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Disclosures

Financial
Selina Oliver is employed by Pearson Clinical Assessments.

Non-financial disclosure
There are no relevant non-financial relationships to disclose.

Course Content Disclosure
Pearson Clinical Assessment publishes assessment and interventions tools for psychologists, speech-language pathologists, occupational therapists, and educators. Pearson is the publisher of the BBCS-4: R and the BSRA-4.

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Learner outcomes

Based on the content of the workshop, participants will be able to:


1. Explain how basic concept comprehension is related to children's understanding of classroom conversations, teacher directions, and school curricula.
2. Explain why concept development is a powerful predictor of overall language development, cognitive functioning, and school readiness.
3. Explain how concept attainment can be integrated into your standard assessment battery.

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AGENDA

- 1.Importance of basic concepts to child development: Language, cognitive, and school readiness
- 2.Overview of concept development issues
- 3.BBCS-4 and BSRA-4 administration and scoring
- 4.Integrate concept results into a comprehensive assessment battery.
- 5.Case Study AND Q & A



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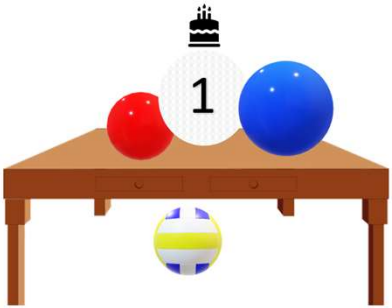


Setting the Stage



5

How would most preschool kids describe item #1?



6

Very basic focus on physical features

White Round Ball

How would you describe?

7

More likely to be Conceptual in your description

White Round Ball

Above Volleyball
Next to Red ball
Between Red and Blue Ball
On the table
Largest ball
Below Cake
2nd in line
 In the **Middle**
Soft, dull, bumpy

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Importance of basic concepts to language development, cognitive functioning, and school readiness...and a definition

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A definition of basic concepts

A basic concept in all languages is:
 ... a word, in its most elementary sense, that is a label for one of the basic colors, comparatives, directions, materials, positions, quantities, relationships, sequences, shapes, sizes, social or emotional states and characteristics, textures, and time. Basic concepts are basic in the sense that they represent the most rudimentary concepts in these specific categorical areas...

Concepts are the 'foundation of intelligence'
 Jerome Kagan



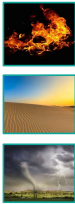
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Conceptual levels

Basic Concepts: The most rudimentary words used to describe salient aspects of the environment (e.g., *rough, hot, blue, liquid*).

Topical Concepts: Conceptual terms used within broader subject areas (e.g., *desert, marsh, jungle, ocean*).

Over-arching Concepts: More inclusive concepts that span beyond basic and topical concepts (e.g., *environments, patterns, systems*).




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The importance of basic concepts

Basic concepts...
 are the foundational terms used to describe young children's everyday world (a).
 are important to vocabulary development, especially for young students who are most at risk for school failure (b).
 are cognitively more complex and functional than common vocabulary terms.


Newman (c), "Low-income preschool children need content-rich instruction...including knowledge of words and the concepts that connect them."



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The importance of basic concepts


Basic concepts...
 are needed to understand classroom conversations and teacher directions (d)
 predict reading, mathematics, and other subject areas better than do traditional vocabulary tests (e.g., PPVT) (e).
 are needed to understand administration directions of early childhood tests of intelligence (f) and achievement (g).



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The importance of basic concepts

Basic concepts:
 are highly relevant educational terms, not simple age-graded words found on common vocabulary tests.
 are central to early childhood educational standards across all 50 states (h).
 have been mapped, categorized, and effectively assessed and remediated in an evidence-based methodology (i).



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Correlates with powerful educational constructs

Basic concepts have powerful correlations with comprehensive tests of:

- *Intelligence, Cognition, Overall Ability*
- *Language, Vocabulary, and Early Educational Skills*
- *Achievement and School Readiness*

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Vocabulary Development v Basic Concept Development

Aspect	Vocabulary Development	Basic Concept Development
Definition	The process of learning and acquiring new words and their meanings.	Understanding and organizing abstract ideas, objects, and events into categories based on common properties.
Focus	Language-specific focus on words and meanings.	Cognitive categorization and understanding of the world via categorizing and relating objects and ideas according to attributes and relationships.
Importance	Crucial for reading comprehension and academic success; enables clear expression and understanding.	Foundational for reading comprehension, mathematical reasoning, problem-solving, and scientific thinking.
Interrelatedness	Interrelated with basic concept development, supporting each other.	Supported by vocabulary development for better understanding.

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Questioning assumptions about concept development

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- ### Four Assumptions About Concept Development
1. All children enter school already knowing important basic concepts.
 2. All children begin school on an equal conceptual footing.
 3. Parents and teachers know which concepts children need to master.
 4. Schools systematically teach basic concepts in early childhood grades

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1. All children enter school already knowing important basic concepts. FALSE

Preschool *intelligence test directions* are replete with basic concepts children do not understand (f).

Early childhood *achievement test directions* are replete with basic concepts children do not comprehend (g).

Young children do not understand basic concepts commonly used in classroom directions and discussions (d).

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Classroom directions given to a 5-year-old kindergarten student

"First, open the classroom door.

Next, go to the center of the room.

Afterward, look carefully before you decide where to sit down.

Never sit across from the doorway."

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Classroom directions given to a 5-year-old kindergarten student

"**First, open** the classroom door.

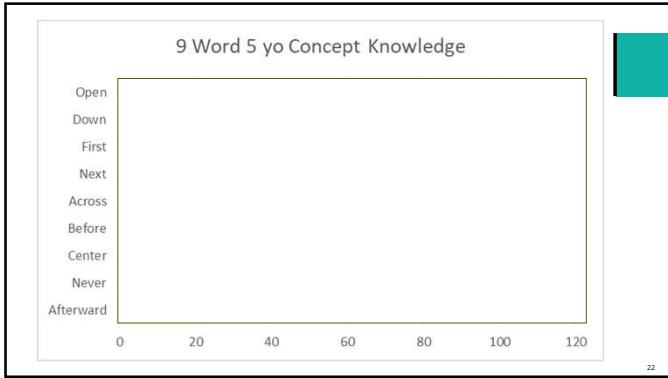
Next, go to the **center** of the room.

Afterward, look carefully **before** you decide where to sit **down**.

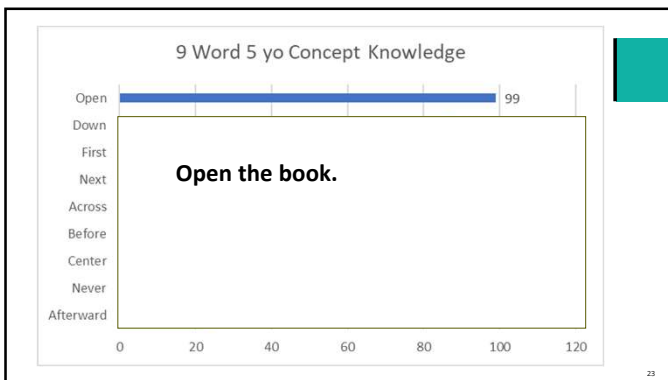
Never sit **across** from the doorway."



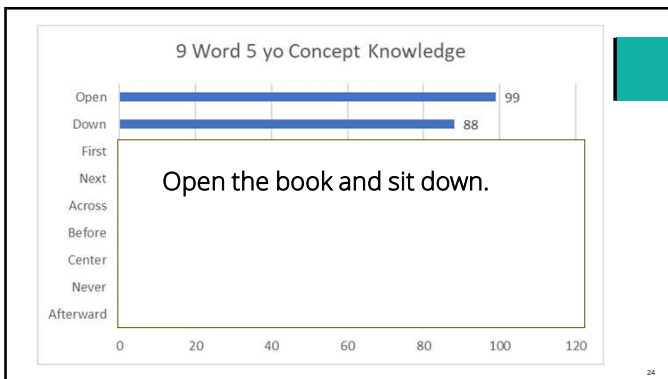
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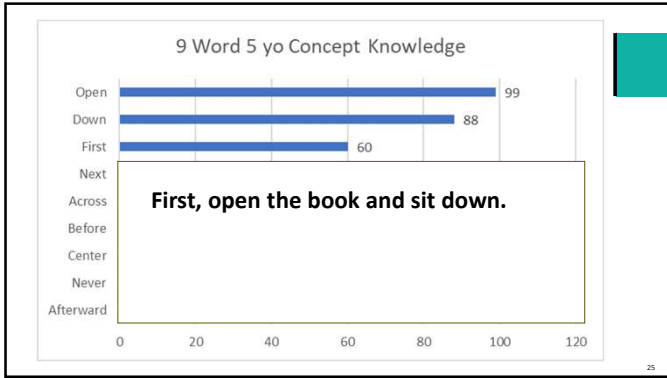
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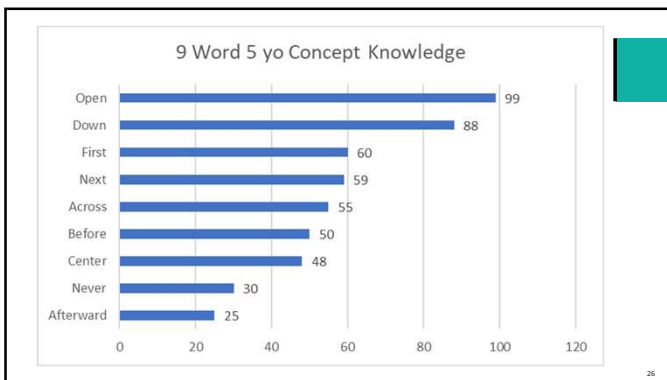
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2. All children begin school on an equal conceptual footing. FALSE

- Children of poverty know fewer basic concepts than more economically advantaged students. (24%, 2021)
- ELL/ESL students know far fewer basic concepts (in English) than native English speakers. (21%, 2021)
- Children with speech/language, hearing, vision, and cognitive disabilities know fewer basic concepts than nondisabled students. (13%, 2021)

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3. Parents and teachers know which concepts children need to master. FALSE



- Research has identified a wide spectrum of basic concepts children need to describe and discuss their world or to follow others' directions.
- Parents often teach only obvious concepts to their children prior to attending school (e.g., colors, numbers, letters).
- Parents and teachers often have misperceptions about the taxonomical nature of concept domains and subdomains (e.g., primary colors, secondary colors, tertiary colors, absolutes). *(Teaching the color Red, not teaching concept of Primary Color)*
- Parents often forget to address essential social-emotional concepts that are an important part of school readiness and self-regulation.

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4. Schools systematically teach basic concepts to children in early childhood grades. FALSE

- None of the 50 states' early-childhood educational standards include all or even most basic concepts (h).
- Schools typically do not follow a systematic 'conceptual map' or proven pedagogy for teaching basic concepts (u).
- Basic concepts are usually taught with little consideration for the empirically derived scope and sequence of concept development (u).



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How can we assess basic concepts?



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Incorporating the BBSC:4-R into a comprehensive psychoeducational assessment

Assessment Questions:

- Determine the **extent** to which a child has acquired the basic concepts needed to be successful in **formal education**, ranging from very delayed to very advanced;
- Determine **which** basic concepts a child has mastered and which concepts the child has not acquired;
- Assist with **identifying** children with language impairments and educational exceptionalities;
- Assist in determining **eligibility** for services.

Differences
Direction
Severity

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BBSC-4:R Ages 3:0 - 7:11 **Bracken 4** Basic Concept Scale: RECEPTIVE

- Assesses comprehension of **320** concepts
- 10 content categories
 - Colors
 - Letters
 - Numbers
 - Sizes/Comparisons
 - Shapes
 - Self/Social Awareness
 - Direction/Position
 - Texture/Material
 - Quantity
 - Time/Sequence

School Readiness Scale

Separate subtest scores available

- 159** concepts associated with early science, technology, engineering, arts, and math curriculum for the K to Grade 2 age group
- Administration time: 20 to 40 minutes
- Composite scores (School Readiness Composite and Receptive Total Composite) provide standard scores, percentile ranks and descriptive classifications
- Individual subtest scores for subtests 6-10 and the School Readiness Composite
 - Scaled scores
 - Percentile ranks
 - Age equivalents
 - Growth scale values
 - Descriptive classifications
 - Percent correct (English or Spanish administration)

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BSRA-4 Ages 3:0 - 7:11 **Bracken 4** SCHOOL READINESS Assessment

- Assesses comprehension of **134** concepts
- 6 content categories
 - Colors
 - Letters
 - Numbers
 - Sizes/Comparisons
 - Shapes
 - Self/Social Awareness

- 64** concepts associated with early science, technology, engineering, arts, and math (STEAM curricula) for K to Grade 2 age levels
- Administration time: 15 to 20 minutes
- Test score: (SRC Composite)
 - standard score
 - percentile rank
 - age equivalent
 - descriptive classification
- Percent correct by subtest (for English and Spanish administrations)

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Concept Domains, subdomains, examples, and relationship to state standards
(see Appendix H in the manual)

01 Early Childhood Educational Standards

Examples of US state standards applicable to the concepts tested on the BBCS-4-R and BSRA-4, including STEAM concepts

02 Conceptual Domains and Subdomains

Inclusive BBCS-4-R domains and subdomains, example:

Colors: Primary, secondary, tertiary, absolute)

Letters: Upper-, lower-case letter recognition, letter sounds

03 Concept Examples

Under, Over, Between...
First, Second, Third, Next...
Sad, Happy, Tired...
Solid, Liquid, Gas...
Hot, Cold, Warm..

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Virginia State Standards: Colors

Sort and classify objects according to one or two attributes (including color)

Identify and explore patterns, e.g., ...red, blue, red, blue

Describe and sort items by their physical properties, e.g., color...

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Colors subtest

Subdomains

Primary Colors

Secondary Colors

- Combination of two primary colors

Absolutes (Non-Hues)

Tertiary Colors

- Mixing a primary color with a secondary color

Concept Example

Red, Yellow, Blue

Orange, Green, Purple

White, Black, (Gray)

Violet (Blue + Purple)

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Bracken 4 Basic Concept Scale: RECEPTIVE Bracken 4 SCHOOL READINESS Assessment Colors subtest

The primary colors are tested in this format

More difficult items are tested in this format

Only a partial view of the item on the left is shown. The example on the right is not an actual test item.

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Ohio State Standards: Letters

With modeling and support, recognize the sounds associated with letters.

With modeling and support, recognize and name some upper- and lower-case letters in addition to those in first name.

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Bracken 4 Basic Concept Scale: RECEPTIVE Bracken 4 SCHOOL READINESS Assessment Letters subtest


<p>Pre-Literacy Skills</p> <p>Recognition</p> <ul style="list-style-type: none"> • Upper-case • Lower-case <p>BBCS:E*</p> <p>Naming</p> <ul style="list-style-type: none"> • Upper-case • Lower-case <p>Letter Sounds</p> <p>Letter Blend Sounds</p>	<p>Concept Examples</p> <p><i>Point to B, L, S</i></p> <p><i>Point to c, f, p</i></p> <p>BBCS:E</p> <p><i>Name this letter, W, P, R, E</i></p> <p><i>Name this letter, a, e, g, k</i></p> <p><i>What sound does b make?</i></p> <p><i>What sound does ch make?</i></p>
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* BBCS:E was not revised and likely will not become a 4th Edition; although it may continue to be used independently


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Bracken **4** Bracken **4** Letters subtest
Basic Concept Scale: RECEPTIVE SCHOOLREADINESS Assessment

M Y Z S



a v j
r t k




Show me the... **S** Show me the... **k**


NOTE: Neither of these test items are actual test items on the BBCS-4:R or the BSRA-4.

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**Georgia State Standards:
Numbers**



Counts at least 10 objects using one-to-one correspondence



Matches numerals to sets of objects with the same number, 0–10.



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Bracken **4** Bracken **4** Numbers/Counting subtest
Basic Concept Scale: RECEPTIVE SCHOOLREADINESS Assessment

Math Literacy Skills

Place Counting

Number Identification

- 0-9
- Double Digits
- Triple Digits

Bracken Basic Concept Scale: Expressive (2006)

Rote Counting

Number Naming

- 0-9
- Double Digits
- Triple Digits

Concept Examples

Counting with one-to-one correspondence

Point to the 1, 5, 8, 0

Point to the 22, 58, 95

Point to 138, 395, 783

Bracken Basic Concept Scale: Expressive (2006)

Counting without place value

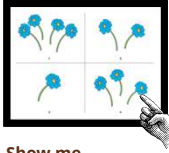
What is this number? 2, 6, 9

What is this number? 44, 78

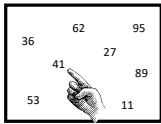
What is this number? 234, 783

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Bracken **4** Bracken **4** Numbers/Counting subtest
Basic Concept Scale: RECEPTIVE SCHOOL READINESS Assessment



Show me...
three flowers



Show me... **41**

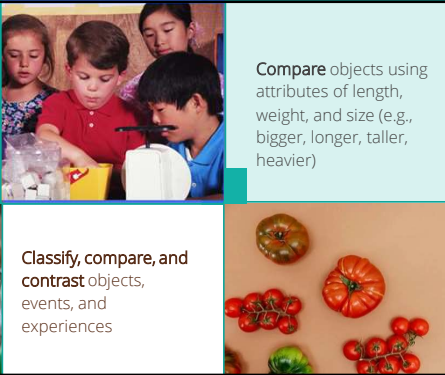
NOTE: Neither of these test items are actual test items on the BBCS-4:R or the BSRA-4.

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Colorado State Standards: Sizes/Comparisons
 Orders objects by size or length

Compare objects using attributes of length, weight, and size (e.g., bigger, longer, taller, heavier)

Classify, compare, and contrast objects, events, and experiences



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Bracken **4** Bracken **4** Sizes/Comparisons subtest
Basic Concept Scale: RECEPTIVE SCHOOL READINESS Assessment

Dimensions and Size Subdomains

Three-Dimensional Size

Two-Dimensional Size

- Vertical
- Horizontal

Comparative Sizes

Concept Examples

Big, Large, Small, Little

Tall, Short

Long, Short

Similar, Same, Different

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Bracken 4 Bracken 4 Sizes/Comparisons subtest
Basic Concept Scale: RECEPTIVE SCHOOL READINESS Assessment

Show me... the **little ball**

Show me... which one is **lighter than the others**

NOTE: Neither of these test items are actual test items on the BBLS-4-R or the BSRA-4.

46

Connecticut State Standards: **Shapes**

Sort and classify objects by one attribute into two or more groups (e.g., color, size, shape)

Identify 2-dimensional shapes (starting with familiar shapes such as circle and triangle) in different orientations and sizes

Identify and describe a variety of 2-dimensional and 3-dimensional shapes with mathematical names (e.g., ball/sphere, box/rectangular prism, can/cylinder) regardless of orientation and size

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Bracken 4 Bracken 4 Shapes subtest
Basic Concept Scale: RECEPTIVE SCHOOL READINESS Assessment

Shape Subdomains	Concept Examples
Linear (vertical/horizontal) <ul style="list-style-type: none"> Curvilinear Line Diagonal Line Angular Line 	<i>Line, Straight</i> <i>Curve</i> <i>Diagonal</i> <i>Angle</i>
Two-Dimensional Shapes Three-Dimensional Shapes	<i>Circle, Square, Triangle</i> <i>Sphere, Cube, Pyramid</i>

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Bracken 4 Basic Concept Scale: RECEPTIVE Bracken 4 SCHOOL READINESS Assessment Shapes subtest

Show me... which one is **round**

Show me... which ducks are **in a row**

NOTE: Neither of these test items are actual test items on the BBCS-4:R or the BSRA-4.

49

Mississippi Standards: **Self-/Social Awareness**

With prompting and support, recognize emotions

Describe self, using several basic characteristics (e.g., gender, age, hair color, eye color).

With guidance and support, identify some similarities and differences in family structure, culture, ability, language, age and gender

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Bracken 4 Basic Concept Scale: RECEPTIVE Self-/Social Awareness subtest

Show me... which person is **anxious**

Show me... which person is **young**

NOTE: Neither of these test items are actual test items on the BBCS-4:R or the BSRA-4.

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Bracken 4
Basic Concept Scale: **RECEPTIVE**

Bracken 4
SCHOOLREADINESS Assessment

Self-/Social Awareness subtest

<p>Personal and Cultural Subdomains</p> <ul style="list-style-type: none"> Affective Feelings Health/Physical Familial Relationships Age Mores 	<p>Conceptual Examples</p> <ul style="list-style-type: none"> Happy, Sad, Excited Healthy, Sick, Tired Mother, Father, Sister Old, Young Right, Wrong, Correct
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Iowa State Standards:
direction and position

The child **demonstrates** understanding of spatial words such as up, down, over, under, top, bottom, inside, outside, in front, and behind.

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Bracken 4
Basic Concept Scale: **RECEPTIVE**

Direction/Position subtest
(i.e., Relational Concepts)

<p>Direction and Position Subdomains</p> <ul style="list-style-type: none"> Three-dimensional Internal/External Relative Proximity Self/Other Perspective Front/Rear Specific Locations 	<p>Concept Examples</p> <ul style="list-style-type: none"> Under, Over, Right, Left Inside, Outside, Around Near, Far, Beside My Right, My Left, Your Right In Front of, Behind Edge, Corner
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Bracken 4
Basic Concept Scale: RECEPTIVE

Direction/Position subtest

1 2 3 4

1 2 3 4

Show me... which child is stepping into the water?

Show me... which line is horizontal?

Neither of these test items are actual test items on the BBCE-4-R or the BSRA-4.

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Montana State Standards:
Textures and Materials

The child may **arrange** a variety of objects by one or two characteristics, such as shape...or texture.

The child may **sort** natural objects by size, shape, color, smell, texture, etc. and **describe** their attributes, such as "These rocks are all round, smooth and red."

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Bracken 4
Basic Concept Scale: RECEPTIVE

Textures/Materials subtest

Environmental Conditions	Concept Examples
States of Matter	<i>Solid, Liquid, Gas</i>
Textures	<i>Rough, Smooth, Sharp</i>
Materials	<i>Cloth, Wood, Metal</i>
Material Characteristics	<i>Wet, Dry, Shiny, Dull</i>
Temperatures	<i>Hot, Cold</i>

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Bracken 4
Basic Concept Scale: RECEPTIVE

Textures/Materials subtest

Show me... which one is *sharp*

Show me... which one is *bumpy*

Neither of these test items are actual test items on the BBCS-4:R or the BSRA-4.

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Maine State Standards: *Quantity*

Recognizes measurable attributes of objects, such as length, weight and capacity of everyday objects (e.g., long, short, tall, heavy, light, big, small, full, empty)

Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group up to 10.

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Bracken 4
Basic Concept Scale: RECEPTIVE

Quantity subtest

Quantitative Subdomains	Concept Examples
Part/Whole Relations	Whole, Part, Piece
Relative Quantity	Lots, Few, Some, None
Volume	Full, Empty
Multiples	Pair, Double, Triple, Dozen
Comparatives/Superlatives	More, Less, Most, Least
Fractions	Half, One-Third
Math Signs/Symbols	+, -, X

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Bracken 4
Basic Concept Scale: RECEPTIVE

Quantity subtest

Show me... which person has the *greatest* number of chickens

Show me... which child is taking *another* piece of candy

Neither of these test items are actual test items on the BBCS-4:R or the BSRA-4.

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Hawaii State Standards: Time/Sequence

State periods of day when events occur

Use time phrases and tense selection appropriately (e.g., today, yesterday, tomorrow, later)

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Bracken 4
Basic Concept Scale: RECEPTIVE

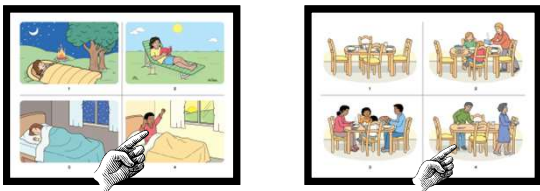
Time / Sequence subtest

Temporal Subdomains	Concept Examples
Mathematical Seriation	First, Second, Third
Frequency	Once, Twice
Natural Occurring Events	Morning, Daytime, Before, Never, Always
Temporal Absolutes	Early, Late, Next, Arriving
Temporal Order	Fast, Slow
Speed	New, Old, Young
Relative Age	Nearly, Just, Waiting
Temporal Nuances	Days, Weeks, Months, Seasons
Larger Temporal Periods	

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Bracken 4
Basic Concept Scale: RECEPTIVE

Time / Sequence subtest



Show me... where it is *morning*

Show me... where the meal is *over*

Neither of these test items are actual test items on the BBCS-4:R or the BSRA-4.

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Bracken 4
Basic Concept Scale: RECEPTIVE

Administration and Scoring

An easy test to administer

- Receptive format requires no verbal response
- Colorful, stimulating, and developmentally appropriate visual stimuli maintains children's interest and engagement
- Consistent, appearance, style, and response mode throughout the test
- Average administration times
 - 20-40 minutes for BBCS-4: R
 - 15-20 minutes for BSRA-4

Examiners: Personnel trained at level A may administer and score the test; however, level B or C staff should review scoring and only level B or C staff may interpret the scores.

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Calculating chronological age

Subtract the child's birth date from the test date

- When borrowing days from months, always borrow 30 days regardless of the month.
- When borrowing months from years, always borrow 12 months.
- Do not round days up or down to the nearest month when calculating age. If the child's current chronological age is calculated as 3 years 11 months 29 days, do not round up to 4 years 0 months.

	Year	Month	Day
Date of test	2020	10	20
Date of birth	2018	9	2
Chronological age	3	11	29

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Bracken 4
Basic Concept Scale: RECEPTIVE

Subtest administration rules

All Subtests

- Begin at the start point based on the child's age.
- Introduce test items by saying, "Show me..."
- Items with four response choices: Circle 1 for correct answers, 0 for incorrect answers, and NR and score as 0 for no response.
- You may repeat the item, if the child:
 - requests a repetition
 - indicates uncertainty about the response
 - does not respond within 10 seconds
- Do not repeat the item if the child responds incorrectly; does not indicate uncertainty about the response; or does not ask you to repeat the item.

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Bracken 4
Basic Concept Scale: RECEPTIVE

Trial items

Simple transition from environmental non-test questions to test materials, thus ensuring the child understands task expectations before testing begins.

Trial 1: If I ask you to show me your shoes, where would you point?
Trial 2: Show me your hair.
Trial 3: Now show me the floor.
Trial 4: Show me the ball. (Confirm that the child can identify at least one picture in the four-picture display).

Instructions for administering the trial items are on page 2 of the Record Form.

*****Do not skip trial items*****

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Considerations based on child responses

- **If a child shows a perseverative pattern of pointing to response options located in only one quadrant on the stimulus page:**
 - Point to each response option, one at a time while saying, "Look at this picture, and this one, and this one, and this one. Now, show me...(concept)."
- **If a child points to more than one option:**
 - Say to the child, "Which one is your answer, show me...(concept)."
- **If a child self-corrects:**
 - Accept the self-correction and score the item as correct.
- **If a child initially responds with the correct response, but then changes to an incorrect response:**
 - Accept the child's changed response and score the item as incorrect.

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Bracken 4 Recording responses and scoring
Basic Concept Scale: RECEPTIVE

Scoring/Recording Responses

- Score 1 if the child responds correctly
- Score 0 if the child responds incorrectly
- Circle NR and 0 if the child does not respond.
- Items 1 – 10, write the alternate color the child selected if incorrect; if correct, just record score.
- Use the four-point response options to note the color (or picture number for items 11 and 12) the child pointed to.

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Basal and discontinue rules

Start Point
Age-based start points

Basal Rule
Correct response to 3 consecutive items (All Subtests)

Discontinue Point
3 consecutive 0 scores on Subtests 1-6
4 consecutive 0 scores on Subtests 7-10

Rules for the SRC subtests (1-6)

START POINTS Age-based start points	BASAL 3 consecutive 1 scores	STEAM (Science, Technology, Engineering, Art, Math) Item numbers underlined for STEAM concepts	DISCONTINUE POINT 3 consecutive 0 scores
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Rules for subtests 7-10

START POINTS Age-based start points	BASAL 3 consecutive 1 scores	STEAM (Science, Technology, Engineering, Art, Math) Item numbers underlined for STEAM concepts	DISCONTINUE POINT 4 consecutive 0 scores
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Scores and descriptive classifications

- Subtest scaled scores
- Composite standard scores
 - School readiness composite
 - Receptive total composite
- Confidence Intervals
- Percentile ranks
- Growth scale values
- Age equivalents
- Descriptive classifications
 - Very delayed
 - Delayed
 - Average
 - Advanced
 - Very Advanced

Subtest	Raw score	Scaled score	Standard score (mean = 100)	Standard error (SE)	Percentile rank	Percentile rank interval	Describe classification	Score range	Age equivalent
1-6 SRC					NA	NA			
7-10 SRC					NA	NA			
11-12 SRC					NA	NA			
13-14 SRC					NA	NA			
15-16 SRC					NA	NA			
Composite SRC					NA	NA			
Composite RC					NA	NA			

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Internal consistency reliability of the BBCS-4:R normative sample by age

Table 14. Internal Consistency Reliability of the BBCS-4:R Normative Sample by Age

Score	Internal consistency reliability									Average r_{tt}
	3:0-3:5	3:6-3:11	4:0-4:5	4:6-4:11	5:0-5:5	5:6-5:11	6:0-6:5	6:6-6:11	7:0-7:11	
1-6. SRS	.97	.97	.98	.99	.98	.97	.97	.98	.96	.98
6. Self-/Social Awareness	.90	.93	.96	.95	.93	.95	.90	.96	.88	.93
7. Direction/Position	.97	.97	.98	.98	.97	.96	.97	.97	.94	.97
8. Texture/Material	.91	.93	.94	.95	.94	.91	.90	.90	.92	.92
9. Quantity	.88	.95	.94	.94	.94	.94	.96	.92	.94	.94
10. Time/Sequence	.85	.91	.93	.94	.95	.93	.92	.95	.92	.93
Receptive TC	.97	.99	.99	.99	.99	.98	.99	.99	.98	.99
Receptive SRC	.97	.97	.98	.99	.98	.97	.97	.98	.96	.98

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Standard errors of measurement of the BBCS-4 normative sample by age

Standard errors of measurement

Score	Standard errors of measurement									Average r_{tt}
	3:0-3:5	3:6-3:11	4:0-4:5	4:6-4:11	5:0-5:5	5:6-5:11	6:0-6:5	6:6-6:11	7:0-7:11	
1-6. SRS	0.52	0.52	0.42	0.30	0.42	0.52	0.52	0.42	0.60	0.48
6. Self-/Social Awareness	0.95	0.79	0.60	0.67	0.79	0.67	0.95	0.60	1.04	0.80
7. Direction/Position	0.52	0.52	0.42	0.42	0.52	0.60	0.52	0.52	0.73	0.54
8. Texture/Material	0.90	0.79	0.73	0.67	0.73	0.90	0.95	0.95	0.85	0.84
9. Quantity	1.04	0.67	0.73	0.73	0.73	0.73	0.60	0.85	0.73	0.77
10. Time/Sequence	1.16	0.90	0.79	0.73	0.67	0.79	0.85	0.67	0.85	0.84
Receptive TC	2.60	1.50	1.50	1.50	1.50	2.12	1.50	1.50	2.12	1.80
Receptive SRC	2.60	2.60	2.12	1.50	2.12	2.60	2.60	2.12	3.00	2.40

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Internal consistency reliability by special group

Table 15. Internal Consistency Reliability by Special Group


Score	LI		DD		GT		Average r_{tt}
	N	r	N	r	N	r	
1-6. SRS	45	1.0	37	.99	32	.86	.96
6. Self-/Social Awareness	45	.98	37	.90	32	.88	.94
7. Direction/Position	45	.99	37	.94	32	.97	.97
8. Texture/Material	45	.97	37	.94	32	.62	.91
9. Quantity	45	.98	37	.80	32	.83	.91
10. Time/Sequence	45	.97	37	.91	32	.92	.94
Receptive TC	45	1.0	37	.97	32	.95	.96
Receptive SRC	45	1.0	37	.99	32	.86	.96



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BBCS-4:R and BSRA-4 now provide options for digital administration and scoring (in addition to traditional print option)

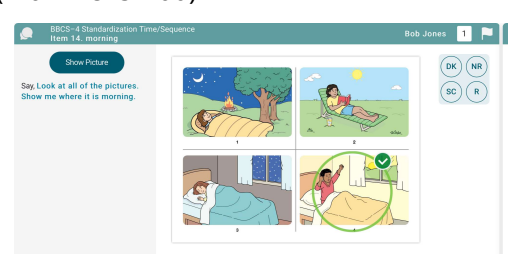


Q-global digital stimulus books can be used for in-person or remote test administration. Scores can be entered in the scoring program to obtain a printed report.

Use two iPads connected by Bluetooth -- one for the examiner -- one for the examinee -- to present, view, and respond to test stimuli. Automated scoring follows the examinee's response.

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Example of a test item on Q-interactive (Examiner's iPad)



BBCS-4 Standardization Time/Sequence
Item 14 morning
Bob Jones 1

Show Picture

Say, Look at all of the pictures.
Show me where it is morning.

DK NR
SC R

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Using BBCS-4: R as part of an integrated assessment battery

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Examining how **Bracken 4** and **Bracken 4i** align with other tests

- Determine detailed information within and across multiple concept categories**
 - More test items across and within categories**
 - Most intelligence, achievement, and language tests include a random collection of conceptual items. In-depth concept assessment identifies strengths and weaknesses within and across conceptual categories.
 - Identify categories of concepts in which the child needs additional instruction and concepts within categories that need remedial attention.**
- Determine the child's developmental trajectory**
 - Early stages of acquisition or mastery?**
 - Comparing similar content across tests provides consistency information about the child's stage of concept acquisition within and across conceptual categories.
 - Determine whether the child is in an early acquisition stage (superficial understanding) or more advanced stage (understands and concepts in multiple contexts).**
- Determine if the child understands concepts in test directions of other tests in the assessment battery**
 - Test directions can be conceptually too complex**
 - It is important to examine performance on other tests in a battery to question whether the tests used age-appropriate concepts in test directions.
 - Tests that assess similar abilities sometimes produce dissimilar results due in part to the child not fully understanding conceptually complex test directions.**

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Examining how **Bracken 4** and **Bracken 4i** align with other tests

- Determine detailed information within and across multiple concept categories**
- Explore test items across and within categories**
 - Most intelligence, achievement, and language tests include a random collection of conceptual items. In-depth concept assessment identifies strengths and weaknesses within and across conceptual categories.
- Identify categories of concepts in which the child needs additional instruction and concepts within categories that need remedial attention.**

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Examining how **Bracken 4** and **Bracken 4i** align with other tests

- Determine the child's developmental trajectory**
- Early stages of acquisition or mastery?**
 - Comparing similar content across tests provides consistency information about the child's stage of concept acquisition within and across conceptual categories.
- Determine whether the child is in an early acquisition stage (superficial understanding) or more advanced stage (understands concepts in multiple contexts).**

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Examining how **Bracken 4** and **Bracken 4i** align with other tests

Determine if the child understands concepts in test directions of other tests in the assessment battery

Test directions can be conceptually too complex!
It is important to examine performance on other tests in a battery to question whether the tests used age-appropriate concepts in test directions.

Tests that assess similar abilities sometimes produce dissimilar results due in part to the child not fully understanding conceptually complex test directions.

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RIOT Assessment Process

Referral Question
Consider if the referral suggests poor direction following, confusion, not following classroom discussions

1 **Review School Records**
Review screenings for vision, hearing, or medical reasons for referral (e.g., Otis Media)

2 **Interview Appropriate Personnel**
Interview school personnel and guardians

3 **Observe Child in Classroom**
Observe child's interactions, following directions, questions asked, confusion

4 **Administer, Score, and Integrate Test Results**
Compare results across tests and identify conceptual strengths and weaknesses

5 **Identify Concepts that Need to be Taught**
Complete the Concept Development Guide to identify concepts for instruction at home and school

Test
Select a battery of tests that addresses the referral questions and answers potential hypotheses and concerns

Observe
Observe the child's classroom and playground dynamics, and interactions with others

Interview
Follow up on Referral with an interview, considering primary and secondary concerns

Review
Review student's work products, grades, attendance records, medical conditions


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Concept Remediation and Instruction: 20 Evidence-Based Principles


BBSC and BSRA Examiner's Manuals identify 20 empirically-supported principles for teaching or remediating children's basic concept acquisition, such as:

- Teach positive pole concepts before negative pole concepts; upper case letters before lower case; numerals 1-5 before 6-9; 3D sizes before 2D (*Big/Small* before *Tall/Short*)...
- Identify and emphasize salient features that define the concept
- Use clear conceptual examples and non-examples when teaching concept discrimination
- Encourage over-learning of concepts through repeated use and inclusion in conversation
- Teach related concepts or concept pairs during the same lesson (e.g., *over, under, around, through; up/down, heavy/light, fast/slow*)
- Use "rich language" by combining concepts meaningfully in conversations (e.g., "Someone please bring me the *big, thick, red* book on the corner of my desk. It's a *heavy* book. Who can carry such a *big, heavy* book?")
- Reinforce generalizations by using increasingly more abstract applications (e.g., *under* the table; *under* your shirt; *under* the water; *under* appreciated).

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Intervention



Concept Development Guide

Use the updated *Concept Development Guide* to facilitate the transition from testing-to-teaching, deficit-to-remediation, while meaningfully inviting parent involvement!

M = The concept is probably understood in most situations (mastered).
NM = The concept is probably not understood in most situations (not mastered).

Colors			Numbers/Counting*			Sizes/Comparisons			Shapes			Self-/Social Awareness		
Concept	M	NM	Concept	M	NM	Concept	M	NM	Concept	M	NM	Concept	M	NM
red	<input type="checkbox"/>	<input type="checkbox"/>	number	<input type="checkbox"/>	<input type="checkbox"/>	big	<input type="checkbox"/>	<input type="checkbox"/>	star	<input type="checkbox"/>	<input type="checkbox"/>	crying	<input type="checkbox"/>	<input type="checkbox"/>
blue	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	small	<input type="checkbox"/>	<input type="checkbox"/>	heart	<input type="checkbox"/>	<input type="checkbox"/>	laughing	<input type="checkbox"/>	<input type="checkbox"/>
green	<input type="checkbox"/>	<input type="checkbox"/>	3	<input type="checkbox"/>	<input type="checkbox"/>	long	<input type="checkbox"/>	<input type="checkbox"/>	circle	<input type="checkbox"/>	<input type="checkbox"/>	sad	<input type="checkbox"/>	<input type="checkbox"/>
black	<input type="checkbox"/>	<input type="checkbox"/>	4	<input type="checkbox"/>	<input type="checkbox"/>	deep	<input type="checkbox"/>	<input type="checkbox"/>	in a line	<input type="checkbox"/>	<input type="checkbox"/>	afraid	<input type="checkbox"/>	<input type="checkbox"/>
yellow	<input type="checkbox"/>	<input type="checkbox"/>	5	<input type="checkbox"/>	<input type="checkbox"/>	tall	<input type="checkbox"/>	<input type="checkbox"/>	square	<input type="checkbox"/>	<input type="checkbox"/>	brothers	<input type="checkbox"/>	<input type="checkbox"/>

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Resources

Early Childhood State Educational Standards:
 Bracken, B. A., & Crawford, E. (2010). Basic concepts in early childhood educational standards: A 50-state review. *Journal of Early Childhood Education*, 37, 421-431.



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Administration of the Bracken School Readiness Assessment and Basic Concept Scale in Spanish

- Spanish Record form is needed
- This option is for children who speak Spanish at least 50% of the time.
- Because normative data were not collected with children who speak Spanish as their dominant language, it is not appropriate to derive standard scores.
- This is a criterion-based measure
- Some of the items on the Spanish record form were modified rather than translated
- Appendix G of BBCS-4 Manual: How Monolingual Clinicians Can Administer the BBCS-4 and BSRA-4 in Spanish.

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Administration of the Bracken School Readiness Assessment and Basic Concept Scale in Spanish

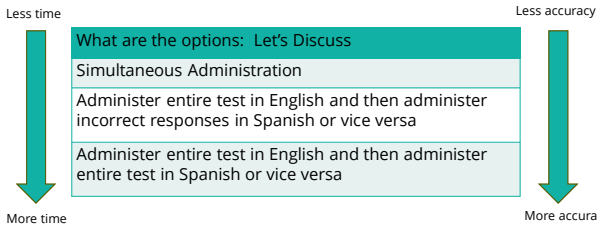
- Administration requires speaking and reading Spanish fluently without hesitations or mispronunciations
- Can be administered by Spanish speaking SLPs, Psychologists, Diagnosticians, and special educators who have been trained and are experienced in the administration and interpretation of individually administered ability tests
- Examiners unable to speak and read Spanish fluently must administer it with other professionals fluent in Spanish. The interpreter must be trained.
- Parent/caregivers or siblings should not be recruited to help administer the measure.

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Bilingual students – How to test?

Consider testing using both Spanish and English versions



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Pre/Post test

- There is no standard time interval between Pre and posttest assessments.
- Begin testing with item 1 on each subtest, regardless of age.
- Administer all items in each subtest.
- On lengthier subtests, it is appropriate to discontinue testing after the child has missed several consecutive items (e.g., 4).
- Calculate the percent mastery by dividing the raw score by the total number of items in the subtest and then multiple by 100.

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Case Study – Luis (Background Information)

- Age 3:7 – Only child
- Born preterm (35 weeks)
- History of unilateral ear infections for left ear (but hearing is within normal limits)
- Lives with mother and grandmother
- After preschool, he is cared for by his grandmother who primarily speaks Spanish
- Attends preschool where instruction is provided in English
- Spanish is the primary language spoken within the home

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Referral Questions for Consideration

1. Does Luis manifest a developmental delay?
2. If a developmental delay is present, what are the patterns of strengths and needs?
3. What implications does the profile of strengths and needs have on Luis' ability to access his education?
4. What intervention recommendations can be derived from Luis' profile?

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Test Results: PLS-5 Spanish

Scale	Spanish Raw Score	Spanish Standard Score	Dual Language Raw Score	Dual Language Standard Score
Auditory Comprehension	36	77	38	83
Expressive Communication	26	72	29	81
Total Language		73		80

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Test Results: BBCS-4

Composite	Subtest	English Raw Score	English Standard Score	Spanish Raw Score	Percent Mastery Score
	School Readiness Subtest	21	06	24/134	18%
	Direction/Position	06	07	9/70	13%
	Texture/Material	08	08	11/34	32%
	Quantity	02	06	3/44	5%
	Time/Sequence	01	07	4/38	11%
Receptive Total			82		
Receptive School Readiness			78		

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Test Results: Vineland-3 Interview

Domain	Subdomain	V-Scale	Standard Score	Qualitative Descriptor
Communication			82	Moderately Low
	Receptive	9	Low	
	Expressive	11	Moderately Low	
Daily Living Skills	Written	17	Adequate	
			93	Adequate
	Personal	13	Adequate	
	Domestic	15	Adequate	
Socialization	Community	13	Adequate	
			85	Moderately Low
	Interpersonal Relationships	14	Adequate	
	Play and Leisure Time	12	Moderately Low	
	Coping Skills	11	Moderately Low	

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Group Activity:

Review the assessment results obtained.

Would you have done something differently?

Yes or No?

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Conclusions

BBCS-4:R results further indicate that Luis shows a relative strength in understanding basic concepts that relate to basic interpersonal communication skills (BICS). This vocabulary knowledge helps him communicate with his mother and grandmother to meet his needs at home.

However, Luis has difficulty understanding concepts that relate to cognitive academic language proficiency (CALP), which negatively impacts his classroom interactions and achievement, manifesting as:

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Conclusions: Continued

- Difficulty understanding vocabulary related to academic instruction
- Difficulty understanding multistep directions
- Difficulty understanding conversational partners who speak in complex sentences

Luis' mother's report on the Vineland-3 is evidence that Luis has deficits in listening and auditory comprehension.

Relative strengths were demonstrated in the areas of daily living skills and gross and fine motor skills.

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What Recommendations would you have for Luis?

Providing Luis with language intervention in both English and Spanish with focused intervention on understanding and using:

- Concepts related to academic achievement (e.g., shapes, direction/position, quantity)
- Compound and complex sentence structures

Encouraging the SLP and Luis' teacher to work collaboratively while following the suggested principles in the General Guidelines for Instruction and Remediation as suggested in Chapter 6 in the Bracken Basic Concept Scale (4th ed.); Receptive (BBCS-4:R) Manual (Bracken, 2023)

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General Guidelines for Instruction and Remediation

20 Principles:

Principle 1: Use language, examples, materials, and procedures to break down concepts into their component parts.

Principle 2: When concepts occur in pairs or in series, maximize the meaningfulness of each concept by teaching all relevant concepts during the same lesson.

Principle 3: As much as possible, teach simple concepts, conceptual pairs, and series by using mnemonic strategies that facilitate understanding and enhance memory.

Principle 4: Teach concept generalization initially by instruction with obvious examples and nonexamples of the concept, and then proceed to less obvious examples.

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Recommendations: Continued


Providing Luis' mother and grandmother with a list of basic concepts that Luis has mastered and not mastered (e.g., using the BBCS-4:R Concept Development Guide)

Providing guidance on how to facilitate understanding and use of CALP-related concepts as well as continued understanding and use of BICS-related concepts

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Resources



Assessment Resources:

- 1) Alfonso, V. C., Bracken, B. A., & Nagle, R. J. (Eds.) (2020). *Psychoeducational Assessment of Preschool Children – Fifth Edition*. New York: Taylor & Francis.
- 2) Bracken, B. A., & Theodore, L. A. (2020). Creating an optimal preschool assessment situation. In V. Alfonso, B. Bracken and R. Nagle (Eds.), *Psychoeducational assessment of preschool children, Fifth Edition*. New York: Routledge: Taylor & Francis Group, pp. 55-76.
- 3) Kim, K. H., Van Tassel-Baska, J., Bracken, B. A., Feng, A., & Stambaugh, T. (2014). Assessing Science Reasoning and Conceptual Understanding in the Primary Grades Using Standardized and Performance-based Assessments. *Journal of Advanced Academics*, 25, 47-66.

Technical information, comparisons to the BBCS3, and case studies will be posted on pearsonassessments.com later this fall.

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References

Teaching Resources:

- 4) Bracken, B. A., & Panter, J. E. (2011). Using the Bracken Basic Concept Scale and the Bracken Concept Development Program for assessing and remediating concept development. *Psychology in the Schools, 48*(5), 465-475.
- 5) Bracken, B. A., & Crawford, E. (2010). Basic concepts in early childhood educational standards: A 50-state review. *Journal of Early Childhood Education, 37*, 421-431.

Bracken, B. A. (2021/2022). [Unpublished BBCS-4:R/BSRA-4 standardization data]. NCS Pearson.

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