

Grade 6 Mathematics Teacher Packet

AoPS Prealgebra and Brilliant

Nantucket New School

Course Overview

Grade 6 mathematics deepens understanding of fractions, equations, decimals, ratios, percents, geometry, and data. AoPS Prealgebra guides the academic structure. Brilliant provides visual models, interactive tools, and context rich tasks.

Core AoPS Chapters

Primary text: *AoPS Prealgebra*

- Chapters 4 through 12
- Selected content from Chapters 13 through 15

Unit and Resource Map

Unit	AoPS focus	Brilliant focus (main courses)
Fraction operations deep dive	Prealgebra Chapter 4 Sections 4.3–4.9. Division of fractions, fraction powers, simplifying, comparison, and full operations fluency.	<i>Arithmetic Thinking</i> fraction operations strands and <i>Real World Algebra</i> fraction context problems.
Equations, inequalities, and word problems	Prealgebra Chapter 5 Sections 5.1–5.5. Expressions, multi step equations, inequalities, and algebraic modeling.	<i>Visual Algebra</i> equation and expression lessons, <i>Solving Equations</i> , and <i>Real World Algebra</i> simple modeling tasks.
Decimals, ratios, and percents	Prealgebra Chapter 6 Sections 6.1–6.5, Chapter 7 Sections 7.1–7.6, Chapter 8 Sections 8.1–8.3. Decimal operations, rounding, ratios, unit rates, proportions, and percent applications.	<i>Proportional Reasoning</i> , selected <i>Arithmetic Thinking</i> rate tasks, and <i>Real World Algebra</i> percent and ratio models.

Unit	AoPS focus	Brilliant focus (main courses)
Roots, powers, and number sense	Review from Chapter 2 Sections 2.1–2.4 and Chapter 9 Sections 9.1–9.3. Exponent review, square roots, estimation, and comparison of roots.	<i>Number Theory</i> power patterns and introductory strands from <i>Exponential Functions</i> used as conceptual enrichment.
Geometry and right triangles	Prealgebra Chapter 10 Sections 10.1–10.3, Chapter 11 Sections 11.1–11.3, Chapter 12 Sections 12.1–12.3. Angles, polygons, perimeter, area, circles, right triangles, and the Pythagorean Theorem.	<i>Geometry and Measurement, Coordinate Geometry, and Coordinate Transformations</i> tasks involving angles, polygons, and distance.
Data, counting, and strategies	Prealgebra Chapter 13 Sections 13.1–13.3, selected Sections 14.1–14.4, Chapter 15 Sections 15.1–15.4. Data displays, basic statistics, introductory probability, and counting strategies.	<i>Everyday Statistics, Probability and Chance, and Strategy Puzzles</i> emphasizing systematic counting and casework.

Planning Notes

- Use Brilliant to open and close each major unit, with AoPS as the steady daily spine.
- When time is tight, protect Brilliant work that supports fraction and proportional reasoning first.