



Math Teachers Press, Inc.

4850 Park Glen Road, Minneapolis, MN 55416
 phone (800) 852-2435 fax (952) 546-7502

Alaska Math Performance Standards (Grade Level Expectations) Correlated to *Moving with Math Extensions Grade 8*

		Student Book	Skill Builders
CONTENT STANDARD A			
Mathematical facts, concepts, principles, and theories			
NUMERATION			
Understand and use numeration			
Understanding Numbers			
The student demonstrates understanding			
•	of real numbers by		
8N-1	ordering real numbers		48-1
8N-2	distinguishing between a whole number in scientific notation and real numbers in standard form		57-1, 57-2
8N-3	converting between expanded notation (multiples of ten with exponents) and standard form		57-1, 57-1
•	of rational numbers (fractions, decimals, or percents including integers) by		
8N-4	identifying, describing, or illustrating equivalent representations	18, 29	
8N-5	expressing products of numbers using exponents	5	6-1
Understanding Meaning of Operation			
The student demonstrates conceptual understanding of mathematical operations by			
8N-6	using models, explanations, number lines, real-life situations describing or illustrating the effects of arithmetic operations on rational numbers (percents)	39	43-1
8N-7	using models, explanations, number lines, real-life situations, describing, or illustrating the use of inverse operations (addition/subtraction or multiplication/division)	78	
Number Theory			
The student demonstrates conceptual understanding of number theory by			
8N-8	applying the rules for order of operation to rational numbers		59-1
8N-9	identifying or writing the prime factorization of a number using exponents	6	6-2

		Student Book	Skill Builders
8N-10	using distributive property with real numbers	3	2-2
	MEASUREMENT		
	Select and use systems, units, and tools of measurement		
	Measurable Attributes		
	The student demonstrates understanding of measurable attributes by		
8MEA-1	converting measurements within the same system (English or metric)	56, 57	335-1, 37-1, 37-2
	Measurement Techniques		
	The student demonstrates understanding of measurement techniques by		
8MEA-2	using scale drawings involving indirect measurement (determining the scale factor and applying it to find missing dimensions)		46-2
8MEA-3	modeling the conversion within the same system	56	
	ESTIMATION AND COMPUTATION		
	Perform basic arithmetic functions, make reasoned estimates, and select and use appropriate methods or tools		
	Estimation		
	The student solves problems (including real-world situations) using estimation by		
8E&C-1	applying and assessing the appropriateness of a variety of estimation strategies	37	44-1
	Computation		
	The student accurately solves problems (including real-world situations) by		
8E&C-2	adding, subtracting, multiplying or dividing integers or positive rational numbers	19-24, 71-74	12-1, 12-2, 58-1 to 58-4
8E&C-3	using percents and percentages (e.g. tax, discount)	38	27-1, 28-1
8E&C-4	converting between equivalent fractions, decimals, or percents	29, 34	20-1, 20-2, 25-2
8E&C-5	using ratio and proportion	35, 36, 50	26-1, 26-2, 46-1
	FUNCTIONS AND RELATIONSHIPS		
	Represent, analyze, and use patterns, relations, and functions		
	Describing Patterns and Functions		
	The student demonstrates conceptual understanding of functions, patterns, or sequences including those represented in real-world situations by		

		Student Book	Skill Builders
8F&R-1	describing or extending patterns (linear) up to the nth term, represented in tables, sequences, graphs, or in problem situations	8	42-1
8F&R-2	generalizing relationships (linear) using a table of ordered pairs, a graph, or an equation	56	
8F&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 quadrilaterals or volume of a rectangular prism)	61, 66	
8F&R-4	using a calculator as a tool when describing, extending, or representing patterns		
	Modeling and Solving Equations and Inequalities		
	The student demonstrates algebraic thinking by		
8F&R-5	translating a written phrase to an algebraic expression	75, 76	
8F&R-6	solving or identifying solutions to two-step linear equations of the form $ax + b = c$, where a , b and c are rational numbers, and $a \neq 0$; translating a story problem into an equation of similar form; or translating a story problem into an equation of similar form and solving it	80	50-3
	GEOMETRY		
	Construct, transform, and analyze geometric figures		
	Geometric Relationships		
	The student demonstrates an understanding of geometric relationships by		
8G-1	using the attributes and properties of regular polygons to sketch regular or irregular polygons	45	31-2
8G-2	using the attributes and properties of solid figures (vertices, length and alignment of edges, shape and number of bases) to identify and describe cylinders and cones		
8G-3	using 2-dimensional nets to create 3-dimensional objects (prisms and cylinders)	66	41-2
	Similarity, Congruence, Symmetry, and Transformation of Shapes		
	The student demonstrates conceptual understanding of similarity, congruence, symmetry, or transformations of shapes by		
8G-4	using proportionality to solve real-world problems involving similar shapes (e.g., two real-world objects casting shadows)	53	46-3
8G-5	identifying the results of applying transformations (translations, rotations, reflections, dilations) to figures on a coordinate plane		

		Student Book	Skill Builders
	Perimeter, Area, Volume, and Surface Area		
	The student solves problems (including real-world situations) by		
8G-6	determining the volume of right triangular prisms or cylinders	65, 66	41-1
8G-7	determining the surface area of cylinders or triangular prisms		
8G-8	determining the circumference and area of a circle	60, 64	39-1, 56-1
	Position and Direction		
	The student demonstrates understanding of position and direction by		
8G-9	graphing or identifying relationships of variables on a coordinate plane (e.g., length/width, area/diameter, cost/pound)		
	Construction		
	The student demonstrates a conceptual understanding of geometric drawings or constructions by		
8G-10	drawing, measuring, or constructing geometric figures (polygons, perpendicular bisectors, or perpendicular or parallel lines)	45	32-1
	STATISTICS AND PROBABILITY		
	Formulate questions, gather and interpret data, and make predictions		
	Data Displays		
	The student demonstrates an ability to classify and organize data by		
8S&P-1	designing, collecting, organizing, displaying, or explaining the classification of data in real-world problems (e.g., science or ;humanities peers or community) using histograms, scatter plots, or box and whisker plots with appropriate scale or with technology	14	
	Analysis and Central Tendency		
	The student demonstrates an ability analyze data (comparing, explaining, interpreting, evaluating, making predictions, describing trends; drawing, formulating, or justifying conclusions) by		
8S&P-2	using information from a variety of displays or analyzing the validity of statistical conclusions found in the media	15, 16	
8S&P-3	determining or justifying a choice of range, mean, median, or mode as the best representation of data for a practical situation		
	Probability		

		Student Book	Skill Builders
	The student demonstrates a conceptual understanding of probability and counting techniques by		
8S&P-4	determining or comparing the experimental and/or theoretical probability of simple events	26	47-1
8S&P-5	using a systematic approach to finding sample spaces or to making predictions about the probability of independent events and using the information to solve real-world problems	26	
8S&P-6	designing and conduction a simulation to study a problem and communicate the results		
	CONTENT STANDARDS B, C, D AND E		
	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		
	Problem Solving		
	Understand and be able to select and use a variety of problem-solving strategies		
	The student demonstrates an ability to problem solve by		
8PS-1	selecting, modifying, and applying a variety of problem-solving strategies (e.g., inductive and deductive reasoning, Venn diagrams, making a simpler problem) and verifying the results	9, 10, 25	
8PS-2	evaluating, interpreting, and justifying solutions to problems	9, 19	
	Communication		
	Form and use appropriate methods to define and explain mathematical relationships		
	The student communicates his or her mathematical thinking by		
8PS-3	representing mathematical problems numerically, graphically, and/or symbolically, translating among these alternative representations; or using appropriate vocabulary, symbols, or technology to explain, justify, and defend strategies and solutions	17, 70	
	Reasoning		
	Use logic and reason to solve mathematical problems		
	The student demonstrates an ability to use logic and reason by		

		Student Book	Skill Builders
8PS-4	generalizing from patterns of observations (inductive reasoning) about mathematical problems and testing using a logical verification (deductive reasoning); or justifying and defending the validity of mathematical strategies and solutions using examples and counterexamples	18, 23	
	Connections		
	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		
8PS-5	using real-world contexts such as science, humanities, peers, and community, and careers	13, 33	