

Tennessee Mathematics Standards 2009-2010 Implementation

Kindergarten Mathematics

Standard 1 – Mathematical Processes

Grade Level Expectations:

- GLE 0006.1.1 Use mathematical language, symbols, and definitions while developing mathematical reasoning.
- GLE 0006.1.2 Apply and adapt a variety of appropriate strategies to problem solving, including estimation, and reasonableness of the solution.
- GLE 0006.1.3 Develop independent reasoning to communicate mathematical ideas and derive algorithms and/or formulas.
- GLE 0006.1.4 Move flexibly between concrete and abstract representations of mathematical ideas in order to solve problems, model mathematical ideas, and communicate solution strategies.
- GLE 0006.1.5 Use mathematical ideas and processes in different settings to formulate patterns, analyze graphs, set up and solve problems and interpret solutions.
- GLE 0006.1.6 Read and interpret the language of mathematics and use written/oral communication to express mathematical ideas precisely.
- GLE 0006.1.7 Recognize the historical development of mathematics, mathematics in context, and the connections between mathematics and the real world.
- GLE 0006.1.8 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):

- ✓ 0006.1.1 Model addition and subtraction (e.g., using a number chart, number line and/or concrete objects).
- ✓ 0006.1.2 Begin to develop the concept of estimation using concrete objects.
- ✓ 0006.1.3 Use words to describe time (e.g., day, night, morning, afternoon, yesterday, today, tomorrow).
- ✓ 0006.1.4 Tell time to the hour.
- ✓ 0006.1.5 Recognize a calendar as a way of measuring time.
- ✓ 0006.1.6 Name and identify coins and their values.
- ✓ 0006.1.7 Use words to describe temperature (e.g., hot, warm, cool, cold).
- ✓ 0006.1.8 Recognize a thermometer as a way of measuring temperature.
- ✓ 0006.1.9 Use age-appropriate books, stories, and videos to convey ideas of mathematics.

Standard 2 – Number and Operations

Grade Level Expectations:

- GLE 0006.2.1 Count objects in a set and use numbers, including written numerals to 25.
- GLE 0006.2.2 Create, represent and recognize a set with a given number of objects.
- GLE 0006.2.3 Recognize, compare and order sets of numerals by using both cardinal and ordinal meanings.
- GLE 0006.2.4 Understand addition as “putting together” and subtraction as “breaking apart.”

GLE 0006.2.5 Model the numbers 1 through 10 as sums or differences of different sets of whole numbers (composing and decomposing numbers).

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0006.2.1 Count objects to 25 using one-to-one correspondence and identify the quantity in the counted group.
- ✓ 0006.2.2 Match quantities to 25 with numerals and written words.
- ✓ 0006.2.3 Count backward from 10 to 1.
- ✓ 0006.2.4 Count to 20 by twos.
- ✓ 0006.2.5 Create a set with a given number of objects.
- ✓ 0006.2.6 Quickly recognize the number of objects in a small set.
- ✓ 0006.2.7 Recognize zero (0) as a set with “no objects”.
- ✓ 0006.2.8 Compare sets of ten or fewer objects and identify which are equal to, more than, or less than others.
- ✓ 0006.2.9 Order the numbers through 25 using numerals and words.
- ✓ 0006.2.10 Recognize 6 through 10 as “five and some ones.”
- ✓ 0006.2.11 Recognize and use ordinal numbers (e.g., first, fourth, last).
- ✓ 0006.2.12 Model simple joining and separating situations with objects.
- ✓ 0006.2.13 Add and subtract single-digit numbers whose total or difference is between 0 and 10.
- ✓ 0006.2.14 Understand add as “put together” or “count on” and solve addition problems with sums less than 20.
- ✓ 0006.2.15 Understand subtraction as “break apart” or “take away” and solve subtraction problems using numbers 1 through 10.
- ✓ 0006.2.16 Model, demonstrate, and solve story problems that illustrate addition and subtraction.
- ✓ 0006.2.17 Understand that numbers can be represented by different groupings.

Standard 3 – Algebra

Grade Level Expectations:

- GLE 0006.3.1 Identify, duplicate, and extend simple number patterns and sequential and growing patterns.
- GLE 0006.3.2 Recognize attributes (such as color, shape, size) and patterns (such as repeated pairs, bilateral symmetry).
- GLE 0006.3.3 Describe qualitative change.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0006.3.1 Use a variety of manipulatives (such as connecting cubes, number cards, shapes) to create patterns.
- ✓ 0006.3.2 Name, copy, and extend patterns.
- ✓ 0006.3.3 Translate simple patterns into rules.
- ✓ 0006.3.4 Sort, order and classify objects by attribute and identify objects that do not belong in a particular group.
- ✓ 0006.3.5 Describe change in attributes according to qualitative criteria such as longer/shorter, colder/warmer, heavier/lighter.

Standard 4 – Geometry and Measurement

Grade Level Expectations:

- GLE 0006.4.1 Interpret and describe the physical world with geometric ideas and vocabulary.
- GLE 0006.4.2 Use positional terms to specify locations with simple relationships.

- GLE 0006.4.3 Compare and order measurable attributes of objects directly (by comparing them with each other) and indirectly (by comparing both with a third object).

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0006.4.1 Identify, name, and describe a variety of shapes (i.e. circles, squares, triangles, rectangles, hexagons, trapezoids) shown in various positions.
- ✓ 0006.4.2 Identify, name, and describe three-dimensional shapes (such as sphere, cube, cone, cylinder).
- ✓ 0006.4.3 Sort plane figures into groups, name and describe the attributes of the shapes (such as number of sides and corners (vertices)).
- ✓ 0006.4.4 Sort solid figures into groups, name and describe the attributes of the shapes.
- ✓ 0006.4.5 Use basic shapes and spatial reasoning to model objects and construct more complex shapes.
- ✓ 0006.4.6 Identify positions (such as beside, inside, outside, above, below, between, on, over, under, near, far, forward, backward, top, middle, bottom, left, right) using models, illustrations, and stories.
- ✓ 0006.4.7 Make direct and indirect comparisons between objects (such as recognize which is shorter, longer, taller, lighter, heavier, or holds more).

Standard 5 – Data, Probability and Statistics

Grade Level Expectations:

- GLE 0006.5.1 Sort objects and use one or more attributes to solve problems.
GLE 0006.5.2 Re-sort objects using new attributes.

Checks for Understanding (Formative/Summative Assessment):

- ✓ 0006.5.1 Sort objects into sets and describe how the objects were sorted.
- ✓ 0006.5.2 Sort objects in different ways.
- ✓ 0006.5.3 Collect and count data.