

CORRELATION
of
the 10 UNDERSTANDING MATH PLUS PROGRAMS
with
Arkansas Mathematics Curriculum Framework
Grade 7

Note: a. The Understanding Math PLUS series of programs consist of 10 programs written for Kindergarten to 10th Grade.

The 10 programs are:

- Understanding Fractions
- Understanding Probability
- Understanding Exponents
- Understanding Algebra
- Understanding Numeration
- Understanding Measurement and Geometry
- Understanding Whole Numbers and Integers
- Understanding Percent
- Understanding Equations
- Understanding Graphing

Note: b. The Understanding Numeration software for K to 3 is set up so that the teacher selects items in the following order:

Concept .. from 5 concepts .. Counting, Comparing & Ordering, Place Value, Operations and Problem Solving.

Skill .. chosen from the list of specific learning expectations

Level .. indicates the levels of development for Kindergarten to 3rd grade.

Level	Upper Range of Number
A	10
B	20
C	100
D	1000

Lesson .. 250 lessons are sequenced to build understanding of concepts.

A detailed Lesson Synopsis on the website www.neufeldmath.com to assist the teacher by stating the lesson contents but also by giving lesson suggestions.
Worksheet .. off computer worksheets are selected from the CD by a code.

Note: c. The remaining 9 Understanding Math programs for 4th to 10th grade are set up so that they can be used in a variety of teaching and learning environments ranging from a teacher centered approach with 1 computer to a student centered lab approach. The lessons can also be used in remediation, tutorial, intervention, resource, fast-tracking.

Each topic has:

..an interactive concept introduction, usually with a variety of graphic approaches.

..a number of particular examples

..practice questions with random questions but particular feedback

..a topic test with random questions and tracking

..off computer worksheets selected from the website .. www.neufeldmath.com

Strand: Number and Operations

Standard 1 Number Sense:

Students shall understand numbers, ways of representing numbers, relationships among numbers and number systems

Standard	Understanding Math PLUS Program and Lesson
<p>NO.1.7.1 Relate, with and without models and <i>pictures</i>, concepts of <i>ratio</i>, <i>proportion</i>, and <i>percent</i>, including <i>percents</i> less than 1 and greater than 100</p>	<p>MAT+ Understanding Percent Topic 6: Problems Involving Percent In This Topic Steps in Solving Problems Finding the Whole Recall Proportion School Population: Method 1 – Using Proportion; Method 2 – Grades Problem: Method 1 – Using Proportion; Method 2 Bike Sale: Method 1 – Using Proportion; Method 2 Finding the Percent Theatre problem Car problem Percent of a Number Earnings Problem Nickel Ore Percents Greater than 100% Number problem Pencil Problem</p>
<p>NO.1.7.2 Demonstrate, with and without appropriate <i>technology</i>, an understanding of <i>place value</i> using powers of 10 and write numbers greater than one in <i>scientific notation</i></p>	<p>MAT+ Understanding Whole Numbers and Integers Topic 1: The Meaning of Whole Numbers CAN/US Place Value to 999 999 Examples Examples 1,2,3,4,5 The Number Line</p> <p>MAT+ Understanding Exponents Topic 4: Scientific Notation Why Use Scientific Notation? Scientific Notation for Large Numbers Introduction Chart The Rule The Rule The Steps</p>

<p>NO.1.7.3 Convert between <i>scientific notation</i> and standard <i>notation</i> using numbers greater than one.</p>	<p><u>MAT+ Understanding Whole Numbers and Integers</u> Expanded Notation To 999 Examples 1, 2 To 9,999 Examples 1, 2 Write as Numerals Examples 1, 2</p> <p><u>MAT+ Understanding Exponents</u> Topic 4: Scientific Notation Why Use Scientific Notation? Scientific Notation for Large Numbers Introduction Chart The Rule The Rule The Steps</p>
<p>NO.1.7.4 Find decimal and <i>percent equivalents</i> for mixed numbers and explain why they represent the same value</p>	<p><u>MAT+ Understanding Fractions</u> Topic 3: Fraction/Decimal to Percent Decimals to Fractions – Place Value Expressing a Decimal as a Percent Examples 1,2,3 Summary and Pattern Percent Nitrogen in Air Batting Averages Expressing a Fraction as a Percent An Example Method 1 – Examples 1,2 Method 2 – Examples 1,2 Lightning Example Percent Change Percent Increase Percent Decrease Percent Increase or Decrease</p>
<p>NO.1.7.5 Compare and represent <i>integers</i>, fractions, decimals and mixed numbers and find their approximate location on a number line</p>	<p><u>MAT+ Understanding Whole Numbers and Integers</u> Topic 4: The Meaning of Integers Comparing Integers Examples 1,2,3,4 Examples Questions: Examples 1,2,3,4,5,6 Practice Questions; Topic Test</p>

<p>NO.1.7.6 Recognize subsets of the <i>real number system</i> (<i>natural, whole, integers, rational, and irrational numbers</i>)</p>	
<p>Strand: Number and Operations Standard 2: Properties of Number Operations Students shall understand meanings of operations and how they relate to one another</p>	
<p>NO.2.7.1 Apply the <i>distributive property</i> of multiplication over addition or subtraction to simplify computations with <i>integers, fractions and decimals</i></p>	<p style="text-align: center;">Understanding Math PLUS Program and Lesson</p> <p>MAT+ Understanding Whole Numbers and Integers Topic 3: Multiplying and Dividing Whole Numbers Multiply by a Two Digit Multiplier Partial Products (Area) Partial Products – Examples 1,2,3 – with blocks Partial Products – Examples 4,5,6 – without blocks Partial Products – Questions 1,2,3 The Distributive Method Distributive Method – Examples 1,2,3 Distributive Method – Questions 1,2,</p>
<p>NO.2.7.2 Apply the addition, subtraction, multiplication and division properties of equality to one-step equations with <i>integers, fractions, and decimals</i></p>	<p>MAT+ Understanding Equations Topic 2: Solving One-Step Equations Our Problem Concepts – Examples with Tiles Concepts – Examples without Tiles Practice Questions; Topic Test</p> <p>Topic 3: Solving Two-step Equations Our Problem Concepts – Examples with Tiles Examples 1 through 4 Concepts – Examples without Tiles Practice Questions; Topic Test</p>
<p>NO.2.7.3 Apply rules (conventions) for <i>order of operations to integers and positive rational numbers</i> including parentheses, brackets or exponents</p>	<p>MAT+ Understanding Whole Numbers and Integers Topic 9: Order of Operations Example Questions Examples 1 through 10 Word Problems Shipping Babysitting Garbage Practice Questions; Topic Test</p>

NO.2.7.4

Model and develop addition, subtraction, multiplication and division of *integers*

MAT+ Understanding Whole Numbers and Integers

Topic 5: Adding Integers

- In This Topic
- Elevators...An Introduction to Addition
Examples 1,2,3,4
- Summary... Using Elevators
- Markers...An Introduction to Addition
Opposites
Examples 1,2,3,4
- Going for a Walk...An Introduction to Addition
Examples 1,2,3
- Number Line...An Introduction to Addition
Examples 1,2,3
- Summary... Using a Number Line
- Writing Positive Integers
Examples 1,2,3

Topic 6: Subtracting Integers

- In This Topic
- Markers...An Introduction to Subtraction
Markers Help Us Understand
Review Opposites
Examples 1,2,3,4,5,6,7,8
The Pattern
- Elevators...An Introduction to Subtraction
Examples 1,2,3,4
- Summary... Using Elevators
- Summary...Add the Opposite
Example Questions
Example 1 – With Brackets
Example 2 – With Brackets
Example 3 – Meaning of ...2-5
Example 4 – Meaning of -7-3
Example 5 – Meaning of -7+9-18
Example 6 – Meaning of -4-9+2-8
Summary from Examples 3 to 6
- Going for a Walk
Preliminary
The Walk
David’s Trip Part 1, 2
Summary

	<p>Topic 7: Multiplying Integers Multiplication is... Examples 1,2 The Multiplication Table Instructions Patterns Practice 1,2 Order in Multiplication The Multiplication Table Examples 1,2,3 Summary #1...Signs Negative X Negative...Note Patterns Patterns 1,2 Summary #2...Signs Example Questions Examples 1,2,3,4,5</p> <p>Topic 8: Dividing Integers Division to Multiplication The Division Table Instructions Patterns Practice The Inverse of Multiplication Examples 1,2 Summaries #1 & #2...Signs Examples Questions: Examples 1,2,3,4</p>
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Strand: Number and Operations
Standard 3: Numerical Operations and Estimation
Students shall compute fluently and make reasonable estimates

<p>NO.3.7.1 Compute, with and without appropriate <i>technology</i>, with <i>integers</i> and <i>positive rational numbers</i> using real world situations to solve problems</p>	<p>Understanding Math PLUS Program and Lesson MAT+ Understanding Whole Numbers and Integers Topic 5: Adding Integers Word Problems Temperature Money Car</p> <p>Topic 6: Subtracting Integers Word Problems</p>
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<p>NO.3.7.2 Solve with and without appropriate <i>technology</i>, multi-step problems using a variety of methods and tools (i.e., objects, mental computation, paper and pencil)</p>	<p>The Sailboat The Bank</p> <p>MAT+ <u>Understanding Equations</u> Topic 5: Word Problems Words and Symbols The Translation Machine Examples 1,2,3,4 The Trick Machine Instructions The Machine Explanation with Picture; with Symbols Area of Walls Chemistry Pools Puzzler – The First Problem</p>
<p>NO.3.7.3 Determine when an <i>estimate</i> is sufficient and use <i>estimation</i> to decide whether answers are reasonable in problems including fractions and decimals</p> <p>NO.3.7.4 Apply <i>factorization</i>, <i>LCM</i>, and <i>GCF</i> to solve problems using more than two numbers and explain the solution</p>	<p>MAT+ <u>Understanding Algebra</u> Topic 3: Patterns, Patterns, Patterns Factor Pairs in Arrays Factors of 8, 12, 16, 20, 5, 15, 18 Prime and Composite Prime Numbers Composite Numbers Common Factors/GCF Examples 1,2</p>
<p>NO.3.7.5 Represent and solve problem situations that can be modeled by and solved using concepts of <i>absolute value</i>, exponents and <i>square roots</i> (for <i>perfect squares</i>) with and without appropriate <i>technology</i></p>	<p>MAT+ <u>Understanding Equations</u> Topic 8: Solving Absolute Value Equations Absolute Value... What is it? Concept Summary</p> <p>MAT+ <u>Understanding Exponents</u> Topic 5: Square Root Squaring Numbers Square Roots Radical Signs Examples 1,2 Summary</p>
<p>NO.3.7.6 Solve, with and without <i>technology</i>, real world <i>percent</i> problems</p>	<p>MAT+ <u>Understanding Percent</u> Topic 6: Problems Involving Percent</p>

<p>Ex. I=PRT</p>	<p>In This Topic Steps in Solving Problems Finding the Whole Recall Proportion School Population: Method 1 – Using Proportion; Method 2 – Grades Problem: Method 1 – Using Proportion; Method 2 Bike Sale: Method 1 – Using Proportion; Method 2 Finding the Percent Theatre problem Car problem Percent of a Number Earnings Problem Nickel Ore Percents Greater than 100% Number problem Pencil Problem Mental Calculation Number Problem Tipping Percent Change Interest Tree Problem Percent Markup</p>
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Strand: Algebra

Standard 4: Patterns, Relations and Functions

Students shall recognize, describe, and develop patterns, relations and functions

Standard	Understanding Math PLUS Program and Lesson
<p>A.4.7.1 Create and complete a <i>function</i> table (<i>input/output</i>) using a given rule with two <i>operations</i></p>	<p>Understanding Graphing Topic 5: Relations, Equations, and Functions Functions What is a Function – Examples 1,2,3 Vertical Line Test Examples 1, 2, 3 Function Notation Examples 1,2</p>
<p>A.4.7.2 Identify and extend <i>patterns</i> in real world situations</p>	
<p>A.4.7.3</p>	

Interpret and write a rule for a two operation *function table*
 Ex. multiply by 2, add 1

Strand: Algebra
Standard 5: Algebraic Representations

Students shall represent and analyze mathematical situations and structures using algebraic symbols

Understanding Math PLUS Program and Lesson	
<p>A.5.7.1 Solve and graph one-step <i>linear equations</i> and <i>inequalities</i> using a variety of methods (i.e., hands-on, <i>inverse operations</i>, symbolic) with real world application with and without <i>technology</i></p>	<p>MAT+ <u>Understanding Graphing</u> Topic 6: Linear Relations In This Topic What is a Linear Relation? Graphs of Linear Relations Concept Examples 1 through 6</p> <p>MAT+ <u>Understanding Equations</u> Topic 7: Solving Inequalities Comparing Integers The Integer Line Example 1 ...Great Than; Example 2...Less Than Explanation Example 3...Greater Than; Example 4...Less Than Greater Than or Less Than Inequalities What are They? Inequality vs. Equation Summary of Relationships Inequality on the Number Line Examples 1-4 Solving Inequalities Examples 1-6 Graphing Linear Inequalities in Two Variables Concepts 1,2 Examples 1,2,3</p>
<p>A.5.7.2 Solve simple <i>linear equations</i> using <i>integers</i> and graph on a <i>coordinate plane</i> Ex. use a T chart</p>	<p>MAT+ <u>Understanding Graphing</u> Topic 8: Equation of a Straight Line Graph $y = mx+b$ Examples 1,2,3,4 Patterns to Summary Examples 5,6,7</p>
<p>A.5.7.3</p>	<p>MAT+ <u>Understanding Algebra</u></p>

<p>Translate phrases and sentences into <i>algebraic expressions</i> and <i>equations</i> including parentheses and positive and <i>rational numbers</i> and simplify <i>algebraic expressions</i> by combining like terms</p>	<p>Topic 2: Tiles and Algebra Pictures to Words to Algebraic Expressions Examples 1,2 Algebraic Expressions to Tiles Examples 1,2,3 Combining Opposites Singles Bars Squares</p> <p>Topic 5: Adding Expressions Our Problem Adding Expressions with X and Y Tiles Examples 1,2,3 Adding Expressions with X-Squared Tiles Examples 1,2,3 Adding Expressions without Tiles Examples 1,2 Practice Questions with Tiles Practice Questions without Tiles</p>
<p>A.5.7.4 Write and evaluate <i>algebraic expressions</i> using positive <i>rational numbers</i></p>	<p>MAT+ Understanding Algebra Topic 4: Patterns, Formulas, Substitution Patterns to Formulas Example...Hockey Standings Example...Counting Money Example...Angles in a Polygon Substitution is...Math Scrabble Scrabble 1,2,3 Challenge Substitution Examples Examples 1,2,3,4</p>

Strand: Algebra

Standard 6: Algebraic Models

Students shall develop and apply mathematical models to represent and understand quantitative relationships

<p>A.6.7.1 Use tables and graphs to represent <i>linear equations</i> by plotting, with and without appropriate <i>technology</i>, points in a <i>coordinate plane</i></p> <p>A.6.7.2</p>	<p>Standard Understanding Math PLUS Program and Lesson MAT+ Understanding Graphing Topic 6: Linear Relations The Taxi Example – Setup Equation – Graph Equation The Elastic Example – Setup Equation – Graph Equation Lightning Example – Setup Equation – Graph Equation</p>
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<p>Represent, with and without appropriate <i>technology</i>, <i>linear equations</i> by plotting and graphing points in the <i>coordinate plane</i> using all four <i>quadrants</i> given data in a table from a real world situation,</p>	<p>Line of Best Fit Examples 1, 2 Practice Questions; Topic Test</p>
<p>A.6.7.3 Create and complete a <i>function table (input/output)</i> using a given rule with two operations in real world situations</p>	

Strand: Algebra

Standard 7: Analysis of Change

Students shall analyze change in various contexts

<p>A.7.7.1 Use, with and without appropriate <i>technology</i>, tables and graphs to compare and identify situations with constant or varying <i>rates of change</i></p>	<p>Understanding Math PLUS Program and Lesson</p>
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Strand: Geometry

Standard 8: Geometric Properties

Students shall analyze characteristics and properties of 2 and 3 dimensional geometric shapes and develop mathematical arguments about geometric relationships

<p>G.8.7.1 Identify, draw, classify and compare geometric figures using models and real world examples</p>	<p>Understanding Math PLUS Program and Lesson <u>MAT+ Understanding Measurement and Geometry</u> Topic 8 : Projective Geometry An Introduction Toothpicks on Isometric Dot Paper Toothpicks to Cube The Views Using Isometric Grid Paper Orthographic Projections: Introduction The Cube Tool Introduction Tutorial Play with Tool Given Solid – Build it Examples 1 through 6 Given Views – Build it Examples 1 through 6</p>
<p>G.8.7.2 Investigate geometric properties and their relationships in one-, two-, and <i>three-dimensional</i> models, including convex and concave <i>polygons</i></p>	
<p>G.8.7.3</p>	<p>MAT+ Understanding Measurement and Geometry</p>

<p>Recognize the pairs of angles formed and the relationship between the angles including two <i>intersecting lines</i> and <i>parallel lines</i> cut by a <i>transversal</i> (<i>vertical, supplementary, complementary, corresponding, alternate interior, alternate exterior angles</i> and <i>linear pair</i>)</p> <p>G.8.7.4 Use paper or physical models to determine the sum of the measures of <i>interior angles</i> of triangles and <i>quadrilaterals</i></p>	<p>Topic 6: Angles and Polygons In This Topic Parallel Lines Example with Parallel Lines Examples 1,2 Angles in Triangles Exploration An Explanation Exterior Angles – Example Angles in Polygons Methods 1,2 Exterior Angles in a Polygon Practice Questions; Topic Test</p>
<p>G.8.7.5 <i>Model</i> and develop the concept that π is the <i>ratio</i> of the <i>circumference</i> to the <i>diameter</i> of any circle</p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 3: The Circle PI...A Special Number Introduction How do we Measure Circumference? Measuring Circles Summary Circumference of a Circle Circumference Example 1 – Egg Example 2 – The Well Example 3 – The Rolling Coin Example 4 – The Semi-Circle</p>
<p>G.8.7.6 Develop the properties of <i>similar figures</i> (<i>ratio</i> of sides and <i>congruent</i> angles)</p>	

Strand: Geometry

Standard 9: Transformation of Shapes

Students shall apply transformations and the use of symmetry to analyze mathematical situations

<p>G.9.7.1 Examine the congruence, similarity, and <i>line</i> or <i>rotational symmetry</i> of objects using <i>transformations</i></p> <p>G.9.7.2 Perform <i>translations</i> and <i>reflections</i> of <i>two-dimensional</i> figures using a variety of methods (<i>paper folding, tracing, graph paper</i>)</p>	<p>Understanding Math PLUS Program and Lesson MAT+ <u>Understanding Graphing</u> Topic 4: Transformations Line of Symmetry – An Introduction Introduction Examples 1 through 6 Symmetry Match Puzzle 1,2</p>
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	<p>Translations Object to Image We Say, We Write Translation Mapping Rule Examples</p> <p>Reflections Object to Image We Say, We Write Reflection Mapping Rule Examples</p> <p>Rotations Object to Image We Say, We Write Rotation Mapping Rule Examples</p>
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Strand: Geometry

Standard 10: Coordinate Geometry

Students shall specify locations and describe spatial relationships using coordinate geometry and other representational systems

Standard	Understanding Math PLUS Program and Lesson
<p>G.10.7.1 Plot points in the <i>coordinate plane</i></p> <p>G.10.7.2 Plot points that form the <i>vertices</i> of a geometric figure and draw, identify and classify the figure.</p>	<p>MAT+ Understanding Graphing Topic 3: Points on a Grid Ordered Pairs Axis Quadrants and Cartesian Plane Order is Important Examples</p> <p>Shapes</p>

Strand: Geometry

Standard 11: Visualization and Geometric Models

Students shall use visualization, spatial reasoning and geometric modeling

Standard	Understanding Math PLUS Program and Lesson
<p>G.11.7.1 Build <i>three-dimensional</i> solids from <i>two-dimensional patterns (nets)</i></p> <p>G.11.7.2 Construct a building out of <i>cubes</i> from a set of views (front, top, side)</p>	<p>MAT+ Understanding Measurement and Geometry Topic 8 : Projective Geometry An Introduction Toothpicks on Isometric Dot Paper Toothpicks to Cube The Views</p>

	<p>Using Isometric Grid Paper</p> <p>Orthographic Projections: Introduction The Cube Tool</p> <p>Introduction Tutorial Play with Tool Given Solid – Build it Examples 1 through 6</p> <p>Given Views – Build it Examples 1 through 6</p>
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Strand: Measurement

Standard 12: Physical Attributes

Students shall use attributes and tools of measurement to describe and compare mathematical and real-world objects

Understanding Math PLUS Program and Lesson	
<p>M.12.7.1 Understand, select and use the appropriate units and tools (metric and customary) to measure length, weight, <i>mass</i> and <i>volume</i> to the required degree of accuracy for real world problems</p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 4: Solids: Volume and Surface Area Volume of a Solid The Concept</p>
<p>M.12.7.2 Understand relationships among units within the same system</p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 1: An Introduction to Measurement Metric and US Standard Measurement Searching for Standardized Measurements Related Units from Metric Prefixes Metric Prefixes at Work Converting Between Metric Units</p>
<p>M.12.7.3 Find different <i>areas</i> for a given <i>perimeter</i> and find a different <i>perimeter</i> for a given <i>area</i></p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 2: Perimeter and Area of Polygons Given Area and Perimeter – Create Shapes Examples 1, 2, 3, 4</p>

Strand: Measurement

Standard 13: Systems of Measurement

Students shall identify and use units, systems and processes of measurement

Understanding Math PLUS Program and Lesson	
<p>M.13.7.1 Solve real world problems involving two or more <i>elapsed times</i>, counting forward and backward (calendar and clock)</p>	

<p>M.1.3.7.2 Draw and measure distance to the nearest mm and 1/16 inch accurately</p>	<p><u>MAT+ Understanding Measurement and Geometry</u> Topic 1: An Introduction to Measurement Measurements with a Ruler Introduction to the Ruler Inches #1 Inches #2 Calculating Distances Using Inches Examples 1, 2, 3, 4, 5, 6</p>
<p>M.1.3.7.3 Develop and use <i>strategies</i> to solve problems involving <i>area</i> of a <i>trapezoid</i> and <i>circumference</i> and <i>area</i> of a circle</p>	<p><u>MAT+ Understanding Measurement and Geometry</u> Topic 3: The Circle Area of a Circle Recall Area Area Exploration #1, #2 Example 1 – Wheel Example 2 – Pizza Example 3 – The Semi-circle Example 4 – The Dog’s Run Example 5 – The Hockey Rink</p>
<p>M.1.3.7.4 Derive and use formulas for <i>surface area</i> and <i>volume</i> of <i>prisms</i> and <i>cylinders</i> and justify them using geometric models and common materials</p>	<p><u>MAT+ Understanding Measurement and Geometry</u> Topic 4: Solids: Volume and Surface Area Surface Area of a Solid The Concept Surface Area of a Pyramid Surface Area of a Cylinder Volume of a Solid The Concept Volume of a Prism: Examples 1, 2 Volume of a Cylinder</p>
<p>M.1.3.7.5 Apply properties (scale <i>factors</i>, <i>ratio</i>, and <i>proportion</i>) of <i>congruent</i> or <i>similar</i> triangles to solve problems involving missing lengths and angle measures</p>	
<p>M.1.3.7.6 Find the distance between two points on a number line and locate the midpoint</p>	
<p>M.1.3.7.7 Estimate and compute the <i>area</i> of more complex or irregular <i>two-dimensional</i> shapes by</p>	<p><u>MAT+ Understanding Measurement and Geometry</u> Topic 2: Perimeter and Area of Polygons</p>

dividing them into more basic shapes	<p>Given Area and Perimeter – Create Shapes Examples 1, 2, 3, 4</p> <p>Problems Section Length of Fence Area of a Wall The Tablecloth</p>
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**Strand: Data Analysis and Probability
 Standard 14: Data Representation**

Students shall formulate questions that can be addressed with data and collect, organize and display

Understanding Math PLUS Program and Lesson	
<p>DAP.14.7.1 Identify different ways of selecting samples and compose appropriate questions Ex. survey response, random sample, representative sample and convenience sample</p>	
<p>DAP.14.7.2 Explain which types of display are appropriate for various data sets (<i>line graph</i> for change over time, <i>circle graph</i> for part-to-whole comparison, <i>scatter plot</i> for trends)</p> <p>DAP.14.7.3 Construct and interpret <i>circle graphs</i>, <i>box-and-whisker plots</i>, <i>histograms</i>, <i>scatter plots</i> and <i>double line graphs</i> with and without appropriate <i>technology</i></p>	<p>MAT+ Understanding Graphing Topic 2: Statistics Presenting Data Stem-and-Leaf Diagram Examples 1 & 2 Bar Graph Examples 1 & 2 Histogram Examples 1 & 2 Line Graph Examples 1 & 2 Circle or Pie Graph Examples 1 & 2 Scatter Plot Examples 1 & 2 Box and Whisker Plots Concepts Examples 1, 2</p>

Strand: Data Analysis and Probability

Standard 15: Data Analysis

Students shall select and use appropriate statistical methods to analyze data

Standard	Understanding Math PLUS Program and Lesson
<p>DAP.15.7.1 Analyze data displays, including ways that they can be misleading</p>	<p>MAT+ Understanding Graphing Topic 2: Statistics Misleading Statistics Examples 1,2</p>
<p>DAP.15.7.2 Analyze, with and without appropriate <i>technology</i>, a set of data by using and comparing measures of <i>central tendencies (mean, median, mode)</i> and <i>measures of spread (range, quartile, interquartile range)</i></p>	<p>MAT+ Understanding Graphing Topic 2: Statistics Measures of Central Tendency Introduction The Mean Average The Median Average The Mode Summary Another Example Adding Data Points</p>

Strand: Data Analysis and Probability

Standard 16: Inferences and Predictions

Students shall develop and evaluate inferences and predictions that are based on data

Standard	Understanding Math PLUS Program and Lesson
<p>DAP.16.7.1 Make, with and without appropriate <i>technology</i>, <i>conjectures</i> of possible relationships in a <i>scatter plot</i> and approximate the <i>line of best fit (trend line)</i></p>	<p>MAT+ Understanding Graphing Topic 2: Statistics Presenting Data Scatter Plot Examples 1 & 2</p>

Strand: Data Analysis and Probability

Standard 17: Probability

Students shall understand and apply basic concepts of probability

Standard	Understanding Math PLUS Program and Lesson
<p>DAP.17.7.1 Understand that <i>probability</i> can take any value between 0 and 1 (events that are not going to occur have <i>probability 0</i>, events certain to occur have <i>probability 1</i>)</p>	<p>MAT+ Understanding Probability Topic 3: Dice Probabilities Roll One Die Your Experiment</p>

DAP.17.7.2

Design, with and without appropriate *technology*, an experiment to test a *theoretical probability* and explain how the results may vary

Ex. suggested materials for simulations are: two-color counters, a number cube, and spinners

Computer's Experiment
Theoretical Experiment
Patterns
Summary
Roll Two Dice
Your Experiment
Computer's Experiment
Theoretical Experiment
Patterns
Summary
Practice Questions; Topic Test