Course Syllabus
Mathematics, Geometry

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 Geometry.

Algebraic Concepts

- The learner will be able to obtain solutions to problems in measurement and approximation using algebraic thought processes and symbolism.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to use reflexive, transitive, and symmetric properties when suitable.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28

Geometry

- The learner will be able to explain objects and identify the minimum conditions needed to define the object.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to apply learned geometry concepts in solving problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to identify and explain the relationships among families of geometric figures.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to illustrate an understanding of the geometric properties of congruence and similarity.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to study relationships among corresponding parts of similar or congruent figures.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to solve real world problems applying geometric properties of circles.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to illustrate an understanding of transformations of figures.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to apply techniques of inductive reasoning to formulate a conjecture.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to use deductive reasoning to justify conclusions.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to apply indirect and deductive reasoning to determine the truth of a statement.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28

- The learner will be able to use properties of solid geometry to obtain solutions to practical problems in real world settings.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to describe position using spatial sense with two-dimensional coordinate systems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to describe position using spatial sense with three-dimensional coordinate systems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to illustrate an understanding of the properties of perpendicularity and parallelism.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to use right triangle relationships including the Pythagorean Theorem, distance formula and/or trigonometric ratios.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28
- The learner will be able to solve real world problems using geometric properties of polygons.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28

Measurement

- The learner will be able to use measurement ideas and relationships in geometric problem solving situations.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to use measurement ideas and relationships in algebraic problem solving scenarios.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to apply the idea of length, area, and volume to approximate and obtain solutions to real world problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to select appropriate tools to measure quantities in order to achieve precision, accuracy, and error (or tolerance) of measurements.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to select appropriate methods to measure quantities in order to achieve precision, accuracy, and tolerance of measurements.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27

Number Theory

- The learner will be able to illustrate an understanding of the relative size of rational and irrational numbers.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to use number theory concepts to solve problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27

Numeration

- The learner will be able to study mathematical patterns associated with algebra and geometry in real world problem solving situations.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to identify, continue, and/or make spatial patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to identify number patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to create patterns using numbers.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27

- The learner will be able to extend patterns of numbers.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to identify geometric patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to extend and make geometric patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27

Probability/Statistics

- The learner will be able to use the ideas of probability and statistics in many different problem solving contexts.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to use geometric models to determine theoretical probability.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 28

Problem Solving

- The learner will be able to explore problems individually or in cooperative groups.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27

Real Numbers and the Coordinate Plane

- The learner will be able to apply coordinate geometry in problem solving scenarios.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27
- The learner will be able to use coordinate geometry to analyze problem solving scenarios.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27

Technology

- The learner will be able to appropriately use technology to solve problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Geometry, p. 27