Course Syllabus
Mathematics, Grade 10-12 Math Foundations II

Jefferson County Schools Curriculum, Final
Jefferson County Schools

Algebra I is the Tennessee End-of-course test that must be passed before graduation to earn a high school diploma.

The Tennessee Mathematics Framework for grades 9 through 12 outlines skills to be taught in Foundations II.

Algebraic Concepts

- The learner will be able to perform operations on simple expressions, and informally justify the procedures selected.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to informally explain and illustrate the concept of inverse.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- 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, Foundations II, p. 22
- The learner will be able to connect concrete, graphical, oral, and symbolic illustrations of absolute value.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to describe the inverse operations of addition/subtraction and multiplication/division.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to use inverse operations.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to model inverse operations.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to interpret the outcomes of algebraic procedures.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to illustrate an understanding of rates and various derived and indirect measurements.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to describe the definition of a variable in an expression, equation, and inequality.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to apply the idea of a variable in obtaining solutions to inequalities.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to use the concept of variable to simplify expressions and obtain solutions to equations.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to illustrate an understanding of division with zero.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21

Data Interpretation

- The learner will be able to apply suitable technology to represent and/or study data.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to draw and/or interpret graphs which model real world phenomena.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22

Geometry

- The learner will be able to use geometric relationships, properties, and formulas to obtain solutions to real world problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23

- The learner will be able to apply learned geometry concepts in solving problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- 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, Foundations II, p. 23
- The learner will be able to use the Pythagorean Theorem in obtaining problem solutions with and/or without suitable use of calculators.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23
- The learner will be able to illustrate an understanding of transformations of figures.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23
- The learner will be able to apply techniques of inductive reasoning to formulate a conjecture.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23
- 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, Foundations II, p. 23
- The learner will be able to recognize and/or describe the properties of various polygons.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23
- The learner will be able to name the properties of various polygons.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23
- The learner will be able to study the properties of various polygons.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23

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, Foundations II, p. 22
- The learner will be able to apply the ideas of length, area, surface area, and volume to approximate and solve real world problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- 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, Foundations II, p. 22
- The learner will be able to describe the concepts and methods applied in estimation, measurement, and computation.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to select suitable methods and tools to measure quantities in order to meet specifications for accuracy.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22

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, Foundations II, p. 21
- The learner will be able to illustrate a comprehension of the subsets, elements, properties, and operations of the real number system.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to apply mathematical notations appropriately.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21

- The learner will be able to use number theory concepts in mathematical problem scenarios.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to use number theory concepts to solve problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to use real numbers to illustrate real world applications.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21

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, Foundations II, p. 22
- The learner will be able to identify, continue, and/or make spatial patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to identify number patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to create patterns using numbers.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to extend patterns of numbers.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to identify geometric patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to extend and make geometric patterns.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to apply estimation strategies to forecast computational results.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22

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, Foundations II, p. 22
- The learner will be able to study the validity of statistical conclusions and the use and misuse of data.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to select, create, and study suitable graphical illustrations for a set of data including pie charts, histograms, stem and leaf plots, scatterplots and/or box and whisker plots.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to interpret a group of data using the suitable measure of central tendency.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to use theoretical and experimental probability to study the likelihood of an event.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to use the counting principles of permutations and combinations applying suitable technology.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 23
- The learner will be able to interpret data using the appropriate measure of dispersion.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22

- The learner will be able to approximate probability using simulations.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22
- The learner will be able to use suitable technology to collect data.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 22

Problem Solving

- The learner will be able to explore problems individually or in cooperative groups.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to evaluate the reasonableness of a given solution.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21, p. 22

Real Numbers and the Coordinate Plane

- The learner will be able to choose and use an appropriate strategy for computing with real numbers.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21
- The learner will be able to connect concrete, graphical, verbal, and symbolic illustrations of real numbers.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21

Technology

- The learner will be able to appropriately use technology to solve problems.
  Source: TN: Curriculum Framework (9-12), January 30, 1998, Foundations II, p. 21