

Northpoint Horizons

Math Elevations™ (Comprehensive Intervention System)
Correlated to the
Arizona Academic Standards for Mathematics

This document provides a sampling of the extensive math directives offered throughout the *Math Elevations* program that meet the Arizona Academic Standards for Mathematics.

<u>Grade 6 Performance Objectives</u>	<u>Process Integration</u>	<u>Math Elevations Teacher’s Guide Level F (Grade 6) Lesson Examples</u>
Strand 1: Number and Operations		
Concept 1: Number Sense		
<p>PO 1. Convert between expressions for positive rational numbers, including fractions, decimals, percents, and ratios.</p> <p>Connections: M06-S1C1-03, M06-S1C1-04, M06-S1C3-01, M06-S2C2-01, M06-S2C2-02</p>	<p>M06-S5C2-05. Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution.</p>	<p>Unit 3 – Lesson 1: <i>Simplest Form</i> pp. 54-55 Unit 3 – Lesson 2: <i>Comparing and Ordering Fractions</i> pp. 56-57 Unit 3 – Lesson 3: <i>Converting Fractions to Decimals</i> pp. 58-59 Unit 3 – Lesson 5: <i>Converting Between Percents, Fractions, and Decimals</i> pp. 62-63 Unit 3 – Lesson 6: <i>More Converting Fractions</i> pp. 64-65</p>
<p>PO 2. Use prime factorization to express a whole number as a product of its prime factors and determine the greatest common factor and least common multiple of two whole numbers.</p> <p>Connections: M06-S1C1-06</p>	<p>M06-S5C2-06. Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.</p>	<p>Unit 1 – Lesson 5: <i>Primes and Composites</i> pp. 26-27 Unit 1 – Lesson 7: <i>Greatest Common Factor (GCF)</i> pp. 30-31 Unit 1 – Lesson 8: <i>Least Common Multiple (LCM)</i> pp. 32-33</p>
<p>PO 3. Demonstrate an understanding of fractions as rates, division of whole numbers, parts of a whole, parts of a set, and locations on a real number line.</p> <p>Connections: M06-S1C1-01, M06-S1C1-</p>	<p>M06-S5C2-05. Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution. M06-S5C2-06. Communicate the</p>	<p>Unit 3 – Lesson 1: <i>Simplest Form</i> pp. 54-55 Unit 3 – Lesson 2: <i>Comparing and Ordering Fractions</i> pp. 56-57 Unit 3 – Lesson 3: <i>Converting Fractions to Decimals</i> pp. 58-59</p>

04, M06-S4C4-02, M06-S4C4-03	answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.	Unit 3 – Lesson 3: <i>Converting Fractions to Decimals</i> pp. 58-59
PO 4. Compare and order integers; and positive fractions, decimals, and percents. Connections: M06-S1C1-01, M06-S1C1-03, M06-S1C3-01, M06-S1C3-02	M06-S5C2-03. Analyze and compare mathematical strategies for efficient problem solving; select and use one or more strategies to solve a problem.	Unit 1 – Lesson 4: <i>Introduction to Integers</i> pp. 24-25 Unit 3 – Lesson 2: <i>Comparing and Ordering Fractions</i> pp. 56-57
PO 5. Express that a number's distance from zero on the number line is its absolute value. Connections: M06-S1C2-01		Unit 1 – Lesson 4: <i>Introduction to Integers</i> pp. 24-25
Strand 1: Number and Operations Concept 2: Numerical Operations		
PO 1. Apply and interpret the concepts of addition and subtraction with integers using models. Connections: M06-S1C1-05	M06-S5C2-05. Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution.	Unit 2 – Lesson 1: <i>Adding Integers</i> pp. 36-37 Lesson 3: <i>Addition and Subtraction</i> pp. 40-41
PO 2. Multiply multi-digit decimals through thousandths. Connections: M06-S1C2-05, M06-S1C2-06, M06-S1C2-07, M06-S1C3-02, M06-S3C1-01, M06-S3C3-04, M06-S5C1-01	M06-S5C2-04. Apply a previously used problem-solving strategy in a new context.	Unit 2 – Lesson 6: <i>Multiplying by Decimals</i> pp. 46-47
PO 3. Divide multi-digit whole numbers and decimals by decimal divisors with and without remainders. Connections: M06-S1C2-05, M06-S1C2-06, M06-S1C2-07, M06-S1C3-02, M06-S3C1-01, M06-S3C3-04, M06-S5C1-01	M06-S5C2-04. Apply a previously used problem-solving strategy in a new context.	Unit 1 – Lesson 6: <i>Divisibility</i> pp. 28-29 Unit 2 – Lesson 7: <i>Division</i> pp. 48-49
PO 4. Multiply and divide fractions.	M06-S5C2-03. Analyze and compare mathematical strategies for efficient	Unit 4 – Lesson 4: <i>Multiplying Fractions</i> pp. 78-79

<p>Connections: M06-S1C2-05, M06-S1C2-06, M06-S1C2-07, M06-S1C3-02, M06-S3C1-01, M06-S3C3-04, M06-S5C1-01</p>	<p>problem solving; select and use one or more strategies to solve a problem.</p>	<p>Unit 4 – Lesson 5: <i>Multiplying Mixed Numbers</i> pp. 80-81 Unit 4 – Lesson 6: <i>Dividing Fractions by Whole Numbers</i> pp. 82-83 Unit 4 – Lesson 7: <i>Dividing Fractions by Fractions</i> pp. 84-85 Unit 4 – Lesson 8: <i>Dividing Mixed Numbers</i> pp. 86-87</p>
<p>PO 5. Provide a mathematical argument to explain operations with two or more fractions or decimals.</p> <p>Connections: M06-S1C2-02, M06-S1C2-03, M06-S1C2-04, M06-S1C2-07, M06-S5C1-01</p>	<p>M06-S5C2-08. Make and test conjectures based on information collected from explorations and experiments.</p>	<p>Unit 2 – Lesson 3: <i>Addition and Subtraction</i> pp. 40-41 Unit 2 – Lesson 8: <i>Word Problems</i> pp. 50-51 Unit 4 – Lesson 4: <i>Multiplying Fractions</i> pp. 78-79 Unit 4 – Lesson 5: <i>Multiplying Mixed Numbers</i> pp. 80-81 Unit 4 – Lesson 7: <i>Dividing Fractions by Fractions</i> pp. 84-85 Unit 4 – Lesson 8: <i>Dividing Mixed Numbers</i> pp. 86-87</p>
<p>PO 7. Simplify numerical expressions (involving fractions, decimals, and exponents) using the order of operations with or without grouping symbols.</p> <p>Connections: M06-S1C2-02, M06-S1C2-03, M06-S1C2-04, M06-S1C2-05, M06-S1C2-06</p>	<p>M06-S5C2-04. Apply a previously used problem-solving strategy in a new context.</p>	<p>Unit 5 – Lesson 1: <i>Order of Operations</i> pp. 90-91</p>
<p>Strand 1: Number and Operations Concept 3: Estimation</p>		
<p>PO 1. Use benchmarks as meaningful points of comparison for rational numbers.</p> <p>Connections: M06-S1C1-01, M06-S1C1-04</p>	<p>M06-S5C2-05. Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution.</p>	<p>Unit 3 – Lesson 1: <i>Simplest Form</i> pp. 54-55 Unit 3 – Lesson 2: <i>Comparing and Ordering Fractions</i> pp. 56-57 Unit 3 – Lesson 3: <i>Converting Fractions to Decimals</i> pp. 58-59 Unit 3 –</p>

		Lesson 5: <i>Converting Between Percents, Fractions, and Decimals</i> pp. 62-63 Unit 3 – Lesson 6: <i>More Converting Fractions</i> pp. 64-65
PO 2. Make estimates appropriate to a given situation and verify the reasonableness of the results. Connections: M06-S1C1-04, M06-S1C2-02, M06-S1C2-03, M06-S1C2-04, M06-S2C1-03, M06-S2C2-02, M06-S3C3-02, M06-S3C3-04, M06-S3C4-01, M06-S4C4-01, M06-S4C4-02, M06-S4C4-03, M06-S4C4-04, M06-S4C4-05	M06-S5C2-01. Analyze a problem situation to determine the question(s) to be answered. M06-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem. M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	Unit 2 – Lesson 2: <i>Rounding Numbers</i> pp. 38-39
Strand 2: Data Analysis, Probability, and Discrete Mathematics		
Concept 1: Data Analysis (Statistics)		
PO 1. Solve problems by selecting, constructing, and interpreting displays of data, including histograms and stem-and-leaf plots. Connections: M06-S2C1-02, M06-S2C1-03, M06-S2C1-04, SC06-S1C3-01, SC06-S1C3-04, SC06-S1C4-01, SC06-S1C4-02, SS06-S1C1-01, SS06-S1C1-02, SS06-S2C1-01, SS06-S2C1-02, SS06-S4C1-01, SS06-S4C1-02	M06-S5C2-06. Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.	Unit 8 – Lesson 2: <i>Line Plots and Stem-and-Leaf Plots</i> pp. 146-147 Unit 8 – Lesson 3: <i>Scales and Bar Graphs</i> pp. 148-149 Unit 8 – Lesson 4: <i>Conducting Surveys</i> pp. 150-151 Unit 8 – Lesson 5: <i>Displaying Data</i> pp. 152-153 Unit 8 – Lesson 6: <i>Line Graphs</i> pp. 154-155
PO 2. Formulate and answer questions by interpreting, analyzing, and drawing inferences from displays of data, including histograms and stem-and-leaf plots. Connections: M06-S2C1-01, M06-S2C1-03, M06-S2C1-04, SC06-S1C1-02, SC06-	M06-S5C2-01. Analyze a problem situation to determine the question(s) to be answered. M06-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem.	Unit 8 – Lesson 2: <i>Line Plots and Stem-and-Leaf Plots</i> pp. 146-147 Lesson 3: <i>Scales and Bar Graphs</i> pp. 148-149 Unit 8 – Lesson 4: <i>Conducting Surveys</i> pp. 150-151 Unit 8 – Lesson 5: <i>Displaying Data</i> pp. 152-153

<p>S1C3-04, SC06-S1C3-06, SS06-S1C1-02, SS06-S2C1-02, SS06-S4C1-02</p>	<p>M06-S5C2-06. Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.</p> <p>M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.</p>	<p>Unit 8 – Lesson 6: <i>Line Graphs</i> pp. 154-155</p>
<p>PO 3. Use extreme values, mean, median, mode, and range to analyze and describe the distribution of a given data set.</p> <p>Connections: M06-S1C3-02, M06-S2C1-01, M06-S2C1-02, M06-S2C1-04</p>	<p>M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.</p>	<p>Unit 8 – Lesson 1: <i>Mean, Mode, and Median</i> pp. 144-145</p>
<p>PO 4. Compare two or more sets of data by identifying trends.</p> <p>Connections: M06-S2C1-01, M06-S2C1-02, M06-S2C1-03, SC06-S1C3-01</p>	<p>M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.</p>	<p>Unit 8 – Lesson 1: <i>Mean, Mode, and Median</i> pp. 144-145</p>
<p>Strand 2: Data Analysis, Probability, and Discrete Mathematics Concept 2: Probability</p>		
<p>PO 1. Use data collected from multiple trials of a single event to form a conjecture about the theoretical probability.</p> <p>Connections: M06-S1C1-01, M06-S2C2-02, M06-S2C2-03</p>	<p>M06-S5C2-08. Make and test conjectures based on information collected from explorations and experiments.</p>	<p>Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159</p>
<p>PO 2. Use theoretical probability to predict experimental outcomes, compare the outcome of the experiment to the prediction, and replicate the</p>	<p>M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify</p>	<p>Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159</p>

experiment and compare results. Connections: M06-S1C1-01, M06-S1C3-02, M06-S2C2-01, M06-S2C2-03	reasoning.	
PO 3. Determine all possible outcomes (sample space) of a given situation using a systematic approach. Connections: M06-S2C2-01, M06-S2C2-02, M06-S2C3-01	M06-S5C2-05. Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution.	Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159
Strand 3: Patterns, Algebra, and Functions Concept 1: Patterns		
PO 1. Recognize, describe, create, and analyze a numerical sequence involving fractions and decimals using all four basic operations. Connections: M06-S1C2-02, M06-S1C2-03, M06-S1C2-04, M06-S3C2-01	M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	Unit 5 – Lesson 2: <i>Patterns</i> pp. 92-93
Strand 3: Patterns, Algebra, and Functions Concept 2: Functions and Relationships		
PO 1. Recognize and describe a relationship between two quantities, given by a chart, table, or graph, using words and expressions. Connections: M06-S3C1-01, M06-S3C3-03, M06-S3C4-01, SC06-S1C3-01, SC06-S1C3-04, SS06-S2C1-01, SS06-S2C1-02, SS06-S4C1-02	M06-S5C2-03. Analyze and compare mathematical strategies for efficient problem solving; select and use one or more strategies to solve a problem.	Unit 5 – Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97 Lesson 7: <i>Graphing Algebraic Equations</i> pp. 102-103
Strand 3: Patterns, Algebra, and Functions Concept 3: Algebraic Representations		
PO 1. Use an algebraic expression to represent a quantity in a given context. Connections: M06-S3C3-02, M06-S4C1-	M06-S5C2-06. Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95 Unit 5 – Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97

02	mathematical language.	
PO 2. Create and solve two-step equations that can be solved using inverse properties with fractions and decimals. Connections: M06-S1C3-02, M06-S3C3-01, M06-S4C1-02	M06-S5C2-06. Communicate the answer(s) to the question(s) in a problem using appropriate representations, including symbols and informal and formal mathematical language.	Unit 5 – Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97
PO 3. Translate both ways between a verbal description and an algebraic expression or equation. Connections: M06-S3C2-01, M06-S3C3-01	M06-S5C2-05. Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution.	Unit 5 – Lesson 3: <i>One-Step Algebraic Expressions</i> pp. 94-95 Unit 5 – Lesson 4: <i>Two-Step Algebraic Expressions</i> pp. 96-97
Strand 4: Geometry and Measurement Concept 2: Transformation of Shapes		
PO 1. Identify a simple translation or reflection and model its effect on a 2-dimensional figure on a coordinate plane using all four quadrants. Connections: M06-S4C2-02	M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	Unit 6 – Lesson 6: <i>Translation</i> pp. 118-119 Unit 6 – Lesson 7: <i>Reflection</i> pp. 120-121 Unit 6 – Lesson 8: <i>Rotation</i> pp. 122-123
PO 2. Draw a reflection of a polygon in the coordinate plane using a horizontal or vertical line of reflection. Connections: M06-S4C2-01, M06-S4C3-01, M06-S4C3-02	M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	Unit 6 – Lesson 7: <i>Reflection</i> pp. 120-121
Strand 4: Geometry and Measurement Concept 3: Coordinate Geometry		
PO 1. Graph ordered pairs in any quadrant of the coordinate plane. Connections: M06-S4C2-02, M06-S4C3-02		Unit 6 – Lesson 5: <i>The Coordinate Plane</i> pp. 116-117
PO 2. State the missing coordinate of a	M06-S5C2-04. Apply a previously used	Unit 6 –

<p>given figure on the coordinate plane using geometric properties to justify the solution.</p> <p>Connections: M06-S4C2-02, M06-S4C3-01</p>	<p>problem-solving strategy in a new context.</p>	<p>Lesson 5: <i>The Coordinate Plane</i> pp. 116-117</p>
<p>Strand 4: Geometry and Measurement Concept 4: Measurement</p>		
<p>PO 4. Solve problems involving the area of simple polygons using formulas for rectangles and triangles.</p> <p>Connections: M06-S1C3-02, M06-S3C3-04, M06-S5C1-02</p>	<p>M06-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem.</p> <p>M06-S5C2-04. Apply a previously used problem-solving strategy in a new context.</p>	<p>Unit 7 – Lesson 5: <i>Areas of Rectangles and Parallelograms</i> pp. 134-135 Unit 7 – Lesson 6: <i>Area of Triangles</i> pp. 136-137</p>
<p>PO 5. Solve problems involving area and perimeter of regular and irregular polygons.</p> <p>Connections: M06-S1C3-02, M06-S3C3-04, M06-S5C1-02</p>	<p>M06-S5C2-04. Apply a previously used problem-solving strategy in a new context.</p>	<p>Unit 7 – Lesson 5: <i>Areas of Rectangles and Parallelograms</i> pp. 134-135 Unit 7 – Lesson 6: <i>Area of Triangles</i> pp. 136-137 Unit 7 – Lesson 7: <i>Area of Irregular Figures</i> pp. 138-139</p>
<p>PO 6. Describe the relationship between the volume of a figure and the area of its base.</p>	<p>M06-S5C2-04. Apply a previously used problem-solving strategy in a new context.</p>	<p>Unit 7 – Lesson 8: <i>Volume</i> pp. 140-141</p>
<p>Strand 5: Structure and Logic Concept 1: Algorithms and Algorithmic Thinking</p>		
<p>PO 1. Analyze algorithms for multiplying and dividing fractions and decimals using the associative, commutative, and distributive properties</p> <p>Connections: M06-S1C2-02, M06-S1C2-03, M06-S1C2-04, M06-S1C2-05</p>	<p>M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.</p>	<p>Unit 2 – Lesson 6: <i>Multiplying by Decimals</i> pp. 46-47 Unit 2 – Lesson 7: <i>Division</i> pp. 48-49 Unit 4 – Lesson 4: <i>Multiplying Fractions</i> pp. 78-79 Unit 4 – Lesson 5: <i>Multiplying Mixed Numbers</i> pp. 80-81 Unit 4 – Lesson 6: <i>Dividing Fractions by Whole Numbers</i> pp. 82-83 Unit 4 –</p>

		Lesson 7: <i>Dividing Fractions by Fractions</i> pp. 84-85 Unit 4 – Lesson 8: <i>Dividing Mixed Numbers</i> pp. 86-87
PO 2. Create and justify an algorithm to determine the area of a given compound figure using parallelograms and triangles. Connections: M06S4C4-04, M06S4C4-05	M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.	Unit 7 – Lesson 7: <i>Area of Irregular Figures</i> pp. 138-139
Strand 5: Structure and Logic Concept 2: Logic, Reasoning, Problem Solving, and Proof		
PO 1. Analyze a problem situation to determine the question(s) to be answered. Connections: SC06-S1C1-02		Unit 5 – Lesson 6: <i>Word Problems</i> pp. 100-101
PO 2. Identify relevant, missing, and extraneous information related to the solution to a problem.		Unit 5 – Lesson 6: <i>Word Problems</i> pp. 100-101
PO 3. Analyze and compare mathematical strategies for efficient problem solving; select and use one or more strategies to solve a problem.		Unit 5 – Lesson 6: <i>Word Problems</i> pp. 100-101
PO 4. Apply a previously used problem-solving strategy in a new context.		Unit 3 – Lesson 7: <i>Ratios and Proportions</i> pp. 66-67
PO 5. Represent a problem situation using multiple representations, describe the process used to solve the problem, and verify the reasonableness of the solution. Connections: SC06-S1C4-02		Unit 8 – Lesson 5: <i>Displaying Data</i> pp. 152-153 Unit 8 – Lesson 6: <i>Line Graphs</i> pp. 154-155
PO 6. Communicate the answer(s) to the question(s) in a problem using appropriate representations, including		Unit 8 – Lesson 2: <i>Line Plots and Stem-and-Leaf Plots</i> pp. 146-147 Unit 8 –

<p>symbols and informal and formal mathematical language.</p> <p>Connections: SC06-S1C4-03</p>		<p>Lesson 3: <i>Scales and Bar Graphs</i> pp. 148-149 Unit 8 – Lesson 5: <i>Displaying Data</i> pp. 152-153 Unit 8 – Lesson 6: <i>Line Graphs</i> pp. 154-155</p>
<p>PO 7. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.</p> <p>Connections: M06-S2C3-02, SC06-S1C3-02, SS06-S1C1-07, SS06-S2C1-07, SS06-S4C4-03</p>		<p>Unit 6 – Lesson 5: <i>The Coordinate Plane</i> pp. 116-117 Unit 8 – Lesson 2: <i>Line Plots and Stem-and-Leaf Plots</i> pp. 146-147 Unit 8 – Lesson 3: <i>Scales and Bar Graphs</i> pp. 148-149 Unit 8 – Lesson 5: <i>Displaying Data</i> pp. 152-153 Unit 8 – Lesson 6: <i>Line Graphs</i> pp. 154-155</p>
<p>PO 8. Make and test conjectures based on information collected from explorations and experiments.</p>		<p>Unit 8 – Lesson 7: <i>Probability</i> pp. 156-157 Unit 8 – Lesson 8: <i>Probability Experiments</i> pp. 158-159</p>
<p>PO 9. Solve simple logic problems, including conditional statements, and justify solution methods and reasoning.</p>	<p>M07-S5C2-03. Analyze and compare mathematical strategies for efficient problem solving; select and use one or more strategies to solve a problem.</p> <p>M06-S5C2-07. Isolate and organize mathematical information taken from symbols, diagrams, and graphs to make inferences, draw conclusions, and justify reasoning.</p>	<p>Unit 5 – Lesson 5: <i>Solving Equations</i> pp. 98-99</p>