

Northpoint Horizons

**Math Elevations™ (Comprehensive Intervention System)
Correlated to
Alaska Content and Performance Standards**

This document provides a sampling of the extensive math directives offered throughout the *Math Elevations* program that meet **Alaska Content and Performance Standards**.

Alaska Content and Performance Standards Grade 4	Math Elevations Level D Teacher's Guide Examples/Lessons
Numeration: Understand and use numeration	
Understanding Numbers	
• of whole numbers to ten thousands by [4] N-1 reading, writing, ordering, or [counting L] (M1.2.1)	Unit 1 – Lesson 1: <i>Large Numbers</i> pp. 18-19 Unit 1 – Lesson 2: <i>Comparing Numbers</i> pp. 20-21
• of whole numbers to ten thousands by [4] N-2 modeling (base ten blocks) or identifying place value positions to ten thousands (M1.2.2)	Unit 1 – Lesson 1: <i>Large Numbers</i> pp. 18-19
• of whole numbers to ten thousands by [4] N-3 converting between whole numbers expressed in expanded notation and standard form (M1.2.4)	Unit 1 – Lesson 1: <i>Large Numbers</i> pp. 18-19
• of fractions with denominators 2 through 12 by [4] N-4 identifying, describing with explanations, or illustrating equal parts of a whole, a region, or a set (using models) (M1.2.4)	Unit 1 – Lesson 4: <i>Fractions as Part of a Whole</i> pp. 24-25 Unit 1 – Lesson 5: <i>Fractions of a Set</i> pp. 26-27
• of fractions with denominators 2 through 12 by [4] N-5 identifying, describing with explanations, or illustrating equivalent fractions or mixed numbers (M1.2.4 & M3.2.5)	Unit 4 – Lesson 2: <i>Equivalent Fractions</i> pp. 74-75 Unit 4 – Lesson 3: <i>Converting Between Improper Fractions and Mixed Numbers</i> pp. 76-77
Understanding Meaning of Operations	
[4] N-6 [using models, explanations, number lines, or real-life situations L] describing or illustrating the processes of multiplication (M1.2.3)	Unit 3 – Lesson 2: <i>Patterns of Calculations</i> pp. 56-57
[4] N-7 [using models, explanations, number lines, or real-life situations L]	Level C Unit 3 –

describing or illustrating the relationship between multiplication and addition (M1.2.3)	Lesson 1: <i>Meaning of Multiplication</i> pp. 54-55
[4] N-8 [using models, explanations, number lines, or real-life situations L] describing or illustrating the relationship between multiplication and division (M1.2.3)	Level C Unit 3 – Lesson 8: <i>Multiplication and Division Word Problems</i> pp. 68-69
[4] N-9 [using models, explanations, number lines, or real-life situations L] describing or illustrating the process of adding or subtracting fractions with like denominators (2 to 12) (M1.2.5)	Unit 4 – Lesson 5: <i>Addition of Fractions with Like Denominators</i> pp. 80-81 Unit 4 – Lesson 6: <i>Subtraction of Fractions with Like Denominators</i> pp. 82-83
Number Theory	
[4] N-10 describing or illustrating identity property of multiplication (L) (M1.2.7)	Level C Unit 3 – Lesson 1: <i>Meaning of Multiplication</i> pp. 54-55
[4] N-11 modeling (with manipulatives) and explaining commutative property of multiplication (L) (M1.2.7)	Level C Unit 3 – Lesson 1: <i>Meaning of Multiplication</i> pp. 54-55
[4] N-12 identifying or listing factors and multiples of a number (M1.2.6)	Unit 4 – Lesson 8: <i>Addition and Subtraction of Fractions with Unlike Denominators</i> pp. 86-87
Measurement: Select and use systems, units, and tools of measurement	
Measurable Attributes	
[4] MEA-1 estimating length to the nearest half-inch or centimeter (L) (M2.2.1)	Unit 6 – Lesson 3: <i>Area and Perimeter of Irregular Polygons</i> pp. 112-113
[4] MEA-2 estimating temperature (degree Celsius or Fahrenheit) or weight (pounds or kilograms) to the nearest unit (L) (M2.2.1)	Unit 6 – Lesson 7: <i>Weight</i> pp. 120-121
[4] MEA-3 identifying or using equivalent measures for length (inch, foot, yard: 12 inches = 1 foot, 3 feet = 1 yard, 36 inches = 1 yard; centimeter, meter: 100 centimeters = 1 meter) (M2.2.2)	Unit 6 – Lesson 4: <i>Metric Measurement</i> pp. 114-115
[4] MEA-4 selecting an appropriate unit of metric measurement to estimate length, weight, or temperature (M2.2.1)	Unit 6 – Lesson 8: <i>Appropriate Units</i> pp. 122-123

Measurement Techniques	
[4] MEA-5 measuring length to the nearest half-inch or [centimeter L] (M2.2.1, M2.2.3, & M2.2.4)	Unit 6 – Lesson 1: <i>Perimeter of Squares and Rectangles</i> pp. 108-109 Unit 6 – Lesson 2: <i>Area of Squares and Rectangles</i> pp. 110-111 Unit 6 – Lesson 3: <i>Area and Perimeter of Irregular Polygons</i> pp. 112-113 Unit 6 – Lesson 4: <i>Metric Measurement</i> pp. 114-115
[4] MEA-6 telling time in 5-minute increments using analog clocks (M2.2.5)	Level C Unit 7 – Lesson 1: <i>Time</i> pp. 126-127
[4] MEA-7 counting back change from \$5.00 (L) (M2.2.6)	Unit 2 – Lesson 3: <i>Making Change</i> pp. 40-41
[4] MEA-8 determining possible combinations of coins and bills equal to given amounts (M2.2.6)	Level C Unit 4 – Lesson 4: <i>Nickels and Quarters</i> pp. 78-79
[4] MEA-9 simulating multiple purchases and calculating the amount of change from a given bill(s) up to \$50.00 (L) (M2.2.6)	Unit 2 – Lesson 3: <i>Making Change</i> pp. 40-41
Estimation and Computation: Perform basic arithmetic functions, make reasoned estimates, and select and use appropriate methods or tools	
Estimation	
[4] E&C-1 identifying or using [a variety of L] strategies (e.g., rounding to appropriate place value, multiplying by powers of ten, using front-end estimation) to estimate the results of whole number addition or subtraction computations to 10,000, or simple multiplication or division (M3.2.1)	Unit 2 – Lesson 1: <i>Mental Addition and Subtraction</i> pp. 36-37
Computation	
[4] E&C-2 recalling basic multiplication facts, products to 100, and corresponding division facts efficiently (L) (M3.2.2)	Unit 3 – Lesson 3: <i>Multiplication by One-Digit Numbers</i> pp. 58-59
[4] E&C-3 adding or subtracting three-digit whole numbers (M3.2.3)	Unit 2 – Lesson 1: <i>Mental Addition and Subtraction</i> pp. 36-37 Unit 2 – Lesson 2: <i>Column Addition (I)</i> pp. 38-39 Unit 2 – Lesson 3: <i>Making Change</i> pp. 40-41 Unit 2 – Lesson 4: <i>Column Subtraction (I)</i> pp. 42-43

	Unit 2 – Lesson 5: <i>Word Problems (Three- and Four-Digit Numbers)</i> pp. 44-45
[4] E&C-4 multiplying two-digit numbers by single-digit numbers (M3.2.4)	Unit 3 – Lesson 3: <i>Multiplication by One-Digit Numbers</i> pp. 58-59
[4] E&C-5 adding fractions with like denominators to 12 (M3.2.3)	Unit 4 – Lesson 5: <i>Addition of Fractions with Like Denominators</i> pp. 80-81 Unit 4 – Lesson 6: <i>Subtraction of Fractions with Like Denominators</i> pp. 82-83
Functions and Relationships: Represent, analyze, and use patterns, relations, and functions	
Describing Patterns and Functions	
[4] F&R-1 extending patterns that use addition, subtraction, multiplication, or symbols, up to 10 terms, represented by models (function machines), tables, sequences, or in problem situations (M4.2.1)	Unit 5 – Lesson 4: <i>Functional Relationships</i> pp. 96-97 Unit 5 – Lesson 5: <i>Linear Functions</i> pp. 98-99
[4] F&R-2 using rules to express the generalization of a pattern using words, lists, or tables (L) (M4.2.4)	Unit 5 – Lesson 5: <i>Linear Functions</i> pp. 98-99
[4] F&R-3 using manipulatives, including a calculator, as tools when describing, extending, or representing a number sequence (L) (M4.2.1 & M4.2.3)	Unit 5 – Lesson 5: <i>Linear Functions</i> pp. 98-99
Modeling and Solving Equations and Inequalities	
[4] F&R-4 using an open number sentence (addition, subtraction, or multiplication) to solve for an unknown represented by a box or circle (e.g., $9 \bullet = 36$, $\bullet 8 = 56$, $3 \bullet 6 =$) (M4.2.5)	Unit 5 – Lesson 2: <i>Solving Open Sentences (Addition and Subtraction)</i> pp. 92-93 Unit 5 – Lesson 3: <i>Solving Open Sentences (Multiplication and Division)</i> pp. 94-95
Geometric Relationships	
[4] G-1 using the attributes and properties of angles to identify and compare triangles (acute, right, or obtuse) and regular polygons (M5.2.1)	Unit 7 – Lesson 1: <i>Types of Angles</i> pp. 126-127 Unit 7 – Lesson 3: <i>Classifying Polygons</i> pp. 130-131
[4] G-2 using the attributes and properties of solid figures (edges, vertices, or the number or shape of faces) to [model L], identify, compare, or describe solid figures (cubes, cylinders, rectangular prisms, or spheres) (e.g., cans,	Unit 7 – Lesson 7: <i>Solid Figures</i> pp. 138-139

dice, boxes, balls) (M5.2.2)	
Similarity, Congruence, Symmetry, and Transformation of Shapes	
[4] G-3 identifying or drawing all lines of symmetry to identify figures that are symmetrical (M5.2.3)	Unit 7 – Lesson 4: <i>Symmetry</i> pp. 132-133
[4] G-4 identifying shapes that are congruent (M5.2.3)	Unit 7 – Lesson 5: <i>Flips and Slides</i> pp. 134-135
[4] G-5 illustrating or identifying the results of transformations (turns) of polygons by continuing a given pattern (M5.2.5)	Unit 7 – Lesson 6: <i>Turns</i> pp. 136-137
Perimeter, Area, Volume, and Surface Area	
[4] G-6 estimating or determining area or perimeter of rectangles, squares, and irregular shapes on grids with a key or ruler (M5.2.4)	Unit 6 – Lesson 1: <i>Perimeter of Squares and Rectangles</i> pp. 108-109 Unit 6 – Lesson 2: <i>Area of Squares and Rectangles</i> pp. 110-111 Unit 6 – Lesson 3: <i>Area and Perimeter of Irregular Polygons</i> pp. 112-113
Position and Direction	
[4] G-7 describing the relative location of places or objects on a map using compass directions of north, south, east, or west (L) (M5.2.6)	Unit 5 – Lesson 7: <i>Ordered Pairs</i> pp. 102-103 Unit 5 – Lesson 8: <i>Directions</i> pp. 104-105
Construction	
[4] G-8 identifying or drawing parallel or intersecting line segments (L) (M5.2.7)	Unit 7 – Lesson 2: <i>Parallel and Perpendicular Lines</i> pp. 128-129
Statistics and Probability: Formulate questions, gather and interpret data, and make predictions	
Data Display	
[4] S&P-1 [designing an investigation and collecting L], organizing or displaying, using appropriate scale, data in real-world problems (e.g., social studies, friends, or school), using bar graphs, tables, charts, or diagrams with whole numbers up to 25 (M6.2.1 & M6.2.2)	Unit 8 – Lesson 1: <i>Data Handling</i> pp. 144-145
Analysis and Central Tendency	
[4] S&P-2 using information from a variety of displays (tables, bar graphs, or Venn diagrams) (M6.2.2)	Unit 8 – Lesson 3: <i>Pictographs</i> pp. 148-149 Unit 8 – Lesson 4: <i>Bar Graphs</i> pp. 150-151 Unit 8 – Lesson 5: <i>Line Graphs</i> pp. 152-153

	Unit 8 – Lesson 6: <i>Venn Diagrams</i> pp. 154-155
[4] S&P-3 using mode or range with up to 5 pieces of data with a value of 10 or less each (M6.2.3)	Unit 8 – Lesson 2: <i>Mode and Mean</i> pp. 146-147
Probability	
[4] S&P-4 predicting or explaining the probability of all possible outcomes in a simple experiment (e.g., spinners, dice, coins) (M6.2.4)	Unit 8 – Lesson 7: <i>Predicting Possible Outcomes</i> pp. 156-157 Unit 8 – Lesson 8: <i>Probability</i> pp. 158-159
[4] S&P-5 determining possible combinations in a given situation involving up to 3 items (e.g., how many ways can you choose two fruits out of a basket containing oranges and bananas?) (M6.2.5)	Unit 8 – Lesson 7: <i>Predicting Possible Outcomes</i> pp. 156-157
Problem Solving: Understand and be able to select and use a variety of problem-solving strategies	
[4] PS-1 selecting and applying appropriate strategy (e.g., lists, guess and check, extended patterns) to solve a variety of problems (M7.2.2)	Unit 5 – Lesson 4: <i>Functional Relationships</i> pp. 96-97 Unit 5 – Lesson 5: <i>Linear Functions</i> pp. 98-99
[4] PS-2 explaining and verifying results of an original problem and applying what was learned to new situations (M7.2.3)	Unit 6 – Lesson 3: <i>Area and Perimeter of Irregular Polygons</i> pp. 112-113
Communication: Form and use appropriate methods to define and explain mathematical relationships	
[4] PS-3 representing problems using mathematical language including concrete, pictorial, and/or symbolic representation; or by organizing and communicating mathematical problem-solving strategies and solutions to problems (M8.2.1, M8.2.2, & M8.2.3)	Unit 5 – Lesson 7: <i>Ordered Pairs</i> pp. 102-103
Reasoning: Use logic and reason to solve mathematical problems	
[4] PS-4 drawing conclusions about mathematical problems (given a rule or generalization, determining whether the example fits) or justifying answers and mathematical strategies (M9.2.1, M9.2.2, & M9.2.3)	Unit 5 – Lesson 5: <i>Linear Functions</i> pp. 98-99
Connections: Apply mathematical concepts and processes to situations within and outside of school	
[4] PS-5 using real-world contexts such as social studies, friends, and school (M10.2.1 & M10.2.2)	Unit 2 – Lesson 3: <i>Making Change</i> pp. 40-41