

Taking Students' Ideas Seriously: A Companion

For Teachers, Instructional Coaches, Principals, and Parents

Companion to DMT Insight 1 · Math Success by DMTI

How to Use This

This Companion is for anyone working with DMT Insight 1. Start with the questions below. Answer them before you read the Insight or watch the video, then return afterward and notice what changed. Coaches can use the same questions to open a team conversation, and the grid and examples that follow to keep it grounded in the classroom.

Questions to Think About

Answer these before you read the Insight or watch the video, then again afterward. The difference is where the learning shows.

- When a student gives a correct answer, what are you assuming they understand, and what might that answer hide?
- When a student uses a strategy you did not teach, what do you do with it?
- What can a student's error tell you about how they are thinking, not just what they got wrong?
- How often do your students explain their reasoning, rather than only report an answer?
- Whose ideas set the direction of a lesson: the curriculum's, yours, or the students'?
- What would change if you planned a lesson around the strategies your students are likely to bring?

The Guiding Question

When your students solve a problem, are you listening for the answer, or for the thinking behind it, and does that thinking shape what you do next?

What Changes: Cognition, Mathematics, and Instruction

COGNITION <i>How learning holds</i>	MATHEMATICS <i>How ideas connect</i>	INSTRUCTION <i>How we teach it</i>
BEFORE A student gives the right answer, so we move on.	BEFORE A strategy a student invents is a detour from the method.	BEFORE We show a method, then students practice it.
AFTER A correct answer can hide counting by ones or a memorized rule. The reasoning is what tells you where the	AFTER Students' informal strategies are the seeds of the formal mathematics. They connect to it rather than	AFTER We draw out student thinking first, then build the mathematics from it.

student actually is.

compete with it.

Across the Grades

Taking student ideas seriously looks different at each grade, but it is the same move: surface the thinking, then build on it.

Grade band	Example	Model	The shift it asks for
Grades K-2	Sharing and counting problems, where students invent counting on and grouping	Bar model, drawings	From showing the way to asking how they did it
Grades 3-5	Multiplication and division, where students bring repeated addition, arrays, and doubling	Array, number line	From correcting a strategy to connecting strategies
Grades 6-8	Ratio and proportion, where students bring scaling up and unit-rate reasoning	Ratio table, double number line	From the algorithm to the reasoning behind it

Why This Matters

Students come to us with mathematical ideas. Instruction that begins by taking those ideas seriously builds understanding that lasts. Instruction that overwrites them builds performance that fades, because the student is following steps they did not help make. Listening for reasoning is not slower teaching; it is how a teacher learns what to teach next.

Think time is part of taking ideas seriously. When students get a moment to reason before we present our own ideas, they begin connecting the new idea to what they already know. This builds their schema. They either fit the new idea into their existing thinking, which is assimilating, or they reshape that thinking to make room for it, which is accommodating. That work of connecting, rather than copying a method, is what makes the learning hold.

Core claim. Durable learning begins when instruction starts from what students already think, and builds the mathematics from there.

Putting It Into Practice

Moves to make it happen:

- **Elicit before you tell.** Ask “how did you do it?” and “why does that work?” before showing a method.
- **Give thinking time before you tell.** Wait long enough for students to form an idea and begin connecting it to what they already know. That pause is when a new idea gets assimilated into their thinking, or reshapes it.

- **Record student strategies.** Put more than one method on the board, in the students' own words.
- **Connect the strategies.** Ask how two methods relate, and link them to the formal mathematics.
- **Use errors as windows.** Treat a wrong answer as evidence of thinking to understand, not just a gap to fix.

Watch for:

- A correct answer taken as proof of understanding.
- Student strategies treated as noise to move past.
- Questions that funnel every student toward one method.

Going Deeper

Pick one lesson this week. Before you teach the method, ask your students how they would solve it, and plan the lesson around what they bring. What did you learn about their thinking that a worksheet would not have shown you?

Resources

Read the full DMT Insight on taking students' ideas seriously, and watch the short video. Find both at dmtinstitute.com, along with the rest of the DMT Insights series.