



The American Math Olympiad: Grade 5

Grade 5 is a pivotal academic turning point. As students prepare to transition into advanced middle school mathematics, this Olympiad challenges them to build deep problem-solving habits across fractions, decimals, algebraic patterns, and three-dimensional space – skills that will carry them far beyond the classroom.

How the Exam is Balanced

The Grade 5 Olympiad tests three distinct kinds of mathematical thinking, ensuring a well-rounded assessment of every student's abilities.

Foundational Math: 30%

Large place values, decimal operations, coordinate grids, and shape classifications.

Advanced Math: 40%

Unlike-denominator fractions, 3D volume, algebraic patterns, and household finance.

Logical Reasoning: 30%

Order of operations, spatial folding, Pigeonhole logic, and deduction matrices.

What Your Child Will Be Tested

Here is exactly what your child will encounter across the three domains – from decimals to deduction.

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Foundational Math

- **Decimal Systems:** Reading, writing, comparing, and rounding decimals to the thousandths; powers of 10.
- **Decimal Fluency:** Adding, subtracting, multiplying, and dividing using place-value strategies.
- **Coordinate Grids:** Plotting and naming ordered pairs (x, y) on a standard grid.
- **Shape Hierarchies:** Classifying 2D shapes into families based on properties.

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Advanced Math

- **Advanced Fractions:** Unlike denominators, mixed numbers, and fraction $\div$ whole-number division.
- **Volume (3D Space):** Unit cubes and the formula $V = l \times w \times h$ for rectangular and irregular solids.
- **Algebraic Patterns:** Number sequences, relational rules, and graphing coordinate pairs.
- **Consumer Math:** Sales tax, percentage discounts, income layouts, and household budgeting.

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Logical Reasoning

- **Complex Order of Operations:** Nested parentheses, brackets, braces, and symbol-coded equations.
- **Advanced Counting & Logic:** Pigeonhole principle – finding maximum or minimum possibilities.
- **Spatial Folding & Rotation:** Mentally folding 2D nets into 3D shapes and examining cross-sections.

Question Types & Test Format

At a Glance

Time Allowed: 75 minutes

Total Questions: 60, evenly distributed across all topics.

No single question type dominates – your child must be comfortable with every format below to perform at their best.

Single Choice

One correct answer from four options.

Multiple Choice

Select all correct answers; no partial credit.

Fill in the Blank

Exact numeric or expression answer – no guessing.

Picture-based

Evaluate shapes, grids, or 3D block positions.

Data Interpretation

Draw conclusions from charts, trends, and fraction tables.

Case Study

Multi-step word problems in realistic scenarios.

Assertion & Reasoning

Verify a statement and its supporting explanation.

Financial Literacy

Apply math to discounts, prices, and tax calculations.

Why This Olympiad Is Worth It

Beyond the score, the Grade 5 Math Olympiad builds lasting skills and mindsets that serve students for years to come.



Middle School Readiness

Bridges the gap to formal algebra and geometry, guiding students through every critical milestone before they step into Year 6 and beyond.



Test Endurance

The 75-minute, 60-question structure builds deep academic focus and teaches students how to stay persistent through longer, more demanding challenges.



Practical Life Skills

Connects classroom numbers to real-world financial literacy – balancing budgets, calculating discounts, and understanding consumer costs.



STEM Foundation

Trains young minds to analyse multi-variable data, laying the groundwork for future success in coding, engineering, and physics.

- ✔ Students who participate in competitive maths at Grade 5 level consistently demonstrate stronger algebraic reasoning and data literacy throughout secondary school.

All the Best!
The Little Scientists

(Learning Partner)