

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 5 Performance Objectives</u>	<u>Process Integration</u>	Math Elevations Teacher’s Guide Level E (Grade 5) Lesson Examples
Strand 1: Number and Operations Concept 1: Number Sense		
<p>PO 1. Determine equivalence by converting between benchmark fractions, decimals, and percents.</p> <p>Connections: M05-S1C1-04, M05-S1C1-05, M05-S1C2-01, M05-S1C3-01, M05-S2C2-01, M05-S5C1-01</p>	<p>M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.</p> <p>M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.</p>	<p>Unit 3 – Lesson 2: <i>Equivalent Fractions and Simplest Form</i> pp. 56-57 Unit 3 – Lesson 3: <i>Mixed Numbers and Improper Fractions</i> pp. 58-59 Unit 3 – Lesson 4: <i>Relating Decimals and Fractions</i> pp. 60-61 Unit 3 – Lesson 5: <i>Comparing and Ordering Fractions</i> pp. 62-63 Unit 3 – Lesson 6: <i>Comparing Fractions Using the LCD</i> pp. 64-65 Unit 3 – Lesson 7: <i>Converting Fractions to Decimals</i> pp. 66-67 Unit 3 – Lesson 8: <i>Comparing and Ordering Fractions and Decimals</i> pp. 68-69 Unit 4 – Lesson 7: <i>Converting Between Percents, Decimals, and Fractions</i> pp. 84-85</p>
<p>PO 2. Differentiate between prime and composite numbers; differentiate between factors and multiples for whole numbers.</p> <p>Connections: M05-S1C2-01, M05-S1C2-02, M05-S1C2-03, M05-S5C1-01, M05-</p>	<p>M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.</p>	<p>Unit 1 – Lesson 5: <i>Primes and Composites</i> pp. 26-27 Unit 1 – Lesson 8: <i>Least Common Multiple</i> pp. 32-33</p>

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S5C2-09		
PO 4. Compare and order positive fractions, decimals, and percents. Connections: M05-S1C1-01, M05-S1C3-01	M05-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M05-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem.	Unit 3 – Lesson 5: <i>Comparing and Ordering Fractions</i> pp. 62-63 Unit 3 – Lesson 6: <i>Comparing Fractions Using the LCD</i> pp. 64-65 Unit 3 – Lesson 7: <i>Converting Fractions to Decimals</i> pp. 66-67 Unit 3 – Lesson 8: <i>Comparing and Ordering Fractions and Decimals</i> pp. 68-69 Unit 4 – Lesson 7: <i>Converting Between Percents, Decimals, and Fractions</i> pp. 84-85
Strand 1: Number and Operations Concept 2: Numerical Operations		
PO 1. Add and subtract decimals through thousandths and fractions expressing solutions in simplest form. Connections: M05-S1C1-01, M05-S1C1-02, M05-S1C2-05, M05-S1C3-01, M05-S3C1-01, M05-S5C1-01	M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Unit 2 – Lesson 2: <i>Addition and Subtraction of Decimal Numbers</i> pp. 38-39
PO 2. Multiply multi-digit whole numbers. Connections: M05-S1C1-02, M05-S1C2-05, M05-S1C3-01	M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Unit 2 – Lesson 3: <i>Multiplying by Multiples of 10, 100, and 1,000</i> pp. 40-41 Unit 2 – Lesson 4: <i>Multiplying by a Two-Digit Factor</i> pp. 42-43
PO 3. Divide multi-digit whole numbers by whole number divisors with and without remainders. Connections: M05-S1C1-02, M05-S1C2-05, M05-S1C3-01	M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Unit 2 – Lesson 7: <i>Long Division</i> pp. 48-49 Unit 2 – Lesson 8: <i>Interpreting Remainders</i> pp. 50-51

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<p>PO 4. Apply the associative, commutative, and distributive properties to solve numerical problems.</p> <p>Connections: M05-S1C2-05, M05-S5C1-01, M05-S5C2-10</p>	<p>M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.</p> <p>M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.</p>	<p>Unit 5 – Lesson 1: <i>Order of Operations</i> pp. 90-91</p>
<p>PO 5. Simplify numerical expressions (including fractions and decimals) using the order of operations with or without grouping symbols.</p> <p>Connections: M05-S1C2-01, M05-S1C2-02, M05-S1C2-03, M05-S1C2-04, M05-S5C2-10</p>	<p>M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.</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. Make estimates appropriate to a given situation or computation with whole numbers, fractions, and decimals</p> <p>Connections: M05-S1C1-01, M05-S1C1-04, M05-S1C1-05, M05-S1C2-01, M05-S1C2-02, M05-S1C2-03, M05-S2C1-02, M05-S2C1-03, M05-S2C2-01, M05-S2C3-02, M05-S2C4-02, M05-S3C1-01, M05-S3C3-01, M05-S3C4-01, M05-S4C4-01, M05-S4C4-02, M05-S4C4-04, M05-S4C4-05</p>	<p>M05-S5C2-01. Analyze a problem situation to determine the question(s) to be answered.</p> <p>M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.</p>	<p>Unit 2 – Lesson 6: <i>Estimating Quotients</i> pp. 46-47</p>
<p>Strand 2: Data Analysis, Probability, and Discrete Mathematics Concept 1: Data Analysis (Statistics)</p>		
<p>PO 1. Collect, record, organize, and display data using multi-bar graphs or</p>	<p>M05-S5C2-05. Represent a problem situation using any combination of words,</p>	<p>Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155</p>

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double line graphs. Connections: M05-S2C1-02, SC05-S1C2-05, SC05-S1C4-02, SS05-S4C1-06	numbers, pictures, physical objects, or symbols.	Unit 8 – Lesson 7: <i>Line Graphs</i> pp. 156-157
PO 2. Formulate and answer questions by interpreting and analyzing displays of data, including multi-bar graphs or double line graphs. Connections: M05-S1C1-05, M05-S1C3-01, M05-S2C1-01, M05-S2C1-03, M05-S3C4-01, M05-S5C2-09, SC05-S1C1-01, SC05-S1C1-02, SC05-S1C3-01, SS05-S4C6-02, SS05-S4C6-03	M05-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem. M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155 Unit 8 – Lesson 7: <i>Line Graphs</i> pp. 156-157 Unit 8 – Lesson 8: <i>Circle Graphs</i> pp. 158-159
PO 3. Use mean, median, mode, and range to analyze and describe the distribution of a given data set. Connections: M05-S1C3-01, M05-S2C1-02, SC05-S1C3-01	M05-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem. M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Unit 8 – Lesson 4: <i>Mode, Median, and Range</i> pp. 150-151 Unit 8 – Lesson 5: <i>The Mean</i> pp. 152-153
Strand 2: Data Analysis, Probability, and Discrete Mathematics		
Concept 2: Probability		
PO 1. Describe the theoretical probability of events and represent the probability as a fraction, decimal, or percent. Connections: M05-S1C1-01, M05-S1C1-05, M05-S1C3-01, M05-S2C2-02, M05-S2C3-02	M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Unit 8 – Lesson 3: <i>Probability Experiments</i> pp. 148-149
PO 2. Explore probability when	M05-S5C2-05. Represent a problem	Unit 8 –

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<p>performing experiments by predicting the outcome, recording the data, comparing outcomes of the experiment to predictions, and comparing the results of multiple repetitions of the experiment.</p> <p>Connections: M05-S2C2-01</p>	<p>situation using any combination of words, numbers, pictures, physical objects, or symbols.</p> <p>M05-S5C2-08. Make and test conjectures based on data or information collected from explorations and experiments.</p>	<p>Lesson 2: <i>Evaluating Probability</i> pp. 146-147</p>
<p>Strand 2: Data Analysis, Probability, and Discrete Mathematics Concept 3: Systematic Listing and Counting</p>		
<p>PO 1. Analyze relationships among representations and make connections to the multiplication principle of counting.</p> <p>Connections: M05-S2C3-02, M05-S5C2-09, M05-S5C2-10</p>	<p>M05-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection.</p> <p>M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.</p>	<p>Unit 2 – Lesson 3: <i>Multiplying by Multiples of 10, 100, and 1,000</i> pp. 40-41</p>
<p>PO 2. Solve a variety of counting problems and explain the multiplication principle of counting.</p> <p>Connections: M05-S1C3-01, M05-S2C2-01, M05-S2C3-01</p>	<p>M05-S5C2-04. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem.</p> <p>M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.</p>	<p>Unit 2 – Lesson 3: <i>Multiplying by Multiples of 10, 100, and 1,000</i> pp. 40-41</p>
<p>Strand 3: Patterns, Algebra, and Functions Concept 1: Patterns</p>		
<p>PO 1. Recognize, describe, create, and analyze a numerical sequence involving fractions and decimals using addition and subtraction.</p>	<p>M05-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection.</p> <p>M05-S5C2-04. Determine whether a</p>	<p>Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93</p>

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Connections: M05-S1C2-01, M05-S1C3-01, M05-S3C4-01	problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem.	
Strand 3: Patterns, Algebra, and Functions		
Concept 4: Analysis of Change		
PO 1. Describe patterns of change including constant rate and increasing or decreasing rate. Connections: M05-S1C1-05, M05-S1C3-01, M05-S2C1-02, M05-S3C1-01, M05-S5C2-10, SC05-S1C3-01	M05-S5C2-02. Identify relevant, missing, and extraneous information related to the solution to a problem. M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Unit 5 – Lesson 2: <i>Investigating Patterns</i> pp. 92-93
Strand 4: Geometry and Measurement		
Concept 1: Geometric Properties		
PO 1. Draw and label 2-dimensional figures given specific attributes including angle measure and side length. Connections: M05-S4C1-03, M05-S4C1-04, M05-S4C4-03, M05-S5C2-10	M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Unit 7 – Lesson 3: <i>Measuring and Classifying Angles</i> pp. 130-131
PO 3. Classify quadrilaterals by their properties. Connections: M05-S4C1-01, M05-S4C1-04, M05-S4C4-04, M05-S4C4-05, M05-S5C1-02, M05-S5C2-10	M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Unit 7 – Lesson 7: <i>Classifying Quadrilaterals</i> pp. 138-139
PO 4. Compare attributes of 2-	M05-S5C2-03. Select and use one or	Unit 7 –

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dimensional figures with 3-dimensional figures by drawing and constructing nets and models. Connections: M05-S4C1-01, M05-S4C1-03	more strategies to efficiently solve the problem and justify the selection. M05-S5C2-08. Make and test conjectures based on data or information collected from explorations and experiments.	Lesson 1: <i>Geometric Concepts</i> pp. 126-127 Unit 7 – Lesson 2: <i>Lines</i> pp. 128-129 Unit 7 – Lesson 3: <i>Measuring and Classifying Angles</i> pp. 130-131 Unit 7 – Lesson 4: <i>Classifying Triangles</i> pp. 132-133 Unit 7 – Lesson 5: <i>Translations</i> pp. 134-135 Unit 7 – Lesson 6: <i>Reflections and Rotations</i> pp. 136-137 Unit 7 – Lesson 7: <i>Classifying Quadrilaterals</i> pp. 138-139 Unit 7 – Lesson 8: <i>Solid Figures</i> pp. 140-141
Strand 4: Geometry and Measurement		
Concept 4: Measurement		
PO 3. Measure angles between 0 and 360 degrees. Connections: M05-S4C1-01, M05-S4C1-02, M05-S4C4-02	M05-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection.	Unit 7 – Lesson 3: <i>Measuring and Classifying Angles</i> pp. 130-131
PO 4. Solve problems involving the area of 2-dimensional figures by using the properties of parallelograms and triangles. Connections: M05-S1C3-01, M05-S4C1-03, M05-S5C1-02	M05-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M05-S5C2-05. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Unit 6 – Lesson 5: <i>Area of Triangles</i> pp. 116-117
PO 5. Solve problems involving area and perimeter of regular and irregular polygons using reallocation of square units.	M05-S5C2-03. Select and use one or more strategies to efficiently solve the problem and justify the selection. M05-S5C2-05. Represent a problem	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Unit 6 –

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Connections: M05-S1C3-01, M05-S4C1-03, M05-S5C1-02	situation using any combination of words, numbers, pictures, physical objects, or symbols.	Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112-113 Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Unit 6 – Lesson 5: <i>Area of Triangles</i> pp. 116-117
Strand 5: Structure and Logic		
Concept 1: Algorithms and Algorithmic Thinking		
PO 1. Analyze common algorithms for adding and subtracting fractions and decimals using the associative, commutative, and distributive properties. Connections: M05-S1C1-01, M05-S1C1-02, M05-S1C2-01, M05-S1C2-04, M05-S5C2-10	M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions. M05-S5C2-07. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.	Unit 4 – Lesson 1: <i>Addition and Subtraction of Fractions (Like Denominators)</i> pp. 72-73 Unit 4 – Lesson 2: <i>Addition and Subtraction of Mixed Numbers (Like Denominators)</i> pp. 74-75 Unit 4 – Lesson 3: <i>Addition and Subtraction of Fractions (Unlike Denominators)</i> pp. 76-77 Unit 4 – Lesson 4: <i>Addition of Mixed Numbers (Unlike Denominators)</i> pp. 78-79 Unit 4 – Lesson 5: <i>Subtraction of Mixed Numbers (Unlike Denominators)</i> pp. 80-81
PO 2. Develop an algorithm or formula to calculate areas and perimeters of simple polygons. Connections: M05-S4C1-03, M05-S4C4-04, M05-S4C4-05, M05-S5C2-10	M05-S5C2-06. Summarize mathematical information, explain reasoning, and draw conclusions.	Unit 6 – Lesson 1: <i>Area and Perimeter</i> pp. 108-109 Unit 6 – Lesson 2: <i>Investigating Area and Perimeter</i> pp. 110-111 Unit 6 – Lesson 3: <i>Perimeter of Irregular Shapes</i> pp. 112-113 Unit 6 – Lesson 4: <i>Area of Parallelograms</i> pp. 114-115 Unit 6 – Lesson 5: <i>Area of Triangles</i> pp. 116-117
Strand 5: Structure and Logic		
Concept 2: Logic, Reasoning, Problem Solving, and Proof		
PO 1. Analyze a problem situation to		Unit 5 –

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determine the question(s) to be answered.		Lesson 5: <i>Solving One-Step Equations</i> pp. 98-99 Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100-101
PO 2. Identify relevant, missing, and extraneous information related to the solution to a problem.		Unit 5 – Lesson 5: <i>Solving One-Step Equations</i> pp. 98-99 Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100-101
PO 3. Select and use one or more strategies to efficiently solve the problem and justify the selection.		Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100-101
PO 4. Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem.		Unit 2 – Lesson 6: <i>Estimating Quotients</i> pp. 46-47
PO 5. Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols.		Unit 5 – Lesson 6: <i>Problem Solving</i> pp. 100-101
PO 6. Summarize mathematical information, explain reasoning, and draw conclusions.		Unit 8 – Lesson 6: <i>Bar Graphs</i> pp. 154-155 Unit 8 – Lesson 7: <i>Line Graphs</i> pp. 156-157 Unit 8 – Lesson 8: <i>Circle Graphs</i> pp. 158-159
PO 7. Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question.		Unit 2 – Lesson 6: <i>Estimating Quotients</i> pp. 46-47
PO 8. Make and test conjectures based on data or information collected from explorations and experiments.		Unit 8 – Lesson 1: <i>Possible Outcomes</i> pp. 144-145 Unit 8 – Lesson 2: <i>Evaluating Probability</i> pp. 146-147

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		Unit 8 – Lesson 3: <i>Probability Experiments</i> pp. 148-149