

Course Syllabus

Mathematics, Adv. Algebra and Trigonometry

Jefferson County Schools Curriculum, Final
Jefferson County Schools

The Terra Nova Complete Battery for Mathematics is "designed to help students show what they know and can do. Many questions call for critical thinking, reasoning, and problem solving. Questions allow students to use different strategies and to take individual paths to a solution. Real-world topics engage students' interest, and the extensive use of graphics reduces the need for explanatory text and provides a supportive context. Themes group items into meaningful configurations, and items are generally sequenced to promote initial success so that students will continue with confidence to more challenging questions.

The [Terra Nova] tests taps broad mathematical power, yet retains the specifics from the traditional curriculum. The first section of the test includes computation, computation in context, and estimation items, and is administered without calculators. The second section covers a broad range of core skills and may be administered with calculators. Some questions require the use of rulers, which are supplied with the testing materials."

The Tennessee Mathematics Curriculum Standards provide standards, performance indicators, and accomplishments for students in mathematics.

The Tennessee Mathematics Framework for grades 9 through 12 outlines skills to be taught in Advanced Algebra and Trigonometry.

Algebraic Concepts

- The learner will be able to obtain solutions to polynomial inequalities applying appropriate strategies.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to solve quadratic inequalities.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to obtain solutions to many different equations using appropriate strategies.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Calculus and Pre-Calculus

- The learner will be able to solve real world problems involving networks.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Discrete Mathematics

- The learner will be able to illustrate an understanding of operations on matrices.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to solve real world problems involving finite graphs.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Functions

- The learner will be able to comprehend amplitude, period, phase shift, and vertical shift and use to graph trigonometric functions.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to obtain solutions to real world problems represented by linear, quadratic, radical, rational, polynomial, exponential, and logarithmic functions.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to illustrate and study many different functions and their attributes graphically, algebraically, verbally, and numerically.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to illustrate a comprehension of recursive and explicit definitions of functions and sequences.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Course Syllabus

Mathematics, Adv. Algebra and Trigonometry

Jefferson County Schools Curriculum, Final
Jefferson County Schools

- The learner will be able to define the trigonometric functions applying the unit circle.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to find values of trigonometric functions for special angles applying the unit circle and the symmetry of the circle.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to graph the translation of a given trigonometric function.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to model periodic phenomena applying trigonometric functions and suitable technology.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to apply transformation concepts when sketching the graphs of functions.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to apply data analysis strategies to model real world phenomena using functions.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Geometry

- The learner will be able to solve real world problems involving geometric transformations.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Numeration

- The learner will be able to use words to represent a sequence.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

- The learner will be able to use symbols to represent a sequence.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to use a list to represent a sequence.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to represent sequences graphically.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41
- The learner will be able to use sigma notation with arithmetic and geometric series.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Probability/Statistics

- The learner will be able to identify the difference between continuous and discrete scenarios.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Problem Solving

- The learner will be able to explore problems individually or in cooperative groups.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40

Real Numbers and the Coordinate Plane

- The learner will be able to obtain solutions to linear inequalities.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 41

Technology

- The learner will be able to appropriately use technology to solve problems.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40

Course Syllabus

Mathematics, Adv. Algebra and Trigonometry

Jefferson County Schools Curriculum, Final
Jefferson County Schools

Trigonometry

- The learner will be able to verify trigonometric identities using both algebraic and graphical methods.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to interchangeably use degrees and radians to illustrate angle measure and describe the advantages and/or disadvantages of their choice.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to use the trigonometric formulas for determining the area of triangles and circular sectors and segments.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to obtain solutions to real world problems using the trigonometric ratios, the Law of Sines, and Law of Cosines.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to derive the Pythagorean trigonometric identities (sine squared of an angle + cosine squared of that angle = 1, etc.).
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40
- The learner will be able to obtain solutions to trigonometric equations graphically.
Source: TN: Curriculum Framework (9-12), January 30, 1998, Adv. Algebra and Trigonometry, p. 40