MES Math League (MML)

Interest Meeting
December 8, 2025

, MES Math/Gate teachers
Stephen Checker and Mohit Singh, parents

To infinity… and beyond!"

Our new math club boldly begins January, 2026

Coaching Team

Teacher Coordinator(s):

Parent Volunteers:

Stephen Checker (parent of 3rd graders)

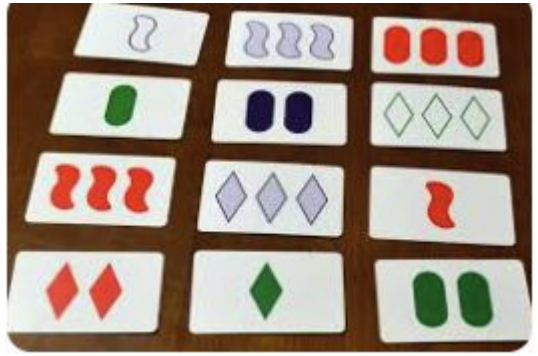
Mohit Singh (parent of 4th grader)

Backstory:

- Atlanta Science Festival

- Ga Tech Club Math

- SET



Math a different way:

Traditional Methods

Memorization
Procedural
Focus on How

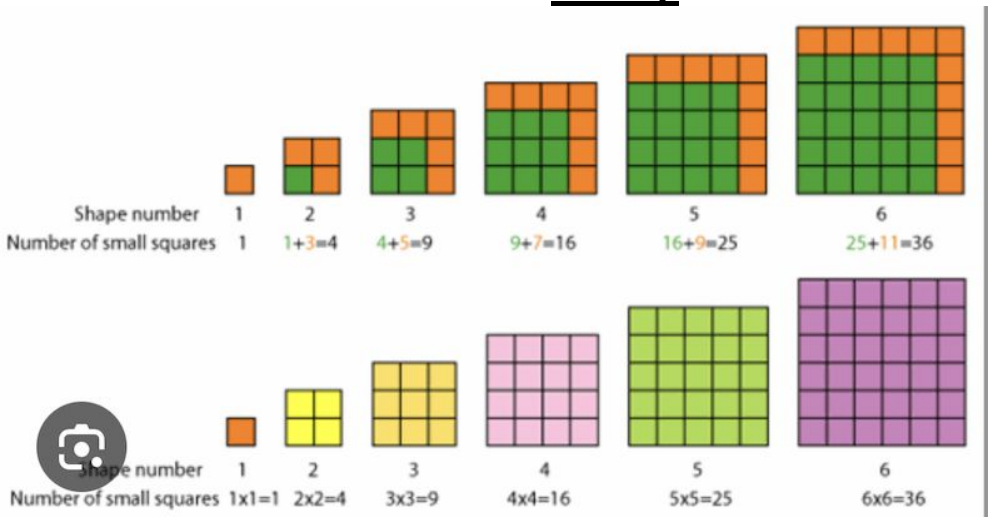
vs.

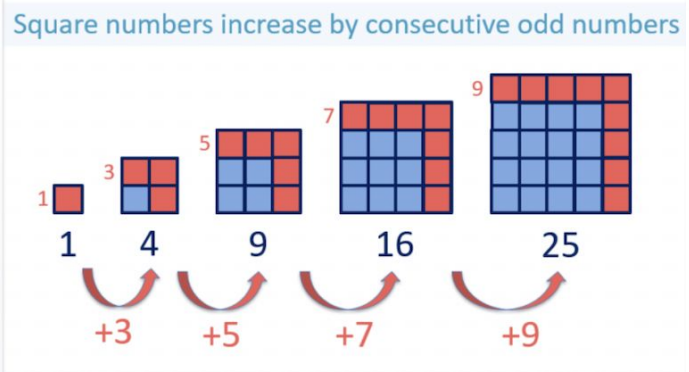
Reasoning Methods

Deeper Understanding
Critical Thinking based
Focus on Why

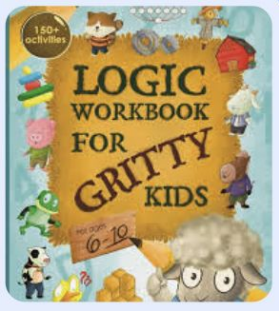
Perfect Square 1 to 30

$1^2 = 1$	$11^2 = 121$	$21^2 = 441$
$2^2 = 4$	$12^2 = 144$	$22^2 = 484$
$3^2 = 9$	$13^2 = 169$	$23^2 = 529$
$4^2 = 16$	$14^2 = 196$	$24^2 = 576$
$5^2 = 25$	$15^2 = 225$	$25^2 = 625$
$6^2 = 36$	$16^2 = 256$	$26^2 = 676$
$7^2 = 49$	$17^2 = 289$	$27^2 = 729$
$8^2 = 64$	$18^2 = 324$	$28^2 = 784$
$9^2 = 81$	$19^2 = 361$	$29^2 = 841$
$10^2 = 100$	$20^2 = 400$	$30^2 = 900$





From "DIY enrichment" to MML



A 4 C's team: ~ *Inspired by **Mr Rawl's** monthly book club*

Community - A tribe for Math/Problem solvers

Connection - Team Environment/camaraderie, shared experience

Collaboration - Communication/exchange of ideas/teamwork

Critical Thinking Development - Logic and reasoning skills built now last a lifetime

* Competition - A bridge to middle school Math team(s)

MES Math League (MML) Goals:

- 2 Teams (junior/advanced) composed of 3rd, 4th and 5th graders (Splash Squad & Wave Warriors, 1st draft of this…)
- Develop Logic/Reasoning & Math skills by introducing and solving math problems in many different topics, methods and applications.
- Build confidence and skill, and ability to work individually, in small groups as well as a team.
- **Enjoy Math! - problem solving should be fun, thoughtful, interesting**
- Participate in math competitions:
  - Perennial Math Competitions (CML, Kangaroo, etc..)

Structure/Focus - Monthly Themes

(* Under Construction)

Month	Theme	Purpose
Feb	Mathematical Thinking & Play	Build mindset + culture
Mar	Number Sense & Problem-Solving Tools	Build essential skills
Apr	Multi-Step Applied Problem Solving	Integrate tools + reasoning
May	Competition, Teamwork & Showcase	Apply everything + celebrate

Structure/Focus - Monthly Themes

(* Under Construction)

🟣 February — Mathematical Thinking & Playful Problem Solving

Goal: Build a culture of curiosity, collaboration, and joyful mathematical mindset.

Why first?
You establish norms, teamwork, productive struggle, and flexible thinking before jumping into heavy content or competition.

Topics/Activities:

- Strategy thinking through puzzles & games (Nim, KenKen, Set, Mastermind, PrimeClimb, All 10)
- Pattern hunting & conjecture-making
- Mathematician habits: breaking problems down, noticing/ wondering, testing cases

Outcome: Students see math as creative, communal, and fun—and they're ready for more structured work.

Structure/Focus - Monthly Themes (cont.)

(* Under Construction)

🟣 March — Number sense, Structure & problem solving tools

Goal: Strengthen foundational fluency and introduce tools used in contest problems.

Why second?
Now enjoying puzzles and challenge, building muscles to tackle deeper problems

Topics/Activities:

- Number theory basics: factors, multiples, primes, modular thinking
- Ratios & proportional reasoning
- Geometry fundamentals: perimeter/area logic puzzles, spatial reasoning
- Problem-solving toolset:
    - Draw a diagram, guess and check systematically, make visuals, work backwards, etc..

Outcome: Students gain structural fluency + a shared language of strategies.

Structure/Focus - Monthly Themes (cont.)

(* Under Construction)

🟣 April — Applied multi-step problem solving

Goal: Move from isolated skills → integrated reasoning and multi-step contest-style problems.

Why Now?

With tools, exposure, and confidence students can now take on more depth with less frustration

Topics/Activities:

- Multi-step word problems across domains
- Logical reasoning & deductive puzzles
- Rate & ratio puzzles, early algebraic thinking
- Geometry-based reasoning
- “Choose your strategy” challenges (students defend approaches)

Outcome: Students learn to *apply* multiple skills together— (what 3rd–5th contest problems generally require).

Structure/Focus - Monthly Themes (cont.)

(* Under Construction)

🟣 May — Presentations/Sharing Ideas/Team Challenges

Goal: Build confidence, teamwork, and performance under light time pressure—while ending the year with celebration.

Why Last?

Kids now have the mindset → skills → integrated problem solving. May becomes fun, not stressful.

Topics/Activities:

- Mock Math Olympiad / CML, Math Kangaroo–style contests
- Student-led problem explanations
- End-of-year challenge:
  "Create your own math problem" showcase
- Reflection on growth as mathematicians/strong, critical thinking problem solvers

Outcome: Kids finish with confidence, teamwork, and the experience of putting it all together.

Meetings and Communication:

- Qualifier sessions on Friday, **Jan 9** and **Jan 16** (**assessment testing**).
- Math League will meet in 7:15-7:45 AM every Friday starting late Jan/early Feb, unless otherwise communicated.
- Please have students arrive by 7:15 AM to start promptly.

Club Format and Meetings:

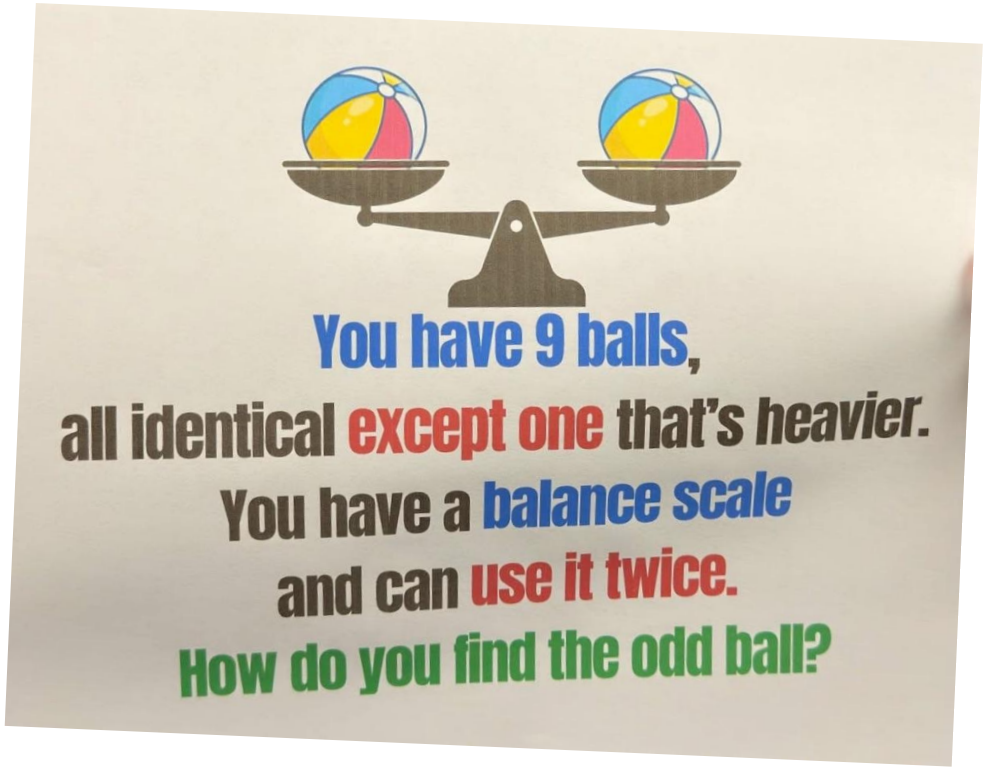
- We will select approximately 25 students with emphasis on students across grade levels.
- Selected students will be divided into two groups based on assessment.
- Each meeting will cover some math topic or have a competition or a practice problem solving session.
- There will be a homework assigned to each student that will be graded. This should take around 30-45 minutes per week (more for those that want it!).
- We will have a google classroom where we will post all material and deadlines.

Student Expectations:

- Student shows up on time. (This is mostly for parents).
- They do the light homework we assign to practice the skills and topics we cover.
- Be respectful to other students and take the league seriously.
- They should get a **notebook/pocket folder** for handouts, materials, notes, workspace.

Sample Problems:

A QUART OF MILK CAN FEED EITHER 6 CATS OR 10 KITTENS.
SUPPOSE THERE ARE 3 QUARTS OF MILK AND 15 CATS.
AFTER ALL THE CATS ARE FED, HOW MANY KITTENS CAN BE FED WITH THE LEFTOVER MILK?



Sample Topic:

Chapter 2
What if *The Simpsons* Were Real? Base 8

If you've ever watched *The Simpsons* you might have noticed that there are some things that are not completely realistic. The people are yellow. Bart's been in 4th grade since 1989. And somehow they keep thinking that Sideshow Bob is reformed and letting him out of prison. But for this chapter I want you to think about something you may not have realized was so unrealistic: Springfield Elementary does the same math that you do in your school even though all of the characters have just eight fingers instead of ten.

If people really had eight fingers they'd probably do math differently. In this chapter I'll tell you why and give you some practice doing math the "base 8" way.

2.1 Our Base Ten Number System

I assume your teachers have given you lots of worksheets explaining how our number system works: there's a ones place, a tens place, a hundreds place, a thousands place, and so on. Some of these worksheets give you numbers like 734 and ask you to write out that this means "seven hundreds, three tens, and four ones". Others ask you to draw lots of boxes to illustrate what 37 means.

I won't go over this here because most of you probably know it, but the Workbook has a page of problems you can do for practice. As I've said before practice in math is always good.

What I did want to talk about here is something that I think a lot of teachers don't do: talk about *why* we write numbers the way we do. Have you ever wondered why there is a ones place, a tens place, and a hundreds place instead of a ones place, a sevens place, and a sixty-threes place? Or some other even crazier system? The answer, I think, is that we write numbers the way we do because we have ten fingers. Imagine that you're a shepherd in some long ago country and you want to count your sheep to make sure they're all there. A good way to count was on your fingers. You look at your sheep one by one and each time you see one you say the next number and put up another finger: 'one, two, three, four, five, six, seven'. If you get distracted you can look down at the fingers you're holding up and count them to remember you're at seven. Counting on your fingers gets harder when you have a few more sheep, but there's a pretty obvious way to do it: you say 'nine' as you put up your ninth finger, 'ten' as you put up your tenth finger, and then put down all your fingers and start over raising one finger as you say 'eleven' and a second as you say 'twelve'. If you look down at your fingers now you'd need to remember that you went through one group of ten fingers already, but if you do it seems natural to write the number 'twelve' as 12 to signify that it was one set of ten fingers, plus two more fingers the second time around.

Q&A?

Next Steps:

(1) Does this commitment fit your child's/family schedule?
(2) Submit Interest Form (Google Form) by ?? (Friday Dec 12)
(3) Practice/review materials for Qualifier to be sent out to submitted form applicant parents
(4) Mark your Calendars: **Key dates** Jan 9,16 and MML official kick off date TBA
(5) Consider supporting MML as a parent Volunteer - more info to come, or please reach out to any of us!