



# Math Teachers Press, Inc.

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## Alaska Math Performance Standards (Grade Level Expectations) Correlated to *Moving with Math Extensions Grade 7*

		Student Book	Skill Builders
<b>CONTENT STANDARD A</b>			
Mathematical facts, concepts, principles, and theories			
<b>NUMERATION</b>			
Understand and use numeration			
<b>Understanding Numbers</b>			
The student demonstrates understanding			
	<ul style="list-style-type: none"> <li>of rational numbers (fractions, decimals, percents, or integers) by</li> </ul>		
<b>7N-1</b>	ordering rational numbers	23	11-4
<b>7N-2</b>	modeling (place value blocks) or identifying place value positions of whole numbers and decimals	35	4-1, 18-1
<b>7N-3</b>	converting between expanded notation (multiples of ten) and standard form for decimal numbers		24-1
	<ul style="list-style-type: none"> <li>of positive fractions, decimals, or percents by</li> </ul>		
<b>7N-4</b>	identifying or representing equivalent numbers	24	11-1, 11-3
<b>Understanding Meaning of Operations</b>			
The student demonstrates conceptual understanding of mathematical operations by			
<b>7N-5</b>	using models, explanations, number lines, real-life situations describing or illustrating the effects of arithmetic operations on rational numbers (fractions, decimals)	28, 30, 44	43-4, 43-5
<b>Number Theory</b>			
The student demonstrates conceptual understanding of number theory by			
<b>7N-6</b>	using commutative, (associative), inverse, or identity properties with rational numbers	5	2-1
<b>7N-7</b>	applying rules of divisibility to whole numbers		
<b>7N-8</b>	identify prime and composite numbers	4	3-1
<b>7N-9</b>	using distributive property with rational numbers		2-2
<b>MEASUREMENT</b>			

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	Select and use systems, units, and tools of measurement		
	<b>Measurable Attributes</b>		
	The student demonstrates understanding of measurable attributes by		
7MEA-1	estimating length to the nearest sixteenth of an inch or millimeter, volume to the nearest cubic centimeter or milliliter, or angle to the nearest 30 degrees		30-2
7MEA-2	identifying or using equivalent English (square inches, square feet, square yards) or metric systems (square centimeters, square meters)	67, 68	35-1, 37-1
	<b>Measurable Techniques</b>		
	The student demonstrates understanding of measurement techniques by		
7MEA-3	applying a given scale factor to find missing dimensions of similar figures		46-2
7MEA-4	measuring various dimensions to one-sixteenth of an inch or millimeter	64	34-2
7MEA-5	accurately measuring a given angle using a protractor to the nearest plus or minus 2 degrees		30-2
7MEA-6	solving real-world problems involving elapsed time between world time zones		
	<b>ESTIMATION AND COMPUTATION</b>		
	Perform basic arithmetic functions, make reasoned estimates, select and use appropriate methods to tools		
	<b>Estimation</b>		
	The student solves problems (including real-world situations) using estimation by		
7E&C-1	identifying or using a variety of strategies, including truncating, rounding, front-end estimation, compatible numbers, to check for reasonableness of solutions	12, 34	22-2
7E&C-2	comparing results of different strategies		
	<b>Computation</b>		
	The student accurately solves problems (including real-world situations) by		
7E&C-3	adding or subtracting fractions or mixed numbers, with unlike denominators, or decimals to the thousandths place	28, 29, 39, 40	12-1, 12-3, 13-1, 13-3, 21-1
7E&C-4	multiplying or dividing decimals to hundredths, or multiplying or dividing by powers of ten, or multiplying or dividing fractions or mixed numbers	30, 33, 41, 42	14-1, 16-1, 17-1, 22-1, 23-1, 24-1
7E&C-5	converting between equivalent fractions, terminating decimals, or percents ( $10\% = 1/10 = 0.1$ )	37, 38, 47, 48	20-1, 25-1, 25-2

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7E&C-6	solving proportions using a given scale	51	46-2
<b>FUNCTIONS AND RELATIONSHIPS</b>			
Represent, analyze, and use patterns, relations, and functions			
<b>Describing Patterns and Functions</b>			
The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by			
7F&R-1	describing or extending patterns (linear) up to ten terms, represented in tables, sequences, or in problem situations	15, 16	42-1
7F&R-2	generalizing relationships (linear) using a table of ordered pairs, a function, or an equation	16	
7F&R-3	describing in words how a change in one variable in a formula affects the remaining variables (how changing the length affects the area of a quadrilateral)		
7F&R-4	using a calculator as a tool when describing, extending, or representing patterns	44	
<b>Modeling and Solving Equations and Inequalities</b>			
The student demonstrates algebraic thinking by			
7F&R-5	evaluating algebraic expressions	21, 22	
7F&R-6	solving or identifying solutions to one-step linear equations of the form $x + a = b$ or $ax = b$ , where $a$ and $b$ are whole numbers; translating a story problem into an equation of similar form; or translating a story problem into an equation of similar form and solving it		44-2, 50-1
<b>GEOMETRY</b>			
Construct, transform, and analyze geometric figures			
<b>Geometric Relationships</b>			
The student demonstrates an understanding of geometric relationships by			
7G-1	using the attributes and properties of polygons (diagonals, number of sides and angles) to identify and classify regular or irregular polygons	58, 59	31-1
7G-2	using the attributes and properties of prisms (vertices, length and alignment of edges, shape and number of base, shape of faces) to identify and describe triangular or rectangular pyramids		29-2
<b>Similarity, Congruence, Symmetry, and Transformation of Shapes</b>			
The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by			

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<b>7G-3</b>	using a scale factor to solve problems involving similar shapes (e.g., scale drawings, maps)		46-2
<b>7G-4</b>	drawing or describing the results of applying transformations such as translations, rotations, reflections, or dilations to figures	60	32-1
	<b>Perimeter, Area, Volume, and Surface Area</b>		
	The student solves problems (including real-world situations) by		
<b>7G-5</b>	determining the volume of cubes and rectangular prisms	75, 76	41-1
<b>7G-6</b>	determining the surface area of rectangular prisms		
<b>7G-7</b>	determining the circumference of a circle	71, 72	39-1
	<b>Position and Direction</b>		
	The student demonstrates understanding of position and direction by		
<b>7G-8</b>	graphing or identifying values of variables on a coordinate grid	19	49-1
	<b>Construction</b>		
	The student demonstrates a conceptual understanding of geometric drawings or constructions by		
<b>7G-9</b>	drawing or measuring polygons with given dimensions and angles or circles with given dimensions	70	29-1
	<b>STATISTICS AND PROBABILITY</b>		
	Formulate questions, gather and interpret data, and make predictions		
	<b>Data Displays</b>		
	The student demonstrates an ability to classify and organize data by		
<b>7S&amp;P-1</b>	collecting, displaying, organizing, or explaining the classification of data in real-world problems (e.g., science or humanities, peers, or community), using circle graphs, frequency distributions, stem-and-leaf, (or scatter plots) with appropriate scale	17	47-2
	<b>Analysis and Central Tendency</b>		
	The student demonstrates an ability to analyze data (comparing, explaining, interpreting, evaluating, making predictions; drawing or justifying conclusions) by		
<b>7S&amp;P-2</b>	using information from a variety of displays (e.g., as found in graphical displays in newspapers and magazines)	78-80	45-2, 47-3
<b>7S&amp;P-3</b>	determining mean, median, mode, or range	17, 18	45-2, 47-2
	<b>Probability</b>		

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	The student demonstrates a conceptual understanding of probability and counting techniques by		
7S&P-4	determining the experimental and theoretical probability of a simple event	77	47-1
7S&P-5	using a systematic approach to finding sample spaces or to making predictions about the probability of independent events		
7S&P-6	designing and conducting a simulation to study a problem and communicate the results		
	<b>CONTENT STANDARDS B, C, D AND E</b>		
	Process skills and abilities applying conceptual knowledge and skills as designated in all strands of Content Standard A by problem solving, communicating, reasoning, and making connections		
	<b>Problem Solving</b>		
	Understand and be able to select and use a variety of problem-solving strategies		
	The student demonstrates an ability to problem solve by		
7PS-1	selecting, modifying, and applying a variety of problem-solving strategies (e.g., working backwards, drawing a picture, Venn diagrams) and verifying the results	13, 14	
7PS-2	evaluating, interpreting, and justifying solutions to problems	44	
	<b>Communication</b>		
	Form and use appropriate methods to define and explain mathematical relationships		
	The student communicates his or her mathematical thinking by		
7PS-3	representing mathematical problems numerically, graphically and/or symbolically; or use appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions	13-15	
	<b>Reasoning</b>		
	Use logic and reason to solve mathematical problems		
	The student demonstrates an ability to use logic and reason by		
7PS-4	using informal deductive and inductive reasoning in concrete contexts or stating counterexamples to disprove statements; or justifying and defending the validity of mathematical strategies and solutions using examples	5, 9	
	<b>Connections</b>		

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	Apply mathematical concepts and processes to situations within and outside of school		
	The student demonstrates the ability to apply mathematical skills and processes across the content strands by		
<b>7PS-5</b>	using real-world contexts such as science, humanities, peers, and community	2, 31	