



SPARK PROBLEM SOLVING

***Igniting Deep Thinking Through
Math Instruction***

FROM ROTE STEPS TO REAL UNDERSTANDING

Practical coaching and professional development that helps teachers shift from procedural teaching to rich, conceptual learning.

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Available virtually & in person

Executive Summary

Erica In Your Corner empowers educators through the SPARK Framework—an instructional model that transforms math instruction into a thinking-rich, student-centered experience. With nearly 20 years of experience in education, Erica offers personalized professional development, coaching, and instructional tools rooted in research and built on classroom realities. SPARK supports teachers in fostering deep mathematical understanding, productive struggle, and confident problem solving.

Through customized implementation pathways, SPARK adapts to meet the needs of schools, districts, and individual educators—whether embedded in the full math block or focused specifically on story problem instruction. This work is grounded in equity, clarity, and the belief that every child can thrive when instruction is thoughtful, intentional, and empowering.



"Erica led a math transformation that changed how our teachers teach and how our students think." —Cara McCarthy, Chief Schools Officer & Former Lower School Principal

Why SPARK Problem Solving?



I created the SPARK Problem Solving Framework because I believe every student deserves math instruction that challenges their thinking, builds their confidence, and honors their ideas. Too often, students are taught to memorize steps without understanding the math behind them. SPARK shifts that dynamic by putting reasoning, representation, and reflection at the center of the learning experience. It's not just about solving problems—it's about knowing why the solution works, and believing you're capable of getting there. SPARK is the result of years of working alongside teachers, listening to their challenges, and designing real tools that support real classrooms.



WHAT IS SPARK?

The SPARK Framework is a comprehensive approach to teaching math that fosters deep, meaningful learning for every student. It guides educators in creating classrooms where students engage actively with challenging problems, think critically about their reasoning, apply flexible strategies, and develop strong conceptual understanding. By shifting away from rote memorization and toward authentic problem solving, the framework builds both student and teacher confidence while promoting intellectual curiosity and mathematical depth.

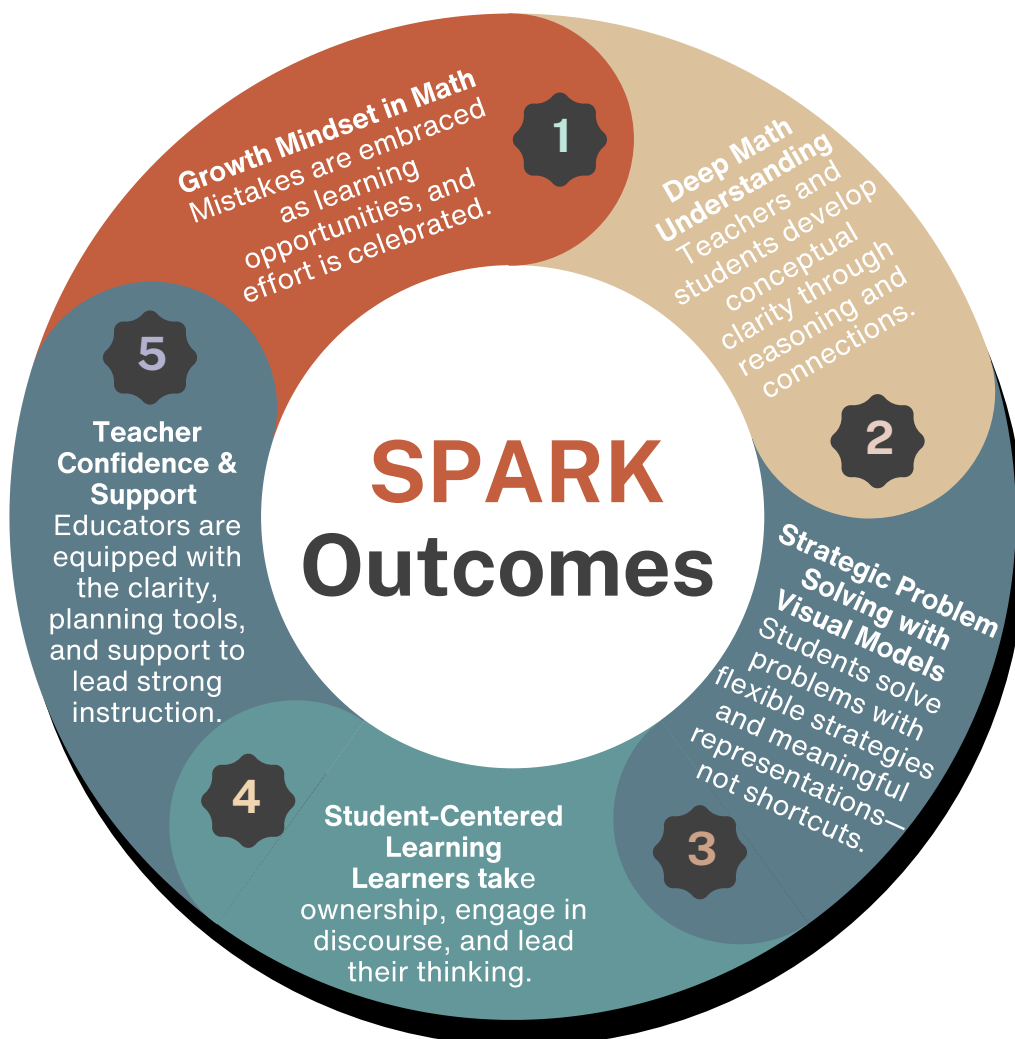
SPARK Outcomes

SPARK Fuels Rigorous, Thinking-Rich Math Instruction.

Strong math instruction doesn't happen by chance. It happens when students are challenged to think deeply, reason clearly, and solve problems with confidence. SPARK makes that possible by equipping teachers with the mindset, tools, and instructional moves to build classrooms full of capable, flexible problem solvers.

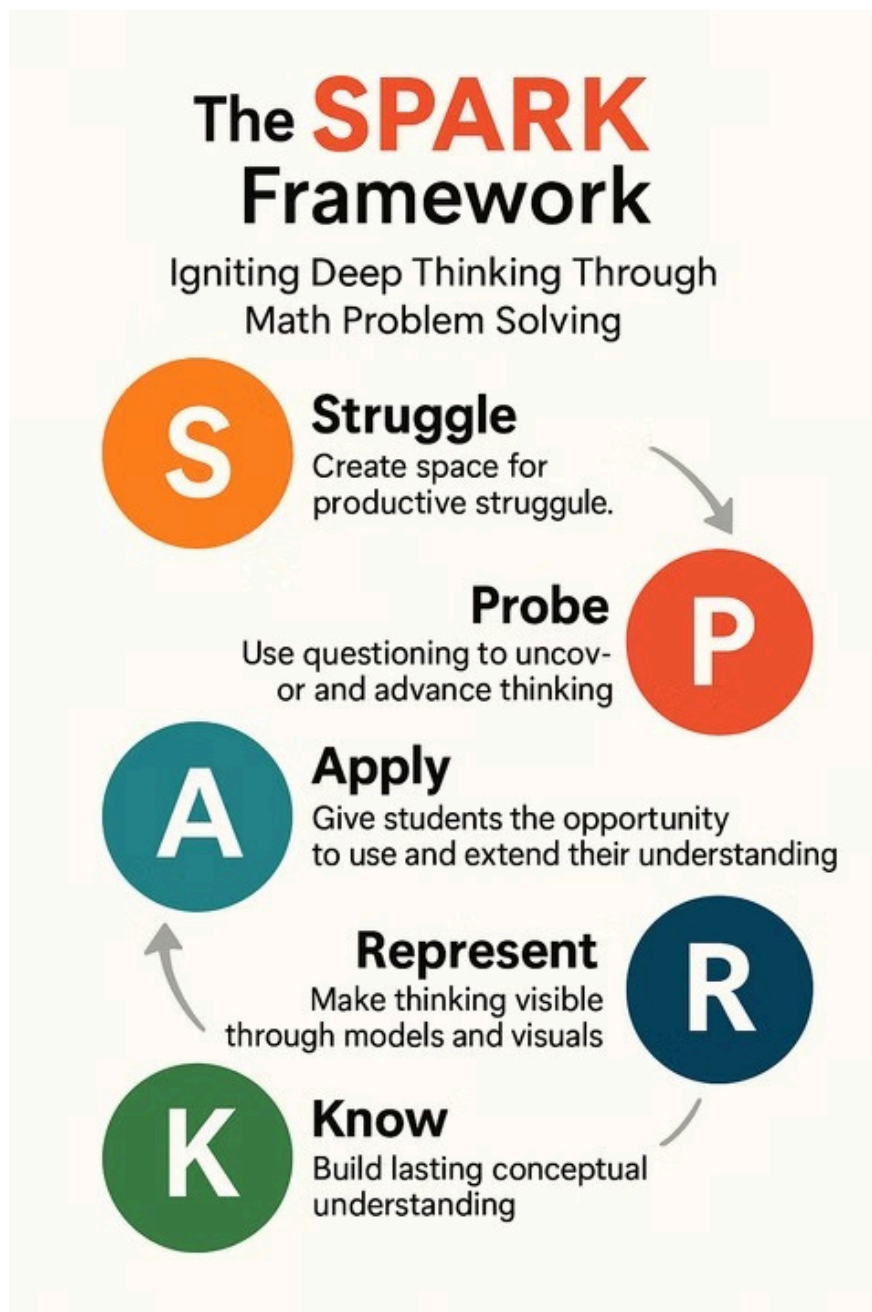


This transformation is grounded in five essential outcomes:



The SPARK Pillars?

These five pillars bring the framework to life in classrooms, representing core instructional practices that support student growth and teacher decision-making:



Together, these pillars provide practical guidance for implementing the SPARK vision and nurturing confident, capable math learners.

Proven Results at a Glance

- ▶ Student gains you can see: Math scores jumped by an average of 28% in just one semester with SPARK.
- ▶ Confident, empowered teachers: 95% of educators felt more confident leading rich, productive math discussions, and 98% said SPARK's feedback improved lesson impact.
- ▶ Engagement like never before: Every school leader saw a boost in student enthusiasm for problem solving, with 100% of classrooms showing growth in reasoning, math talk, and problem-solving.
- ▶ From memorization to mastery: In just 6 weeks, students shifted from guessing and chasing keywords to solving with labeled models and number sentences.
- ▶ Immediate, lasting change: From day one, teachers saw gains across all student groups, including those in Exceptional Student Education (ESE) and multilingual learners.
- ▶ Results that last: Growth trends continued year after year.

Classrooms showed measurable increases in:

- ▶ Student math talk and peer discussion
- ▶ Use of visual models to solve problems
- ▶ Confidence in reasoning and perseverance through challenge

Leaders reported improvements in:

- ▶ Instructional clarity and consistency across grade levels
- ▶ Teacher confidence in facilitating problem solving and rich discourse
- ▶ Alignment of math block structure to rigorous, student-centered instruction



Consulting Pathways

At the heart of effective instruction is the belief that every student can think deeply, communicate their ideas, and make meaning of rigorous content. These professional development sessions are designed to empower educators with practical tools, intentional planning moves, and responsive teaching strategies—so that classrooms become spaces where learning is driven by curiosity, clarity, and student thinking.

SPARK is flexible by design. Whether integrated into the full math block or focused specifically on story problems, SPARK adapts to your context—while staying grounded in its core pillars.

Workshops are organized into two pathways choices:

- ▶ **Pathway 1: The Main Math Block Trajectory**, which develops strong instructional practices across any math unit
- ▶ **Pathway 2: The Math Stories Trajectory**, which focuses on improving students' understanding and success with math word problems, especially in Grades K–4



Pathway Details

PATHWAY 1: Main Math Instruction Pathway

SPARK can be embedded directly into the core math block to elevate day-to-day instruction. This pathway helps teachers transform traditional lessons into thinking-rich learning experiences and builds core instructional moves that make math classrooms more student-centered, responsive, and intellectually rich.

Workshops:

- ▶ Creating a Classroom Culture that Encourages Productive Struggle
- ▶ Make Your Math Class Student Driven through a Strategic Launch Task and Productive Discussion
- ▶ Turn-and-Talks: Get Students Productively Talking about Instruction
- ▶ Landing the Key Point in a Math Lesson
- ▶ Facilitating a Strong Discussion – Your Questions Matter
- ▶ Identifying and Illuminating Misconceptions in a Lesson
- ▶ How to Respond to Students with Gaps in Content Understanding
- ▶ Using Formative Assessments to Guide Your Instruction
- ▶ Unpacking Your Next Math Unit – The What, the How, the Why
- ▶ Review – Choice from the list or follow-up session based on need

You might use this pathway to:

- ▶ Launch lessons with open problems
 - ▶ Integrate SPARK into curriculum-aligned units
 - ▶ Reframe math block structures to emphasize reasoning and discourse
 - ▶ Improve the quality of questioning to uncover and extend student thinking
- Build PLC goals or coaching cycles around SPARK-aligned practice

Pathway Details

PATHWAY 2: Math Story Problem Pathway

SPARK can also be applied through a focused lens on story problem instruction—supporting students in making sense of word problems through visual modeling and strategic thinking. This pathway deepens teacher expertise in helping students understand, model, and solve math story problems with confidence and clarity.

Workshops:

- ▶ Types of Story Problems
- ▶ Using Representations to Help Students Understand Math Story Problems
Deep Dive into Bar Models Across the Grades
- ▶ Effective Strategies in Teaching Math Stories
- ▶ Turn-and-Talks: Get Students Productively Talking about Instruction
- ▶ Landing the Key Point in a Math Lesson
- ▶ Facilitating a Strong Discussion – Your Questions Matter
- ▶ Identifying and Illuminating Misconceptions in a Lesson
- ▶ Review – Choice from the list or follow-up session based on need

You might use this pathway to:

- ▶ Teach problem-solving strategies using tape diagrams, number lines, and other visual models
- ▶ Move beyond keyword tricks by helping students visualize the action
- ▶ Establish consistent routines (e.g., “Understand, Represent, Solve, and Answer”)
- ▶ Provide targeted support in small group, RTI, or family engagement settings

Other PD Offerings

General (All Elementary Grades)

- Creating a Classroom Culture that Encourages Productive Struggle
- Setting Up Your Classroom with Strong Routines and Procedures
- Creating a Positive Classroom Environment (Relationship Building, Presence, Accountability, and Consistent Norms)
- How to Increase Student Talk
- How to Increase Student Work Production
- Facilitating a Strong Discussion
- Increasing Engagement in Your Lesson
- Your Questions Matter
- Initiating and Executing Response to Intervention (RTI)
- Using Formative Assessments to Guide Instruction
- Behavior is Communication
- Analyzing Data & Creating Manageable Next Steps



Math (Grades Specified)

- ▶ Deep Dive into Multiplication and Division (Gr 3–7)
- ▶ Deep Dive into Fractions (Gr 3–7)
- ▶ Effective Strategies in Teaching Math Story Problems (Gr K–4)
- ▶ Using Representations to Understand Math Story Problems (Gr K–4)
- ▶ Deep Dive into Bar Models (Gr 1–4)
- ▶ Turn-and-Talks for Math Instruction
- ▶ Landing the Key Point in a Math Lesson
- ▶ Student-Driven Math: Strategic Launch & Discussion
- ▶ Facilitating Strong Discussions in Math
- ▶ Unpacking Your Next Math Unit
- ▶ Data Analysis of Unit/Trimester Assessments
- ▶ Identifying and Illuminating Misconceptions in a Lesson



Literacy

- ▶ Strong Start to Reading (PreK–K)
- ▶ Foundations of Reading (K–2)
- ▶ Deep Dive into Phonemic Awareness and Phonics (K–2)

Key Differentiators: Why Schools Chose SPARK

► Research-based and classroom-tested:

SPARK was developed in collaboration with teachers and tested in real classrooms—not just drawn from theory.

💬 “Erica supports teachers through clear and concise feedback, always asking for teacher voice in what they need in their classroom to grow. Erica encourages a culture of positivity, collaboration, and continuous improvement, always seeking new ways to develop teachers and enhance the school’s academic programs. Her caring demeanor, coaching expertise, and commitment to teacher growth make her a valuable asset to any school community.” Gabrielle Galat, Classroom Teacher

► Designed by a Practitioner:

Erica brings nearly 20 years of experience across teaching, coaching, and leadership, giving her a full-system perspective.

💬 “Erica is an amazing coach with a wealth of content and instructional knowledge, and believes in every educator. You will walk away a stronger educator, and your students will have a deeper understanding of math!” —Kiera Johnston, Classroom Teacher

► Deep Content + Instructional Expertise:

Erica blends math content knowledge with powerful instructional strategies, making complex ideas clear and actionable.

💬 “Her ability to break down complex concepts and provide clear examples and modeling has been instrumental in helping teachers develop high-quality instruction.” —Gabrielle Galat, 3rd Grade Teacher

► **Student-Centered Approach:**

SPARK emphasizes student ownership, curiosity, and discourse—making thinking visible and learning stick.

💬 "With your coaching, I knew I had a strong instructional routine and an array of tools to leverage student understanding and engagement." —Kiera Johnston, Classroom Teacher

► **Practical and Sustainable:**

Every strategy and tool is designed to be immediately usable and long-lasting—not one-and-done PD.

💬 "Erica's deep knowledge of curriculum and instruction, her ability to create systems that support growth and learning, and her dedication to excellence are some of the qualities that make her an outstanding leader and educator." —Cara McCarthy, Chief Schools Officer

► **Coaching that empowers both teachers and students:**

Erica's coaching style combines clarity, warmth, and high expectations, empowering teachers without overwhelming them.

💬 "She has the unique and unteachable skill of being able to hold staff accountable while they feel unequivocally supported. Teachers come to her to help them problem solve or to share ideas, they implement her feedback, and shine in her praise." —Emily Davidson, School Leader



► **Flexible Implementation:**

SPARK meets schools where they are—whether transforming the full math block or targeting specific gaps like problem solving.

💬 “Erica’s individualized approach to coaching empowers teachers to grow in their own teaching practice while making sure all teachers feel supported in the process.” – Classroom Teacher

► **Aligned with Equity:**

By focusing on reasoning and representation, SPARK creates access points for all learners—not just those who thrive with procedures.

💬 “At the core of her leadership is the belief that all students have the ability to achieve and that all teachers with intentional and purposeful coaching and curricular support can create the conditions that lead to student achievement.”—Cara McCarthy, Chief Schools Officer & Former Lower School Principal



What Teachers Gain

Before Working With Erica...

Many teachers feel:

- Overwhelmed by the complexity of teaching and instructional decision-making
- Unclear about how to adapt or navigate curriculum effectively
- Unsure how to support students with lagging foundational skills
- Frustrated by disengaged learners
- Unsure how to move beyond rote memorization to engage students in real thinking
- Uncertain how to support productive struggle without stepping in too soon
- Unsure how to use visual models or representations to support understanding
- Not confident in how to shift ownership to students
- Hesitant to let go of control during problem-solving

After Working With Erica...

Teachers walk away with:

- ✓ Greater clarity on how to adapt curriculum and navigate instructional decisions
- ✓ Tools and strategies for addressing gaps and supporting foundational skills
- ✓ Practical techniques for engaging students and reigniting interest in math
- ✓ Confidence moving beyond memorization to foster real understanding
- ✓ Techniques to promote productive struggle and allow students to grapple
- ✓ A strong grasp of how and when to use visual models to support understanding
- ✓ A shift toward student-centered instruction and shared thinking
- ✓ Increased comfort releasing control and trusting the problem-solving process

Erica Provides:

- ✓ Thoughtful modeling of instructional strategies aligned to SPARK pillars
- ✓ 1:1 and team coaching that supports planning, reflection, and implementation
- ✓ Support with adapting curriculum to meet student needs while staying concept-focused
- ✓ Tools for diagnosing and addressing unfinished learning and foundational gaps
- ✓ Guidance on designing and facilitating rich, student-centered tasks
- ✓ Scaffolds to shift teacher talk and promote student ownership of thinking
- ✓ Strategies for using models and representations to build conceptual understanding
- ✓ Feedback cycles that build teacher confidence and instructional precision

“You will walk away a stronger educator, and your students will have a deeper understanding of math.” —Kiera Johnston, Classroom Teacher



Conclusion

Implementing the SPARK Framework transforms math instruction into a dynamic, student-centered process—and a journey of professional growth for educators. When teachers embrace these principles, classrooms become vibrant spaces where challenge is welcomed, reasoning is valued, and understanding is deepened.

SPARK supports educators in guiding students to not only solve problems but to understand the “why” behind the math, preparing them for lifelong success. We encourage teachers and school leaders to explore each element, adapt the teacher moves, and reflect on their practice to foster a culture of curiosity, resilience, and mathematical growth.

- ▶ **With SPARK: Igniting Curiosity, Empowering Understanding, both teachers and students are empowered to explore, question, and thrive in the world of math.**
- ▶ **Want to bring SPARK to your school? Let’s connect to explore the right professional learning experience for your team. Visit www.ericainyourcorner.com to get started.**

