

**Building  
Critical  
Thinkers**

**Phases I and II  
15 Lessons each  
Shared reading**

**Math Together makes math real and exciting for students:**

Encourages students to investigate math conjectures by estimating answers and experimenting with hypotheses.

Promotes written and verbal communication about math through reading, discussion, and solving and checking problems together.

Makes math vocabulary “real” with manipulatives or hands-on demonstrations.

Interdisciplinary approach breaks down artificial barriers between subject areas and encourages students to become active learners as they relate math to real-world experiences.

Enhances motivation through reading and creates the environment for math literacy.

Emphasizes calculator use so students concentrate on the main objective and not get bogged down in computation.

Explores concepts with representations and manipulatives to construct meaning. Hands-on materials are used in more than a third of the lessons.

Lessons are sequenced to build upon mathematical concepts learned. Journal questions encourage tutees to make connections to concepts learned, discover relationships between facts and construct their own understanding.

In Phase I, tutors and tutees take turns reading aloud from passages about historical figures and events. Launch activities allow tutees to explore and discover concepts to be covered in the lesson. Tutors introduce SOLVE, a paradigm that prompts tutees as they solve word problems. Tutees then write their own problems based on the passage. At the end of each lesson, tutors and tutees write in their journals, reinforcing math concepts and writing skills.

Phase II follows the same format, with higher-level problem solving.

Lessons include:

- Warm-up chat
- Launch activity
- Predicting
- Activating prior knowledge
- Modeling
- Shared reading
- Problem-solving (SOLVE)
- Reasoning and proof
- Communication — verbal and written
- Making connections
- Debriefing



**M<sub>2</sub>**  
math  together™  
*Raising math achievement by the power of 2.*

**BUILD  
CRITICAL  
THINKING**

**Grades  
Three/Four**

Through mathematical exploration, students construct meaning and make learning personal. Math Together was developed to build confident mathematicians and thinkers who go beyond memorization to understand the processes for solving word problems. Math Together embeds math concepts and problems within content-rich passages about key events in U.S. history. Written on the third-grade level, the passages are appropriate for third, fourth and some fifth graders. Key concepts such as problem solving, estimation, fact mastery and calculator use are addressed across all math strands: numeration, geometry, measurement, pre-algebra and data analysis. The curriculum, built on the objectives and standards of the National Council of Teachers of Mathematics, works in conjunction with whole-school initiatives and reforms, and aligns with local and state curricula.

**Key elements:**

- ✓ Strategies (such as use of manipulatives, representations and problem-solving heuristic — SOLVE) are used repeatedly and consistently until tutees can apply them independently.
- ✓ Students build competence and confidence in math, as they improve their reading, writing and understanding of U.S. history.
- ✓ All language arts — listening, speaking, reading and writing — are practiced in each lesson.
- ✓ Lessons are sequenced to build upon each other, so that concepts introduced are repeated and expanded upon in subsequent lessons.
- ✓ Real-world connections and hands-on materials bring meaning to mathematics and motivate students.

Who are the tutees?

- Third- or fourth-grade students
- Able to decode
- Below grade level in math
- May be appropriate for some fifth-grade students

Who are the tutors?

- Cross-Age Tutors
  - Two grade levels higher than tutees
  - Able to read at fourth-grade level
  - May benefit from instruction
  - Willing to work with younger children
- Adult Tutors
  - Family members
  - Paraprofessionals
  - Community/corporate volunteers
  - Able to read at fourth-grade level
  - Willing to help struggling math students



**Math Together Grades Three and Four**  
*Raising student achievement by the power of 2!*

**Training, scripted lessons, activity books and ongoing support ensure success!**

**Student Kit:**

- 2 Tutee Activity Books
- 2 Tutor Guidebooks (30 lessons)
- 1 Math Tool Kit with calculator, manipulatives
- 2 Math Together T-shirts



**PHASE I Focus**

- Lesson One:** "Meet the M Team"; Main Math Concept: Overview
- Lesson Two:** "The M Team Rides with Paul Revere"; Main Math Concepts: SOLVE, measurement
- Lesson Three:** "The M Team Meets George Washington"; Main Math Concepts: SOLVE, measurement (money)
- Lesson Four:** "The M Team at the Constitutional Convention"; Main Math Concepts: SOLVE, measurement
- Lesson Five:** "The M Team Visits the Louisiana Purchase"; Main Math Concepts: SOLVE, measurement (money), multiplication concepts, fact families
- Lesson Six:** "The M Team Meets Lewis and Clark"; Main Math Concepts: SOLVE, fact families
- Lesson Seven:** No Story; Main Math Concept: fact families
- Lesson Eight:** "The M Team at the Alamo"; Main Math Concepts: SOLVE, graphing
- Lesson Nine:** "The M Team and the California Gold Rush"; Main Math Concepts: SOLVE, graphing
- Lesson 10:** "The M Team Meets Harriet Tubman"; Main Math Concepts: SOLVE, coordinate grids
- Lesson 11:** "The M Team and the First Transcontinental Railroad"; Main Math Concepts: SOLVE, probability
- Lesson 12:** "The M Team Meets Thomas Edison"; Main Math Concepts: SOLVE, graphing, probability
- Lesson 13:** "The M Team and the Wright Brothers"; Main Math Concepts: SOLVE, graphing, measurement
- Lesson 14:** "The M Team Meets George Washington Carver"; Main Math Concepts: SOLVE, congruent shapes
- Lesson 15:** "The M Team at the Panama Canal"; Main Math Concepts: SOLVE, polygons, congruent shapes

**PHASE II Focus**

- Lesson 16:** "The M Team, Together Again"; Main Math Concept: Multiplication facts
- Lesson 17:** "The M Team Flies with a World War I Ace Pilot"; Main Math Concepts: SOLVE, polygons, polyhedrons
- Lesson 18:** "The M Team Attends a Woman Suffrage Parade"; Main Math Concepts: SOLVE, polygons, polyhedron patterns
- Lesson 19:** "The M Team at Pearl Harbor"; Main Math Concepts: SOLVE, perimeter and area
- Lesson 20:** "The M Team on D-Day"; Main Math Concepts: SOLVE, building and using pictographs
- Lesson 21:** "The M Team Visits a MASH Unit"; Main Math Concepts: SOLVE, odd and even numbers
- Lesson 22:** "The M Team Rides with Rosa Parks"; Main Math Concepts: SOLVE, expanded notation, place value
- Lesson 23:** "The M Team Hears Martin Luther King, Jr."; Main Math Concepts: SOLVE, sets, empty sets
- Lesson 24:** "The M Team Witnesses the Kennedy Assassination"; Main Math Concepts: SOLVE, pictographs, bar graphs, sets
- Lesson 25:** "The M Team Over Vietnam"; Main Math Concepts: SOLVE, measurement, scale
- Lesson 26:** "The M Team on the Moon"; Main Math Concepts: SOLVE, measurement, area and perimeter
- Lesson 27:** "The M Team Aboard the Exxon Valdez"; Main Math Concepts: Solve, place value, expanded notation
- Lesson 28:** "The M Team and Operation Desert Storm"; Main Math Concepts: SOLVE, expanded notation
- Lesson 29:** "The M Team Meets George W. Bush"; Main Math Concepts: SOLVE, rounding, bar graphs
- Lesson 30:** "The M Team Meets a Future President"; Main Math Concepts: SOLVE, using bar graphs

**Coordinator Kit:**

- 1 Coordinator Manual
- 2 Tutor Guidebooks
- 1 Coordinator Resource CD