

Second Grade Mathematics

The purpose of this document is to clarify what students should know and be able to do in Quarter 3.

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.).

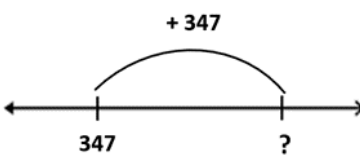
Teachers will report on the competencies using the Grading Progressions which are comprised of four proficiency levels (developing (DV), progressing (PG), and proficient (PF)) and defines the knowledge and skills students will master on their pathway to proficiency. The Grading Progressions for each 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
2.1B, 2.1E, 2.1G	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
2.1A, 2.1C, 2.1D, 2.1F, 2.2A, 2.2D, 2.3B	C2— Numeration The student understands how to represent and compare whole numbers within real-world situations. The student understands how to represent fractional units within real-world context.	X		X	X
2.1A, 2.1C, 2.1D, 2.1F, 2.4C, 2.5A, 2.7C	C3— Operations The student develops and uses strategies for whole number addition and subtraction within real-world context in order to solve problems.	X	X	X	
2.1A, 2.1C, 2.1D, 2.1F, 2.8B, 2.8C	C4— Geometry The student analyzes attributes of two-dimensional shapes and three-dimensional solids within real-world contexts to develop generalizations about their properties.				X
2.1A, 2.1C, 2.1D, 2.1F, 2.9D, 2.9G	C5— Measurement The student selects and uses units to describe length, area, and time within real-world contexts.			X	X
2.1A, 2.1C, 2.1D, 2.1F, 2.10C	C6—Data Analysis The student organizes data to make it useful for interpreting information and solving problems within real-world contexts.		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
<p>Identify information needed to solve the problem</p> <p>Represent the values of the problem using objects or pictures of objects</p> <p>Explain how the objects or pictures of objects represent a number</p>	<p>Create and use teacher-selected representation to organize or record and communicate mathematical thinking such as:</p> <ul style="list-style-type: none"> • number sentence • various types of manipulatives • various types of pictorial representations • graphs <p>Use teacher-selected strategies to solve a problem such as:</p> <ul style="list-style-type: none"> • count objects or picture of objects • number lines • strip diagrams • fact strategies • computations using non-standard algorithm <ul style="list-style-type: none"> ○ place value strategy ○ number sense strategy • graphs <p>Explain the process used to solve the problem</p>	<p>Create and use self-selected multiple representations to organize or record and communicate mathematical thinking such as:</p> <ul style="list-style-type: none"> • number sentence • various types of manipulatives • various types of pictorial representations • graphs • explaining the process to solve <p>Use self-selected strategies to solve a problem such as:</p> <ul style="list-style-type: none"> • count objects or picture of objects • number lines • strip diagrams • fact strategies • computations using non-standard algorithm <ul style="list-style-type: none"> ○ place value strategy ○ number sense strategy • graphs <p>Justify an answer by comparing it to a predicted answer</p>	<p>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.)</p> <p>Explain connections between representations and the context of the problem situation</p> <p>Sentence Stem: The __ (explain representation) __ because the problem said __ (evidence) __ and that means __ (reasoning) __.</p> <p>(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.</p> 

Learning Progression for Competency 2: Numeration

The student understands how to represent and compare whole numbers within real-world situations. The student understands how to represent fractional units within real-world context.

Numeration – Numbers up to 1,200

Developing	Progressing	Proficient	Advanced
<p>Compose numbers when given models</p> <p>Decompose numbers using models</p> <p>Describe the value of each digit in a number</p> <p>Generate a number that is more than or less than a given number</p> <p>Identify numbers as a distance from any given point on a number line</p>	<p>Compose numbers from expanded form</p> <p>Decompose numbers into expanded form</p> <p>Determine 10 more or less and 100 more or less than a given number using:</p> <ul style="list-style-type: none"> base 10 models hundreds and thousands charts expanded form and place value <p>Compare numbers based on place value using:</p> <ul style="list-style-type: none"> base 10 models pictorial models place value charts expanded form <p>Determine the appropriate symbol to represent a comparison and describe using comparative language</p>	<p>Explain the connection between expanded form, base ten representations, and place value chart</p> <p>Use objects and pictorial models to compose and decompose in more than one way</p> <p>Represent the inverse of a comparison statement and explain why it is true</p> <p>Order numbers based on place value using:</p> <ul style="list-style-type: none"> base 10 models pictorial representations place value charts expanded form <p>Explain how to order numbers using place value</p>	<p>Justify how different decomposed values are equivalent using models and place value understanding</p> <p>(e.g. $200 + 10 + 2 = 100 + 110 + 2$ because both sums equal 212)</p>  <p>Generate and solve real world problems involving comparing and ordering numbers</p>

Learning Progression for Competency 3: Operations

The student develops and uses strategies for whole number addition and subtraction within real-world context in order to solve problems.

Operations – Numbers up to 1,000

Developing	Progressing	Proficient	Advanced
<p>Identify information to solve word problems</p> <p>Represent the values in the problem using base ten models</p> <p>Add two values that do not involve regrouping using base 10 models and place value charts</p> <p>Subtract two values that do not involve regrouping using base 10 models and place value charts</p>	<p>Add two or more numbers using variety of strategies such as:</p> <ul style="list-style-type: none"> • base ten models with place value chart • closed number lines with values labeled • fact strategies • place value strategies <p>Represent one-step addition or subtraction word problems using:</p> <ul style="list-style-type: none"> • base ten blocks • strip diagrams • number lines • number sentence <p>Solve one-step problems involving addition or subtraction that include regrouping using variety of strategies:</p> <ul style="list-style-type: none"> • base ten models with place value chart • closed number lines with values labeled • fact strategies • place value strategies <p>Explains strategies and algorithms for addition and subtraction using place value understanding</p>	<p>Solve one-step problems involving addition and subtraction that include regrouping using variety of strategies such as:</p> <ul style="list-style-type: none"> • base ten models with place value chart • closed number lines with values labeled • fact strategies • place value strategies <p>Represent multi-step addition and subtraction word problems using:</p> <ul style="list-style-type: none"> • base ten blocks • strip diagrams • number lines • number sentence <p>Solve multi-step addition and subtraction word problems using:</p> <ul style="list-style-type: none"> • base ten blocks with place value charts • fact strategies • place value strategies <p>Uses estimation strategies to justify solutions.</p>	<p>Justify the efficiency/effectiveness of the chosen strategy or representation as compared to other methods or strategies</p> <p>(e.g. Using a number line to solve the problem $137 - 22$ is more efficient than counting objects. When counting objects, I would need to count out 137 blocks, take away 22 blocks, and then count the remaining blocks. With a number line, I would mark 137, jump 10 less, jump 10 less again, then jump 2 less.)</p>

Learning Progression for Competency 5: Measurement

The student selects and uses units to describe length, area, and time within real-world contexts.

Time and Length

Developing	Progressing	Proficient	Advanced
<p>Read and write time to the nearest one-minute increment using a digital clock</p> <p>Estimate and find the length of an object or picture of an object using concrete models for standard units of length (e.g. centimeter cubes and inch tiles)</p> <p>Explain if fewer or more concrete units are needed to measure the length of an object based on the size of the concrete unit (<i>e.g. when measuring the size of a pencil, more cm cubes will be needed than inch tiles</i>)</p>	<p>Read and write time to the quarter hour and every five minutes using analog and digital clocks</p> <p>Explain how units of measure are related to a number line</p> <ul style="list-style-type: none"> • time • length <p>Determine the length of an object or picture of an object to the nearest marked unit using a measure tool (e.g. rulers, measuring tape)</p> <ul style="list-style-type: none"> • nearest inch • nearest centimeter • nearest foot • nearest meter 	<p>Read and write time to the nearest one-minute increment using an analog clock (write time-using numbers in the form of a digital clock)</p> <p>Explain how to tell time with an analog clock</p> <p>Identify the difference between events that occur in the a.m. and the p.m.</p> <p>Estimate a solution to a problem involving length</p> <p>Determine a solution to a problem involving length and identify the units</p>	<p>Create and solve real-world problems that require solving for time, length, and area</p>