

Transforming Math Instruction

A District Leader's Reference for Taking Action

Most math improvement initiatives fail; not because the strategies are wrong, but because districts avoid honest conversations about what's actually getting in the way. This document summarizes the key barriers and five evidence-informed strategies for leaders who are ready to do the harder work of creating lasting change.

Where Initiatives Break Down: Three Levels of Barriers

CLASSROOM	BUILDING	DISTRICT
<p>Beliefs, not just skills.</p> <p>Many teachers don't truly believe all students can develop deep mathematical understanding. This is often visible in ability grouping, simplified tasks for certain students, and over-reliance on repeated practice. Most teachers were taught math procedurally and have never experienced the kind of mathematical insight they're now being asked to cultivate.</p>	<p>Principals are stretched thin.</p> <p>Math improvement is one item on an impossible list. Many principals lack deep math content expertise and can't provide specific instructional feedback. Pressure for quick test score gains pushes toward short-term fixes rather than the slower work of building teacher capacity.</p>	<p>Planning for launch, not longevity.</p> <p>Districts invest in the initial rollout but fail to build what sustains it: coach pipelines, onboarding for new teachers, and structures that outlast key individuals. When coaches leave or budgets are cut, gains disappear. Systemic equity concerns often go unaddressed.</p>

FIVE STRATEGIES THAT CREATE LASTING CHANGE

1 Share Credible Models, Not Just Research

Beliefs change through specific, applicable examples, not data alone. Seek out and share stories of unexpected student success: classrooms labeled "low" that thrived with challenging problems, skeptical teachers who tried one new approach and saw different results. Arrange for principals and teachers to observe these classrooms directly.

Ask: What stories from our own district could shift what people believe is possible here?

Give Teachers Their Own Mathematical Experiences

2

Teachers need to experience mathematical insight themselves before they can facilitate it for students. Professional learning should put teachers in the role of learner, working through genuinely challenging problems, experiencing productive struggle, and arriving at understanding rather than being given answers.

Ask: Does our professional development give teachers a chance to do math, or only talk about it?

Build Capacity Intentionally From the Start

3

Develop pipelines for math coaches and teacher leaders, establish cross-school math committees, create structured onboarding for new hires, and embed collaborative learning time into the regular schedule; not as a one-time event, but as ongoing infrastructure.

Ask: If our three strongest math coaches left tomorrow, what would happen to this work?

Create Safe Conditions for Honest Dialogue

4

Real change requires surfacing doubts and resistance and that only happens when people feel safe being honest. Name challenges explicitly in leadership meetings. When teachers say something isn't working, get curious before defending the approach.

Ask: Where in our system do people feel safe saying what they actually think?

Reframe the Goal: Understanding Over Practice

5

Help everyone — teachers, principals, and families — recognize that the goal is mathematical insight, not task completion. Highlight student reasoning, reframe struggle as the site of learning, and be transparent with families about why instruction is changing.

Ask: How do we currently talk about math success? Does it center understanding, or speed and accuracy?

This work unfolds over years, not quarters. The districts that sustain improvement are the ones that invest in beliefs, capacity, and honest conversation; consistently, and at every level of the system.