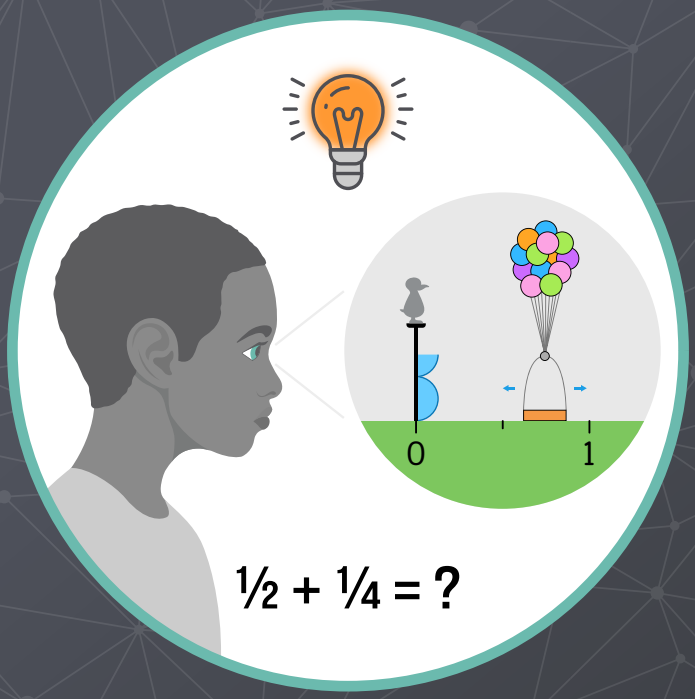


Teaching Math the Way the Brain Learns Naturally

Students thrive when math is taught the way their brains are built to learn—visually, actively, and through connected ideas. Grounded in decades of research, this approach fuels deeper understanding, lasting outcomes, and the confidence to solve real-world problems.

MIND EDUCATION®

Contents

CHAPTER 1

A New Era for Math Education

The math crisis is real. And solvable.

Walk into a traditional math classroom, and you'll likely see a familiar scene: a teacher demonstrating procedures on the board while students quietly copy steps and practice similar problems. For generations, we've taught math this way, memorizing formulas, drilling procedures, and focusing on getting the "right" answer.

Yet our students' math outcomes suggest this approach isn't working.

> *only* **36%**
> **of fourth graders are proficient in math**

According to the 2022 National Assessment of Educational Progress (NAEP), only 36% of fourth graders scored proficient or above in math, marking the largest decline in mathscores since 1990. By eighth grade, proficiency drops to just 26%, with nearly 40% falling below basic levels.

And the problem starts early. A study by Stickney et al. (2012) found that just 42% of third graders were fluent in basic subtraction facts within 20, and only 50% could recall basic addition facts. Meanwhile, a growing body of research highlights another troubling trend: by seventh grade, as many as 82% of students report experiencing anxiety or fear related to math (Finlayson, 2014).

These numbers point to more than academic gaps. They reveal that despite our best efforts, our approach to math learning keeps missing the mark.

It's time to do more than fix math. It's time to rethink how we teach and learn it.

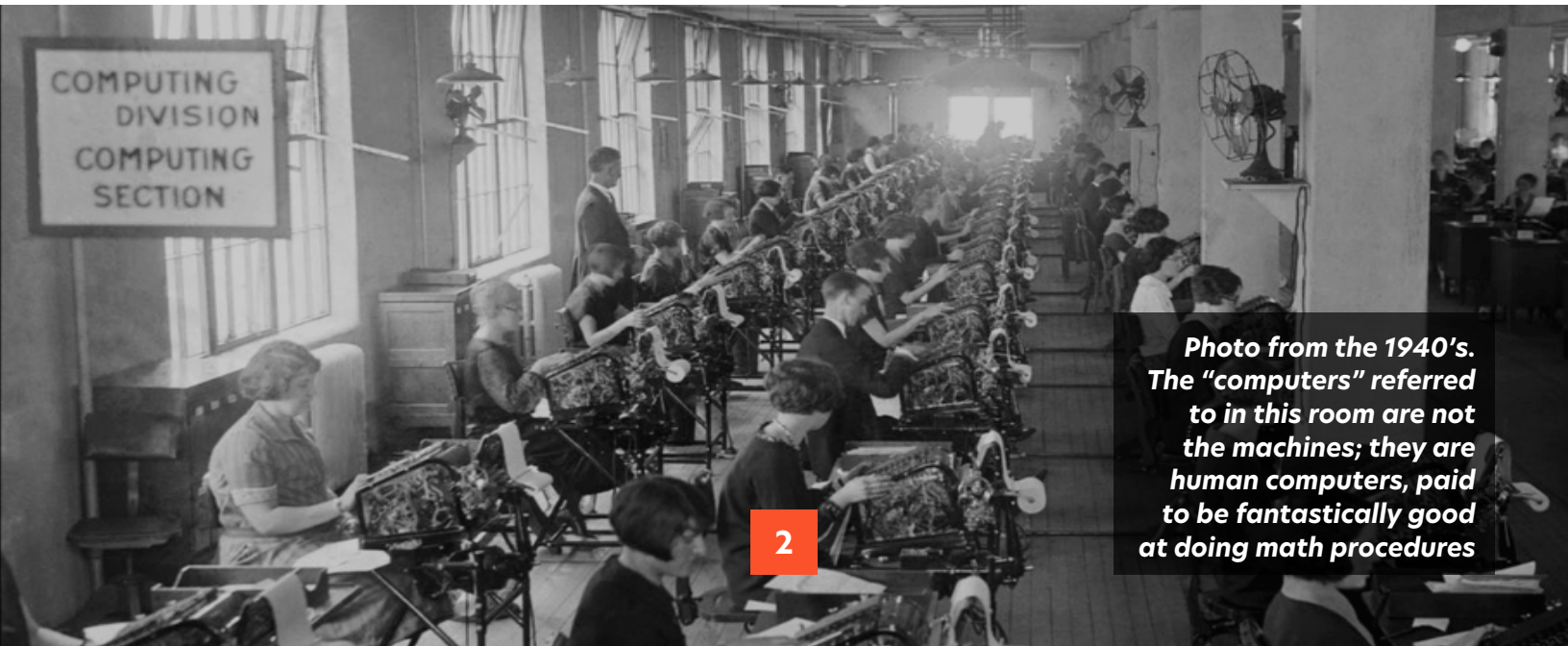


Photo from the 1940's. The "computers" referred to in this room are not the machines; they are human computers, paid to be fantastically good at doing math procedures

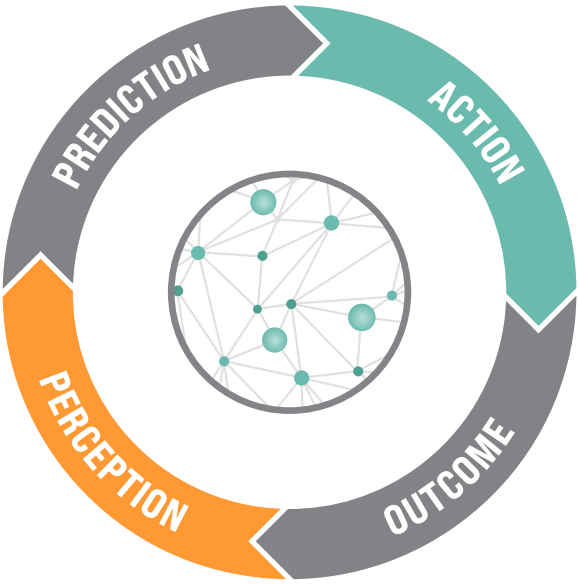
CHAPTER 2

How the Brain Really Learns Math

Decades of cognitive science and neuroscience research have revealed a great deal about how the brain learns. Surprisingly, learning math isn't so different from learning in other domains. It thrives on making sense of ideas in a connected, intuitive way rather than rote repetition. **One thing is clear: the brain learns best by making sense of ideas through interaction, not imitation.**

Before children ever see a number or equation, they explore their world by moving, observing, testing, and adapting. That's learning in action. And math is no exception.

The brain builds understanding through the Perception-Action Cycle:
Take in information → act on it → get feedback → revise your thinking.



This process, driven by pattern recognition and reflection, is how the brain turns experience into knowledge.

When math is taught in ways that mirror this process—visually, actively, and meaningfully—students develop deep, lasting understanding.

They become more than memorizers of steps. They become mathematical thinkers.

> **" The premise is audacious: spatial thinking, rooted in perception of space and action in it, is the foundation for all thought."** —Barbar Tversky; *Mind in Motion: How Action Shapes Thought*

CHAPTER 3

What's Missing from Traditional Curriculum

Most math programs follow a familiar path:

- Direct instruction
- Guided practice
- Worksheets for independent work

While this model may yield short-term gains, it often results in shallow learning. It stems from an era when speed and calculation were the goal, not understanding.

Today's students need something more. They need to reason, connect, question, and explore.

Skill and drill instruction is not only out of sync with today's world, it's out of sync with how students learn best. It leaves too many feeling frustrated, disconnected, or convinced they're "just not a math person."

We've created generations of students who can recite multiplication facts but struggle to explain a concept or solve a novel problem. The result? Disengagement and persistent learning gaps.

The solution isn't a new test-prep strategy. It's a reimagined foundation. One that aligns with how the brain learns.

> **We've created generations of students who can recite facts but can't explain them.**

CHAPTER 4

A Better Way: Visual, Active, and Connected Learning

Imagine a math class where students see ideas unfold before they're asked to name them.

What if learning started with visual puzzles that revealed the structure of math? What if students were encouraged to explore, try, and revise—just like their brains are wired to do?

In a brain-aligned math classroom, students experience:

Visual modeling that makes ideas intuitive before introducing symbols

Productive struggle that encourages learning through trial and error

Connected concepts that build understanding across topics and grades

Discourse that deepens reasoning and amplifies every voice

Feedback without fear or anxiety that helps students refine thinking in real time

This is more than engagement. This is math the way the brain learns best.

CHAPTER 5

Empowering Teachers, Engaging Students

Real change happens when teachers are equipped, not overloaded.

That's why any successful curriculum must support the educators who bring it to life.

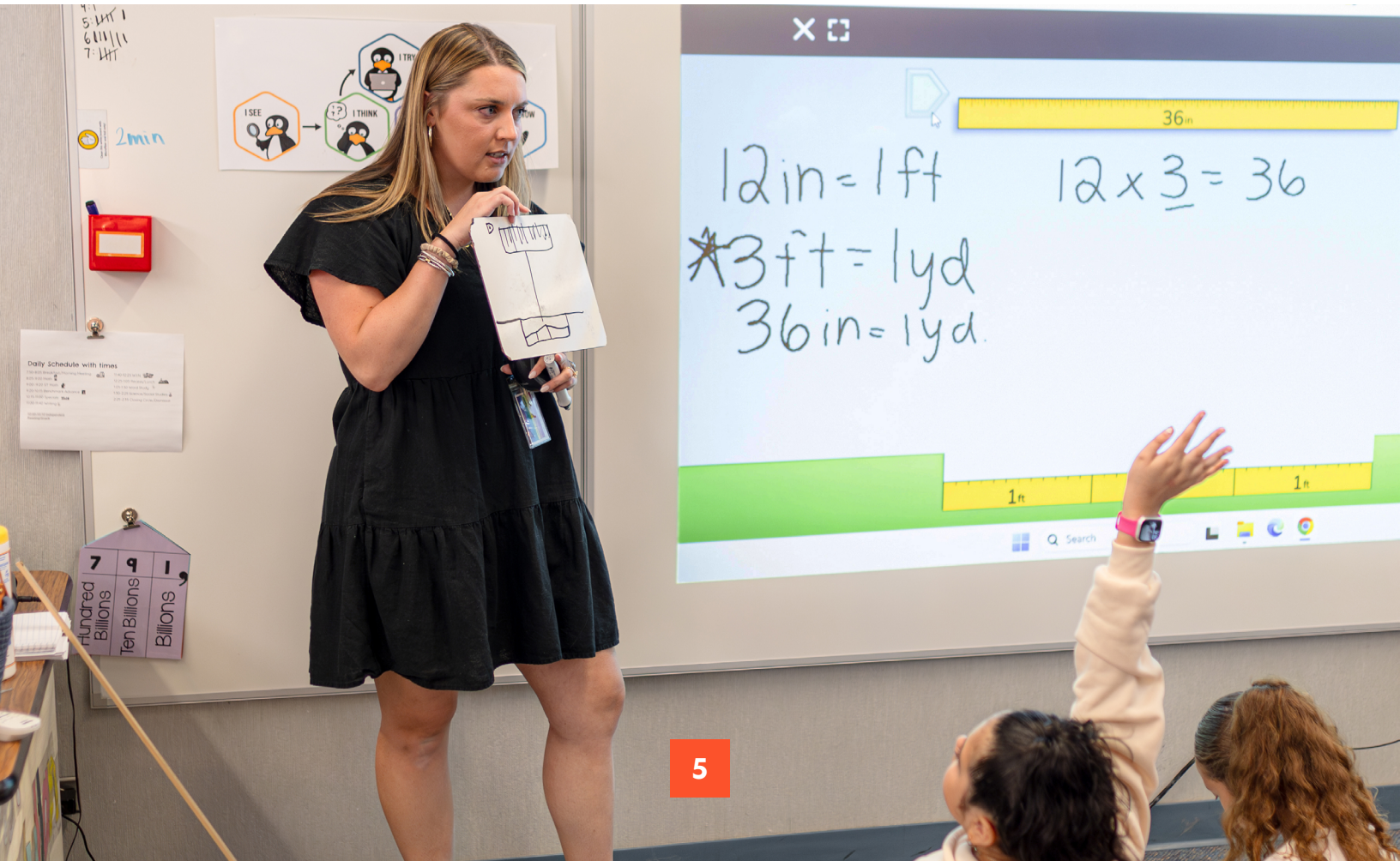
A program based on brain science gives teachers the tools to facilitate rich learning for every student:

- Embedded support for discourse and differentiation
- Resources for planning, pacing, and reflection
- Flexibility to meet students where they are

And for students, the shift is transformational:

- Confidence from solving puzzles on their own
- Genuine engagement through discussion
- Ownership as they build understanding themselves

The classroom becomes a thinking space—one where learning is visible, shared, and joyful.



CHAPTER 6

Introducing InsightMath

InsightMath is the only comprehensive K–6 curriculum built on how the brain learns.

Built on patented, neuroscience-based learning design and backed by decades of research, InsightMath blends puzzle-based exploration, visual models, and meaningful discourse into a cohesive core math experience.

"The design of the lessons naturally encouraged a growth mindset, without needing to force the conversation."

—Kerien Driscoll, Assistant Principal, Lowell Public Schools

Each unit begins with conceptual exploration before introducing symbols and procedures, ensuring students first understand the "why" before the "how."

With InsightMath, students experience:

- Visual-first learning that makes concepts stick
- Learning by doing, not just listening
- Language barriers removed for accessibility
- Productive struggle with immediate feedback
- Discourse that solidifies deep understanding
- Purposeful progression that builds lasting knowledge

This is more than a curriculum. It's a reimagining of what math learning can be—grounded in science, aligned to standards, and built to reach every learner.

"I really liked the opportunity for student discourse and productive struggle in all the lessons. The students exploring to learn a new concept instead of teachers lecturing was super impactful on their learning."

—Emily Landrum, Math Specialist, Navarro ISD

CHAPTER 7

Reaching ALL Learners

When learning begins visually and interactively, every student has a way in, regardless of language, background, prior exposure, or learning style.

> **"I love that InsightMath lets me see how my students are thinking in real time. The built-in visuals support their conceptual understanding, and the instant feedback keeps them engaged and growing every day."**
>
> *—Annie Koga, Teacher, Rio School District*

InsightMath is designed this way. By starting with visual models and conceptual exploration, it removes language barriers and creates shared understanding from the start, before formal vocabulary is introduced, and before gaps begin to appear.

And when students explore multiple solution paths and connect math to real-world thinking, they gain more than content mastery. They develop the habits of lifelong problem solvers.

CHAPTER 8

Why Now: What's Driving Urgent Change

Math education is at a crossroads.

Despite new frameworks, district investments, and new tools, most students are still not reaching proficiency. The message from the data is loud and clear: Students need more effective approaches—now.

Districts across the country are realizing that incremental change isn't enough. Teachers are asking for tools that align with how students learn. Frameworks now demand sense-making, not surface-level drills.

The moment for real change is here. Let's move beyond repetition. Let's make math a subject students love, not fear.

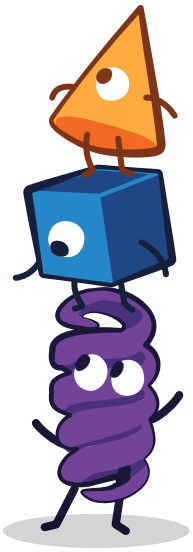
Let's teach math the way the brain learns.

Ready to Lead the Way?

Experience InsightMath and see for yourself.

Be part of a new era in math instruction. One where curiosity fuels understanding, and every student can confidently say: "I am a math person."

Learn more at insightmath.com



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