

Kindergarten Transition to New TN Mathematics Standards

Kindergarten – Mathematical Processes

New 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.

Kindergarten – Number and Operations

Former Learning Expectations

- 1.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems.
- 1.2 Understand meanings of operations and how they relate to one another.
- 1.3 Solve problems, compute fluently, and make reasonable estimates.

New 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).

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		<ul style="list-style-type: none"> ▪ Count how many objects are in a set (1-20). Count to 50 by 1’s and 10’s. ▪ Match quantities up to 20 with numerals. 	✓0006.2.1 Count objects to 25 using one-to-one correspondence and identify the quantity in the counted group.
		<ul style="list-style-type: none"> ▪ Identify and write numerals 0-20. ▪ Identify the position of a whole number less than 20 on a number line. 	✓0006.2.2 Match quantities to 25 with numerals and written words.
		<ul style="list-style-type: none"> ▪ Count backward from 10 to 1. 	✓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”.
		<ul style="list-style-type: none"> ▪ Identify equivalent sets of objects by one-to-one correspondence. 	✓0006.2.8 Compare sets of ten or fewer objects and identify which are equal to, more than, or less than others.
		<ul style="list-style-type: none"> ▪ Order numbers less than 20. ▪ Express the relationship between two numbers less than 20 using the words less 	✓0006.2.9 Order the numbers through 25 using numerals and words.

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		than, more than, or equal to.	
			✓0006.2.10 Recognize 6 through 10 as "five and some ones."
		<ul style="list-style-type: none"> ▪ Use the language of ordinal numbers up to tenth. 	✓0006.2.11 Recognize and use ordinal numbers (e.g., first, fourth, last).
			✓0006.2.17 Understand that numbers can be represented by different groupings.
			✓0006.1.2 Begin to develop the concept of estimation using concrete objects.
		<ul style="list-style-type: none"> ▪ Represent quantities up to 20 on ten - frames. Use concrete objects to develop strategies for addition and subtraction of whole numbers. 	✓0006.2.12 Model simple joining and separating situations with objects.
		<i>formerly in Algebra</i> <ul style="list-style-type: none"> ▪ Use concrete objects or pictures to demonstrate addition and subtraction number sentences involving numbers 0 to 5. ▪ Read and explain simple addition and subtraction number sentences. 	✓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.
		<ul style="list-style-type: none"> ▪ Solve simple word problems involving whole numbers 0-10. ▪ Use words, actions, pictures, or concrete objects to solve problems. ▪ Explain if the solution to a word problem is reasonable. 	✓0006.2.16 Model, demonstrate, and solve story problems that illustrate addition and subtraction.
		<ul style="list-style-type: none"> ▪ Use pictures or objects to 	✓0006.1.1 Model addition and

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		show one more or one less than any number to 20.	subtraction (e.g., using a number chart, number line and/or concrete objects).
		<ul style="list-style-type: none"> ▪ Identify and name coins (penny, nickel, dime, quarter, and half dollar) and their values. 	✓ 0006.1.6 Name and identify coins and their values.
		<ul style="list-style-type: none"> ▪ Determine if a figure has been divided into halves. 	

Kindergarten – Algebra

Former Learning Expectations

- 2.1 Sort and classify objects by size, number, and other properties.
- 2.2 Represent and analyze patterns and functions.
- 2.3 Use concrete, pictorial, and verbal representations to develop an understanding of the language and symbols of mathematics.
- 2.4 Illustrate general properties of operations.
- 2.5 Analyze change in various contexts.

New 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.

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		<ul style="list-style-type: none"> ▪ Create and describe a simple repeating pattern of numbers or figures. 	<ul style="list-style-type: none"> ✓0006.3.1 Use a variety of manipulatives (such as connecting cubes, number cards, shapes) to create patterns. ✓0006.3.3 Translate simple patterns into rules.
		<ul style="list-style-type: none"> ▪ Identify patterns in the environment, in arrangements of objects, or in pictures. ▪ Recognize and extend a concrete, visual, or auditory two- or three-part repeating pattern. 	<ul style="list-style-type: none"> ✓0006.3.2 Name, copy, and extend patterns.
		<ul style="list-style-type: none"> ▪ Sort objects by color, size, shape, and kind. 	<ul style="list-style-type: none"> ✓0006.3.4 Sort, order and classify objects by attribute and identify objects that do not belong in a particular group.
			<ul style="list-style-type: none"> ✓0006.3.5 Describe change in attributes according to qualitative criteria such as longer/shorter, colder/warmer, heavier/lighter.
		<ul style="list-style-type: none"> ▪ Use mathematical terms appropriately. 	

Kindergarten - Geometry and Measurement

Former Learning Expectations

- 3.1 Analyze characteristics and properties of geometric shapes.
- 3.2 Specify locations and describe spatial relationships.
- 3.3 Recognize and apply flips, slides, and turns.
- 4.1 Demonstrate understanding of units of measure and measurable attributes of objects.
- 4.2 Apply appropriate techniques and tools to determine measurements.

New 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).

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		<ul style="list-style-type: none"> ▪ Match terms with given shapes (circles, squares, triangles, and rectangles) when shown in various positions. ▪ Recognize circles, squares, triangles, and rectangles in the environment and as faces of three-dimensional objects. 	<ul style="list-style-type: none"> ✓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).
		<ul style="list-style-type: none"> ▪ Recognize basic properties of and similarities and differences between simple geometric figures (e.g., number of sides, corners). 	<ul style="list-style-type: none"> ✓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.
		<ul style="list-style-type: none"> ▪ Reproduce and create circles, squares, rectangles, and triangles. ▪ Reproduce and create structures using three-dimensional shapes. ▪ Combine two-dimensional shapes to make pictures. 	<ul style="list-style-type: none"> ✓0006.4.5 Use basic shapes and spatial reasoning to model objects and construct more complex shapes.
		<ul style="list-style-type: none"> ▪ Recognize and show terms of relative position and direction in a variety of situations (e.g., over, under, forward, 	<ul style="list-style-type: none"> ✓0006.4.6 Identify positions (such as beside, inside, outside, above, below, between, on, over, under, near, far, forward,

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		backward, between, right, and left).	backward, top, middle, bottom, left, right) using models, illustrations, and stories.
		<ul style="list-style-type: none"> ▪ Demonstrate understanding of the concept of length. ▪ Recognize and show which is larger/smaller, longer/shorter, taller/shorter, heavier/lighter or which holds more/holds less, when given two similar objects. ▪ Distinguish between light and heavy objects. 	✓0006.4.7 Make direct and indirect comparisons between objects (such as recognize which is shorter, longer, taller, lighter, heavier, or holds more).
		<ul style="list-style-type: none"> ▪ Use words to describe time (e.g., day, night, morning, afternoon, yesterday, today, and tomorrow). 	✓0006.1.3 Use words to describe time (e.g., day, night, morning, afternoon, yesterday, today, tomorrow).
		<ul style="list-style-type: none"> ▪ Recognize clocks and watches as instruments for measuring time and tell time to the hour. 	✓0006.1.4 Tell time to the hour.
		<ul style="list-style-type: none"> ▪ Recognize a calendar as a way of measuring time. 	✓0006.1.5 Recognize a calendar as a way of measuring time.
		<ul style="list-style-type: none"> ▪ Use words to describe temperature (e.g., hot, warm, cool, and cold). 	✓0006.1.7 Use words to describe temperature (e.g., hot, warm, cool, cold).
		<ul style="list-style-type: none"> ▪ Recognize a thermometer as a device to measure temperature. 	✓0006.1.8 Recognize a thermometer as a way of measuring temperature.
		<ul style="list-style-type: none"> ▪ Measure and estimate length of an object using a variety of nonstandard units. 	

Kindergarten – Data Analysis, Probability, and Statistics

Former Learning Expectations

- 5.1 Develop, select, and use appropriate methods to collect, organize, display, and analyze data.
- 5.2 Apply basic concepts of probability

New 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.

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			✓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.
		<ul style="list-style-type: none"> ▪ Represent and compare data using concrete objects, pictures, and simple graphs. 	
		<ul style="list-style-type: none"> ▪ Describe events related to students' experiences as likely or unlikely. 	