AoPS to Brilliant Core Crosswalk

This document gives a basic curriculum level map from AoPS chapters to core Brilliant Math Tab courses. It is intended for day to day planning and does not include enrichment courses or the Data Tab courses.

Each table row shows an AoPS chapter, the main standards that chapter targets, and the core Brilliant courses that contain lessons tagged with those standards.

AoPS Prealgebra

Chapter 1: Properties of Arithmetic

AoPS focus	Primary standards	Core Brilliant courses to pull from
Structure of the four operations, order of operations, reciprocals, division as inverse multiplication	5.NBT.7, 5.NF.3, 5.NF.4, 6.NS.1, 6.NS.2, 6.NS.3, 6.EE.2	Arithmetic Thinking

Chapter 2: Exponents

AoPS focus	Primary standards	Core Brilliant courses to pull from
Powers, exponent rules, patterns in repeated multiplication, early negative exponents	6.EE.1, 8.EE.1, 8.EE.3	Arithmetic Thinking, Exponential Functions

Chapter 3: Number Theory

AoPS focus	Primary standards	Core Brilliant courses to pull from
Factors and multiples, divisibility tests, primes, prime factorization, GCF and LCM	4.OA.4, 6.NS.1, 6.NS.4	Number Theory, Arithmetic Thinking

Chapter 4: Fractions

AoPS focus	Primary standards	Core Brilliant courses to pull from

Fraction meaning, comparison, addition, subtraction, multiplication, mixed numbers	5.NF.1, 5.NF.2, 5.NF.3, 5.NF.4, 5.NF.6, 6.NS.1	Arithmetic Thinking, Proportional Reasoning

Chapter 5: Equations and Inequalities

AoPS focus	Primary standards	Core Brilliant courses to pull from
Variables, expressions, one variable equations, basic inequalities	6.EE.2, 6.EE.3, 6.EE.5, 6.EE.6, 6.EE.7, 6.EE.8	Solving Equations, Visual Algebra

Chapter 6: Decimals

AoPS focus	Primary standards	Core Brilliant courses to pull from
Decimal place value, operations with decimals, decimal fraction equivalence	5.NBT.7, 6.NS.3, 4.NF.6	Arithmetic Thinking

Chapter 7: Ratios, Conversions, and Rates

AoPS focus	Primary standards	Core Brilliant courses to pull from
Ratio language, unit rates, unit conversions, speed and other applied rates	6.RP.1, 6.RP.2, 6.RP.3, 7.RP.1, 7.RP.2	Proportional Reasoning, Real World Algebra

Chapter 8: Percents

AoPS focus	Primary standards	Core Brilliant courses to pull from
Percent as rate per hundred, percent increase and decrease, multi step percent problems	6.RP.3.c, 7.RP.3	Proportional Reasoning, Real World Algebra

Chapter 9: Square Roots

AoPS focus	Primary standards	Core Brilliant courses to pull from

Square numbers, square roots, estimating roots, connection to geometry and area	8.EE.2, 8.NS.1	Quadratics, Geometry and Measurement

Chapter 10: Angles

AoPS focus	Primary standards	Core Brilliant courses to pull from
Angle measure, angle relationships, parallel lines with transversals, angles in polygons	4.MD.5, 4.MD.6, 4.MD.7, 7.G.5, 8.G.5	Geometry and Measurement, Coordinate Geometry

Chapter 11: Perimeter and Area

AoPS focus	Primary standards	Core Brilliant courses to pull from
Perimeter, area of triangles, quadrilaterals, circles, composite figures	6.G.1, 7.G.4, 7.G.6	Geometry and Measurement, Coordinate Geometry

Chapter 12: Right Triangles and Quadrilaterals

AoPS focus	Primary standards	Core Brilliant courses to pull from
Right triangles, Pythagorean theorem, special right triangles, quadrilateral families	8.G.6, 8.G.7, 8.G.8, 7.G.2	Geometry and Measurement, Quadratics

Chapter 13: Data and Statistics

AoPS focus	Primary standards	Core Brilliant courses to pull from
Data displays, measures of center, spread, interpreting graphs and tables	6.SP.1, 6.SP.2, 6.SP.4, 6.SP.5, 7.SP.1, 7.SP.2	Everyday Statistics, Probability and Chance

Chapter 14: Counting and Probability

AoPS focus	Primary standards	Core Brilliant courses to pull from
Counting strategies, sample space, basic probability, simple compound events	7.SP.7, 7.SP.8, HSS.CP.1, HSS.CP.2, HSS.CP.3	Probability and Chance, Everyday Statistics

Chapter 15: Problem Solving Strategies

AoPS focus	Primary standards	Core Brilliant courses to pull from
Heuristics, patterns, diagrams, working backwards, multiple representations	Mathematical Practices MP1 through MP8	Use any of the aligned core courses above as needed for extension and mixed review

AoPS Introduction to Algebra

Chapter 1: Follow the Rules

AoPS focus	Primary standards	Core Brilliant courses to pull from
Order of operations, properties of operations, exponents, distribution and factoring basics	6.EE.1, 6.EE.2, 6.EE.3, 7.EE.1, 7.EE.2, 8.EE.1, 8.EE.2	Arithmetic Thinking, Visual Algebra

Chapter 2: x Marks the Spot

AoPS focus	Primary standards	Core Brilliant courses to pull from
Expressions with variables and fractions, rewriting and simplifying expressions	7.EE.1, 7.EE.2, 7.EE.3, 6.EE.2, 6.EE.3	Visual Algebra, Solving Equations

Chapter 3: One Variable Linear Equations

AoPS focus	Primary standards	Core Brilliant courses to pull from
Solving multi step linear equations in one variable, equation solving strategies	7.EE.4, 8.EE.7	Solving Equations

Chapter 4: More Variables

AoPS focus	Primary standards	Core Brilliant courses to pull from
Evaluating and manipulating expressions in several variables, substitution	7.EE.1, 7.EE.2, 6.EE.2	Solving Equations, Functions

Chapter 5: Multi Variable Linear Equations

AoPS focus	Primary standards	Core Brilliant courses to pull from
Systems of linear equations, substitution, elimination, word problem contexts	8.EE.8, 8.EE.7	Solving Equations, Functions, Coordinate Plane, Coordinate Geometry

Chapter 6: Ratios and Percents

AoPS focus	Primary standards	Core Brilliant courses to pull from
Advanced ratios, percents, real world multi step percent problems	6.RP.3, 7.RP.2, 7.RP.3	Proportional Reasoning, Real World Algebra

Chapter 7: Proportion

AoPS focus	Primary standards	Core Brilliant courses to pull from
Direct proportionality, inverse proportionality, scaling, word problems in context	7.RP.2, 7.RP.3, 6.RP.3	Proportional Reasoning, Real World Algebra

Chapter 8: Graphing Lines

AoPS focus	Primary standards	Core Brilliant courses to pull from
Coordinate plane, slope, slope intercept form, lines as graphs of linear equations and proportional relationships	8.EE.5, 8.EE.6, 8.EE.8, 7.RP.2	Coordinate Plane, Coordinate Geometry, Functions

Chapter 9: Introduction to Inequalities

AoPS focus	Primary standards	Core Brilliant courses to pull from
Linear inequalities in one variable, solution sets, graphical representations	6.EE.8, 7.EE.4, 8.EE.7	Solving Equations, Visual Algebra

Chapter 10: Quadratic Equations Part 1

AoPS focus	Primary standards	Core Brilliant courses to pull from
Factoring quadratics, solving by factoring, roots of quadratic equations	A.SSE.1, A.SSE.2, A.REI.4	Quadratics

Chapter 11: Special Factorizations

AoPS focus	Primary standards	Core Brilliant courses to pull from
Squares of binomials, difference of squares, algebraic identities, factored forms	A.SSE.2, A.APR.1	Quadratics, Visual Algebra

Chapter 12: Complex Numbers

AoPS focus	Primary standards	Core Brilliant courses to pull from
Imaginary unit, basic operations with complex numbers	N.CN.1, N.CN.2, N.CN.3	No core middle school Brilliant course aligns directly; this is usually treated as high school content

Chapter 13: Quadratic Equations Part 2

AoPS focus	Primary standards	Core Brilliant courses to pull from
Completing the square, quadratic formula, applications and modeling with quadratics	A.REI.4, A.SSE.3.c	Quadratics

Chapter 14: Graphing Quadratics

AoPS focus	Primary standards	Core Brilliant courses to pull from
Parabolas, vertex form, transformations and features of quadratic graphs	F.IF.7.a	Quadratics, Coordinate Plane

Chapter 15: More Inequalities

AoPS focus	Primary standards	Core Brilliant courses to pull from
Quadratic inequalities, regions, constraints on graphs, optimization flavour problems	A.REI.11, F.IF.7	Solving Equations, Quadratics

Chapter 16: Functions

AoPS focus	Primary standards	Core Brilliant courses to pull from
Function notation, inputs and outputs, combining and composing functions	8.F.1 through 8.F.5, HSF.IF.1 through HSF.IF.3, HSF.BF.1, HSF.BF.2	Functions

Chapter 17: Graphing Functions

AoPS focus	Primary standards	Core Brilliant courses to pull from
Graphing functions, interpreting features, transformations and comparisons of graphs	8.F.2 through 8.F.5, HSF.IF.7	Functions, Coordinate Plane, Coordinate Transformations

Chapter 18: Polynomials

AoPS focus	Primary standards	Core Brilliant courses to pull from
Adding, subtracting, multiplying polynomials, structure and degree	A.APR.1, A.SSE.1	Visual Algebra, Quadratics

Chapter 19: Exponents and Logarithms

AoPS focus	Primary standards	Core Brilliant courses to pull from
Exponential growth and decay, percent growth, introduction to logarithms as inverses	8.EE.3, 8.EE.4, HSF.LE.1, HSF.LE.2, HSF.LE.4	Exponential Functions, Real World Algebra

Chapter 20: Special Functions

AoPS focus	Primary standards	Core Brilliant courses to pull from
Absolute value, radical, rational and piecewise functions, other non linear forms	HSF.IF.2, HSF.IF.7, HSF.BF.1, HSF.BF.2	Functions, Coordinate Transformations