

Second Grade Mathematics

The purpose of this document is to clarify what students should know and be able to do in Quarter 2.

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.).

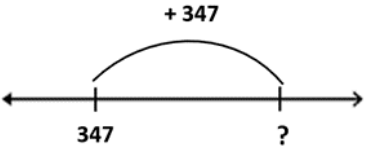
Teachers will report on the competencies using the Grading Progressions which are comprised of four proficiency levels (developing (DV), progressing (PG), and proficient (PF)) and defines the knowledge and skills students will master on their pathway to proficiency. The Grading Progressions for each 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 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 99

| 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 6: Data Analysis

The student organizes data to make it useful for interpreting information and solving problems within real-world contexts.

| Developing | Progressing | Proficient | Advanced |
|--|---|---|--|
| <p>Describe information represented in graphs when given pictographs and bar graphs</p> <p>Explain the meaning of the pictures in a pictograph</p> <p>Solve one-step word problems involving addition or subtraction using information in a graph with intervals of one</p> | <p>Begin a data collection process by asking a question (e.g. What types of pets do the students in my grade level have at home?)</p> <p>Data is collected, sorted, and organized with up to four categories and organized with an interval of one using</p> <ul style="list-style-type: none"> • tally marks and t-chart • pictograph • bar graph <p>Explain construction of pictograph or bar graph with an interval of one</p> <p>Solve one-step word problems involving addition or subtraction using information in a graph with intervals of one or more</p> <p>Write and solve one-step word problems involving addition or subtraction using information in a graph with intervals of one</p> | <p>Data is collected, sorted, and organized with up to four categories and organized with an interval of two, five or ten using</p> <ul style="list-style-type: none"> • pictograph • bar graph <p>Explain construction of pictograph or bar graph with an interval of two, five, or ten</p> <p>Analyze data and draw conclusions from graphs related to the original question asked that began the data collection such as:</p> <ul style="list-style-type: none"> • Identify which categories has the most or least number of items • Compare the different categories of data using words like more than, fewer than, and equal too • Solves addition and subtraction problems related to the graph • Make a summarization <p>Analyze the data to make predictions from the information in the graph</p> | <p>Transform a pictograph into a bar graph or a bar graph into a pictograph and justify which best represents the data</p> |