

NEWSLETTER

Issue 14 · 2025 · Math Success with DMTI



FLUENCY IS MORE THAN SPEED

Build unknown facts from relationships students already know.

In today's edition, we explore:

- What fluency looks like
- Four ways to build from what students know
- Three classroom moves and a task to try tomorrow

Educators!

Ask a student for $8 + 7$. One student immediately says 15. Another thinks, " $8 + 8$ is 16, so $8 + 7$ is 15."

Both may be fluent. One retrieves the fact directly. The other efficiently derives it from a known relationship.

The goal of fact instruction is not to keep students dependent on strategies forever. It is to help useful relationships become increasingly efficient and, over time, automatic.

What Fluency Looks Like

- **Accurate:** The student consistently gets the fact correct.
- **Efficient:** The student recalls or derives the fact without unnecessary steps.
- **Flexible:** If the fact is not immediately recalled, the student has a relationship to reason from.

With practice, many of these relationships become automatic.

Build From What Students Know

- **Doubles:** $8 + 7 \rightarrow 8 + 8 - 1$
- **Make Ten:** $8 + 6 \rightarrow 8 + 2 + 4$
- **Decompose a Factor:** $7 \times 8 \rightarrow 5 \times 8 + 2 \times 8$
- **Compensate:** $9 \times 6 \rightarrow 10 \times 6 - 6$

The strategy is not another fact to memorize. It is a relationship students can reuse. Use a model to make the relationship visible, then connect that relationship to the equation and mental strategy.

Classroom Tips

1. Start with a known fact. Ask: What fact do you already know that could help?

2. **Ask for the relationship.** Ask: How did the known fact change? What did you compose, decompose, or adjust?
3. **Practice for efficiency.** Return to useful fact relationships frequently so students need fewer steps and increasingly retrieve them automatically.

Try This Tomorrow

Write 7×8 on the board. Ask students to solve it without starting from 7×1 . Then ask:

- What fact did you use?
- What relationship connected that fact to 7×8 ?
- Compare $5 \times 8 + 2 \times 8$, 7×4 doubled, and $8 \times 8 - 8$.

The goal is not to collect strategies. It is to see the relationships connecting them.

What Does the Research Say?

Children use derived facts as a strategy between counting and recall (Carpenter & Moser, 1983). Conceptual and procedural knowledge support each other's growth (Rittle-Johnson et al., 2015), and automatic recall of the basic facts depends on sufficient practice (National Mathematics Advisory Panel, 2008).

Students need facts they can access efficiently. They also need relationships they can reason from when a fact is not immediately available. Build the relationship. Practice it. Make it increasingly efficient.

Keep developing mathematical thinkers.

More Information

This is a quick overview. To download the full research overview on math fact fluency 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.

For more information on professional development and curricular resources, visit mathsuccess.io.



 | mathsuccess.io |  mathsuccess.dmtinstitute.com

CONNECT WITH DMTI

 [@dmtinstitute](https://www.facebook.com/dmtinstitute)  [DMT Institute](https://www.linkedin.com/company/dmt-institute)  [@dmtinstitute](https://www.youtube.com/dmtinstitute)  [@dmtinstitute](https://www.instagram.com/dmtinstitute)  [@dmtinstitute](https://twitter.com/dmtinstitute)  [@math.success](https://www.tiktok.com/@math.success)  [@DMTInstitute.bsky.social](https://bsky.app/profile/dmtinstitute.bsky.social)