Brilliant to AoPS Crosswalk

This document maps core Brilliant Math Tab courses to AoPS chapters using short instructional descriptions. Enrichment courses (Contest Math, Logic, Vectors, Calculus, Infinity, Group Theory, Math History) and all Data Tab courses are intentionally **excluded**.

A lesson is included only if it carries CCSS-aligned standards relevant to AoPS Prealgebra or Introduction to Algebra.

Brilliant Course: Arithmetic Thinking

AoPS Connections

AoPS Prealgebra Chapters 1–4, 6, and 7.

Representative Lessons

Splitting Parts Introduces fractions as partitioning wholes into equal parts. Supports AoPS Prealgebra Ch. 4.

Combining Parts Builds understanding of fraction addition by recombining partitioned regions. Matches early fraction work in Ch. 4.

Finding Half Develops reasoning about unit fractions and fractional equivalence. Maps to Ch. 4.

Fill the Grid Reinforces multi-digit arithmetic, place value, and mental computation. Aligns with Ch. 1 and 6.

Arithmetic Operations Puzzles Challenges students to use structure and order of operations. Connects to Ch. 1.

Brilliant Course: Solving Equations

AoPS Connections

AoPS Prealgebra Ch. 5; Intro Algebra Ch. 1, 2, 3, 4, and 5.

Representative Lessons

Balancing with Constants Uses visual balance models to build conceptual understanding of maintaining equality. Ideal for Ch. 5 and Intro Alg Ch. 3.

Solving Multi Step Equations Students apply distribution and combining like terms to isolate variables. Maps to Intro Alg Ch. 3.

Rearranging Expressions Explores algebraic structure and rewriting strategies; supports Intro Alg Ch. 1 and 2.

Adjusting Formulas Requires students to rearrange literal equations. Strong alignment with Intro Alg Ch. 4.

Brilliant Course: Visual Algebra

AoPS Connections

AoPS Prealgebra Ch. 5; Intro Algebra Ch. 1, 2, 9, 18.

Representative Lessons

Building Expressions Uses geometric patterns to show how algebraic expressions represent quantities. Maps to Intro Alg Ch. 1.

    Comparing Expressions Students analyze structure to identify equivalence. Strong alignment with Ch. 2.

    Distributing and Grouping Illustrates distributing and factoring as inverse processes. Connects to Intro Alg Ch. 1 and 18.

Brilliant Course: Proportional Reasoning

AoPS Connections

AoPS Prealgebra Ch. 7 and 8; Intro Algebra Ch. 6 and 7.

Representative Lessons

Finding Batches Students build unit rates and scale recipes. Aligns to AoPS Ch. 7.

    Using Unit Prices Reinforces proportional comparisons in real contexts. Maps to Ch. 7 and Intro Alg Ch. 6.

    Comparing Offers Multi-step percent reasoning. Connects to Prealgebra Ch. 8 and Intro Alg Ch. 6.

Brilliant Course: Real World Algebra

AoPS Connections

AoPS Prealgebra Ch. 7 and 8; Intro Algebra Ch. 6 and 7.

Representative Lessons

Controlling Costs Students interpret proportionality in applied settings. Connects strongly to Ch. 7.

    Percent Increase and Decrease Tasks Interprets multi-step percent changes. Matches Prealgebra Ch. 8 and Intro Alg Ch. 6.

Brilliant Course: Number Theory

AoPS Connections

AoPS Prealgebra Ch. 3.

Representative Lessons

Prime Patterns Introduces primes and divisibility. Direct match to Ch. 3.
    Factor Trees Models prime factorization conceptually. Supports Ch. 3.

Brilliant Course: Probability and Chance

AoPS Connections

AoPS Prealgebra Ch. 13 and 14.

Representative Lessons

Sample Space Exploration Students enumerate possible outcomes, mapping perfectly to Ch. 14.
    Simple Compound Events Builds probability for sequential events. Reinforces Ch. 14.

Brilliant Course: Everyday Statistics

AoPS Connections

AoPS Prealgebra Ch. 13.

Representative Lessons

Visualizing Data Distributions Covers dot plots and histograms. Aligns to Ch. 13.
    Center and Spread Interprets mean and median. Supports Ch. 13.

Brilliant Course: Coordinate Plane

AoPS Connections

AoPS Intro Algebra Ch. 8 and 17.

Representative Lessons

Plotting Points Introduces coordinate pairs and graph navigation. Aligns to Ch. 8.
    Slope Interpretation Tasks Students identify slope in graphs and grids. Connects to Ch. 8.

Brilliant Course: Coordinate Geometry

AoPS Connections

AoPS Prealgebra Ch. 10–12, Intro Algebra Ch. 8, 14.

Representative Lessons

Angle Relationships Explores interior, exterior, and transversal angles. Matches Ch. 10.
  Pythagorean Distance Uses coordinate geometry to derive distance formulas. Supports Ch. 12.

Brilliant Course: Coordinate Transformations

AoPS Connections

AoPS Intro Algebra Ch. 17 and 20.

Representative Lessons

Translation Tasks Strengthens understanding of shifting graphs. Aligns with Ch. 17.
  Scaling and Dilations Shows how function parameters affect graphs. Maps to Ch. 20.

Brilliant Course: Functions

AoPS Connections

AoPS Intro Algebra Ch. 16 and 17.

Representative Lessons

Function Machines Introduces input–output rules. Matches Ch. 16.
  Comparing Functions Students evaluate tables, graphs, and rules. Supports Ch. 17.

Brilliant Course: Quadratics

AoPS Connections

AoPS Intro Algebra Ch. 10, 11, 13, and 14.

Representative Lessons

Factoring Quadratics Students practice decomposing expressions into products. Aligns to Ch. 10.
  Vertex and Axis Tasks Reinforces structure of quadratic graphs. Supports Ch. 14.