Tennessee Mathematics Standards 2009-2010 Implementation

Grade One Mathematics

Standard 1 – Mathematical Processes

Grade Level Expectations:

GLE 0106.1.1	Use mathematical language, symbols, and definitions while developing mathematical
	reasoning.
GLE 0106.1.2	Apply and adapt a variety of appropriate strategies to problem solving, including
	estimation, and reasonableness of the solution.
GLE 0106.1.3	Develop independent reasoning to communicate mathematical ideas and derive
	algorithms and/or formulas.
GLE 0106.1.4	Move flexibly between concrete and abstract representations of mathematical ideas in
	order to solve problems, model mathematical ideas, and communicate solution strategies.
GLE 0106.1.5	Use mathematical ideas and processes in different settings to formulate patterns, analyze
	graphs, set up and solve problems and interpret solutions.
GLE 0106.1.6	Read and interpret the language of mathematics and use written/oral communication to
	express mathematical ideas precisely

- express mathematical ideas precisely.

 GLE 0106.1.7 Recognize the historical development of mathematics, mathematics in context, and the connections between mathematics and the real world.
- GLE 0106.1.8 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):

- ✓ 0106.1.1 Describe the relationship between days and months.
- ✓ 0106.1.2 Read and write time to the hour, half-hour, and quarter-hour.
- \checkmark 0106.1.3 Compare units of time.
- ✓ 0106.1.4 Count the value of a set of coins up to fifty cents.
- ✓ 0106.1.5 Use a thermometer to measure temperature.
- ✓ 0106.1.6 Recognize scales as a way of measuring weight.
- ✓ 0106.1.7 Apply spatial sense to recreate a figure from memory.
- ✓ 0106.1.8 Recognize the "word clues" and mathematical symbols for addition and subtraction.
- ✓ 0106.1.9 Use age-appropriate books, stories, and videos to convey ideas of mathematics.
- ✓ 0106.1.10 Match the spoken, written, concrete, and pictorial representations of whole numbers, one-half, and one-fourth.

Standard 2 – Number and Operations

Grade Level Expectations:

- GLE 0106.2.1 Understand and use number notation and place value to 100.
- GLE 0106.2.2 Compare and order whole numbers to 100.
- GLE 0106.2.3 Develop strategies for learning basic addition facts and related subtraction facts.
- GLE 0106.2.4 Use multiple representations (including groups of ten) to model two-digit addition and subtraction.

Checks for Understanding (Formative/Summative Assessment):

- \checkmark 0106.2.1 Read and write numerals up to 100.
- \checkmark 0106.2.2 Write numbers up to 10 in words.
- ✓ 0106.2.3 Count forward and backward by ones beginning with any number less than 100.
- \checkmark 0106.2.4 Skip count by twos, fives, and tens.
- ✓ 0106.2.5 Order and compare (less than, greater than, or equal to) whole numbers to 100.
- ✓ 0106.2.6 Recognize the place value of numbers (tens, ones).
- ✓ 0106.2.7 Develop fluency with addition and subtraction facts of sums through ten.
- ✓ 0106.2.8 Relate "counting on" and "counting back" to addition and subtraction and understand them as inverse operations.
- ✓ 0106.2.9 Add three single-digit numbers.
- ✓ 0106.2.10 Use models (such as discrete objects, connecting cubes, and number lines) to represent "part-whole," "adding to," "taking away from," and "comparing to" situations to develop understanding of the meaning of addition and subtraction.
- ✓ 0106.2.11 Recognize the "part-whole" relationship in representations of basic fractions such as ½ and ¼.
- ✓ 0106.2.12 Use various models to develop strategies for solving arithmetic problems.
- ✓ 0106.2.13 Solve problems that require addition and subtraction of numbers through 100.
- ✓ 0106.2.14 Use composition and decomposition of numbers to identify and discuss patterns.
- ✓ 0106.2.15 Represent whole numbers between 10 and 100 in groups of tens and ones.
- ✓ 0106.2.16 Represent whole numbers up to 100 on a number line.
- ✓ 0106.2.17 Use the number line to create visual representations of sequences (such as even numbers, tens, multiples of five).

Standard 3 – Algebra

Grade Level Expectations:

- GLE 0106.3.1 Identify, describe, and extend simple number patterns to develop strategies for adding and subtracting whole numbers.
- GLE 0106.3.2 Understand that addition and subtraction are inverse operations.
- GLE 0106.3.3 Extend the strategies for basic facts to include other properties of number and operations.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0106.3.1 Find repeating patterns on the number line, addition table, and hundreds chart.
- ✓ 0106.3.2 Determine a reasonable next term in a given sequence and describe the rule.
- ✓ 0106.3.3 Use objects to illustrate the commutative property with basic facts and show that subtraction is not commutative.
- ✓ 0106.3.4 Demonstrate understanding of the basic equation a + b = c by using objects to illustrate the number sentences (fact families) associated with any particular sum.
- ✓ 0106.3.5 Use various strategies to find unknowns in problems involving addition and subtraction.
- ✓ 0106.3.6 Use objects to demonstrate the inverse relationship between addition and subtraction.
- ✓ 0106.3.7 Use the inverse relation between addition and subtraction to check arithmetic problems.
- ✓ 0106.3.8 Determine whether a number is odd or even by pairing objects.
- ✓ 0106.3.9 Recognize that zero is the identity element for addition.

Standard 4 – Geometry and Measurement

Grade Level Expectations:

- GLE 0106.4.1 Recognize, describe, and draw geometric figures.
- GLE 0106.4.2 Compose and decompose geometric shapes.
- GLE 0106.4.3 Use non-standard units in linear measurement.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0106.4.1 Recognize and describe similarities and differences between 2-dimensional figures (geometric attributes and properties).
- ✓ 0106.4.2 Recognize 2- and 3-dimensional figures from different perspectives and orientations.
- ✓ 0106.4.3 Model part-whole relationships and properties of plane and solid figures by combining two or more shapes to make a larger shape or by breaking apart an object into its smaller shapes.
- ✓ 0106.4.4 Identify 2-dimensional shapes as faces of 3-dimensional figures.
- ✓ 0106.4.5 Estimate and measure length using non-standard units (counting by using groups of tens and ones) to represent addition.
- ✓ 0106.4.6 Recognize the essential role of units in measurement, and understand the difference between standard and non-standard units.
- ✓ 0106.4.7 Understand and use comparative words such as long, longer, longest; short, shorter, shortest; tall, taller, tallest; high, higher, highest.

Standard 5 – Data, Probability and Statistics

Grade Level Expectations:

GLE 0106.5.1 Use various representations to display and compare data.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0106.5.1 Represent measurements and discrete data using concrete objects, picture graphs, and bar graphs.
- ✓ 0106.5.2 Represent data in both horizontal and vertical form.
- ✓ 0106.5.3 Display data using appropriate titles and labels.
- ✓ 0106.5.4 Count and compare collected data.