Idaho Extended Standards Draft Extended Content Indicators Grade 4 Mathematics

Standard 1: Number and Operation - Students in Grade 4 read, write, compare, and order whole numbers to 1,000,000 and commonly used fractions with pictorial representations. Students identify and apply place value in whole numbers. Students add and subtract whole numbers, fractions with like denominators that do not require simplification, and decimals using money. Students recall multiplication facts through ten, multiply up to two-digit by two-digit whole numbers, and divide whole numbers by one-digit divisors. Students estimate to predict computation results and to evaluate the reasonableness of the answer.

Extended Standard 1: Students in Grade 4 read, write, compare, and order whole numbers and identify commonly used fractions with pictorial representations. Students identify place value in whole numbers. With the use of a calculator, abacus, or manipulatives, students add and subtract whole numbers, simple, common fractions with like denominators, and common decimals using money. Students recognize multiplication through the addition of repeated sets of whole numbers, and division by separating sets into equal parts. Students estimate size of quantity to predict computation results and then determine reasonableness of the answer.

Topic	GR	Goals	Objectives	Essence	Extended Content Indicators
	4.M.1.1	Understand and use numbers.	4.M.1.1.1 Read, write, compare,		4.M.1.1.1A
			and order whole numbers to		Communicate and demonstrate whole numbers in order up to 50, using a
			100,000. (297.01.a)		number line or chart when necessary.
			4.M.1.1.2 Identify and apply place		4.M.1.1.2 A
			value in whole numbers. (297.01.b)		Identify and apply place value through 50.
			4.M.1.1.3 Count the value of a		4.M.1.1.3 A
			collection of bills and coins up to		Count the value of a collection of pennies nickels and dimes up do \$1.00
			\$100.00. (297.01.c)		
			4.M.1.1.4 Read, write, compare,		4.M.1.1.4A
			and order commonly used fractions		Communicate and demonstrate commonly used fractions with symbolic
			with pictorial representations.		representations.
			(297.01.d)		
	4.M.1.1.5 Use dec		4.M.1.1.5 Use decimal numbers		4.M.1.1.5.A
			with money. (297.01.e)		The student will recognize the value of common coins and the dollar.
	4.M.1.1.6 Select strategies			4.M.1.1.6A	
			appropriate for solving a problem.		Choose appropriate application to solve a problem.
			(298.01.a)		
			4.M.1.1.7 Use appropriate		4.M.1.1.7A
			vocabulary. (297.01.f)		Recognize appropriate vocabulary.

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Extended Standard 1: Students in Grade 4 read, write, compare, and order whole numbers and identify commonly used fractions with pictorial representations. Students identify place value in whole numbers. With the use of a calculator, abacus, or manipulatives, students add and subtract whole numbers, simple, common fractions with like denominators, and common decimals using money. Students recognize multiplication through the addition of repeated sets of whole numbers, and division by separating sets into equal parts. Students estimate size of quantity to predict computation results and then determine reasonableness of the answer.

Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
	4.M.1.2	Perform computations	4.M.1.2.1 Recall		4.M.1.2.1A
		accurately.	multiplication facts through		Explore single digit multiplication for 1's – 5's through symbolic concrete systems
			10 x 10. (297.02.e)		
			4.M.1.2.2 Add and subtract		4.M.1.2.2 A
			whole numbers. (297.02.a)		Add and subtract whole numbers, with or without the use of manipulatives.
			4.M.1.2.3 Multiply up to two-		4.M.1.2.3 A
			digit by two-digit whole		Explore multiplication through the manipulation of adding repeated sets and division by
			numbers and divide whole		separating sets into equal parts.
			numbers by one-digit divisors.		
			(297.02.b)		
			4.M.1.2.4 Add and subtract		4.M.1.2.4 A
			fractions with like		Identify that "a whole" can be divided to create "smaller pieces" (fractions) and the
			denominators that do not		pieces can be added to create a whole again.
			require simplification.		
			(297.02.c)		
			4.M.1.2.5 Add and subtract		4.M.1.2.5 A
			decimals using money.		Demonstrate knowledge to add a collection of dollars using the decimal point symbol
			(297.02.d)		
			4.M.1.2.6 Select and use an		4.M.1.2.6 A
			appropriate method of		Choose concrete objects or symbolic systems to solve addition and subtractions
			computation from mental		problems
			math, paper and pencil,		
			calculator, or a combination		
			of the three. (297.02.f)		

4.M.1.2.7 Select and use appropriate operations to solve word problems and show or explain work. (298.01.b)	4.M.1.2.7A Select appropriate operations to solve one step addition or subtraction word or symbolic problems
4.M.1.2.8 Use appropriate	4.M.1.2.8A
vocabulary. (297.02.g)	Recognize appropriate vocabulary.

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<u>Extended Standard 1</u>: Students in Grade 4 read, write, compare, and order whole numbers and identify commonly used fractions with pictorial representations. Students identify place value in whole numbers. With the use of a calculator, abacus, or manipulatives, students add and subtract whole numbers, simple, common fractions with like denominators, and common decimals using money. Students recognize multiplication through the addition of repeated sets of whole numbers, and division by separating sets into equal parts. Students estimate size of quantity to predict computation results and then determine reasonableness of the answer.

Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
	4.M.1.3	Estimate and judge	4.M.1.3.1 Estimate to predict		4.M.1.3.1A
		reasonableness of results.	computation results.		Estimate to predict sums and differences
			(297.03.a)		
			4.M.1.3.2 Use estimation to		4.M.1.3.2 A
			evaluate the reasonableness of		Use estimation skills across daily living activities.
			an answer. (297.03.b)		
			4.M.1.3.3 Investigate the use		4.M.1.3.3A
			of a four-function calculator		Investigate the use of a calculator to solve problems.
			to solve complex grade-level		
			problems. (298.03.a)		
			4.M.1.3.4 Use appropriate		4.M.1.3.4 A
			vocabulary. (297.03.c)		Recognize appropriate vocabulary.

<u>Standard 2: Concepts and Principles of Measurement</u> - Students in Grade 4 select and use appropriate units and tools to make the formal measurements of time, length, temperature, weight, and capacity in both systems. Estimate measurement in real-world problems using standard units. Students convert units of length and time within the U. S. Customary system. Students tell time to the nearest minute using digital and analog clocks.

Extended Standard 2: Students in Grade 4 use appropriate units and tools to make the formal measurements of time, length, temperature, and weight. Estimate measurement in real-world problems using standard or nonstandard units. Students match units of length and time within the U. S. Customary system. Students tell time using digital and analog clocks and associating daily routines to the time of the day.

Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
	4.M.2.1	Understand and use U.S.	4.M.2.1.1 Select and use		4.M.2.1.1A
		customary and metric	appropriate units and tools to		Identify the standard tools to make formal measurements of length, time, temperature, and
		measurements.	make the formal		weight.
			measurements of length,		
			temperature, and weight in		
			both systems. (299.01.a)		
			4.M.2.1.2 Estimate length,		4.M.2.1.2 A
			time, weight, and temperature		Estimate length, time, weight, and temperature in real-world problems.
			in real-world problems using		
			standard units. (299.01.b)		
			4.M.2.1.3 Tell time to the		4.M.2.1.3A
			nearest minute using digital		Match time to a specific activity (e.g. bell or board schedule)
			and analog clocks. (299.01.e)		
			4.M.2.1.4 Solve real-world		4.M.2.1.4 A
			problems related to elapsed		Identify real-world problems related to time.
			time. (299.01.f)		
			4.M.2.1.5 Convert units of		4.M.2.1.5A
			length and time within the U.		Use a unit of measurement within the U.S. customary system or within the metric system.
			S. Customary system.		
			(299.01.c)		
			4.M.2.1.6 State that there are		4.M.2.1.6 A
			365 days in a year and 52		Identify how months of the year are presented in a calendar.
			weeks in a year.		
			4.M.2.1.7 Recall length and		4.M.2.1.7A
			volume (capacity)		Match simple, equivalent units of measurement in the U.S. Customary system.
			equivalences involving		
			inches, feet, yards, cups,		
			pints, quarts, and gallons in		
			the U.S. Customary system.		

	4.M.2.1.8 Use appropriate vocabulary. (299.01.g)	4.M.2.1.8A Recognize appropriate vocabulary.
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Standard 2: Concepts and Principles of Measurement - Students in Grade 4 select and use appropriate units and tools to make the formal measurements of time, length, temperature, weight, and capacity in both systems. Estimate measurement in real-world problems using standard units. Students convert units of length and time within the U. S. Customary system. Students tell time to the nearest minute using digital and analog clocks.

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Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
	4.M.2.2	Apply the concepts of rates,	No objectives at this grade		No objectives at this grade level.
		ratios, and proportions.	level.		

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Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.2.3	Apply dimensional analysis.	No objectives at this grade level.		No objectives at this grade level.

Standard 3: Concepts and Language of Algebra and Functions - Students in Grade 4 write a division problem using a bracket (\neg) , the division symbol (\div) , and as a fraction. Students write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. Students read and use the symbols of "<," ">," and "=" to express relationships with numbers through 1,000,000. Students use the identity and zero properties of multiplication and solve missing factor equations. Students identify the rule for a pattern using whole numbers and addition and then extend the pattern.

Topic	Gr	Goal	Objectives	Essence	Extended Content Indicators
	4.M.3.1	Use algebraic symbolism as a	4.M.3.1.1 Write a division		4.M.3.1.1 A
		tool to represent mathematical	problem using a bracket (¬)		Express the concept of division using concrete objects or pictures.
		relationships.	and/or the division symbol		
			(÷). (300.01.a)		
			4.M.3.1.2 Write a number		4.M.3.1.2A
			sentence using simple		Use concrete or symbolic system with a one step addition or subtraction real life problem that
			geometric shapes or letters of		represents an unknown number.
			the alphabet as symbols to		
			represent an unknown		
			number. (300.01.b)		
			4.M.3.1.3 Show the		4.M.3.1.3A
			relationship between		Show the relationship between addition and subtraction in fact families using concrete objects or
			multiplication and division		pictures.
			using fact families.		
			4.M.3.1.4 Read and use		4.M.3.1.4 A
			symbols of "<," ">," and "="		Compare objects or pictures using the vocabulary or symbols for (<, >, =) to express
			to express relationships with		relationships with quantity.
			numbers through 1,000,000.		
			(300.01.c)		

Standard 3: Concepts and Language of Algebra and Functions - Students in Grade 4 write a division problem using a bracket (¬), the division symbol (÷), and as a fraction. Students write a number sentence using simple geometric shapes or letters of the alphabet as symbols to represent an unknown number. Students read and use the symbols of "<," ">," and "=" to express relationships with numbers through 1,000,000. Students use the identity and zero properties of multiplication and solve missing factor equations. Students identify the rule for a pattern using whole numbers and addition and then extend the pattern.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.3.2	Evaluate algebraic expressions.	4.M.3.2.1 Use the identity and		4.M.3.2.1 A
			zero properties of		Solve multiplication problems with the identity and zero property, with concrete objects if
			multiplication.		necessary.

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Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.3.3	Solve algebraic equations and	4.M.3.3.1 Solve missing		4.M.3.3.1A
		inequalities.	factor equations. (300.03.a)		Solve missing items or addends equations with concrete objects or symbols.

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Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.3.4	Understand the concept of	4.M.3.4.1 Identify the rule		4.M.3.4.1.A
		functions.	(function) for a pattern using		Copy a pattern using whole numbers and the 1+ rule and then extend the pattern.
			whole numbers and addition		
			and then extend the pattern.		
			(303.01.a)		
			4.M.3.4.2 Use appropriate		4.M.3.4.2A
			vocabulary. (303.01.c)		Recognize appropriate vocabulary.

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Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.3.5	Represent equations, inequalities and functions in a variety of formats.	No objectives at this grade level.		No objectives at this grade level.

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Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.3.6	Apply functions to a variety of	No objectives at this grade		No objectives at this grade level.
		problems.	level.		

Standard 4: Concepts and Principles of Geometry - Students in Grade 4 identify, compare, and analyze attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify multiple lines of symmetry in two-dimensional shapes and students discuss perimeters of polygons, and areas and perimeters of rectangles and squares, using concrete objects. Students predict the results of sliding and flipping two-dimensional shapes.

Extended Standard 4: Students in Grade 4 identify attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify a line of symmetry in two-dimensional shapes and students recognize perimeters and areas of rectangles and squares, using concrete objects. Students recognize the results of sliding and flipping two-dimensional shapes.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.4.1	Apply concepts of size, shape, and spatial relationships.	4.M.4.1.1 Identify, compare, and analyze attributes of two-and three- dimensional shapes, including parallel, intersecting, and perpendicular lines, and develop vocabulary to describe the attributes. (301.01.a)		4.M.4.1.1.A Identify, parallel, intersecting and perpendicular lines, and develop vocabulary to describe the attributes.
			4.M.4.1.2 Predict the results of sliding and flipping two-dimensional shapes. (301.01.d)		4.M.4.1.2.A Recognize the results of sliding and flipping two-dimensional shapes.
			4.M.4.1.3 Identify multiple lines of symmetry in two-dimensional shapes.		4.M.4.1.3.A Identify a line of symmetry in two-dimensional shapes.
			4.M.4.1.4 Discuss perimeters of polygons, and areas and perimeters of rectangles and squares, using concrete objects. (301.01.c)		4.M.4.1.4.A Recognize perimeters and areas of rectangles and squares, using concrete objects.
			4.M.4.1.5 Use appropriate vocabulary. (301.01.e)		4.M.4.1.5 A Recognize appropriate vocabulary.

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Extended Standard 4: Students in Grade 4 identify attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify a line of symmetry in two-dimensional shapes and students recognize perimeters and areas of rectangles and squares, using concrete objects. Students recognize the results of sliding and flipping two-dimensional shapes.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.4.2	Apply the geometry of right triangles.	No objectives at this grade level.		No objectives at this grade level.

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Extended Standard 4: Students in Grade 4 identify attributes of two- and three- dimensional shapes, including parallel and intersecting perpendicular lines, and students develop vocabulary to describe the attributes. Students identify a line of symmetry in two-dimensional shapes and students recognize perimeters and areas of rectangles and squares, using concrete objects. Students recognize the results of sliding and flipping two-dimensional shapes.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.4.3	Apply graphing in two	4.M.4.3.1 Use ordered pairs		4.M.4.3.1.A
		dimensions.	to identify the position of a		Identify the point of final destination give directions for movement using 1 to 5 on a vertical
			point in the first quadrant on a		positive number line.
			coordinate grid.		

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.5.1	Understand data analysis.	4.M.5.1.1 Read and interpret		4.M.5.1.1.A
			simple tables, charts, bar		Identify data in simple line graph, bar graphs, or circle graph.
			graphs, and line graphs.		
			(302.01.a)		
			4.M.5.1.2 Use appropriate		4.M.5.1.2A
			vocabulary. (302.01.c)		Recognize appropriate vocabulary.

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.5.2	Collect, organize, and display	4.M.5.2.1 Collect, organize,		4.M.5.2.1.A
		data.	and display data in tables and		Organize data in a table or chart to answer a question.
			charts to answer a question.		
			(302.02.a)		
			4.M.5.2.2 Display data in a		4.M.5.2.2.A
			bar graph using appropriate		Display data in a bar graph using a title and reasonable scales.
			notation such as a title, axes		
			labels, and reasonable scales.		
			(302.02.a)		

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.5.3	Apply simple statistical	4.M.5.3.1 Find the mode of a		4.M.5.3.1.A
		measurements.	simple set of whole number		Find the mode of a simple set of whole number data using manipulatives when necessary.
			data.		

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.5.4	Understand basic concepts of	4.M.5.4.1 Predict the results		4.M.5.4.1.A
		probability.	of simple probability		Predict the results of simple probability experiments using coins or spinners (e.g., 3 out of 6
			experiments using coins or		choices).
			spinners (e.g., 3 out of 6		
			choices). (302.04.a)		

Topic	Gr	Goal	Objective	Essence	Extended Content Indicators
	4.M.5.5	Make predictions or decisions	4.M.5.5.1 Make predictions		4.M.5.5.1 A
		based on data.	based on data. (298.01.c)		Make predictions based on data.