
95% confidence level = +/–		7	7	6	7	7	7

Table C.1 Core Language Score and Index Standard Scores, Ages 3:0–3:5 *(continued)*

Standard score	PR	Sum of test scaled scores					
		CLS	RLI	ELI	LCI	LSI	ALRI
124	95	—	42	—	42	—	—
125	95	42	—	42	—	—	—
126	96	—	43	—	43	42	41
127	96	—	44	—	—	—	—
128	97	43	—	43	44	—	—
129	97	—	45	—	—	43	42
130	98	44	—	—	45	—	—
131	98	—	46	44	—	—	—
132	98	—	—	—	46	44	43
133	99	45	47	—	—	—	—
134	99	—	48	45	47	45	44
135	99	—	—	—	—	—	—
136	99	46	49	46	48	—	—
137	99	—	—	—	—	46	45
138	99	—	—	47	—	—	—
139	99.5	47	50	—	49	47	46
140	99.6	—	—	48	—	—	—
141	99.7	48	51	—	50	48	47
142	99.7	—	—	49	—	—	—
143	99.8	49	—	50	51	49	48
144	99.8	—	52	—	—	—	—
145	99.9	—	—	51	52	50	49
146	99.9	50	53	52	—	—	—
147	99.9	—	—	—	53	51	50
148	99.9	—	54	53	—	—	51
149	99.9	51	—	54	54	52	—
150	> 99.9	—	55	—	—	53	52
151	> 99.9	52	—	55	55	—	53
152	> 99.9	—	56	—	—	54	—
153	> 99.9	53	—	56	56	55	54
154	> 99.9	—	—	—	—	56	55
155	> 99.9	54	57	57	57	57	56–57
156	> 99.9	—	—	—	—	—	—
157	> 99.9	55	—	—	—	—	—
158	> 99.9	—	—	—	—	—	—
159	> 99.9	56	—	—	—	—	—
160	> 99.9	57	—	—	—	—	—
68% confidence level = +/–		4	4	3	3	3	3
90% confidence level = +/–		6	6	5	5	5	5
95% confidence level = +/–		7	7	6	7	7	7

Table C.2 Core Language Score and Index Standard Scores, Ages 3:6–3:11

Standard score	PR	Sum of test scaled scores					
		CLS	RLI	ELI	LCI	LSI	ALRI
40	< 0.1	3	—	—	—	—	—
41	< 0.1	—	—	—	—	—	—
42	< 0.1	—	—	—	—	—	—
43	< 0.1	—	—	—	—	—	—
44	< 0.1	—	—	—	—	—	—
45	< 0.1	—	—	3	3	3	3
46	< 0.1	—	—	—	—	—	—
47	< 0.1	—	—	4	—	—	—
48	< 0.1	4	—	—	—	—	4
49	< 0.1	—	3	—	4	4	—
50	< 0.1	—	—	5	—	—	—
51	0.1	—	—	—	—	—	5
52	0.1	5	4	—	—	—	—
53	0.1	—	—	—	5	5	—
54	0.1	—	5	6	—	—	6
55	0.1	—	—	—	—	—	—
56	0.2	6	6	—	6	6	7
57	0.2	—	—	7	—	—	8
58	0.3	—	7	—	7	—	—
59	0.3	7	—	—	—	7	9
60	0.4	—	8	8	8	—	—
61	0.5	8	—	—	—	8	10
62	1	—	9	9	9	—	—
63	1	—	—	—	—	9	11
64	1	9	10	10	10	—	—
65	1	—	—	—	—	10	12
66	1	10	11	11	11	—	—
67	1	11	—	—	—	11	13
68	2	12	12	12	12	—	—
69	2	—	—	13	—	12	14
70	2	13	—	—	13	13	15
71	3	14	13	14	—	—	—
72	3	—	—	—	14	14	16
73	4	15	14	15	—	15	17
74	4	16	15	16	15	—	18
75	5	—	16	—	16	16	—
76	5	17	17	17	17	17	19
77	6	18	18	18	18	18	—
78	7	19	—	—	—	—	20
79	8	—	19	19	19	19	—
80	9	20	20	—	20	20	21
81	10	21	—	20	—	—	—
68% confidence level = +/–		4	4	3	4	3	4
90% confidence level = +/–		7	6	5	7	5	7
95% confidence level = +/–		8	7	7	8	7	8

Table C.2 Core Language Score and Index Standard Scores, Ages 3:6–3:11 *(continued)*

Standard score	PR	Sum of test scaled scores					
		CLS	RLI	ELI	LCI	LSI	ALRI
82	12	—	21	21	21	21	22
83	13	22	22	—	—	—	—
84	14	—	—	22	22	22	23
85	16	23	23	—	—	—	—
86	18	—	—	23	23	23	24
87	19	24	—	—	—	—	—
88	21	—	24	24	24	24	25
89	23	25	—	—	—	25	—
90	25	—	25	25	25	—	26
91	27	26	—	26	—	26	—
92	30	—	26	—	—	—	27
93	32	27	—	27	26	27	—
94	34	—	27	—	—	—	—
95	37	28	—	28	27	28	28
96	39	—	28	—	—	—	—
97	42	29	—	29	28	29	29
98	45	—	29	—	29	30	—
99	47	30	—	30	—	—	30
100	50	—	30	—	30	31	—
101	53	31	—	31	—	—	31
102	55	—	31	—	31	—	—
103	58	32	—	32	—	32	—
104	61	—	32	—	32	—	32
105	63	—	—	—	—	33	—
106	66	33	33	33	33	—	33
107	68	—	—	—	—	—	—
108	70	34	34	34	34	34	34
109	73	—	—	35	—	—	—
110	75	35	35	—	35	35	—
111	77	—	—	36	—	—	35
112	79	36	36	—	36	36	—
113	81	—	—	37	—	—	36
114	82	37	37	—	37	37	—
115	84	—	—	38	—	—	—
116	86	38	38	—	38	38	37
117	87	—	—	—	—	—	—
118	88	39	39	39	39	39	—
119	90	—	—	—	—	—	38
120	91	40	40	40	40	—	—
121	92	—	—	—	—	40	39
122	93	41	41	41	41	—	—
123	94	—	—	—	—	41	40
68% confidence level = +/–		4	4	3	4	3	4
90% confidence level = +/–		7	6	5	7	5	7
95% confidence level = +/–		8	7	7	8	7	8

Table C.2 Core Language Score and Index Standard Scores, Ages 3:6–3:11 *(continued)*

Standard score	PR	Sum of test scaled scores					
		CLS	RLI	ELI	LCI	LSI	ALRI
124	95	—	42	—	42	—	—
125	95	42	—	42	—	—	—
126	96	—	43	—	43	42	41
127	96	—	44	—	—	—	—
128	97	43	—	43	44	—	—
129	97	—	45	—	—	43	42
130	98	44	—	—	45	—	—
131	98	—	46	44	—	—	—
132	98	—	—	—	46	44	43
133	99	45	47	—	—	—	—
134	99	—	48	45	47	45	44
135	99	—	—	—	—	—	—
136	99	46	49	46	48	—	—
137	99	—	—	—	—	46	45
138	99	—	—	47	—	—	—
139	99.5	47	50	—	49	47	46
140	99.6	—	—	48	—	—	—
141	99.7	48	51	—	50	48	47
142	99.7	—	—	49	—	—	—
143	99.8	49	—	50	51	49	48
144	99.8	—	52	—	—	—	—
145	99.9	—	—	51	52	50	49
146	99.9	50	53	52	—	—	—
147	99.9	—	—	—	53	51	50
148	99.9	—	54	53	—	—	51
149	99.9	51	—	54	54	52	—
150	> 99.9	—	55	—	—	53	52
151	> 99.9	52	—	55	55	—	53
152	> 99.9	—	56	—	—	54	—
153	> 99.9	53	—	56	56	55	54
154	> 99.9	—	—	—	—	56	55
155	> 99.9	54	57	57	57	57	56–57
156	> 99.9	—	—	—	—	—	—
157	> 99.9	55	—	—	—	—	—
158	> 99.9	—	—	—	—	—	—
159	> 99.9	56	—	—	—	—	—
160	> 99.9	57	—	—	—	—	—
68% confidence level = +/–		4	4	3	4	3	4
90% confidence level = +/–		7	6	5	7	5	7
95% confidence level = +/–		8	7	7	8	7	8

Table C.3 Core Language Score and Index Standard Scores, Ages 4:0–4:5

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
40	< 0.1	3	—	—	—	—	—	—
41	< 0.1	—	—	—	—	—	—	—
42	< 0.1	—	—	—	—	—	—	—
43	< 0.1	—	—	—	—	—	—	—
44	< 0.1	—	—	—	—	—	—	—
45	< 0.1	—	—	3	3	3	3	2
46	< 0.1	—	—	—	—	—	—	—
47	< 0.1	—	—	4	—	—	—	—
48	< 0.1	4	—	—	—	—	4	—
49	< 0.1	—	3	—	4	4	—	—
50	< 0.1	—	—	5	—	—	—	3
51	0.1	—	—	—	—	—	5	—
52	0.1	5	4	—	—	—	—	—
53	0.1	—	—	—	5	5	—	—
54	0.1	—	5	6	—	—	6	—
55	0.1	—	—	—	—	—	—	4
56	0.2	6	6	—	6	6	7	—
57	0.2	—	—	7	—	—	8	—
58	0.3	—	7	—	7	—	—	—
59	0.3	7	—	—	—	7	9	5
60	0.4	—	8	8	8	—	—	—
61	0.5	8	—	—	—	8	10	—
62	1	—	9	9	9	—	—	6
63	1	—	—	—	—	9	11	—
64	1	9	10	10	10	—	—	—
65	1	—	—	—	—	10	12	7
66	1	10	11	11	11	—	—	—
67	1	11	—	—	—	11	13	—
68	2	12	12	12	12	—	—	8
69	2	—	—	13	—	12	14	—
70	2	13	—	—	13	13	15	—
71	3	14	13	14	—	—	—	9
72	3	—	—	—	14	14	16	—
73	4	15	14	15	—	15	17	—
74	4	16	15	16	15	—	18	10
75	5	—	16	—	16	16	—	—
76	5	17	17	17	17	17	19	11
77	6	18	18	18	18	18	—	—
78	7	19	—	—	—	—	20	12
79	8	—	19	19	19	19	—	—
80	9	20	20	—	20	20	21	13
81	10	21	—	20	—	—	—	—
68% confidence level = +/–		4	3	4	4	3	4	3
90% confidence level = +/–		7	5	6	6	5	7	5
95% confidence level = +/–		8	7	7	7	7	8	7

Table C.3 Core Language Score and Index Standard Scores, Ages 4:0–4:5 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
82	12	—	21	21	21	21	22	14
83	13	22	22	—	—	—	—	—
84	14	—	—	22	22	22	23	15
85	16	23	23	—	—	—	—	—
86	18	—	—	23	23	23	24	16
87	19	24	—	—	—	—	—	—
88	21	—	24	24	24	24	25	—
89	23	25	—	—	—	25	—	17
90	25	—	25	25	25	—	26	—
91	27	26	—	26	—	26	—	—
92	30	—	26	—	—	—	27	—
93	32	27	—	27	26	27	—	18
94	34	—	27	—	—	—	—	—
95	37	28	—	28	27	28	28	—
96	39	—	28	—	—	—	—	—
97	42	29	—	29	28	29	29	19
98	45	—	29	—	29	30	—	—
99	47	30	—	30	—	—	30	—
100	50	—	30	—	30	31	—	20
101	53	31	—	31	—	—	31	—
102	55	—	31	—	31	—	—	21
103	58	32	—	32	—	32	—	—
104	61	—	32	—	32	—	32	—
105	63	—	—	—	—	33	—	22
106	66	33	33	33	33	—	33	—
107	68	—	—	—	—	—	—	—
108	70	34	34	34	34	34	34	23
109	73	—	—	35	—	—	—	—
110	75	35	35	—	35	35	—	—
111	77	—	—	36	—	—	35	24
112	79	36	36	—	36	36	—	—
113	81	—	—	37	—	—	36	—
114	82	37	37	—	37	37	—	25
115	84	—	—	38	—	—	—	—
116	86	38	38	—	38	38	37	—
117	87	—	—	—	—	—	—	—
118	88	39	39	39	39	39	—	26
119	90	—	—	—	—	—	38	—
120	91	40	40	40	40	—	—	—
121	92	—	—	—	—	40	39	—
122	93	41	41	41	41	—	—	27
123	94	—	—	—	—	41	40	—
68% confidence level = +/–		4	3	4	4	3	4	3
90% confidence level = +/–		7	5	6	6	5	7	5
95% confidence level = +/–		8	7	7	7	7	8	7

Table C.3 Core Language Score and Index Standard Scores, Ages 4:0–4:5 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
124	95	—	42	—	42	—	—	—
125	95	42	—	42	—	—	—	—
126	96	—	43	—	43	42	41	28
127	96	—	44	—	—	—	—	—
128	97	43	—	43	44	—	—	—
129	97	—	45	—	—	43	42	—
130	98	44	—	—	45	—	—	29
131	98	—	46	44	—	—	—	—
132	98	—	—	—	46	44	43	—
133	99	45	47	—	—	—	—	—
134	99	—	48	45	47	45	44	30
135	99	—	—	—	—	—	—	—
136	99	46	49	46	48	—	—	—
137	99	—	—	—	—	46	45	—
138	99	—	—	47	—	—	—	31
139	99.5	47	50	—	49	47	46	—
140	99.6	—	—	48	—	—	—	—
141	99.7	48	51	—	50	48	47	—
142	99.7	—	—	49	—	—	—	—
143	99.8	49	—	50	51	49	48	32
144	99.8	—	52	—	—	—	—	—
145	99.9	—	—	51	52	50	49	—
146	99.9	50	53	52	—	—	—	—
147	99.9	—	—	—	53	51	50	33
148	99.9	—	54	53	—	—	51	—
149	99.9	51	—	54	54	52	—	—
150	> 99.9	—	55	—	—	53	52	34
151	> 99.9	52	—	55	55	—	53	—
152	> 99.9	—	56	—	—	54	—	35
153	> 99.9	53	—	56	56	55	54	36
154	> 99.9	—	—	—	—	56	55	37
155	> 99.9	54	57	57	57	57	56–57	38
156	> 99.9	—	—	—	—	—	—	—
157	> 99.9	55	—	—	—	—	—	—
158	> 99.9	—	—	—	—	—	—	—
159	> 99.9	56	—	—	—	—	—	—
160	> 99.9	57	—	—	—	—	—	—
68% confidence level = +/–		4	3	4	4	3	4	3
90% confidence level = +/–		7	5	6	6	5	7	5
95% confidence level = +/–		8	7	7	7	7	8	7

Table C.4 Core Language Score and Index Standard Scores, Ages 4:6–4:11

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
40	< 0.1	3	—	—	—	—	—	—
41	< 0.1	—	—	—	—	—	—	—
42	< 0.1	—	—	—	—	—	—	—
43	< 0.1	—	—	—	—	—	—	—
44	< 0.1	—	—	—	—	—	—	—
45	< 0.1	—	—	3	3	3	3	2
46	< 0.1	—	—	—	—	—	—	—
47	< 0.1	—	—	4	—	—	—	—
48	< 0.1	4	—	—	—	—	4	—
49	< 0.1	—	3	—	4	4	—	—
50	< 0.1	—	—	5	—	—	—	3
51	0.1	—	—	—	—	—	5	—
52	0.1	5	4	—	—	—	—	—
53	0.1	—	—	—	5	5	—	—
54	0.1	—	5	6	—	—	6	—
55	0.1	—	—	—	—	—	—	4
56	0.2	6	6	—	6	6	7	—
57	0.2	—	—	7	—	—	8	—
58	0.3	—	7	—	7	—	—	—
59	0.3	7	—	—	—	7	9	5
60	0.4	—	8	8	8	—	—	—
61	0.5	8	—	—	—	8	10	—
62	1	—	9	9	9	—	—	6
63	1	—	—	—	—	9	11	—
64	1	9	10	10	10	—	—	—
65	1	—	—	—	—	10	12	7
66	1	10	11	11	11	—	—	—
67	1	11	—	—	—	11	13	—
68	2	12	12	12	12	—	—	8
69	2	—	—	13	—	12	14	—
70	2	13	—	—	13	13	15	—
71	3	14	13	14	—	—	—	9
72	3	—	—	—	14	14	16	—
73	4	15	14	15	—	15	17	—
74	4	16	15	16	15	—	18	10
75	5	—	16	—	16	16	—	—
76	5	17	17	17	17	17	19	11
77	6	18	18	18	18	18	—	—
78	7	19	—	—	—	—	20	12
79	8	—	19	19	19	19	—	—
80	9	20	20	—	20	20	21	13
81	10	21	—	20	—	—	—	—
68% confidence level = +/–		5	4	4	4	4	4	3
90% confidence level = +/–		7	7	6	6	7	6	4
95% confidence level = +/–		9	8	7	7	8	7	5

Table C.4 Core Language Score and Index Standard Scores, Ages 4:6–4:11 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
82	12	—	21	21	21	21	22	14
83	13	22	22	—	—	—	—	—
84	14	—	—	22	22	22	23	15
85	16	23	23	—	—	—	—	—
86	18	—	—	23	23	23	24	16
87	19	24	—	—	—	—	—	—
88	21	—	24	24	24	24	25	—
89	23	25	—	—	—	25	—	17
90	25	—	25	25	25	—	26	—
91	27	26	—	26	—	26	—	—
92	30	—	26	—	—	—	27	—
93	32	27	—	27	26	27	—	18
94	34	—	27	—	—	—	—	—
95	37	28	—	28	27	28	28	—
96	39	—	28	—	—	—	—	—
97	42	29	—	29	28	29	29	19
98	45	—	29	—	29	30	—	—
99	47	30	—	30	—	—	30	—
100	50	—	30	—	30	31	—	20
101	53	31	—	31	—	—	31	—
102	55	—	31	—	31	—	—	21
103	58	32	—	32	—	32	—	—
104	61	—	32	—	32	—	32	—
105	63	—	—	—	—	33	—	22
106	66	33	33	33	33	—	33	—
107	68	—	—	—	—	—	—	—
108	70	34	34	34	34	34	34	23
109	73	—	—	35	—	—	—	—
110	75	35	35	—	35	35	—	—
111	77	—	—	36	—	—	35	24
112	79	36	36	—	36	36	—	—
113	81	—	—	37	—	—	36	—
114	82	37	37	—	37	37	—	25
115	84	—	—	38	—	—	—	—
116	86	38	38	—	38	38	37	—
117	87	—	—	—	—	—	—	—
118	88	39	39	39	39	39	—	26
119	90	—	—	—	—	—	38	—
120	91	40	40	40	40	—	—	—
121	92	—	—	—	—	40	39	—
122	93	41	41	41	41	—	—	27
123	94	—	—	—	—	41	40	—
68% confidence level = +/–		5	4	4	4	4	4	3
90% confidence level = +/–		7	7	6	6	7	6	4
95% confidence level = +/–		9	8	7	7	8	7	5

Table C.4 Core Language Score and Index Standard Scores, Ages 4:6–4:11 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
124	95	—	42	—	42	—	—	—
125	95	42	—	42	—	—	—	—
126	96	—	43	—	43	42	41	28
127	96	—	44	—	—	—	—	—
128	97	43	—	43	44	—	—	—
129	97	—	45	—	—	43	42	—
130	98	44	—	—	45	—	—	29
131	98	—	46	44	—	—	—	—
132	98	—	—	—	46	44	43	—
133	99	45	47	—	—	—	—	—
134	99	—	48	45	47	45	44	30
135	99	—	—	—	—	—	—	—
136	99	46	49	46	48	—	—	—
137	99	—	—	—	—	46	45	—
138	99	—	—	47	—	—	—	31
139	99.5	47	50	—	49	47	46	—
140	99.6	—	—	48	—	—	—	—
141	99.7	48	51	—	50	48	47	—
142	99.7	—	—	49	—	—	—	—
143	99.8	49	—	50	51	49	48	32
144	99.8	—	52	—	—	—	—	—
145	99.9	—	—	51	52	50	49	—
146	99.9	50	53	52	—	—	—	—
147	99.9	—	—	—	53	51	50	33
148	99.9	—	54	53	—	—	51	—
149	99.9	51	—	54	54	52	—	—
150	> 99.9	—	55	—	—	53	52	34
151	> 99.9	52	—	55	55	—	53	—
152	> 99.9	—	56	—	—	54	—	35
153	> 99.9	53	—	56	56	55	54	36
154	> 99.9	—	—	—	—	56	55	37
155	> 99.9	54	57	57	57	57	56–57	38
156	> 99.9	—	—	—	—	—	—	—
157	> 99.9	55	—	—	—	—	—	—
158	> 99.9	—	—	—	—	—	—	—
159	> 99.9	56	—	—	—	—	—	—
160	> 99.9	57	—	—	—	—	—	—
68% confidence level = +/–		5	4	4	4	4	4	3
90% confidence level = +/–		7	7	6	6	7	6	4
95% confidence level = +/–		9	8	7	7	8	7	5

Table C.5 Core Language Score and Index Standard Scores, Ages 5:0–5:5

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
40	< 0.1	3	—	—	—	—	—	—
41	< 0.1	—	—	—	—	—	—	—
42	< 0.1	—	—	—	—	—	—	—
43	< 0.1	—	—	—	—	—	—	—
44	< 0.1	—	—	—	—	—	—	—
45	< 0.1	—	3	3	3	3	3	2
46	< 0.1	—	—	—	—	—	—	—
47	< 0.1	—	4	4	4	—	—	—
48	< 0.1	4	—	—	—	—	4	—
49	< 0.1	—	5	—	5	4	—	—
50	< 0.1	—	—	5	—	—	—	3
51	0.1	—	6	—	6	—	5	—
52	0.1	5	—	—	—	—	—	—
53	0.1	—	7	—	7	5	—	—
54	0.1	—	—	6	—	—	6	—
55	0.1	—	8	—	8	—	—	4
56	0.2	6	—	—	—	6	7	—
57	0.2	—	9	7	9	—	8	—
58	0.3	—	—	—	—	—	—	—
59	0.3	7	10	—	10	7	9	5
60	0.4	—	—	8	—	—	—	—
61	0.5	8	11	—	11	8	10	—
62	1	—	—	9	—	—	—	6
63	1	—	12	—	12	9	11	—
64	1	9	—	10	—	—	—	—
65	1	—	13	—	13	10	12	7
66	1	10	—	11	—	—	—	—
67	1	11	14	—	14	11	13	—
68	2	12	—	12	15	—	—	8
69	2	—	15	13	16	12	14	—
70	2	13	—	—	—	13	15	—
71	3	14	16	14	—	—	—	9
72	3	—	—	—	17	14	16	—
73	4	15	17	15	—	15	17	—
74	4	16	—	16	—	—	18	10
75	5	—	18	—	18	16	—	—
76	5	17	—	17	19	17	19	11
77	6	18	19	18	—	18	—	—
78	7	19	—	—	20	—	20	12
79	8	—	20	19	—	19	—	—
80	9	20	21	—	21	20	21	13
81	10	21	—	20	—	—	—	—
68% confidence level = +/–		5	5	4	5	5	5	3
90% confidence level = +/–		8	8	7	7	7	7	5
95% confidence level = +/–		9	9	8	9	9	9	7

Table C.5 Core Language Score and Index Standard Scores, Ages 5:0–5:5 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
82	12	—	—	21	22	21	22	14
83	13	22	22	—	—	—	—	—
84	14	—	—	22	—	22	23	15
85	16	23	23	—	23	—	—	—
86	18	—	—	23	—	23	24	16
87	19	24	24	—	24	—	—	—
88	21	—	25	24	—	24	25	—
89	23	25	—	—	25	25	—	17
90	25	—	26	25	26	—	26	—
91	27	26	—	26	—	26	—	—
92	30	—	27	—	27	—	27	—
93	32	27	—	27	—	27	—	18
94	34	—	28	—	28	—	—	—
95	37	28	29	28	—	28	28	—
96	39	—	—	—	29	—	—	—
97	42	29	—	29	—	29	29	19
98	45	—	30	—	30	30	—	—
99	47	30	—	30	—	—	30	—
100	50	—	31	—	31	31	—	20
101	53	31	—	31	32	—	31	—
102	55	—	32	—	—	—	—	21
103	58	32	—	32	—	32	—	—
104	61	—	33	—	33	—	32	—
105	63	—	—	—	34	33	—	22
106	66	33	34	33	—	—	33	—
107	68	—	—	—	35	—	—	—
108	70	34	—	34	—	34	34	23
109	73	—	35	35	—	—	—	—
110	75	35	36	—	36	35	—	—
111	77	—	—	36	—	—	35	24
112	79	36	—	—	—	36	—	—
113	81	—	37	37	37	—	36	—
114	82	37	—	—	—	37	—	25
115	84	—	—	38	—	—	—	—
116	86	38	38	—	38	38	37	—
117	87	—	—	—	—	—	—	—
118	88	39	—	39	—	39	—	26
119	90	—	—	—	39	—	38	—
120	91	40	39	40	—	—	—	—
121	92	—	—	—	—	40	39	—
122	93	41	40	41	40	—	—	27
123	94	—	—	—	—	41	40	—
68% confidence level = +/–		5	5	4	5	5	5	3
90% confidence level = +/–		8	8	7	7	7	7	5
95% confidence level = +/–		9	9	8	9	9	9	7

Table C.5 Core Language Score and Index Standard Scores, Ages 5:0–5:5 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
124	95	—	41	—	—	—	—	—
125	95	42	—	42	41	—	—	—
126	96	—	—	—	—	42	41	28
127	96	—	—	—	—	—	—	—
128	97	43	42	43	42	—	—	—
129	97	—	—	—	—	43	42	—
130	98	44	43	—	—	—	—	29
131	98	—	—	44	43	—	—	—
132	98	—	44	—	—	44	43	—
133	99	45	45	—	—	—	—	—
134	99	—	—	45	—	45	44	30
135	99	—	46	—	44	—	—	—
136	99	46	—	46	—	—	—	—
137	99	—	47	—	—	46	45	—
138	99	—	—	47	45	—	—	31
139	99.5	47	48	—	—	47	46	—
140	99.6	—	—	48	—	—	—	—
141	99.7	48	49	—	46	48	47	—
142	99.7	—	—	49	—	—	—	—
143	99.8	49	50	50	47	49	48	32
144	99.8	—	—	—	—	—	—	—
145	99.9	—	51	51	48	50	49	—
146	99.9	50	—	52	49	—	—	—
147	99.9	—	52	—	50	51	50	33
148	99.9	—	—	53	51	—	51	—
149	99.9	51	53	54	52	52	—	—
150	> 99.9	—	—	—	53	53	52	34
151	> 99.9	52	54	55	54	—	53	—
152	> 99.9	—	—	—	—	54	—	35
153	> 99.9	53	55	56	55	55	54	36
154	> 99.9	—	56	—	56	56	55	37
155	> 99.9	54	57	57	57	57	56–57	38
156	> 99.9	—	—	—	—	—	—	—
157	> 99.9	55	—	—	—	—	—	—
158	> 99.9	—	—	—	—	—	—	—
159	> 99.9	56	—	—	—	—	—	—
160	> 99.9	57	—	—	—	—	—	—
68% confidence level = +/–		5	5	4	5	5	5	3
90% confidence level = +/–		8	8	7	7	7	7	5
95% confidence level = +/–		9	9	8	9	9	9	7

Table C.6 Core Language Score and Index Standard Scores, Ages 5:6–5:11

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
40	< 0.1	3	—	—	—	—	—	—
41	< 0.1	—	—	—	—	—	—	—
42	< 0.1	—	—	—	—	—	—	—
43	< 0.1	—	—	—	—	—	—	—
44	< 0.1	—	—	—	—	—	—	—
45	< 0.1	—	3	3	3	3	3	2
46	< 0.1	—	—	—	—	—	—	—
47	< 0.1	—	4	4	4	—	—	—
48	< 0.1	4	—	—	—	—	4	—
49	< 0.1	—	5	—	5	4	—	—
50	< 0.1	—	—	5	—	—	—	3
51	0.1	—	6	—	6	—	5	—
52	0.1	5	—	—	—	—	—	—
53	0.1	—	7	—	7	5	—	—
54	0.1	—	—	6	—	—	6	—
55	0.1	—	8	—	8	—	—	4
56	0.2	6	—	—	—	6	7	—
57	0.2	—	9	7	9	—	8	—
58	0.3	—	—	—	—	—	—	—
59	0.3	7	10	—	10	7	9	5
60	0.4	—	—	8	—	—	—	—
61	0.5	8	11	—	11	8	10	—
62	1	—	—	9	—	—	—	6
63	1	—	12	—	12	9	11	—
64	1	9	—	10	—	—	—	—
65	1	—	13	—	13	10	12	7
66	1	10	—	11	—	—	—	—
67	1	11	14	—	14	11	13	—
68	2	12	—	12	15	—	—	8
69	2	—	15	13	16	12	14	—
70	2	13	—	—	—	13	15	—
71	3	14	16	14	—	—	—	9
72	3	—	—	—	17	14	16	—
73	4	15	17	15	—	15	17	—
74	4	16	—	16	—	—	18	10
75	5	—	18	—	18	16	—	—
76	5	17	—	17	19	17	19	11
77	6	18	19	18	—	18	—	—
78	7	19	—	—	20	—	20	12
79	8	—	20	19	—	19	—	—
80	9	20	21	—	21	20	21	13
81	10	21	—	20	—	—	—	—
68% confidence level = +/–		4	5	3	4	4	5	3
90% confidence level = +/–		7	7	5	7	6	8	5
95% confidence level = +/–		8	9	7	8	7	9	6

Table C.6 Core Language Score and Index Standard Scores, Ages 5:6–5:11 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
82	12	—	—	21	22	21	22	14
83	13	22	22	—	—	—	—	—
84	14	—	—	22	—	22	23	15
85	16	23	23	—	23	—	—	—
86	18	—	—	23	—	23	24	16
87	19	24	24	—	24	—	—	—
88	21	—	25	24	—	24	25	—
89	23	25	—	—	25	25	—	17
90	25	—	26	25	26	—	26	—
91	27	26	—	26	—	26	—	—
92	30	—	27	—	27	—	27	—
93	32	27	—	27	—	27	—	18
94	34	—	28	—	28	—	—	—
95	37	28	29	28	—	28	28	—
96	39	—	—	—	29	—	—	—
97	42	29	—	29	—	29	29	19
98	45	—	30	—	30	30	—	—
99	47	30	—	30	—	—	30	—
100	50	—	31	—	31	31	—	20
101	53	31	—	31	32	—	31	—
102	55	—	32	—	—	—	—	21
103	58	32	—	32	—	32	—	—
104	61	—	33	—	33	—	32	—
105	63	—	—	—	34	33	—	22
106	66	33	34	33	—	—	33	—
107	68	—	—	—	35	—	—	—
108	70	34	—	34	—	34	34	23
109	73	—	35	35	—	—	—	—
110	75	35	36	—	36	35	—	—
111	77	—	—	36	—	—	35	24
112	79	36	—	—	—	36	—	—
113	81	—	37	37	37	—	36	—
114	82	37	—	—	—	37	—	25
115	84	—	—	38	—	—	—	—
116	86	38	38	—	38	38	37	—
117	87	—	—	—	—	—	—	—
118	88	39	—	39	—	39	—	26
119	90	—	—	—	39	—	38	—
120	91	40	39	40	—	—	—	—
121	92	—	—	—	—	40	39	—
122	93	41	40	41	40	—	—	27
123	94	—	—	—	—	41	40	—
68% confidence level = +/–		4	5	3	4	4	5	3
90% confidence level = +/–		7	7	5	7	6	8	5
95% confidence level = +/–		8	9	7	8	7	9	6

Table C.6 Core Language Score and Index Standard Scores, Ages 5:6–5:11 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
124	95	—	41	—	—	—	—	—
125	95	42	—	42	41	—	—	—
126	96	—	—	—	—	42	41	28
127	96	—	—	—	—	—	—	—
128	97	43	42	43	42	—	—	—
129	97	—	—	—	—	43	42	—
130	98	44	43	—	—	—	—	29
131	98	—	—	44	43	—	—	—
132	98	—	44	—	—	44	43	—
133	99	45	45	—	—	—	—	—
134	99	—	—	45	—	45	44	30
135	99	—	46	—	44	—	—	—
136	99	46	—	46	—	—	—	—
137	99	—	47	—	—	46	45	—
138	99	—	—	47	45	—	—	31
139	99.5	47	48	—	—	47	46	—
140	99.6	—	—	48	—	—	—	—
141	99.7	48	49	—	46	48	47	—
142	99.7	—	—	49	—	—	—	—
143	99.8	49	50	50	47	49	48	32
144	99.8	—	—	—	—	—	—	—
145	99.9	—	51	51	48	50	49	—
146	99.9	50	—	52	49	—	—	—
147	99.9	—	52	—	50	51	50	33
148	99.9	—	—	53	51	—	51	—
149	99.9	51	53	54	52	52	—	—
150	> 99.9	—	—	—	53	53	52	34
151	> 99.9	52	54	55	54	—	53	—
152	> 99.9	—	—	—	—	54	—	35
153	> 99.9	53	55	56	55	55	54	36
154	> 99.9	—	56	—	56	56	55	37
155	> 99.9	54	57	57	57	57	56–57	38
156	> 99.9	—	—	—	—	—	—	—
157	> 99.9	55	—	—	—	—	—	—
158	> 99.9	—	—	—	—	—	—	—
159	> 99.9	56	—	—	—	—	—	—
160	> 99.9	57	—	—	—	—	—	—
68% confidence level = +/–		4	5	3	4	4	5	3
90% confidence level = +/–		7	7	5	7	6	8	5
95% confidence level = +/–		8	9	7	8	7	9	6

Table C.7 Core Language Score and Index Standard Scores, Ages 6:0–6:11

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
40	< 0.1	3	—	—	—	—	—	—
41	< 0.1	—	—	—	—	—	—	—
42	< 0.1	—	—	—	—	—	—	—
43	< 0.1	—	—	—	—	—	—	—
44	< 0.1	—	—	—	—	—	—	—
45	< 0.1	—	3	3	3	3	3	2
46	< 0.1	—	—	—	—	—	—	—
47	< 0.1	—	4	4	4	—	—	—
48	< 0.1	4	—	—	—	—	4	—
49	< 0.1	—	5	—	5	4	—	—
50	< 0.1	—	—	5	—	—	—	3
51	0.1	—	6	—	6	—	5	—
52	0.1	5	—	—	—	—	—	—
53	0.1	—	7	—	7	5	—	—
54	0.1	—	—	6	—	—	6	—
55	0.1	—	8	—	8	—	—	4
56	0.2	6	—	—	—	6	7	—
57	0.2	—	9	7	9	—	8	—
58	0.3	—	—	—	—	—	—	—
59	0.3	7	10	—	10	7	9	5
60	0.4	—	—	8	—	—	—	—
61	0.5	8	11	—	11	8	10	—
62	1	—	—	9	—	—	—	6
63	1	—	12	—	12	9	11	—
64	1	9	—	10	—	—	—	—
65	1	—	13	—	13	10	12	7
66	1	10	—	11	—	—	—	—
67	1	11	14	—	14	11	13	—
68	2	12	—	12	15	—	—	8
69	2	—	15	13	16	12	14	—
70	2	13	—	—	—	13	15	—
71	3	14	16	14	—	—	—	9
72	3	—	—	—	17	14	16	—
73	4	15	17	15	—	15	17	—
74	4	16	—	16	—	—	18	10
75	5	—	18	—	18	16	—	—
76	5	17	—	17	19	17	19	11
77	6	18	19	18	—	18	—	—
78	7	19	—	—	20	—	20	12
79	8	—	20	19	—	19	—	—
80	9	20	21	—	21	20	21	13
81	10	21	—	20	—	—	—	—
68% confidence level = +/–		5	5	4	4	5	4	5
90% confidence level = +/–		8	8	7	7	7	7	8
95% confidence level = +/–		9	9	8	8	9	8	9

Table C.7 Core Language Score and Index Standard Scores, Ages 6:0–6:11 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
82	12	—	—	21	22	21	22	14
83	13	22	22	—	—	—	—	—
84	14	—	—	22	—	22	23	15
85	16	23	23	—	23	—	—	—
86	18	—	—	23	—	23	24	16
87	19	24	24	—	24	—	—	—
88	21	—	25	24	—	24	25	—
89	23	25	—	—	25	25	—	17
90	25	—	26	25	26	—	26	—
91	27	26	—	26	—	26	—	—
92	30	—	27	—	27	—	27	—
93	32	27	—	27	—	27	—	18
94	34	—	28	—	28	—	—	—
95	37	28	29	28	—	28	28	—
96	39	—	—	—	29	—	—	—
97	42	29	—	29	—	29	29	19
98	45	—	30	—	30	30	—	—
99	47	30	—	30	—	—	30	—
100	50	—	31	—	31	31	—	20
101	53	31	—	31	32	—	31	—
102	55	—	32	—	—	—	—	21
103	58	32	—	32	—	32	—	—
104	61	—	33	—	33	—	32	—
105	63	—	—	—	34	33	—	22
106	66	33	34	33	—	—	33	—
107	68	—	—	—	35	—	—	—
108	70	34	—	34	—	34	34	23
109	73	—	35	35	—	—	—	—
110	75	35	36	—	36	35	—	—
111	77	—	—	36	—	—	35	24
112	79	36	—	—	—	36	—	—
113	81	—	37	37	37	—	36	—
114	82	37	—	—	—	37	—	25
115	84	—	—	38	—	—	—	—
116	86	38	38	—	38	38	37	—
117	87	—	—	—	—	—	—	—
118	88	39	—	39	—	39	—	26
119	90	—	—	—	39	—	38	—
120	91	40	39	40	—	—	—	—
121	92	—	—	—	—	40	39	—
122	93	41	40	41	40	—	—	27
123	94	—	—	—	—	41	40	—
68% confidence level = +/–		5	5	4	4	5	4	5
90% confidence level = +/–		8	8	7	7	7	7	8
95% confidence level = +/–		9	9	8	8	9	8	9

Table C.7 Core Language Score and Index Standard Scores, Ages 6:0–6:11 *(continued)*

Standard score	PR	Sum of test scaled scores						
		CLS	RLI	ELI	LCI	LSI	ALRI	ErLI
124	95	—	41	—	—	—	—	—
125	95	42	—	42	41	—	—	—
126	96	—	—	—	—	42	41	28
127	96	—	—	—	—	—	—	—
128	97	43	42	43	42	—	—	—
129	97	—	—	—	—	43	42	—
130	98	44	43	—	—	—	—	29
131	98	—	—	44	43	—	—	—
132	98	—	44	—	—	44	43	—
133	99	45	45	—	—	—	—	—
134	99	—	—	45	—	45	44	30
135	99	—	46	—	44	—	—	—
136	99	46	—	46	—	—	—	—
137	99	—	47	—	—	46	45	—
138	99	—	—	47	45	—	—	31
139	99.5	47	48	—	—	47	46	—
140	99.6	—	—	48	—	—	—	—
141	99.7	48	49	—	46	48	47	—
142	99.7	—	—	49	—	—	—	—
143	99.8	49	50	50	47	49	48	32
144	99.8	—	—	—	—	—	—	—
145	99.9	—	51	51	48	50	49	—
146	99.9	50	—	52	49	—	—	—
147	99.9	—	52	—	50	51	50	33
148	99.9	—	—	53	51	—	51	—
149	99.9	51	53	54	52	52	—	—
150	> 99.9	—	—	—	53	53	52	34
151	> 99.9	52	54	55	54	—	53	—
152	> 99.9	—	—	—	—	54	—	35
153	> 99.9	53	55	56	55	55	54	36
154	> 99.9	—	56	—	56	56	55	37
155	> 99.9	54	57	57	57	57	56–57	38
156	> 99.9	—	—	—	—	—	—	—
157	> 99.9	55	—	—	—	—	—	—
158	> 99.9	—	—	—	—	—	—	—
159	> 99.9	56	—	—	—	—	—	—
160	> 99.9	57	—	—	—	—	—	—
68% confidence level = +/–		5	5	4	4	5	4	5
90% confidence level = +/–		8	8	7	7	7	7	8
95% confidence level = +/–		9	9	8	8	9	8	9

Appendix D. Subtest Age Equivalents

Table D.1 Subtest Age Equivalents

Age equivalent	Subtest										Age equivalent
	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	
< 3:0	0–8	0–6	0–10	0–6	0–10	0–10			0–68	0–27	< 3:0
3:0	—	—	—	—	—	—			—	—	3:0
3:1	—	—	—	—	—	—			—	—	3:1
3:2	9	7	11–12	7	11–12	11			69	28–29	3:2
3:3	—	8	13	8	13	12			70	30–31	3:3
3:4	—	—	14	—	14	13			71	32–33	3:4
3:5	10	9	15	9	15	14			—	34–35	3:5
3:6	—	10	16	—	16	15			72	36–37	3:6
3:7	—	—	17	—	17	—			—	38–39	3:7
3:8	11	11	18	10	18	16			73	40–41	3:8
3:9	—	—	19	—	19	—			—	42–43	3:9
3:10	—	—	—	—	20	17			—	44–45	3:10
3:11	12	12	20	11	21	—			74	46–47	3:11
< 4:0	—	—	—	—	—	18	0–13	0–9	—	48–49	< 4:0
4:0	—	—	21	—	22	—	—	—	—	50–51	4:0
4:1	—	—	—	—	—	—	—	—	—	52	4:1
4:2	13	13	22	12	23	19	14	10	75	53–54	4:2
4:3	—	—	—	—	24	—	—	—	—	55–56	4:3
4:4	—	—	23	—	25	—	—	11	—	57–58	4:4
4:5	14	14	—	13	26	20	—	—	76	59–60	4:5
4:6	—	—	24	—	27	—	—	12	—	61–62	4:6
4:7	—	—	—	—	—	—	—	—	—	63–64	4:7
4:8	15	15	25	14	28	21	15	13	77	65–66	4:8
4:9	—	—	—	—	—	—	—	14	—	67–68	4:9
4:10	—	—	26	—	29	—	—	15	—	69–71	4:10
4:11	16	16	—	15	—	—	—	16	—	72–73	4:11
5:0	—	17	27	—	30	—	—	17	—	74–76	5:0
5:1	—	—	—	—	—	—	—	—	—	77–79	5:1
5:2	17	18	28	16	31	22	16	18	78	80–81	5:2
5:3	—	—	—	—	—	—	—	—	—	82–83	5:3
5:4	—	—	—	—	32	—	—	—	—	84	5:4
5:5	18	—	29	17	—	—	—	19	—	85–86	5:5
5:6	—	—	—	—	33	—	—	—	—	87–88	5:6
5:7	—	—	—	—	—	—	—	—	—	89	5:7
5:8	19	19	30	18	34	—	17	20	79	90–91	5:8
5:9	—	—	—	—	—	—	—	—	—	92	5:9
5:10	—	—	—	—	—	—	—	—	—	93	5:10
5:11	—	—	31	—	35	—	—	—	—	94	5:11
6:0	—	—	—	—	—	—	—	21	—	95	6:0
6:1	—	—	—	—	—	23	—	—	—	96	6:1
6:2	—	—	32	—	—	—	—	—	—	97	6:2
6:3	—	—	—	—	—	—	—	—	—	98	6:3
6:4	—	—	—	—	—	—	—	—	—	99	6:4
6:5	20	20	33	19	36	—	18	22	80	100	6:5
6:6	—	—	—	—	—	—	—	—	—	—	6:6
6:7	—	—	—	—	—	—	—	—	—	—	6:7
6:8	—	—	34	20	37	—	—	—	—	101	6:8
6:9	—	—	—	—	—	—	—	—	—	—	6:9
6:10	—	—	—	—	—	—	—	—	—	—	6:10
6:11	—	—	—	—	—	—	—	—	—	—	6:11
> 7:0	21–22	21–24	35–42	21–24	38–45	24	19–20	23–24	81–84	102–105	> 7:0

Appendix E. Percentile Ranks, Normal Curve Equivalents, and Stanines

Table E.1 Percentile Ranks, Normal Curve Equivalents, and Stanines

Subtest scaled score	Standard score	Percentile rank	Normal curve equivalent	Stanine
	160	> 99.9	> 99	9
	159	> 99.9	> 99	9
	158	> 99.9	> 99	9
	157	> 99.9	> 99	9
	156	> 99.9	> 99	9
	155	> 99.9	> 99	9
	154	> 99.9	> 99	9
	153	> 99.9	> 99	9
	152	> 99.9	> 99	9
	151	> 99.9	> 99	9
	150	> 99.9	> 99	9
	149	99.9	> 99	9
	148	99.9	> 99	9
	147	99.9	> 99	9
	146	99.9	> 99	9
19	145	99.9	> 99	9
	144	99.8	> 99	9
	143	99.8	> 99	9
	142	99.7	> 99	9
	141	99.7	> 99	9
18	140	99.6	> 99	9
	139	99.5	> 99	9
	138	99	> 99	9
	137	99	> 99	9
	136	99	> 99	9
17	135	99	99	9
	134	99	98	9
	133	99	96	9
	132	98	95	9
	131	98	94	9
16	130	98	92	9
	129	97	91	9
	128	97	89	9
	127	96	88	9
	126	96	87	8
15	125	95	85	8
	124	95	84	8
	123	94	82	8
	122	93	81	8
	121	92	79	8
14	120	91	78	8

Table E.1 Percentile Ranks, Normal Curve Equivalents, and Stanines *(continued)*

Subtest scaled score	Standard score	Percentile rank	Normal curve equivalent	Stanine
	119	90	77	8
	118	88	75	7
	117	87	74	7
	116	86	72	7
13	115	84	71	7
	114	82	70	7
	113	81	68	7
	112	79	67	7
	111	77	65	6
12	110	75	64	6
	109	73	63	6
	108	70	61	6
	107	68	60	6
	106	66	58	6
11	105	63	57	6
	104	61	56	6
	103	58	54	5
	102	55	53	5
	101	53	51	5
10	100	50	50	5
	99	47	49	5
	98	45	47	5
	97	42	46	5
	96	39	44	4
9	95	37	43	4
	94	34	42	4
	93	32	40	4
	92	30	39	4
	91	27	37	4
8	90	25	36	4
	89	23	35	4
	88	21	33	3
	87	19	32	3
	86	18	30	3
7	85	16	29	3
	84	14	28	3
	83	13	26	3
	82	12	25	3
	81	10	23	2
6	80	9	22	2
	79	8	21	2

Table E.1 Percentile Ranks, Normal Curve Equivalents, and Stanines *(continued)*

Subtest scaled score	Standard score	Percentile rank	Normal curve equivalent	Stanine
	78	7	19	2
	77	6	18	2
	76	5	16	2
5	75	5	15	2
	74	4	13	2
	73	4	12	1
	72	3	11	1
	71	3	9	1
4	70	2	8	1
	69	2	6	1
	68	2	5	1
	67	1	4	1
	66	1	2	1
3	65	1	1	1
	64	1	< 1	1
	63	1	< 1	1
	62	1	< 1	1
	61	0.5	< 1	1
2	60	0.4	< 1	1
	59	0.3	< 1	1
	58	0.3	< 1	1
	57	0.2	< 1	1
	56	0.2	< 1	1
1	55	0.1	< 1	1
	54	0.1	< 1	1
	53	0.1	< 1	1
	52	0.1	< 1	1
	51	0.1	< 1	1
	50	< 0.1	< 1	1
	49	< 0.1	< 1	1
	48	< 0.1	< 1	1
	47	< 0.1	< 1	1
	46	< 0.1	< 1	1
	45	< 0.1	< 1	1
	44	< 0.1	< 1	1
	43	< 0.1	< 1	1
	42	< 0.1	< 1	1
	41	< 0.1	< 1	1
	40	< 0.1	< 1	1

Appendix F. Growth Scale Values

Table F.1 Growth Scale Values

Raw score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Raw score
105										647	105
104										616	104
103										597	103
102										586	102
101										578	101
100										572	100
99										567	99
98										563	98
97										560	97
96										556	96
95										554	95
94										551	94
93										549	93
92										547	92
91										545	91
90										543	90
89										541	89
88										540	88
87										538	87
86										537	86
85										535	85
84									652	534	84
83									621	533	83
82									601	531	82
81									589	530	81
80									580	529	80
79									573	528	79
78									567	527	78
77									562	526	77
76									558	525	76
75									554	524	75
74									551	523	74
73									547	522	73
72									544	521	72
71									542	520	71
70									539	519	70
69									537	518	69
68									534	517	68
67									532	516	67
66									530	515	66
65									528	514	65
64									526	513	64
63									525	512	63

Table F.1 Growth Scale Values *(continued)*

Raw score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Raw score
62									523	511	62
61									521	510	61
60									520	509	60
59									518	509	59
58									517	508	58
57									515	507	57
56									514	506	56
55									513	505	55
54									511	504	54
53									510	503	53
52									509	502	52
51									508	501	51
50									506	500	50
49									505	500	49
48									504	499	48
47									503	498	47
46									502	497	46
45					650				501	496	45
44					621				499	495	44
43					605				498	494	43
42			591		596				497	493	42
41			574		589				496	492	41
40			563		583				495	491	40
39			556		577				494	490	39
38			550		572				493	489	38
37			546		567				491	488	37
36			542		563				490	487	36
35			538		558				489	486	35
34			535		553				488	484	34
33			532		549				487	483	33
32			529		544				486	482	32
31			527		540				484	481	31
30			524		535				483	480	30
29			522		531				482	478	29
28			519		527				480	477	28
27			517		523				479	476	27
26			515		518				478	474	26
25			512		514				476	473	25
24		636	510	658	510	643		626	475	472	24
23		604	507	625	506	609		594	473	470	23
22	629	583	505	604	501	588		574	472	468	22
21	597	570	503	590	497	573		561	470	467	21
20	576	560	500	578	492	561	617	551	468	465	20

Table F.1 Growth Scale Values *(continued)*

Raw score	SC	WS	EV	FD	RS	BC	WC	PA	DPP	PRS	Raw score
19	563	551	497	568	488	551	585	542	467	463	19
18	553	543	495	559	483	542	565	535	465	461	18
17	545	536	492	550	479	534	552	528	463	459	17
16	537	529	489	542	475	526	542	521	461	457	16
15	530	523	486	534	471	519	533	515	458	455	15
14	524	517	483	525	466	512	526	509	456	453	14
13	518	510	480	517	462	505	519	504	453	450	13
12	512	504	477	508	457	499	513	498	450	447	12
11	505	498	474	500	452	493	506	493	447	444	11
10	499	491	470	490	447	486	500	488	443	441	10
9	493	484	467	481	441	480	494	482	439	437	9
8	486	477	464	471	435	473	487	477	433	433	8
7	479	469	460	460	428	466	481	471	427	429	7
6	471	461	456	448	420	459	474	465	419	424	6
5	461	451	451	436	411	450	466	458	408	418	5
4	450	439	446	421	402	441	458	450	389	410	4
3	435	425	440	401	391	429	448	441	358	401	3
2	412	406	433	374	378	414	435	429	350	388	2
1	376	379	421	338	356	390	415	410	338	368	1

Appendix G. Criterion Scores for the Connected Speech Sample: Story Grammar

Table G.1 Criterion Scores for the Connected Speech Sample: Story Grammar

	Criterion scores		
Age	**Acceptable**	**Emerging**	**Beginning**
3:0–4:11	≥ 6	4–5	0–3
5:0–6:11	≥ 14	10–13	0–9

Appendix H. Criterion Scores for the Pragmatic Activities Checklist

Table H.1 Criterion Scores for the Pragmatic Activities Checklist

Age	Criterion score
3:0–3:11	≤ 15
4:0–4:11	≤ 9
5:0–6:11	≤ 7

Appendix I. CELF Preschool–3 Examiners

The authors and Pearson Clinical Assessment would like to thank the following examiners for their contributions to the pilot and standardization research.

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Tracy Larson
Sarah Liporace
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Elizabeth Frye
Brittany Grey
Lourdes Hawkins
Christine Johnson
Courtney Licklider
Rigby Malandrino
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Deana Payton
Carlye Slaughter
Courtney Swillinger

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Ashley East
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Ashley Ward

Oregon

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Kaley Carpenter
Sandra Harberger
Kathleen Kolbe Holden
Channa Leibowitz
Maribel Rivera
Marjory Warnes

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Melody Simmons

South Dakota

Lori Eggleston
Tracey Lorang

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Candice Gray
Kathryne Kerley

Texas

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Randi Bassett
Andrea Bermudez
Roxanna Caceres
Andrea Crafton
Rachael Dawson
Amber Droll
Liz Feeney
Mary Forkner
Nidia Garcia Blevins
Khristy Garrett
Dawn Hafling Magers
Amy Huddleston
Jeanene Johnson
Ron Jones
Sherri Lamb
Priscilla Lu-Lorente
Kelly Majewski
Caprice McCarey-Dodds
Karen Miller
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Nancy Ramirez
Abby Reis
Priscilla Samuelson
Hillary Sellers
Latrichielle Sorrells
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Dana Walker
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Appendix J. Growth Scale Values Tracking Form

CELF® PRESCHOOL 3

Clinical Evaluation of Language Fundamentals–PRESCHOOL

Growth Scale Values Tracking Form

Name: _____

Date of birth: _____/_____/_____ Sex: F M School: _____

Growth scale values

	First administration Age: _____ Test date: ___/____/____ Examiner: _____	Second administration Age: _____ Test date: ___/____/____ Examiner: _____	Third administration Age: _____ Test date: ___/____/___ Examiner: _____
Sentence Comprehension (SC)			
Word Structure (WS)			
Expressive Vocabulary (EV)			
Following Directions (FD)			
Recalling Sentences (RS)			
Basic Concepts (BC)			
Word Classes (WC)			
Phonological Awareness (PA)			
Descriptive Pragmatics Profile (DPP)			
Preliteracy Rating Scale (PRS)			