Third Grade Mathematics

The purpose of this document is to clarify what students should know and be able to do in Quarter 4.

The Competencies listed in the table below are developed from the Texas Essential Knowledge and Skills (TEKS) for that grade level. The chart defines which quarter the Competency is reported (Q1 = Grading Period 1, Q2 = Grading Period 2, etc.).
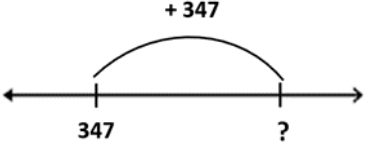
Teachers will report on the competencies using the Grading Progressions which are comprised of four proficiency levels (developing (DV), progressing (PG), and proficient (PF)) and defines the knowledge and skills students will master on their pathway to proficiency. The Grading Progressions for each Competency are below the yearlong outline of the Competencies. The Grading Progressions define what a student knows and is able to do related to that competency at the end of a unit or quarter. To see what success on each individual competency looks like in a particular unit, please see the Public Overview document for the course.

Students who receive a mark of "Proficient" meet the grade level expectation for that Competency.

TEKS	Competencies	Q 1	Q 2	Q 3	Q 4
3.1B, 3.1E, 3.1G	**C1— Problem Solving** The student analyzes word problems, utilizes a strategy, creates multiple representations, communicates mathematical thinking (oral and written), and determines an answer or solution.	X	X	X	X
3.1A, 3.1C, 3.1D, 3.1F, **3.2D**	**C2— Numeration** The student understands how to represent and order whole numbers within real-world context.	X			
3.1A, 3.1C, 3.1D, 3.1F, **3.5A, 3.5B, 3.4A, 3.4G, 3.4K**	**C3— Operations** The student develops concepts of expressions and equations and uses strategies for **whole number** computations within real-world context in order to solve problems.	X	X	X	
3.1A, 3.1C, 3.1D, 3.1F, **3.3D, 3.3H,** 3.6E	**C4— Fractions** The student understands how to represent and explain fractional units within real-world context.			X	X
3.1A, 3.1C, 3.1D, 3.1F, 3.6A	**C5— Geometry** The student analyzes attributes of two-dimensional shapes and three-dimensional solids within real-world context to develop generalizations about their properties.		X		
3.1A, 3.1C, 3.1D, 3.1F, **3.7B, 3.6C**	**C6— Measurement** The student selects appropriate units, strategies, and tools within real-world context to solve problems involving customary and metric measurements.		X	X	
3.1A, 3.1C, 3.1D, 3.1F, **3.8B**	**C7—Data Analysis** The student solves problems by collecting, organizing, displaying, and interpreting data within real-world context.				X

Learning Progression for Competency 1: Problem Solving

The student analyzes word problems by determining the important information, utilizing a strategy, creating multiple representations, communicating mathematical thinking (oral and written), and determining an answer.

Developing	Progressing	Proficient	Advanced

Identify information needed to solve the problem
 	
Represent the **values** of the problem using objects or pictures of objects
	Create and use **teacher-selected** representation to organize or record and communicate mathematical thinking such as:
	• number sentence
	• various types of manipulatives
	• various types of pictorial representations
	• graphs
	
	Use **teacher-selected strategies** to solve a problem such as:
	• count objects or picture of objects
	• number paths
	• number lines
	• ten frames
	• part- whole map (strip-diagram)
	• fact strategies
	• graphs
	• estimation
	• one-to-one correspondence for comparison
		Create and use **self-selected multiple** representations to organize or record and communicate mathematical thinking such as:
		• number sentence
		• various types of manipulatives
		• various types of pictorial representations
		• graphs
		• explaining the process to solve
		
		Use **self-selected strategies** to solve a problem such as:
		• count objects or picture of objects
		• number lines
		• strip diagrams
		• fact strategies
		• computations using non-standard algorithm
		  o place value strategy
		  o number sense strategy
		• graphs
			Evaluate the problem-solving process or justify the efficiency of using a specific strategy (e.g. When comparing numbers, it is faster to look at the value of each digit rather than building the numbers using base ten models.)
			
			Explain connections between representations and the context of the problem situation
			
			Sentence Stem: The ___ (explain representation)___ because the problem said ___(evidence)___ and that means ___(reasoning)___.
			
			(e.g. I drew a number line jumping to the right which makes the number larger because the problem said Jack and Jill had 347 each which means I will be joining these two numbers.
			
			+ 347
			347 ?

Explain how the objects or pictures of objects represent a number	Explain the process used to solve the problem	Justify an answer by comparing it to a predicted answer	

Learning Progression for Competency 4: Fractions
The student understands how to represent and explain fractional units within real-world context.

Compose and Decompose/Compare

Developing	Progressing	Proficient	Advanced
Solve problems involving partitioning an object or a set of objects among two or more recipients Write a fraction when given • concrete models • pictorial models Identify a fraction given a specified point on a number line. Represent fractions as part of a whole using pictorial models including: • fraction strips • number lines • fraction circles Represent fractions as part of a set of objects using models or pictures of models such as: • square tiles • centimeter cubes • two color counters	Partition two shapes in different ways to represent the same part of a whole. Describe how many unit fractions it takes to make one whole Decompose a fraction as unit fractions when given a • model • fraction Compose a fraction when given • models that represent a sum of unit fractions • number sentence as a sum of unit fractions.	Represent equivalent fractions using a variety of objects and pictorial models with denominators of 2, 3, 4, 6, and 8 • fraction strips • number lines • fraction circles Compare two fractions having the same numerator or denominator in problems • symbols • words • concrete models • pictorial models Justify comparisons using: • objects • models • words (reasoning about the size of the parts or the number of parts)	Create real-world situations that require partitioning objects or a set of objects among two or more recipients using pictorial representations of fractions Identify the location of a given fraction on an open number line **(0 and 1 are not marked)** labeled with one fraction.

Learning Progression for Competency 7: Data Analysis

The student solves problems by collecting, organizing, displaying, and interpreting data within real-world context.

Developing	Progressing	Proficient	Advanced
Summarize a data set (organized and unorganized) with multiple categories and scaled intervals using • frequency table • dot plot • pictograph • bar graph Explain how a graph represents the data given	Solve one-step problems using information represented with and without scaled intervals • frequency table • dot plot • pictograph • bar graph Explain the similarities and differences among different types graphs with the same data set	Solve two-step problems using information represented with and without scaled intervals • frequency table • dot plot • pictograph • bar graph Justify solutions using estimation strategies. Explain why a specific graph is an appropriate graph for given data	Transform a pictograph into a bar graph or a bar graph into a pictograph and justify which best represents the data Compare data shown in two different graphs about the same topic (i.e. a bar graph representing favorite types of third graders shoes compared to a frequency table representing types of favorite fourth grader shoes)