Mathematical Process Standards

2.1 Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding.

Tools to Know

2.1(A)	apply mathematics to problems arising in everyday life, society, and the workplace
2.1(B)	use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution
2.1(C)	select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems

Representation and Comparison of Whole Numbers
Connected Knowledge and Skills 2.7

2.2 Number and operations. The student applies mathematical process standards to understand how to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value.

Readiness Standards		Supporting Standards	
2.2(B)	use standard, word, and expanded forms to represent numbers up to 1,200	2.2(A)	use concrete and pictorial models to compose and decompose numbers up to 1,200 in more than one way as a sum of so many thousands, hundreds, tens, and ones
2.2(D)	use place value to compare and order whole numbers up to 1,200 using comparative language, numbers, and symbols (>, <, or =)	2.2(C)	generate a number that is greater than or less than a given whole number up to 1,200
		2.2(E)	locate the position of a given whole number on an open number line
		2.2(F)	name the whole number that corresponds to a specific point on a number line
		2.7(B)	use an understanding of place value to determine the number that is 10 or 100 more or less than a given number up to 1,200

Fractions

2.3 Number and operations. The student applies mathematical process standards to recognize and represent fractional units and communicates how they are used to name parts of a whole.

2.3(B)	explain that the more fractional parts used to make a whole, the smaller the part; and the fewer the fractional parts, the larger the part	2.3(A)	partition objects into equal parts and name the parts, including halves, fourths, and eighths, using words
		2.3(C)	use concrete models to count fractional parts beyond one whole using words and recognize how many parts it takes to equal one whole
		2.3(D)	identify examples and non-examples of halves, fourths, and eighths

Whole Number Operations

2.4 Number and operations. The student applies mathematical process standards to develop and use strategies and methods for whole number computations in order to solve addition and subtraction problems with efficiency and accuracy.
2.5 Number and operations. The student applies mathematical process standards to determine the value of coins in order to solve monetary transactions.
2.6 Number and operations. The student applies mathematical process standards to connect repeated addition and subtraction to multiplication and division situations that involve equal groupings and shares.
2.7 Algebraic reasoning. The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships.

2.4(C)	solve one-step and multi-step word problems involving addition and subtraction within 1,000 using a variety of strategies based on place value, including algorithms	2.4(A)	recall basic facts to add and subtract within 20 with automaticity
2.4(D)	generate and solve problem situations for a given mathematical number sentence involving addition and subtraction of whole numbers within 1,000	2.4(B)	add up to four two-digit numbers and subtract two-digit numbers using mental strategies and algorithms based on knowledge of place value and properties of operations
2.5(A)	determine the value of a collection of coins up to one dollar	2.5(B)	use the cent symbol, dollar sign, and the decimal point to name the value of a collection of coin
		2.6(A)	model, create, and describe contextual multiplication situations in which equivalent sets of concrete objects are joined
		2.6(B)	model, create, and describe contextual division situations in which a set of concrete objects is separated into equivalent sets
		2.7(A)	determine whether a number up to 40 is even or odd using pairings of objects to represent the number
		2.7(C)	represent and solve addition and subtraction word problems where unknowns may be any one of the terms in the problem

Geometry

2.8 Geometry and measurement. The student applies mathematical process standards to analyze attributes of two-dimensional shapes and three-dimensional solids to develop generalizations about their properties.

Readiness Standards	Supporting Standards
2.8(B) classify and sort three-dimensional solids, including spheres, cones, cylinders, rectangular prisms (including cubes as special rectangular prisms), and triangular prisms, based on attributes using formal geometric language 2.8(C) classify and sort polygons with 12 or fewer sides according to attributes, including identifying the number of sides and number of vertices	2.8(A) create two-dimensional shapes based on given attributes, including number of sides and vertices 2.8(D) compose two-dimensional shapes and three-dimensional solids with given properties or attributes 2.8(E) decompose two-dimensional shapes such as cutting out a square from a rectangle, dividing a shape in half, or partitioning a rectangle into identical triangles and identify the resulting geometric parts

Measurement

2.9 Geometry and measurement. The student applies mathematical process standards to select and use units to describe length, area, and time.

2.9(E) determine a solution to a problem involving length, including estimating lengths 2.9(G) read and write time to the nearest one-minute increment using analog and digital clocks and distinguish between a.m. and p.m.	2.9(A) find the length of objects using concrete models for standard units of length 2.9(B) describe the inverse relationship between the size of the unit and the number of units needed to equal the length of an object 2.9(C) represent whole numbers as distances from any given location on a number line 2.9(D) determine the length of an object to the nearest marked unit using rulers, yardsticks, meter sticks, or measuring tapes 2.9(F) use concrete models of square units to find the area of a rectangle by covering it with no gaps or overlaps, counting to find the total number of square units, and describing the measurement using a number and the unit

Data Analysis

2.10 Data analysis. The student applies mathematical process standards to organize data to make it useful for interpreting information and solving problems.

2.10(C) write and solve one-step word problems involving addition or subtraction using data represented within pictographs and bar graphs with intervals of one	2.10(A) explain that the length of a bar in a bar graph or the number of pictures in a pictograph represents the number of data points for a given category 2.10(B) organize a collection of data with up to four categories using pictographs and bar graphs with intervals of one or more 2.10(D) draw conclusions and make predictions from information in a graph

Personal Financial Literacy

2.11 Personal financial literacy. The student applies mathematical process standards to manage one's financial resources effectively for lifetime financial security.

	2.11(A) calculate how money saved can accumulate into a larger amount over time 2.11(B) explain that saving is an alternative to spending 2.11(C) distinguish between a deposit and a withdrawal 2.11(D) identify examples of borrowing and distinguish between responsible and irresponsible borrowing 2.11(E) identify examples of lending and use concepts of benefits and costs to evaluate lending decisions 2.11(F) differentiate between producers and consumers and calculate the cost to produce a simple item

Mathematical Process Standards

2.1 Mathematical process standards. The student uses mathematical processes to acquire and demonstrate mathematical understanding.

Ways to Show

2.1(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate
2.1(E) create and use representations to organize, record, and communicate mathematical ideas
2.1(F) analyze mathematical relationships to connect and communicate mathematical ideas
2.1(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication

NOTE: The classification of standards on this Snapshot represents the reviewed and synthesized input of a sample of Texas Math teachers. This Snapshot DOES NOT represent a publication of the Texas Education Agency. District curriculum may reflect other classifications.