



THE FLEXIBLE FACT FLUENCY PLAYBOOK: PRACTICAL STRATEGIES FOR THE CLASSROOM AND HOME

(DMT INSIGHTS COMPANION DOCUMENT)

Introduction

You know students need to know their math facts. Nevertheless, how can you help them learn in a way that sticks *and* makes them better thinkers? This guide translates the research into actionable strategies you can use tomorrow.

Core Principle: Strategy + Smart Practice = Durable Fluency

Forget the old “drill and kill” method. The most effective learning occurs when we first **teach children strategies** and then **help them practice recalling facts quickly and accurately (Smart Practice)**.

Part 1: For Educators & Instructional Coaches

Shift 1: Teach the Strategies, Not Just the Facts

Explicitly teach a small set of core strategies. Use visual models and “structural language” consistently.

- **Addition/Subtraction Strategies:**
 - **Use Doubles/Near Doubles:** “For $6 + 7$, I know $6+6=12$, then $12 + 1 = 13$. So, $6 + 7 = 13$.”
 - **Make Ten:** “For $8 + 6$, decompose 6 into 2 and 4. Then, $8 + 2 = 10$, and 4 more is 14. So, $8 + 6 = 14$.”
 - **Compensation:** “For $8 + 9$, I know $8 + 10$ is 18. But I only had 9, so I need to subtract 1 from 18 to get 17. So, $8 + 9 = 17$.”
- **Multiplication/Division Strategies:**
 - **Doubling/Halving:** “If $4 \times 6 = 24$, then 8×3 must also be 24.”
 - **Benchmark facts:** “For 7×8 . I know 7×5 is 35 and 7×3 is 21. And 35 and 21 is 56. So, $7 \times 8 = 56$.”

- **Compensation:** “For 6×9 , I know 6×10 is 60. I only had 9, so I need to subtract 6. 60 minus 6 is 54. So, I know $6 \times 9 = 54$.”

Shift 2: Replace Timed Tests with These Powerful Practices

- **Number Talks:** Spend 10-15 minutes on a problem like “ 18×5 .” Have students share mental strategies. Promote the strategy methods—the goal is to highlight flexible thinking.
- **Strategy-Based Games:** Use card games (e.g., Multiplication War, where students explain their strategy), board games, or digital games that require reasoning.
- **Mixed & Spaced Practice:** Give students mixed fact sheets (addition & multiplication) instead of isolated sets. Revisit strategies weekly in warm-ups.

Shift 3: Foster a Growth Mindset Classroom

- **Use Praise Wisely:** Instead of “You are so smart!” try “I love the strategy you used!”
- **Display Student Thinking:** Create anchor charts and “Strategy Walls” that show the DMT strategies.
- **Normalize Struggle:** Teach students that using a strategy to figure out a forgotten fact is a sign of intelligence.

Part 2: For Parents & Caregivers

Shift 1: Change the Conversation at Home

- **Ask the Question:** Instead of “What is 7 times 8?” ask, “**How did you figure that out?**” This shows you value their thinking.
- **Focus on Effort:** Praise the process: “You worked really hard to break that problem apart!”

Shift 2: Make Practice Playful and Real

- **Play Games:** Use card games, dice games, or commercial games that involve calculations. Ask for an explanation of the strategy used.
- **Connect to Life:**
 - **At the store:** “If apples are \$12 a bag, how much for 4 bags? How did you figure it out in your head?”
 - **In the car:** “If our trip is 30 miles and we have traveled 12, how many are left? How did you figure it out in your head?”
 - **Cooking:** “My recipe makes 8 muffins, and I need 56 muffins. How many recipes will I make?”

Shift 3: Partner with the Teacher

- Ask: “What strategies is the class learning right now?” so you can use the same language at home.

- Share concerns about anxiety, and work together on a plan that focuses on understanding over speed.

Quick Reference: “Instead of This... Try This...”

For...	Instead of This...	Try This...
A Fact like 7 x 8	“Just memorize it.”	“What is a fact you know that is close? Can you use a 5? $7 \times 5 = 35$ and $7 \times 3 = 21$. $35 + 21 = 56$, So $7 \times 8 = 56$ ”
Practice	Timed flash cards	Use strategy cards.
Assessment	A one-minute timed test	Sitting with a student and asking, “Tell me two strategies you can use to solve 6×9 .”
Praise	“You’re so fast!”	“That was a really good strategy to solve it!”
Struggle	Giving the answer	“That’s a tough one. What’s one part of it you <i>do</i> know?”

Remember: The goal is to create fluency and flexibility, enabling students to become confident in their accuracy. By focusing on strategy and thoughtful practice, you are giving them a gift that will last a lifetime.

Strategy Cards, Fluency Probes, Fluency apps (Math Fluency with Sports: Addition and Subtraction; Math Fluency with Sports: Multiplication and Division; Picnic Party; Dino Dice) <https://www.dmtinstitute.com>)

Brendefur, J., & Strother, S. (2021). *Math facts: Kids need them—Here’s how to teach them*. Developing Mathematical Thinking Institute. Available on Amazon. https://www.amazon.com/Math-Facts-Them-Heres-Teach/dp/173732900X/ref=sr_1_1?sr=8-1



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