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## Math Success with DMTI

# Building Strong Thinkers: Start With What Students Already Know!

### DMT Insight 1 · Unlocking Learning Potential: Why Student Ideas Matter

In today's edition, we explore:

- Why a correct answer does not tell you what a student understands
- Three classroom moves that surface student thinking
- A teacher's experience with listening first
- What the research says

### Educators!

This week we look at what happens when we treat students' own ideas as the starting point for a lesson. Students arrive with ways of thinking about number and quantity that they built before we met them. When instruction begins from those ideas, understanding lasts. When instruction writes over them, students learn to perform steps they did not help make, and those steps fade.

The shift is small, and it changes everything: ask before you tell. A correct answer can hide counting by ones or a half-remembered rule, so the reasoning behind the answer tells you where a student actually is. That is the information you need to decide what to teach next.

### Classroom Tips

- 1. Elicit before you tell.** Ask "how did you do it?" and "why does that work?" before you show a method. Give students enough time to form an idea first, since a few seconds of quiet give every student time to think, not just the quickest one.
- 2. Record two strategies side by side.** Put more than one student method on the board in the students' own words, and draw each one on a number line or a bar model so the class can compare them. Use the visual model before the equation.
- 3. Connect the strategies to the mathematics.** Ask how two methods are related, then name the formal mathematics they both point to. This is the step most often skipped, and it is the one that turns a good discussion into learning.

## A Teacher's Perspective

*"When I started truly listening to my students' mathematical ideas, even the unconventional ones, I saw a remarkable change. Students became more willing to take risks, share their thinking, and engage in deeper mathematical discussions. Their problem-solving skills improved dramatically, and they developed a genuine enthusiasm for math."*

– Emily R., 5th Grade Teacher

What Emily describes is the point of the practice. Students take intellectual risks when their ideas are treated as worth examining.

## What Does the Research Say?

Children arrive at school with a great deal of informal knowledge of mathematics. That knowledge can serve as the basis for much of the formal mathematics of the primary curriculum. Carpenter, Fennema, and Franke (1996) make the case that understanding how students think gives a teacher's knowledge coherence, and turns it into a basis for deciding what to teach next. Hiebert and Carpenter (1992) explain why it works: children who connect what they know out of school to what they meet in school improve their understanding in both settings. Rowe (1986) adds a practical finding: lengthening the pause after a question changes both how much students say and how well they reason.

**Keep developing mathematical thinkers.**

## More Information

This is a quick overview. To download the full research overview on taking students' ideas seriously and watch the short video, go to DMT Insights at [mathsuccess.io/dmtinsights](https://mathsuccess.io/dmtinsights).

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