Transition to Advanced Mathematics (TAM) was the first course designed by the TD Mathematics Initiative team. In conjunction with Algebra I, TAM offers students a year-long “double-dose” of mathematics instruction. It is an 80- to 90-minute course offered daily during the first semester. Research has shown that TAM prepares students for the rigorous sequence of standards-based high school mathematics courses.

TAM encourages students’ conceptual understanding of key ideas that underlie all high school mathematics and sharpens their overall basic mathematical skills. TAM challenges students to think through and understand what they are doing, learn from one another, communicate and respect ideas, and make connections between mathematics and the world.

**Transition to Advanced Mathematics’ content is built upon three factors:**

- Analysis of existing research on best practices for teaching mathematics to poorly prepared adolescents.
- Research from classroom teachers about skills and abilities their students lack.
- Examination of the skills and abilities necessary to succeed in standards-based courses and high-stakes assessments.
TAM UNITS & ACTIVITIES

Unit 1
Mathematical Reasoning, Data Analysis, and Probability
Students learn how to collect and analyze real world data, use statistical tools and approaches to make data-based decisions and interpretations, and learn how collecting and presenting data can influence interpretation.
Lesson 1: Topics in Number Theory
Lesson 2: Number Patterns
Lesson 3: Inductive Reasoning
Lesson 4: Data Analysis
Lesson 5: Descriptive Statistics
Lesson 6: Probability

Unit 2
Numbers & Integers
Students develop understanding and the need for the different number sets with a focus on the four main operations on a set of integers.
Lesson 1: Natural Numbers to Integers
Lesson 2: Adding Integers
Lesson 3: Subtracting Integers
Lesson 4: Multiplying Integers
Lesson 5: Dividing Integers
Lesson 6: Natural Numbers to Rational Numbers

Unit 3
Rational Numbers
Students explore rational numbers from both an additive (absolute) and multiplicative (relative) approach.
Lesson 1: Relative and Absolute Reasoning
Lesson 2: Percents
Lesson 3: Finding Percents
Lesson 4: The Multiple Personalities of Rational Numbers and Unitizing Revisited
Lesson 5: Common Denominators and Adding/Subtracting Fractions
Lesson 6: Multiplying Rational Numbers
Lesson 7: Reciprocals and Dividing Fractions
Lesson 8: Investigating the Mysteries of Decimals
Lesson 9: Ratios and Rates
Unit 4
Measurement
Students learn how to accurately measure by selecting and using appropriate techniques, units, and tools. Students use geometric measures of length, area, volume, and angles.
Lesson 1: Measuring Concepts and Skills
Lesson 2: Areas and Perimeters
Lesson 3: Rectangles and Parallelograms
Lesson 4: Angles and Angle Measures
Lesson 5: Getting Ready for Pythagoras
Lesson 6: Locations for Real Numbers
Lesson 7: Slope
Lesson 8: Slopes for Special Lines

Unit 3
Patterns & Functions, Introduction to Algebra
Students learn how to look for, generalize, and use patterns; understand the meaning and nature of variables; represent algebraic problems verbally, visually, concretely, and symbolically; and begin to appreciate algebraic language and the power of symbolism.
Lesson 1: Order of Operations
Lesson 2: Equivalence
Lesson 3: Opposite Operations
Lesson 4: Solving One-Step Equations
Lesson 5: Solving Two-Step Equations
Lesson 6: Tables and Graphs
Lesson 7: Patterns
Lesson 8: Introduction to Functions
Lesson 9: Exploring and Analyzing Graphs