Bridging the Foundational Math Knowledge Gap

Ensuring All K-5 Students Are Set Up to Achieve Math Success

Districts are making huge investments in closing early reading gaps – but what about math?

Like in reading, most students are capable of reaching math proficiency without intensive intervention, but only 61% are actually proficient by the end of 8th grade. This gap means that thousands of students are on track to struggle with high school coursework, postsecondary options, and even life skills, like personal health decision-making. **To move the needle in math, districts need strategies that close critical foundational skill gaps** *at a large scale* **and** *as soon as possible* **– before students'** early skill gaps compound over time. Across 100+ interviews with district leaders and math education experts, EAB identified the instructional shifts proven to boost student math outcomes and what districts should do today to see long-lasting results.

Top Takeaway

Students will continue to struggle in math unless districts enable teachers to systematically close overlooked key skill gaps at scale.

Because math is cumulative, districts must ensure all K-5 students reach mastery on key skills – but many overlook these skills and what's required to master them. EAB provides the roadmap to ensure all students advance with the foundation they need to succeed.

The Problem

Common instructional strategies often stop short of full mastery, and K-5 students rarely recover the key skills they need to succeed in later grades.

In EAB's review of more than 300 studies supporting these strategies, **60% did not meet basic standards** for quality, effect on learning, and feasibility. The studies that did meet these standards pointed to effective, practical instructional strategies that can close foundational gaps at scale – **but most district leaders were not aware of this supporting research**, and most teachers are not using the strategies.

Research Spotlight

The *instructional hierarchy*: Decades of empirical research describe **predictable learning stages** for key math skills (and the most efficient path to durable skill mastery):

1. **Acquisition**: Students build understanding and accuracy
2. **Fluency**: Students build accuracy and efficiency (speed)
3. **Generalization**: Students apply the skill flexibly in unstructured contexts

Top findings from high-quality math education research:

✓ Key math skills follow predictable learning stages

✓ Students can recover missed skills in whole-group settings without impeding core instruction

Ways in which current instruction deviates from best practice:

✗ **Many teachers inadvertently advance students** through learning stages before students reach full mastery of a skill

✗ **Many teachers don't help students recover missed skills** because they rely solely on small-group intervention, or existing resources don't accurately follow student learning stages

As a result, too many K-5 students lack foundational skills, and current district approaches overlook these skills or don't operate at scale.

Some districts may not realize that full classrooms of students have not fully mastered a key skill like automatic recall of basic facts. **Longitudinal research shows that math is inherently cumulative**, and without these key skills, students will continue to struggle.

Bridging the Foundational Math Knowledge Gap

Ensuring All Students Can Achieve Math Success

The Solution

Districts must prepare K-5 teachers with a feasible protocol for identifying and addressing key foundational skill gaps *at scale.*

Traditional skill recovery models often diverge from evidence-based practice or rely on small-group and 1:1 instruction, placing a significant decision burden on teachers and support staff. But districts can close key foundational gaps more efficiently by hardwiring a systematic decision path that helps teachers identify which skills students still need to master and the instructional steps required to bring them to mastery. Rigorous research shows that **a 15-minute classwide routine** can effectively close these skill gaps for most students, reserving small group support for students who really need it.

See how the protocol works below, then read on to learn how EAB can help district leaders prepare teachers to use this systematic approach in daily math instruction.

Evidence of Success

Coxsackie-Athens Central School District (NY)

Results of teachers using a classwide math intervention protocol:

10%

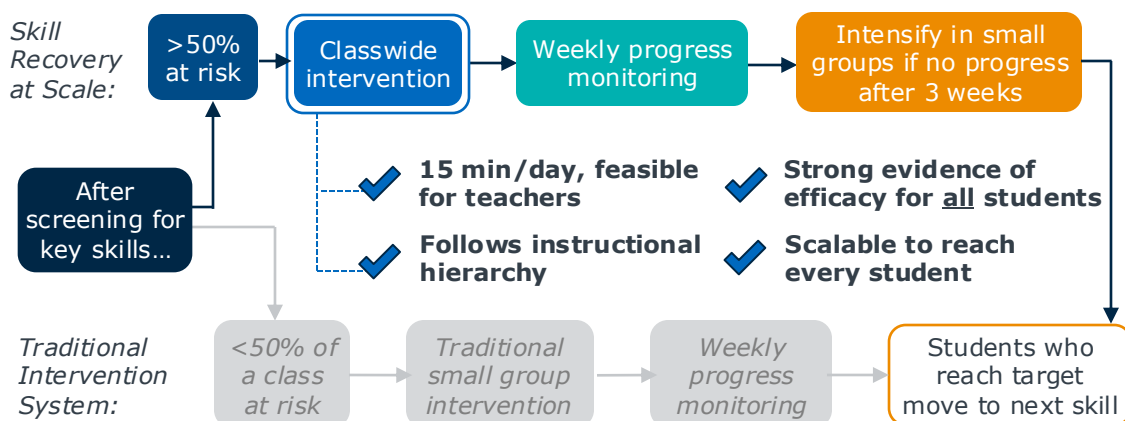of kindergarteners met all benchmarks in fall 2023; 35% failed to meet any

▼

70%

of kindergarteners met all benchmarks in spring 2024; only 4% failed to meet any

A Classwide Intervention Protocol Is the Key to Skill Recovery at Scale

Skill Recovery at Scale: >50% at risk → Classwide intervention → Weekly progress monitoring → Intensify in small groups if no progress after 3 weeks

After screening for key skills…

✔ **15 min/day, feasible for teachers**
✔ **Follows instructional hierarchy**
✔ **Strong evidence of efficacy for all students**
✔ **Scalable to reach every student**

Traditional Intervention System: <50% of a class at risk → Traditional small group intervention → Weekly progress monitoring → Students who reach target move to next skill

How EAB Supports You

Our research and resources guide leaders every step of the way toward hardwiring a protocol for foundational math skill recovery.

Improving student math performance is not simply achieved by adopting high-quality curriculum. EAB helps leaders through every step of building a math skill recovery protocol proven to boost student outcomes and feasible to implement at scale.

Have Questions?

Reach out to your dedicated research advisor to learn how to bring this research to your leadership team. Email research@eab.com to get started.

EAB's Math Leadership Lab for K-5 Math Leaders

Join the Aug. 2025 Cohort

In 4 working sessions, EAB's Math Leadership Lab provides step-by-step guidance for designing a scalable plan to close foundational math skill gaps. Learn how to:

- Diagnose gaps early and precisely
- Scale a classwide skill recovery protocol aligned to the instructional hierarchy
- Build systemwide teacher buy-in and leadership support

Participants will walk away with a complete plan for launching an evidence-based foundational skill recovery protocol, as well as:

All the materials you need to build and implement your plan

A network of peers dedicated to improving student math outcomes