

4th Grade Mathematics

The purpose of this document is to clarify what students should know and be able to do each grading period.

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 Learning Progressions which are comprised of four proficiency levels (developing (DV), progressing (PG), proficient (PG) and advanced (AV)) and defines the knowledge and skills students will master on their pathway to proficiency. The Learning Progressions for each Competency are below the yearlong outline of the Competencies. Following the Learning Progression are the Competency Success Criteria which define what a student knows and is able to do related to that competency at the end of a unit or quarter.

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

Competencies	Q 1	Q 2	Q 3	Q 4
C1 – Problem Solving The student analyzes given information, creates a plan, solves, and determines reasonableness.	X	X	X	X
C2 – Whole Numbers and Decimals The student represents, compares, composes, and decomposes whole numbers and decimals.	X			
C3 – Addition and Subtraction The student uses strategies and place value to add and subtract whole numbers and decimals.	X	X		
C4 – Multiplication and Division The student uses strategies and place value to multiply and divide whole numbers.		X		X
C5 – Representing Data The students represents and analyzes data on tables and graphs.		X	X	X
C6 – Geometry The student classifies 2D shapes and 3D figures by geometric attributes, including angles and determines unknown angles.		X	X	
C7 – Measurement The student solves problems that measure length, time, capacity, mass, money, area and perimeter using addition, subtraction, multiplication, and division.				X
C8 – Comparing Fractions The student represents, decomposes, and compares fractions; and relates them to decimals.			X	X

Learning Progression for Competency 1: Problem Solving

The student analyzes given information, creates a plan, solves, and determines reasonableness.

Developing	Progressing	Proficient	Advanced
Identifies information in the problem	Identifies and analyzes important information needed to solve the problem	Uses the important information to solve the problem	<i>Meets all Proficient criteria and...</i>
Represents the problem		Represents the problem in multiple ways	Uses multiple representations to solve the problem
Attempts to solve the problem	Represents the problem		Explains how the multiple representations are connected
	Determines a correct solution	Determines a correct solution	
	Justifies their thinking, including their representation and the solution	States the solution as it relates to the situation	Connects the problem to similar real-life experiences
	Evaluates the reasonableness of the solution using a number sense strategy by explaining the sequence of solving the problem	Justifies their thinking, including their representations and the solution	
		Evaluates the reasonableness of the solution using a number sense strategy or estimation	

Success Criteria for Proficient in Problem Solving:

The student can:

- read the problem and understand what the question is asking.
- use the important information to solve the problem.
- state my answer as it relates to the problem.
- use models to represent the problem.
 - strip diagram
 - number lines
 - area models
 - graphs
 - manipulatives

Learning Progression for Competency 2: Whole Numbers and Decimals

The student represents, compares, composes, and decomposes whole numbers and decimals.

Developing	Progressing	Proficient	Advanced
Identifies place value up to a billion Uses numerals to represent the value of a digit in whole numbers to the billions place Compares numbers up to a billion using symbols	Uses numerals to represent the value of a digit in whole numbers and decimals (from 1 billion to the hundredths place) Compares (using symbols) and orders numbers up to a billion Compares decimals using concrete models to the hundredths Represents decimals using money	Uses expanded notation and numerals to represent the value of a digit Rounds whole numbers to a given place value up to the hundred thousands place Compares (using symbols) and orders numbers up to one billion Identifies decimals on a number line to the hundredths place Represents decimals using concrete models and money (including tenths and hundredths) Compares and orders decimals using various models to the hundredths	<i>Meets all of Proficient criteria and...</i> Interprets and explains the relative size of decimals Estimates the solution without doing the exact calculations Describes the relationship between two or more decimals on a number line

Success Criteria for Proficient in Whole Numbers and Decimals:

The student can:

- represent the value of a whole number from one billion to the hundredths place using expanded notation.
- round whole numbers to a given place value up to the hundred thousands place.
- compare numbers up to one billion using symbols $>$, $<$, $=$.
- order numbers up to one billion.
- identify decimals on a number line to the hundredths place.
- represent the value of a decimal to the hundredths place using expanded notation
- represent decimals to the hundredths place using:
 - concrete models.
 - money.
- compare decimals to the hundredths place using:
 - concrete models.
 - pictorial models.
 - money.
- The student can order decimals to the hundredths place using:
 - concrete models.

- pictorial models.
- money.

The student uses strategies and place value to add and subtract whole numbers and decimals.

Developing	Progressing	Proficient	Advanced
Adds whole numbers using a standard algorithm Represents one-step problems with whole numbers using Strip diagrams	Add and subtracts whole numbers using a standard algorithm Adds decimals using a standard algorithm Represents one- and two-step problems with whole numbers using Strip diagrams Generates a number pattern when given an input/output table or expression	Add and subtracts decimals to the hundredths place using a standard algorithm Represents multi-step problems involving addition and subtraction with whole numbers using both: - Strip diagrams - Equations with a letter for the unknown amount Represents problems involving addition and subtraction to generate number patterns from a given rule using both input and output tables	<i>Meets all Proficient criteria and...</i> Explains the inverse relationship between addition and subtraction for both whole numbers and decimals Explains the connection between the strip diagram and an equation for one problem

Success Criteria for Proficient in Addition and Subtraction:

The student can:

- add whole numbers using the standard algorithm.
- subtract whole numbers using the standard algorithm.
- add decimals to the hundredths place using the standard algorithm.
- subtract decimals to the hundredths place using the standard algorithm.
- represent multi-step problems involving addition and subtraction with whole numbers using strip diagrams.
- represent multi-step problems involving addition and subtraction with whole numbers using equations with a letter standing for the unknown.
- represent problems involving addition and subtraction to generate patterns when I am given the rule using input/output tables.
- represent problems involving addition and subtraction to generate patterns when I am given the rule using expressions.