

DMT COMPANION

Insight 24 · 2026 · for teachers, interventionists, coaches, and school leaders



BEYOND THE CORE CURRICULUM: WHY MATHEMATICAL INTERVENTION MATTERS

Planning intervention that develops understanding, fluency, and flexibility

How to Use This

This Companion provides examples and questions for teachers, interventionists, instructional coaches, and school leaders who plan mathematics intervention. It focuses on examining student reasoning, identifying the mathematical relationships involved, and selecting instruction that develops conceptual understanding, procedural fluency, and flexibility together. Start with the three questions that follow.

Key Idea • Intervention should respond to student reasoning and provide opportunities to develop mathematical relationships that students have not yet understood.

Three Guiding Questions

Answer these before you read the Insight, then again afterward.

1. When a student is referred for intervention, what evidence do you have about how the student is reasoning?
2. Which mathematical relationships need further development, and what different tasks or representations might help students understand them?
3. How will you know whether the student is developing understanding, fluency, and flexibility?

Planning Intervention: Five Decisions

Each decision draws on evidence from student work.

Decision	Questions to ask
1. Examine student reasoning	“How did you get your answer? Can you show me with a model or a drawing?”
2. Identify the mathematics	What does the student’s work suggest about their understanding of the units, quantities, and relationships involved?
3. Select tasks and representations	Which task, model, or equation will make that relationship visible?
4. Connect understanding and fluency	How will students connect their reasoning to accurate, efficient, and flexible strategies?
5. Monitor progress	What evidence will show that the student is using the relationship in core mathematics?

Worked Examples

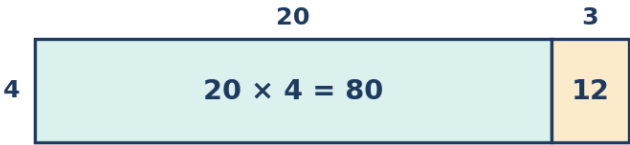
Example 1 · understanding: 23×4

A response

$23 \times 4 = 812$

$2 \times 4 = 8$ and $3 \times 4 = 12$,
written side by side

The area model



$80 + 12 = 92$

The 2 in 23 is 2 tens, so 2×4 is 8 tens, or 80.

The area model shows 23 as 20 and 3. The partial products are 80 and 12.

The student may have multiplied the digits separately and written the products side by side. Ask the student to explain the value of each digit in 23 and how the products were determined. An area model can help students represent 23 as 20 and 3, examine four groups of each quantity, and connect the partial products of 80 and 12 to the written procedure.

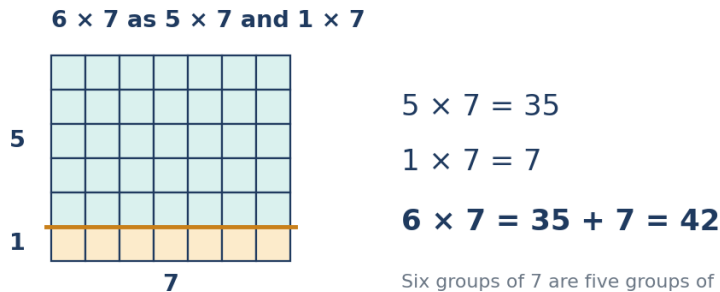
Questions to ask:

“What does the 2 in 23 represent?”

“What is 20×4 ? Where is it in the area model?”

“Where do 80 and 12 appear in your written work?”

Example 2 · fluency and flexibility: 6×7



Six groups of 7 are five groups of 7 and one more group of 7.

Decomposing 6 into 5 and 1 connects an unknown fact to a known one.

A student who does not yet recall 6×7 can decompose 6 into 5 and 1 and use $5 \times 7 = 35$. Practice that keeps this relationship visible builds accuracy and efficiency, and it helps the student see that a known fact can be used to find an unknown one. That is flexibility: selecting a strategy from the relationships among numbers.

Questions to ask:

“Which fact do you know that could help you find 6×7 ?”

“How does the array show 5 groups of 7 and 1 more group of 7?”

“Could you use 3×7 to find 6×7 ? How?”

Key Idea • Both examples focus on mathematical relationships. The first examines place value and partial products. The second uses the distributive property by decomposing 6 into 5 and 1. Practice helps students develop accuracy and efficiency as they use these relationships.

Understanding, Fluency, and Flexibility

The three develop together. You can observe each one in student work.

Outcome	Evidence in student work	Ask
Conceptual understanding	The student represents quantities and explains the mathematical relationships involved.	“What does each number represent?”
Procedural fluency	The student uses procedures accurately and efficiently and understands when to apply them.	“How can you check that your answer makes sense?”
Flexibility	The student selects or adapts strategies based on the numbers and mathematical relationships.	“Is there another way? Which is more efficient here?”

Questions That Reveal Student Reasoning

Both columns have a place. The right column adds questions that reveal how the student is reasoning.

Instead of only	Also ask
"Let me show you the steps again."	"Show me how you thought about it. What does each number represent?"
"Practice these twenty facts."	"Which fact do you know that helps with this one?"
"Line up the digits."	"What does the 2 in 23 represent, and how does that affect the calculation?"
"What is the answer?"	"How do you know your answer makes sense?"

For Coaches

Coaches can help interventionists and classroom teachers examine student work together before planning intervention. Sort responses to one problem by the reasoning they show, decide which relationship to address, and plan how the intervention will connect to the core lesson.

Questions for a coaching conversation:

- What does this student work tell us about the relationships the student understands?
- How is the intervention task different from the core lesson, and why?
- Where in the intervention does the student practice, and how is the practice connected to the relationship?
- What evidence shows that the student is using the relationship back in core mathematics?

During a coaching conversation, examine several student responses to the same problem. Ask teachers what the responses reveal, what additional questions they would ask students, and which mathematical relationships they should develop during intervention. After instruction, return to student work to determine whether students are using those relationships more accurately, efficiently, and flexibly.

For School Leaders

Intervention should add to core mathematics instruction rather than replace it. Leaders can schedule intervention so students do not miss grade-level lessons, choose intervention materials designed around mathematical relationships, and protect time for teachers, interventionists, and coaches to examine student work together.

Using Math Success by DMTI

Math Success by DMTI is designed for this kind of intervention. Its tasks and representations focus on units, quantities, composing and decomposing, partitioning and iterating, and equivalence, and its lessons ask students to explain their reasoning while practicing procedures. Use the planning decisions above to choose which Math Success lessons address the relationship a student needs.

Across the Grades

The same planning process applies across grade levels—the mathematics changes.

Grade band	A response to investigate	Relationship to develop	Possible representation
Grades K–2	$8 + 5$ solved by counting all from 1	Counting on and composing ten	Ten-frames, number path
Grades 3–5	$23 \times 4 = 812$	Tens and ones in multiplication	Area model
Grades 6–8	$2(x + 3)$ written as $2x + 3$	The distributive property: multiplying each term by 2	Area model

Continue With DMT Insight 24

Read DMT Insight 24 for the research behind this Companion. Find it at mathsuccess.io/dmtinsights.

As you plan intervention, begin with one student’s work. Identify the relationship the student is using, choose a task and representation that make the mathematics visible, and return to the student’s work after several sessions to see how understanding, fluency, and flexibility are developing.