

NEWSLETTER

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ONE MATH SCORE DOESN'T TELL THE WHOLE STORY

Six areas can reveal very different instructional needs.

In today's edition, we explore:

- Why one score can hide very different mathematics
- Three classroom moves for reading a profile
- Same score, different next move
- What the research says

Educators!

Two students. Same mathematics score. Different needs. One retrieves number facts quickly but struggles to represent the structure of a contextual problem. The other sees the relationship in the problem but still counts to determine a basic fact.

A total score can put them in the same group. It cannot tell you that they need different instruction. That is why we look separately at six areas of early mathematics: number sense and sequencing, number facts, contextual problems, relational thinking, measurement, and spatial reasoning. Each area tells us something different about how a student is reasoning.

Classroom Tips

- 1. Look past the total.** When two students earn similar scores, look at how they performed across the six areas before grouping them for instruction. Ask: Where is this student strong, and what are we still building?
- 2. Name the mathematics that needs work.** Replace “low in math” or “needs more practice” with something specific: fact fluency is developing, the student is not yet representing compare situations, or equality is still being interpreted as an instruction to calculate.
- 3. Use the profile to choose the next task.** Assessment should change instruction. If the weakness is number facts, work on relationships and fluency; if it is contextual reasoning, work on representing situations with a bar model. If it is measurement, make the unit explicit: “What is the unit, and how many times do we iterate it?”

Same Score. Different Next Move.

Student A retrieves $8 + 6$ immediately but cannot represent a compare problem with 8 and 6.

Student B draws and explains the compare relationship accurately but counts to determine $8 + 6$.

A total score could place these students together. Their next moves are different. Student A needs to represent the situation, perhaps with two bar models lined up to show how much more. Student B needs to build $8 + 6$ from relationships, such as making a ten. The purpose of a profile is not six labels instead of one. It is a better picture of student thinking.

What Does the Research Say?

A student can be strong in one area of early mathematics and still developing in another. Brendefur and colleagues (2015, 2018) designed the Primary Mathematics Assessment around that idea: it examines six areas rather than producing a single number score, and its diagnostic reports each student's strengths and areas needing support. Siebert and Brendefur (2018) examined the assessment's validity and reliability for kindergarten through grade 2. The research supports using a profile to decide what to teach next. It does not show that a weakness in one area causes later difficulty.

Keep developing mathematical thinkers.

More Information

This is a quick overview. To download the full research overview on early predictors of math success and watch the short video, go to DMT Insights at mathsuccess.io/dmtinsights.

Do you want to share ideas or contribute a teaching tip or story for the next newsletter? Please email us at mathsuccess@dmtinstitute.com.

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