Competitive Math Coaching Class: FAQs

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What is the AMC 8? Why is it important for my child?

The **AMC 8** (American Mathematics Competition for middle schoolers) is the most recognized math contest for students in grades 6–8. The exam is conducted by the Mathematical Association of America (MAA) and the link to the official exam page can be found here. AMC 8 2027 happens between Jan 22 – Jan 28, 2027.

Benefits of participating:

- Builds strong **problem-solving skills** that go beyond school math.
- Encourages **logical reasoning, creativity, and persistence** in tackling challenging problems.
- Strengthens readiness for **high school math, science, and computer science**.
- Helps students stand out in **academic applications** (honors classes, math clubs, selective programs).
- AMC 8 is a precursor for the subsequent exams like AMC 10 and AMC 12 – building strong foundations will help them succeed in these exams, which in turn, is a significant accomplishment that is considered in college applications.

Even if students don't score in the top percentile, the preparation itself dramatically improves their math thinking.

How many students will be in each class?

I favor a **small cohort size (10 students max)** to ensure personalized attention. This way, every child has space to ask questions and engage. I typically call out the names of the kids to give them a chance to answer questions, so they feel engaged.

What happens if my child misses a class?

- I would highly encourage attendance, but if in case, the child is absent, I do expect parents to email me prior to the class.
- **Class recording videos** and my handwritten notes (in class) will be shared after every class.
- Homework and notes will be available so they can stay on track.

What is the weekly time commitment?

- **Class:** 60[1] minutes per week (I will email logistics before start of the program)
- **Homework:** 2-3 hours weekly, including problem sets and practice contests

What is expected from parents?

- Parents don't need to tutor; however, I expect parents to keep track of their child's routine – this is an advanced class, and every question will be tricky, so unless the child has spent sufficient time thinking about the homework problems, they will have a very hard time adjusting to the class and being successful in the course.
- Please ensure the child works on their assignments without any AI tools – it will be very easy for me to figure out if a child is using one, and this would really be detrimental to the child's creativity and ultimately, his/her success in the exam.
- Please act on the feedback from me – I will be regularly emailing the test scores to you, as well as areas of improvement for your child. End of the day, I am vested in the success of your child and want your child to develop a love for math.
- Finally, parents must be responsible for ensuring that the child is registered for the exam(s).

What is the teaching approach?

- Focus on **problem-solving strategies**, not rote memorization. I will not be providing them a list of formulas to blindly apply but rather they will learn to solve problems from first principles.
- Students are encouraged to **explain their thinking** (while the final answer is important, I care more about how they got to the answer) and learn multiple approaches.

How do you track progress?

- Regular **tests** once every 3-4 weeks. The tests will be very similar to AMC style tests, in terms of difficulty, format and time. This will slowly start to build confidence for the kids.
- I don't share the scores of other kids (nor provide stats on the scores) – test scores are meant as a personal baseline and I want the student to improve themselves (and not compare themselves to anyone else). No kid should feel belittled because of a test score – my goal is to make the child embrace math.

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[1] Depending on the schedule, there might be additional classes, which might sometimes make it 90 mins per week

- **Quarterly parent updates** on progress and areas of focus

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What outcomes can we expect?

By the end of the program, students will:

- Compete confidently in AMC 8 & MATHCOUNTS. Although I don't explicitly mention MATHCOUNTS, it should be noted that MATHCOUNTS and AMC 8 have similar topics (and similar levels of difficulty) so preparing for AMC 8 helps with MATHCOUNTS.
- Strengthen foundations in **algebra, geometry, number theory, and probability**
- Build confidence, resilience, and a love for problem-solving.
- My personal goal is to push the students to achieve a honor roll (top 5%) and above in AMC 8.

What are the fees and schedule?

- **Fee:** $600 per quarter (12 weeks) – I will send out instructions on how to pay before classes start.
- **Duration:** Feb 2026 – Jan 2027
- **Mode:** Zoom (live & interactive)
- **Schedule:** TBD (will work with all the kids' schedules to ensure we have timings that work for most of the group)

Is there a refund policy?

- If for some reason, you want to withdraw your child at point of time, I am more than happy to refund the prorated amount.

How do I enroll my child?

If you are getting this email, your child is already on the list. I will send a confirmation email shortly, and the class logistics will follow. I need the following before the start of classes:

- Student's name, grade and an email to correspond with them

- Parent's email (typically for feedback and class schedule changes, if any)

Why This Matters for your child

Enrolling in AMC 8 preparation is **not just about a contest** — it's about giving your child a head-start in:

- Advanced mathematical thinking
- Confidence in problem-solving
- Logical and critical thinking skills
- Opportunities to excel in high school and beyond (the topics we will cover are foundational for advanced courses)

Detailed Syllabus

1. Number Theory: (~10 weeks)
   a. Divisibility, prime numbers & factorizations, LCM, GCD
   b. Factorial-based number theory problems
   c. Units Digit
   d. Fractions & Decimals
   e. Even/Odd number patterns
   f. Modular Arithmetic concepts*
2. Algebra (~8 weeks)
   a. Word problems (Linear equations, Ratio/proportion, Percentage, Inequalities)
   b. Sequences and Series - Arithmetic/Geometric/Telescoping
3. Statistics (~4 weeks)
   a. Basic statistics (measures of central tendency)
   b. Interpreting frequency distributions, scatter plots (Graphs & charts)
4. Counting & Probability (~12 weeks)
   a. Principle of Inclusion/Exclusion
   b. Factorials
   c. Permutations/Combinations
   d. Probability basics, Probability using combinations
   e. Compound events, addition rule
   f. Independent/Dependent events, multiplication rule
5. Geometry (~10 weeks)
   a. Review: Points, lines, angles (Angle chasing)
   b. Parallel lines
   c. Triangles - similar and congruent triangles
   d. Triangles - Perpendicular bisectors (circumcenter), angle bisectors (incenter), median (centroid), altitude (orthocenter)

e. Triangles - Right triangles, Pythagoras theorem
f. Polygons and quadrilaterals
g. Circles (chord, tangent, secant, inscribed/circumscribed angles, arcs)
h. Area calculations (analytical/coordinate based calculations)
6. Test preparation (~ 4 weeks)
a. Test prep methodologies
b. Understanding key design patterns and tricks in solving
c. Mock tests with feedback

What are the types of problems my child will be able to solve?

For those that are curious, these are some of the problems my current batch of students have mastered:

1. Three friends, Al, Bob and Carl are painting on separate pieces of paper, the word "CAVALIERS" for a basketball game, with at least two letter painted on each friend's paper. For example, Al might get "CA", Bob could get "VAL" and Carl could get "IERS". Or Carl could get "CAVA", Bob could get "LI" and Al paints "ERS". How many ways can these three friends paint letters on their paper so that when they stand with the papers in the correct order, they spell CAVALIERS?
2. Positive integers, a, b and c, satisfy the following condition:
    a. $GCD(a,b,c) = 1$
    b. $GCD(a,b) = 3$
    c. $GCD(a,c) = 4$
    d. $GCD(b,c) = 5$
    What is the least possible value of LCM(a,b,c)?
3. If N, the set of natural numbers is partitioned into groups $S_1 = \{1\}$, $S_2 = \{2, 3\}$, $S_3 = \{4,5,6\}$,…, find the sum of numbers in S_{50}.
4. John walks six blocks on a city grid of sidewalks to his favorite deli for lunch: 3 blocks north and 3 blocks west. He never uses the exact same path on his return to work. If John always stays on city sidewalks and goes six blocks each way, in how many ways can John walk to the deli and back?