

Course Syllabus

Mathematics, Grade 3

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 Terra Nova Complete Battery assesses students in third grade (Level 13).

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

Algebraic Concepts

The Algebraic Concepts Unit includes Competencies/Objectives which focus on algebraic equations and operations. Students explore the symbolic nature of algebraic concepts by identifying and extending patterns in algebra, by following algebraic procedures, and by proving theorems with properties.

The Algebraic Concepts Unit includes Competencies/Objectives which focus on algebraic equations and operations. Students explore the symbolic nature of algebraic concepts by identifying and extending patterns in algebra, by following algebraic procedures, and

by proving theorems with properties.

- The learner will be able to (IMPORTANT) explain and apply qualitative change (e.g., a student growing taller).
- The learner will be able to (IMPORTANT) explain and apply quantitative change (e.g. a student growing 2 inches in one year).
- The learner will be able to (IMPORTANT) comprehend that an equation is a number sentence which expresses that two quantities are equal.
- The learner will be able to (IMPORTANT) determine the input for a given output when given the one operation function rule involving addition, subtraction, or multiplication.
- The learner will be able to (ESSENTIAL) determine the output for a given input when given the one operation function rule.
- The learner will be able to (ESSENTIAL) identify number sentences that illustrate real world scenario.
- The learner will be able to (ESSENTIAL) obtain solutions that involve addition and subtraction of whole numbers zero to twenty.
- The learner will be able to (ESSENTIAL) comprehend the concepts of operation sense.
- The learner will be able to (ESSENTIAL) demonstrate an understanding of the properties of various operations.
- The learner will be able to (IMPORTANT) comprehend the relationships among operations.
- The learner will be able to (ESSENTIAL) continue repeating and growing number and geometric patterns.
- The learner will be able to (ESSENTIAL) illustrate repeating geometric patterns as repeating number patterns.
- The learner will be able to (IMPORTANT) describe the commutative properties of addition and multiplication with words or symbols and apply the concept.

Course Syllabus

Mathematics, Grade 3

Jefferson County Schools Curriculum, Final
Jefferson County Schools

- The learner will be able to (IMPORTANT) apply the property of zero in addition and subtraction.
- The learner will be able to (IMPORTANT) use arrays to illustrate the commutative property of multiplication.
- The learner will be able to (IMPORTANT) demonstrate that subtraction is not commutative.
- The learner will be able to (IMPORTANT) apply zero and identity properties of multiplication.
- The learner will be able to (ESSENTIAL) describe the rules used to sort numbers or objects.
- The learner will be able to (ESSENTIAL) sort objects by two characteristics.
- The learner will be able to (IMPORTANT) use mathematical vocabulary and appropriate symbols to communicate ideas.

Data Analysis and Probability

- The learner will be able to (ESSENTIAL) make interpretations of data displays.
- The learner will be able to (IMPORTANT) create bar graphs and pictographs to display data.
- The learner will be able to (ESSENTIAL) interpret information given in bar graphs.
- The learner will be able to (ESSENTIAL) read bar graphs.
- The learner will be able to (IMPORTANT) ask questions that can be answered by gathering data.
- The learner will be able to (ESSENTIAL) make comparisons of data.
- The learner will be able to (ESSENTIAL) choose a suitable display to illustrate a data set.
- The learner will be able to (IMPORTANT) explain whether an event is likely or unlikely.
- The learner will be able to (ESSENTIAL) restructure a data display for various reasons.

- The learner will be able to (ESSENTIAL) describe events as certain, possible, or impossible.
- The learner will be able to (ESSENTIAL) recognize and explain all possible outcomes of a simple experiment (i.e., spinner, coin toss, number, or color cube).
- The learner will be able to (ESSENTIAL) interpret pictographs.
- The learner will be able to (IMPORTANT) justify predictions of the outcomes of events that are based on collected and displayed data.
- The learner will be able to (ESSENTIAL) determine the most likely, least likely, or equally likely outcomes in simple experiments (i.e. spinner, number or color cube).
- The learner will be able to (ESSENTIAL) identify the probability of a given situation.
- The learner will be able to (IMPORTANT) read, create, and make interpretations of tables, bar graphs, and pictographs.
- The learner will be able to (ESSENTIAL) obtain solutions to real world problems using tables.

Geometry

The Geometry Unit includes Competencies/Objectives which focus on exploring geometric concepts from multiple perspectives. Students study properties and construction of figures, proofs and theorems, history of geometry, transformations, logic, and problem solving.

The Geometry Unit includes Competencies/Objectives which focus on exploring geometric concepts from multiple perspectives. Students study properties and construction of figures, proofs and theorems, history of geometry, transformations, logic, and problem solving.

- The learner will be able to (IMPORTANT) recognize, name, build, draw, and compare two- and three-dimensional geometric figures.

Course Syllabus

Mathematics, Grade 3

Jefferson County Schools Curriculum, Final
Jefferson County Schools

- The learner will be able to (ESSENTIAL) recognize congruent figures.
- The learner will be able to (ESSENTIAL) recognize and classify figures by congruence and/or similarity.
- The learner will be able to (ESSENTIAL) apply appropriate mathematical vocabulary to locate a point on a grid using whole number coordinates.
- The learner will be able to (IMPORTANT) identify a location on a grid using whole number coordinates.
- The learner will be able to (IMPORTANT) identify and draw diagonal lines of polygons.
- The learner will be able to (IMPORTANT) draw horizontal and vertical lines.
- The learner will be able to (IMPORTANT) recognize the position of $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$ on a number line.
- The learner will be able to (ESSENTIAL) connect two-dimensional and three-dimensional representations.
- The learner will be able to (ESSENTIAL) name two-dimensional shapes (i.e., rectangle, square, triangle, circle).
- The learner will be able to (ESSENTIAL) identify figures that are similar and/or congruent.
- The learner will be able to (ESSENTIAL) name three-dimensional solids (i.e., cube, cylinder, sphere, cone) (Learning Accomplishment includes "name, build, draw, and compare").
- The learner will be able to (ESSENTIAL) recognize symmetry (Learning Accomplishment includes ("in two-dimensional figures").
- The learner will be able to (ESSENTIAL) use the concepts, properties, and relationships of three-dimensional solids.
- The learner will be able to (ESSENTIAL) apply the properties and concepts of transformations.
- The learner will be able to (ESSENTIAL) identify the result of a transformation that has been applied to a simple two dimensional geometric shape (i.e., flips or slides).

- The learner will be able to (IMPORTANT) formulate predictions and explain the results of sliding, flipping, and turning plane figures.

Measurement

The Measurement Unit includes Competencies/Objectives which focus on measurement concepts, applications, and analysis. Students study length, area, circumference, perimeter, volume, weight, formulas, distance, calendar, money, tools, accuracy, units, constructions, patterns, and problem solving.

The Measurement Unit includes Competencies/Objectives which focus on measurement concepts, applications, and analysis. Students study length, area, circumference, perimeter, volume, weight, formulas, distance, calendar, money, tools, accuracy, units, constructions, patterns, and problem solving.

- The learner will be able to (ESSENTIAL) develop an understanding of calendars and their uses.
- The learner will be able to (ESSENTIAL) use a calendar to obtain solutions to real world problems.
- The learner will be able to (IMPORTANT) measure capacity to the nearest liter, cup, pint, quart, and gallon.
- The learner will be able to (IMPORTANT) understand the concepts of area, perimeter, and capacity.
- The learner will be able to (IMPORTANT) determine when an estimate of a measurement is sufficient.
- The learner will be able to (ESSENTIAL) use the appropriate measurement instrument (ruler, thermometer, etc.) when measuring a specific attribute.
- The learner will be able to (IMPORTANT) estimate length, perimeter, area, capacity, weight, time, and temperature using various strategies.
- The learner will be able to (ESSENTIAL) measure the length of an object to the nearest centimeter and inch.
- The learner will be able to (IMPORTANT) measure the length to the nearest half-inch.

Course Syllabus

Mathematics, Grade 3

Jefferson County Schools Curriculum, Final
Jefferson County Schools

- The learner will be able to (ESSENTIAL) make measurement estimations.
- The learner will be able to (IMPORTANT) explain the relationship among inch, foot, and yard.
- The learner will be able to (ESSENTIAL) perform calculations with money.
- The learner will be able to (IMPORTANT) find the perimeter of polygons.
- The learner will be able to (ESSENTIAL) determine the perimeter of a rectangle on a grid.
- The learner will be able to (ESSENTIAL) solve real-world problems involving addition and subtraction of one-or-two digit measurements (Learning Accomplishment includes "elapsed time to the half-hour).
- The learner will be able to (ESSENTIAL) obtain solutions to real world problems involving elapsed time to the half-hour.
- The learner will be able to (ESSENTIAL) solve problems involving time.
- The learner will be able to (ESSENTIAL) read and write time in up to five-minute intervals.
- The learner will be able to (ESSENTIAL) read and write time to the nearest hour, half-hour, and quarter-hour.
- The learner will be able to (ESSENTIAL) read a Fahrenheit and Celsius thermometer.
- The learner will be able to (ESSENTIAL) understand temperature concepts in problem solving situations.
- The learner will be able to (ESSENTIAL) use a ruler.
- The learner will be able to (ESSENTIAL) choose and use the appropriate standard units to determine measures of length, (Learning Accomplishment also includes "area, capacity, weight, time, and temperature").

- The learner will be able to (IMPORTANT) measure to the nearest ounce, pound, kilogram, and gram.

| |
|------------------------------|
| Number and Operations |
|------------------------------|

- The learner will be able to (IMPORTANT) use mental math to calculate the sum or difference of the two numbers up to one hundred.
- The learner will be able to (ESSENTIAL) add and subtract efficiently and accurately with single-digit numbers.
- The learner will be able to (ESSENTIAL) perform the addition of two- and/or three-digit whole numbers.
- The learner will be able to (ESSENTIAL) determine the correct change from a transaction that is less than \$1.00.
- The learner will be able to (ESSENTIAL) compare and/or order numbers and/or objects to 9999 using the appropriate symbol $<$, $>$, $=$.
- The learner will be able to (ESSENTIAL) compare and order numbers.
- The learner will be able to (ESSENTIAL) correctly perform various computations.
- The learner will be able to (ESSENTIAL) perform computations in the context of given problems.
- The learner will be able to (ESSENTIAL) connect verbal, written, physical and pictorial models of fractions with denominators up to ten.
- The learner will be able to (ESSENTIAL) count by tens, hundreds and thousands.
- The learner will be able to (ESSENTIAL) solve problems using counting.
- The learner will be able to (IMPORTANT) relate division to sharing situations.
- The learner will be able to (IMPORTANT) write addition and subtraction number sentences which represent real world situations.

Course Syllabus

Mathematics, Grade 3

Jefferson County Schools Curriculum, Final
Jefferson County Schools

- The learner will be able to (ESSENTIAL) apply estimation to choose a reasonable solution (addition and subtraction only).
- The learner will be able to (ESSENTIAL) use estimation in solving problems.
- The learner will be able to (ESSENTIAL) illustrate whole numbers up to 10,000 in expanded form.
- The learner will be able to (ESSENTIAL) develop an understanding of the concept of fractional parts.
- The learner will be able to (ESSENTIAL) compare unit fractions with denominators up to 10.
- The learner will be able to (IMPORTANT) demonstrate multiplication using repeated addition (e.g., arrays).
- The learner will be able to (ESSENTIAL) identify when information is extraneous or missing.
- The learner will be able to (ESSENTIAL) model problem scenarios.
- The learner will be able to (ESSENTIAL) model problem solutions.
- The learner will be able to (IMPORTANT) compare money amounts expressed as decimals.
- The learner will be able to (ESSENTIAL) recognize the value of combinations of coins and bills up to \$5.
- The learner will be able to (IMPORTANT) identify the relationship between skip counting and multiplication.
- The learner will be able to (ESSENTIAL) use the multiplication facts 0, 1, 2, 5, and 10 efficiently and accurately.
- The learner will be able to (IMPORTANT) apply already learned multiplication facts to determine related products.
- The learner will be able to (ESSENTIAL) illustrate number to 9,999 in flexible ways using many different materials.
- The learner will be able to (ESSENTIAL) display a knowledge of number sense.
- The learner will be able to (ESSENTIAL) identify numbers.
- The learner will be able to (ESSENTIAL) recognize the applications of numbers and number relations in the real world.
- The learner will be able to (IMPORTANT) write and explain related addition and subtraction sentences.
- The learner will be able to (ESSENTIAL) recognize even and odd whole numbers.
- The learner will be able to (IMPORTANT) connect the addition of doubles with multiplying by two.
- The learner will be able to (IMPORTANT) order whole numbers up to 10,000.
- The learner will be able to (ESSENTIAL) comprehend number patterns.
- The learner will be able to (ESSENTIAL) find an element that is missing in a pattern.
- The learner will be able to (ESSENTIAL) understand and/or apply geometric patterns.
- The learner will be able to (ESSENTIAL) use number patterns.
- The learner will be able to (ESSENTIAL) identify place value of a given digit up to thousands (Learning Accomplishment includes ("to 10,000's).
- The learner will be able to (ESSENTIAL) understand the concept of place value.
- The learner will be able to (ESSENTIAL) find solutions to real world problems that involve adding and subtracting whole numbers.
- The learner will be able to (IMPORTANT) read and write whole numbers less than 10,000.
- The learner will be able to (ESSENTIAL) read numbers.

Course Syllabus

Mathematics, Grade 3

Jefferson County Schools Curriculum, Final
Jefferson County Schools

- The learner will be able to (ESSENTIAL) round numbers to the desired degree of accuracy.
- The learner will be able to (IMPORTANT) skip count by tens from any whole number less than 1000.
- The learner will be able to (ESSENTIAL) evaluate the reasonableness of a given solution.
- The learner will be able to (IMPORTANT) choose and apply suitable strategies for obtaining problem solutions.
- The learner will be able to (IMPORTANT) explain problem solving strategies.
- The learner will be able to (ESSENTIAL) perform the subtraction of two- and/or three-digit whole numbers.
- The learner will be able to (IMPORTANT) use a variety of thinking strategies to add and subtract whole numbers (e.g., sums of ten, doubles, plus one).
- The learner will be able to (IMPORTANT) read and write whole numbers with up to four digits.