CSAP Mathematics Assessment Framework

Grade 3

ASSESSMENT FRAMEWORK – *defines what will be assessed on the State paper and pencil, standardized, timed assessment (CSAP). This document is organized as follows:*

Standard	Indicates the broad knowledge and skills that all students should be acquiring in Colorado schools at grade level. Each standard is assessed every year.
Benchmark	Tactical description of the knowledge and skills students should acquire within each grade level range (i.e., K-4, 5-8, or 9-12).
Assessment Objectives	a Specific knowledge and skills measured by CSAP for each grade level assessed. Assessment Objectives are assessed on a cyclical basis.

*Note: The appearance of an * behind a word or phrase indicates it appears in the glossary of the Colorado Model Content Standards for Mathematics.*

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Standard 1	Students develop number sense* and use numbers and number relationships in problem-solving situations* and communicate the reasoning used in solving these problems.
Benchmark 1	Demonstrate meanings for whole numbers, and commonly-used fractions and decimals (for example, 1/3, 3/4, 0.5, 0.75), and representing equivalent forms of the same number through the use of physical models*, drawings, calculators, and computers.

Assessment Objectives	a	Identify whether a given number is odd or even.
	b	Identify the fractional part of a drawing or a set (restricted to halves, thirds, fourths).
	c	Using concrete materials or pictures identify different combinations* of coins up to $0.99.

Benchmark 2	Read and write whole numbers and know place-value concepts and numeration through their relationships to counting, ordering, and grouping.

Assessment Objectives	a	Read, write, and order numerals 0 - 9,999.
	b	Read the number words for selected numbers from zero to nine thousand, nine hundred ninety-nine.
	c	Identify place value through ten-thousands (for example, in 86,243, '6' is in the thousands place.
	d	Generate equivalent representations for the same number up to a 4-digit number (for example; 25=20+5 or 10+15 or 2 tens and 5 ones).
	e	Compare whole numbers as greater than, less than, or equal to one another using words or symbols.

Benchmark 3	Use numbers to count, to measure, to label, and to indicate location.

Assessment Objectives	a	Locate, label, or count forward from any even number by 2's and from any number by 10's and 100's up to 999.
	b	Locate and label 1/2s between whole numbers on the number line.

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Benchmark 4	Develop, test, and explain conjectures* about properties of whole numbers, and commonly-used fractions and decimals (for example, 1/3, 3/4, 0.5, 0.75).	
Assessment Objectives	a	Use the multiplication properties of zero and one with whole numbers.
	b	Solve addition and subtraction problems using commutative and associative properties (for example, 2+3+6=6+3+2; the words commutative and associative will not be used in test items).
Benchmark 5	Use number sense* to estimate and justify the reasonableness of solutions to problems involving whole numbers, and commonly-used fractions and decimals (for example, 1/3, 3/4, 0.5, 0.75).	
Assessment Objectives	a	Use estimation strategies to determine the reasonableness of solutions to problems.
Standard 2	Students use algebraic methods* to explore, model*, and describe patterns* and functions* involving numbers, shapes, data, and graphs in problem-solving situations* and communicate the reasoning used in solving these problems.	
Benchmark 1	Reproduce, extend, create, and describe patterns* and sequences using a variety of materials (for example, beans, toothpicks, pattern blocks, calculators, unifix cubes, colored tiles).	
Assessment Objectives	a	Reproduce, extend, and create patterns*, using pictures or geometric shapes.
	b	Use a pattern* to find missing elements (for example, multiples of 2, 3, 4, 5, 10).
Benchmark 2	Describe patterns* and other relationships using tables, graphs, and open sentences.*	
Assessment Objectives	*No objectives assessed at this level.*	

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Benchmark 3		Recognize when a pattern* exists and use that information to solve a problem.
Assessment Objectives	a	Identify a rule using addition or subtraction patterns* and solve a new problem using the rule.
	b	Given numbers in a table, extend the table.
Benchmark 4		Observe and explain how a change in one quantity can produce a change in another (for example, the relationship between the number of bicycles and the number of wheels).
Assessment Objectives	a	Using whole numbers, determine how the change in one quantity affects the change in the other by addition or subtraction (for example, one bicycle has 2 wheels, 2 bicycles have 4 wheels, and 3 bicycles have 6 wheels. How many wheels do 4 bicycles have? The solution could be presented in chart or picture form).
Standard 3		Students use data collection and analysis, statistics*, and probability* in problem-solving situations* and communicate the reasoning used in solving these problems.
Benchmark 1		Construct, read, and interpret displays of data including tables, charts, pictographs, and bar graphs.
Assessment Objectives	a	Organize and display data using tallies, bar graphs, pictographs, or tables.
Benchmark 2		Interpret data using the concepts of largest, smallest, most often, and middle.
Assessment Objectives	a	Determine the mode from a given a set of numbers, the mode is the number that occurs most often.
	b	Use various displays of data, interpret and draw conclusions.
Benchmark 3		Generate, analyze, and make predictions based on data obtained from surveys and chance devices.
Assessment Objectives	a	Determine which outcomes are the most likely, least likely, or equally likely when using a chance device (for example, a spinner).

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Benchmark 4		Solve problems using various strategies for making combinations* (for example, determining the number of different outfits that can be made using two blouses and three skirts).
Assessment Objectives	a	Given pictures, determine all the possible combinations* of matching a set containing two elements with a set containing three elements.
Standard 4		Students use geometric concepts, properties, and relationships in problem-solving situations* and communicate the reasoning used in solving these problems.
Benchmark 1		Recognize shapes and their relationships (for example, symmetry*, congruence*) using a variety of materials (for example, pasta, boxes, pattern blocks).
Assessment Objectives	a	Identify figures which are congruent*.
	b	Identify a line of symmetry* for regular polygons and other familiar objects.
	c	Create a figure with at least one line of symmetry.
Benchmark 2		Identify, describe, draw, compare, classify, and build physical models of geometric figures.
Assessment Objectives	a	Identify the characteristics of two-dimensional figures (for example, number of sides or vertices, contains a right angle, contains parallel sides).
	b	Identify points, lines, and line segments.
	c	Identify three dimensional figures (for example, cubes, spheres, cylinders, cones and pyramids).
	d	Identify right angles.
	e	Create and identify the results of combining or subdividing given geometric shapes (for example, pattern blocks, tangrams).

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Benchmark 3	Relate geometric ideas to measurement and number sense*.	
Assessment Objectives	a	Find the perimeter of a polygon.
Benchmark 4	Solve problems using geometric relationships and spatial reasoning* (for example, using rectangular coordinates* to locate objects, constructing models of three-dimensional objects).	
Assessment Objectives	*No objectives assessed at this level.*	
Benchmark 5	Recognize geometry* in their world (for example, in art and in nature).	
Assessment Objectives	*No objectives assessed at this level.*	
Standard 5	Students use a variety of tools and techniques to measure, apply the results in problem-solving situations*, and communicate the reasoning used in solving these problems.	
Benchmark 1	Know, use, describe and estimate measure of length, perimeter, capacity*, weight, time, and temperature.	
Assessment Objectives	a	Use an analog and digital clock, tell time to the nearest 5 minutes.
	b	Read and interpret pictorial representations of measurements of length, weight, temperature, and capacity*.
	c	Choose the appropriate tool to measure familiar objects/situations containing length, weight, temperature or time.
Benchmark 2	Compare and order objects according to measurable attributes (for example, longest to shortest, lightest to heaviest).	
Assessment Objectives	a	Compare objects according to the measurable attributes of length, capacity*, weight, or temperature.

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Benchmark 3		Demonstrate the process of measuring and explaining the concepts related to units of measurement.
Assessment Objectives	a	Measure the length of objects including the sides of rectangles and squares to the nearest inch and centimeter.
Benchmark 4		Use the approximate measures of familiar objects (for example, the width of your finger, the temperature of a room, the weight of a gallon of milk) to develop a sense of measurement.
Assessment Objectives	a	Approximate the measurement of familiar objects using standards units (for example, a paper clip is about one inch).
Benchmark 5		Select and use appropriate standard and non-standard units of measurement in problem-solving situations*.
Assessment Objectives		*No objectives assessed at this level.*
Standard 6		Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic*, paper-and-pencil, calculators, and computers, in problem-solving situations* and communicate the reasoning used in solving these problems.
Benchmark 1		Demonstrate conceptual meanings for the four basic arithmetic operations of addition, subtraction, multiplication, and division.
Assessment Objectives	a	Using pictures, diagrams, numbers or words, demonstrate addition and subtraction of whole numbers with 2-digit numbers.

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Benchmark 2	Add and subtract commonly-used fractions and decimals using physical models* (for example, 1/3, 3/4, 0.5, 0.75).	
Assessment Objectives	a	Using pictures, demonstrate addition and subtraction of proper fractions with common denominators of four or less
	b	Using money notation, add and subtract commonly used decimals in which sums and differences should not exceed $10.00.
Benchmark 3	Demonstrate ~~understanding of and proficiency~~ *fluency* with basic addition, subtraction, multiplication, and division facts without the use of a calculator.	
Assessment Objectives	a	Demonstrate understanding of basic multiplication facts* of 1's, 2's, 3's, 5's, 10's.
	b	Demonstrate proficiency with basic addition and subtraction facts*.
Benchmark 4	Construct, use, and explain procedures to compute and estimate with whole numbers.	
Assessment Objectives	a	Use estimation strategies with whole numbers prior to performing the operations of addition and subtraction (for example, front-end estimation, estimation by rounding, friendly numbers, flexible rounding, clustering).
	b	Demonstrate three basic operations of whole numbers (for example, addition and subtraction of three digits, and multiplication of multiples of ten by 1, 2, 3, 5).
Benchmark 5	Select and use appropriate ~~methods~~ *algorithms** for computing with whole numbers in problem-solving situations*. ~~from among mental arithmetic, estimation, paper-and-pencil, calculator, and computer methods.~~	
Assessment Objectives	a	Given a real world problem-solving situation*, use addition, subtraction, or multiplication to solve the problem.
		Determine from real-world problems*, whether an estimated or exact sum, difference, or product is acceptable.

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