

Tennessee Mathematics Standards 2009-2010 Implementation

Grade Two Mathematics

Standard 1 – Mathematical Processes

Grade Level Expectations:

- GLE 0206.1.1 Use mathematical language, symbols, and definitions while developing mathematical reasoning.
- GLE 0206.1.2 Apply and adapt a variety of appropriate strategies to problem solving, including estimation, and reasonableness of the solution.
- GLE 0206.1.3 Develop independent reasoning to communicate mathematical ideas and derive algorithms and/or formulas.
- GLE 0206.1.4 Move flexibly between concrete and abstract representations of mathematical ideas in order to solve problems, model mathematical ideas, and communicate solution strategies.
- GLE 0206.1.5 Use mathematical ideas and processes in different settings to formulate patterns, analyze graphs, set up and solve problems and interpret solutions.
- GLE 0206.1.6 Read and interpret the language of mathematics and use written/oral communication to express mathematical ideas precisely.
- GLE 0206.1.7 Recognize the historical development of mathematics, mathematics in context, and the connections between mathematics and the real world.
- GLE 0206.1.8 Use technologies/manipulatives appropriately to develop understanding of mathematical algorithms, to facilitate problem solving, and to create accurate and reliable models of mathematical concepts.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0206.1.1 Read and write time up to five-minute intervals.
- ✓ 0206.1.2 Relate days, dates, weeks, months, and years to a calendar.
- ✓ 0206.1.3 Use strategies to make estimates of time.
- ✓ 0206.1.4 Solve problems involving elapsed time in hour and half-hour intervals.
- ✓ 0206.1.5 Count the value of a set of coins up to one dollar and use the transitive property of equality to recognize equivalent forms of values up to \$1.00.
- ✓ 0206.1.6 Read thermometers with Fahrenheit and Celsius scales.
- ✓ 0206.1.7 Measure weight to the nearest pound or kilogram.
- ✓ 0206.1.8 Use concrete models or pictures to show whether a fraction is less than a half, more than a half, or equal to a half.
- ✓ 0206.1.9 Match the spoken, written, concrete, and pictorial representations of halves, thirds, and fourths.
- ✓ 0206.1.10 Develop a story problem that illustrates a given addition or subtraction number sentence.
- ✓ 0206.1.11 Use manipulatives to demonstrate addition and subtraction sentences written symbolically.
- ✓ 0206.1.12 Write numbers and translate word clues to number sentences and vice versa.
- ✓ 0206.1.13 Use manipulatives such as pattern blocks, tangrams, etc. to explore geometric concepts of symmetry and transformations.
- ✓ 0206.1.14 Create and observe numerical patterns on a calculator by repeatedly adding or subtracting the same number from some starting number.
- ✓ 0206.1.15 Use age-appropriate books, stories, and videos to convey ideas of mathematics.

Standard 2 – Number and Operations

Grade Level Expectations:

- GLE 0206.2.1 Understand and use place value concepts to 1000.
- GLE 0206.2.2 Understand and use the base-ten numeration system.
- GLE 0206.2.3 Use efficient and accurate strategies to develop fluency with multi-digit addition and subtraction.
- GLE 0206.2.4 Develop an initial understanding of multiplication.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0206.2.1 Starting at any number, count by ones, twos, fives, tens, and hundreds up to 1000.
- ✓ 0206.2.2 Read and write numbers up to 1000 using numerals and up to 100 using words.
- ✓ 0206.2.3 Locate and interpret numbers on a number line.
- ✓ 0206.2.4 Recognize that place-value notation represents the sums of multiples of powers of ten (e.g., 853 as 8 hundreds + 5 tens + 3 ones).
- ✓ 0206.2.5 Compare and order multi-digit numbers up to 1000.
- ✓ 0206.2.6 Use various models such as number lines, pictures, and base-ten blocks to illustrate addition and subtraction.
- ✓ 0206.2.7 Develop fluency at recalling basic addition facts and related subtraction facts.
- ✓ 0206.2.8 Use efficient procedures, and understand why they work, to solve problems involving the addition and subtraction of two- and three-digit whole numbers (including those that require regrouping for addition only).
- ✓ 0206.2.9 Apply appropriate methods to estimate and mentally calculate sums or differences with ones, tens, and hundreds.
- ✓ 0206.2.10 Add three two-digit numbers.
- ✓ 0206.2.11 Solve addition and subtraction problems in context using various representations.
- ✓ 0206.2.12 Demonstrate skip counting on the number line and relate to repeated addition and multiplication.
- ✓ 0206.2.13 Relate patterns in skip counting to multiplication.

Standard 3 – Algebra

Grade Level Expectations:

- GLE 0206.3.1 Develop pattern recognition.
- GLE 0206.3.2 Extend knowledge of the properties of numbers and operations to multiplication.
- GLE 0206.3.3 Solve simple arithmetic problems using various methods.
- GLE 0206.3.4 Describe quantitative change.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0206.3.1 Given rules, complete tables to reveal both arithmetic and geometric patterns.
- ✓ 0206.3.2 Given a description, extend or find a missing term in a pattern or sequence.
- ✓ 0206.3.3 Record and study patterns in lists of numbers created by repeated addition or subtraction.
- ✓ 0206.3.4 Generalize the patterns resulting from the addition, subtraction and multiplication of combinations of odd and even numbers.
- ✓ 0206.3.5 Understand and use the commutative and associative properties of addition and multiplication.
- ✓ 0206.3.6 Relate repeated addition to multiplication.
- ✓ 0206.3.7 Find unknowns in number sentences and problems involving addition, subtraction and multiplication.

- ✓ 0206.3.8 Describe change in measures according to quantitative criteria such as growing 2 inches in one year.

Standard 4 – Geometry and Measurement

Grade Level Expectations:

- GLE 0206.4.1 Recognize, classify, and transform 2- and 3-dimensional geometric figures.
- GLE 0206.4.2 Understand the meaning and process of linear measurement.
- GLE 0206.4.3 Add, subtract, compare, compute and estimate linear measurements.
- GLE 0206.4.4 Compose and decompose polygons to make other polygons.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0206.4.1 Describe common geometric attributes of familiar plane and solid objects.
- ✓ 0206.4.2 Reflect, rotate, and translate shapes to explore the effects of transformations.
- ✓ 0206.4.3 Understand the property of transitivity as it relates to linear measurement (for example: If A is longer than B, and B is longer than C, then A is longer than C).
- ✓ 0206.4.4 Estimate, measure, and calculate length to the nearest unit: meter, centimeter, yard, foot, and inch.
- ✓ 0206.4.5 Use rulers to measure the lengths of sides and diagonals of common 2-dimensional figures and polygons.
- ✓ 0206.4.6 Understand the inverse relationship between the size of a unit and the number of units used in a particular measurement (the smaller the unit, the more iterations needed to cover the length).
- ✓ 0206.4.7 Investigate and describe composition, decomposition, and transformations of polygons.
- ✓ 0206.4.8 Combine polygons to form other polygons and subdivide a polygon into other polygons.
- ✓ 0206.4.9 Recognize the composition and decomposition of polygons.

Standard 5 – Data, Probability and Statistics

Grade Level Expectations:

- GLE 0206.5.1 Use and understand various representations to depict and analyze data measurements.
- GLE 0206.5.2 Determine whether an event is likely or unlikely.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0206.5.1 Read, interpret, and analyze data shown in tables, bar graphs and picture graphs.
- ✓ 0206.5.2 Read, interpret, and create tables using tally marks.
- ✓ 0206.5.3 Explain whether a real world event is likely or unlikely.
- ✓ 0206.5.4 Predict outcomes of events based on data gathered and displayed.