

Demystifying Dyscalculia in the Classroom & at Home

Mathematics Learning Disability Assessment Strategies

Simple Math-related assessments to identify challenges with numbers, patterns and calculations

Age levels: 5 -7; 8- 10; 11+



Assessment 1: Number Sense & Recognition



Assessment 2: Pattern & Sequencing



Assessment 3: Calculation & Estimation



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Introduction

Demystifying Dyscalculia in the Classroom and at Home

Dyscalculia is a specific learning disability that affects a person's ability to understand, process, and work with numbers and mathematical concepts. Unlike general math anxiety, dyscalculia involves fundamental challenges with number sense, spatial orientation, and numerical magnitude. Identifying these hurdles early is essential for shifting the narrative from frustration to growth.



Why These Assessments Matter

- **For the Creative Teacher:** These tools provide actionable, low-stress diagnostic data without requiring heavy, clinical testing, allowing educators to tailor classroom instruction and intervention strategies effectively.
- **For the Learning Student:** They pinpoint exact areas of difficulty in a supportive environment, reducing math anxiety and validating the student's unique learning journey.
- **For the Hopeful Parent:** They offer clear, jargon-free insights and practical ways to support learning and build confidence at home.

Assessment Ideas

1. Number Recognition & Sequencing

Evaluates the student's foundational ability to visually identify, name, and order numbers correctly.

- **Early Childhood (Ages 5–7):** *The Missing Number Train.* Children use colorful train toy blocks with numbers 1 through 10. The teacher or parent removes one or two blocks, and the child must figure out which number engine is missing to fix the train.
- **Elementary (Ages 8–10):** *Backward Skip Counting Hopscotch.* A paper or chalk hopscotch grid is set up on the floor. Students are asked to verbally count backward by twos or threes (e.g., from 30 down to 0) while stepping on the corresponding squares.
- **Middle/High School (Ages 11+):** *The Number Line Sequence Challenge.* Students are given a mixed-up sequence of negative integers, decimals, and fractions (e.g., -2.5 , $\frac{1}{2}$, -1 , 0.75) and must quickly order them accurately on a horizontal number line.



Assessment Ideas

2. Math Word Problem Comprehension

Assesses the student's ability to translate written language into mathematical operations and equations.

- **Early Childhood (Ages 5–7): *Storybook Counters*.** Using a picture book featuring animals, the adult reads a short prompt (e.g., "There are 3 frogs on a log, and 2 more jump on. How many now?"). The child uses plastic counters to act out the story.
- **Elementary (Ages 8–10): *Draw-the-Problem*.** Students read a short 2-sentence word problem about a baking recipe or a toy store and are instructed to sketch out what is happening before writing down the actual math equation.
- **Middle/High School (Ages 11+): *Deconstructing Multi-Step Scenarios*.** Students are given a budget word problem and use highlighters to separate the "noise" (unnecessary background info) from the core data points required to solve the equation.



Assessment Ideas

3. Visual-Spatial Pattern Recognition

Determines how well students recognize, decode, and replicate visual number arrangements and geometric patterns.

- **Early Childhood (Ages 5–7): *Dot Card Subitizing.*** The adult flashes a card with dice-like dot patterns for 3 seconds. The child says or points to how many dots they saw without explicitly counting them one by one.
- **Elementary (Ages 8–10): *Pattern Block Mosaic.*** Students look at a complex repeating shape or number grid and must physically continue the pattern using physical geometric blocks or colored markers.
- **Middle/High School (Ages 11+): *Geometric Array Grid.*** Students analyze a visual grid of dots or squares increasing in size and write down the algebraic rule governing how the visual pattern grows from step to step.

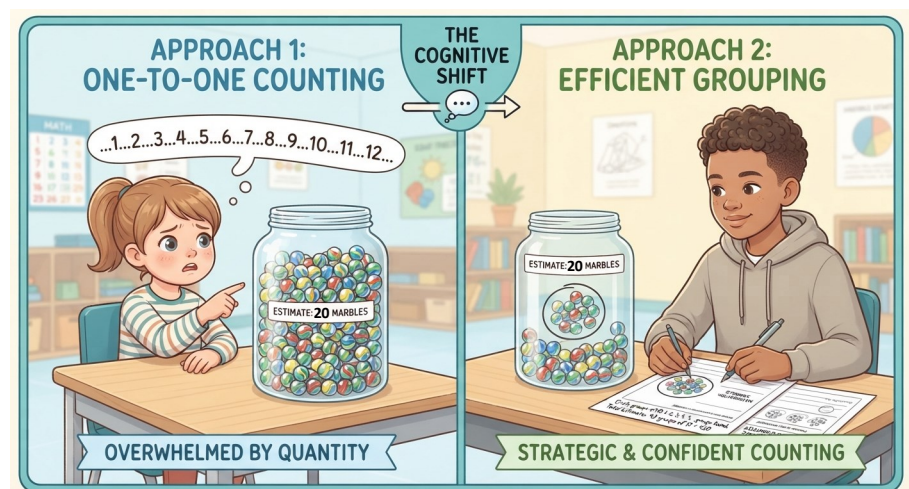


Assessment Ideas

4. Basic Counting & Estimation Test

Measures the student's capability to count objects accurately, group quantities, and make logical mathematical guesses.

- **Early Childhood (Ages 5–7):** *The Jellybean Jar.* A small, transparent jar filled with 15 to 20 jellybeans is shown. The child guesses roughly how many are inside ("a lot or a little?") and then counts them out loud one-by-one into piles of 5.
- **Elementary (Ages 8–10):** *Estimation Quick-Check.* Students are shown a large grid of stars on a page and asked to estimate the total by circling a smaller group of 10 first, testing if they can use grouping strategies rather than counting blindly.
- **Middle/High School (Ages 11+):** *Supermarket Bulk Estimation.* Students look at a picture of stacked boxes or items on a grocery shelf and calculate an approximate total using rounding and mental grouping strategies.



Assessment Ideas

5. Time & Money Concept Check

Evaluates practical comprehension of chronological time, analog clocks, and currency value systems.

- **Early Childhood (Ages 5–7):** *Coin Sorting Market.* Using real or plastic coins, children sort pennies, nickels, and dimes into separate piggy bank slots based on size and color, learning to match coin names to basic values.
- **Elementary (Ages 8–10):** *Daily Schedule Timeline.* Students map out their ideal Saturday morning schedule by drawing clock hands on blank analog clock faces and matching them to specific written activities (e.g., soccer at 10:00 AM).
- **Middle/High School (Ages 11+):** *Elapsed Time & Change Calculation.* Students solve a practical scenario involving figuring out train arrival schedules across time zones and calculating exact change from a \$50 bill after a simulated shopping trip.

Conclusion: Empowering Future Success

Assessing dyscalculia does not have to be an intimidating clinical process. By embedding these simple, structured activities into everyday routines at school and home, educators and parents can build a comprehensive understanding of a student's cognitive landscape. With early identification, targeted practice, and consistent encouragement, students with dyscalculia can overcome numerical hurdles and encourage their full mathematical potential.