

<b>Everyday Mathematics, Fifth Grade</b>
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**Correlations of the TEN UNDERSTANDING MATHEMATICS PLUS Programs**  
**By Neufeld Learning Systems Inc.**  
**February 2005**

**Note: a. The Understanding Math PLUS series of programs consist of 10 programs written for Kindergarten to 10<sup>th</sup> Grade.**

**The 10 programs are:**

<b>Understanding Fractions</b>	<b>Understanding Whole Numbers and Integers</b>
<b>Understanding Probability</b>	<b>Understanding Percent</b>
<b>Understanding Exponents</b>	<b>Understanding Equations</b>
<b>Understanding Algebra</b>	<b>Understanding Graphing</b>
<b>Understanding Numeration</b>	
<b>Understanding Measurement and Geometry</b>	

**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 3<sup>rd</sup> grade.

<b>Level</b>	<b>Upper Range of Number</b>
<b>A</b>	<b>10</b>
<b>B</b>	<b>20</b>
<b>C</b>	<b>100</b>
<b>D</b>	<b>1000</b>

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

A detailed Lesson Synopsis on the website [www.neufeldmath.com](http://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 4<sup>th</sup> to 10<sup>th</sup> 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](http://www.neufeldmath.com)

*\*Curriculum is correlated with Understanding Math programs in the following manner:*  
**MAT+** (Understanding Math Plus, 4-10) / **Program Title** / **Topic Number & Title** / **Lesson Title**

## **Unit 1: Number Theory**

Lesson 1.1 ⇨ INTRODUCTION TO THE *STUDENT REFERENCE BOOK*

Lesson 1.2 ⇨ RECTANGULAR ARRAYS

Lesson 1.3 ⇨ FACTORS

Lesson 1.4 ⇨ THE *FACTOR CAPTOR GAME*

**MAT+ / Understanding Algebra / Topic 3 – Patterns, Patterns, Patterns /**  
Factor Pairs in Arrays: Factors 8, 12, 16, 20, 5, 15, 18; Common Factors/GCF:  
Examples 1 & 2; Patterns in the Multiplication Table

Lesson 1.5 ⇨ DIVISIBILITY

**MAT+ / Understanding Whole Numbers and Integers / Topic 3 – Multiplying  
and Dividing Whole Numbers /** Divide by a Single Digit Divisor: Fair Sharing  
Examples 1 & 1, Questions 1 through 6

**MAT+ / Understanding Whole Numbers and Integers / Topic 8 –Dividing  
Integers /** Division to Multiplication; The Division Table: Instructions, Patterns,  
Practice; The Inverse of Multiplication: Examples 1 & 2; Summaries 1 & 2;  
Example Questions 1 through 4; Word Problems: Casino, Plant, Graham’s Walk;  
Practice Questions; Topic Test

Lesson 1.6 ⇨ PRIME AND COMPOSITE NUMBERS

**MAT+ / Understanding Algebra / Topic 3 – Patterns, Patterns, Patterns /**  
Prime and Composite: Prime Numbers, Composite Numbers;

Lesson 1.7 ⇨ SQUARE NUMBERS

Lesson 1.8 ⇨ UNSQUARING NUMBERS

**MAT+ / Understanding Exponents / Topic 5 – Square Root /** Squaring  
Numbers; Square Roots; Radical Signs

Lesson 1.9 ⇨ FACTOR STRINGS AND PRIME FACTORIZATIONS

**MAT+ / Understanding Algebra / Topic 3 – Patterns, Patterns, Patterns /**  
Prime and Composite: Prime Numbers, Composite Numbers;

## **Unit 2: Estimation and Computation**

Lesson 2.1 ⇨ ESTIMATION CHALLENGE

Lesson 2.2 ⇨ PROCEDURES FOR ADDITION OF WHOLE NUMBERS

Lesson 2.3 ⇨ PROCEDURES FOR SUBTRACTION OF WHOLE NUMBERS  
AND DECIMALS

Lesson 2.4 ⇨ ADDITION AND SUBTRACTION NUMBER STORIES

**MAT+ / Understanding Whole Numbers and Integers / Topic 2 – Adding and Subtracting Whole Numbers** / Add - Partial Sums: Examples 1 through 6; Add – Trade First: Examples 1 through 6; Add – Right to Left: Examples 1 through 6; Subtract – Right to Left: Examples 1 through 6; Subtract – Trade First: Examples 1 through 6; Subtract – Add Up: Examples 1 through 6; Subtract – Add up to Zero: Examples 1 through 4; Whole Numbers Around Us: Examples 1 through 11

**MAT+ / Understanding Fractions / Topic 14 – Addition and Subtraction of Decimals** / Subtracting Decimals: Tenths – The Pencil, Examples 1 through 5, Hundredths – The Field, Examples 1 through 4; Method 1 – Right to Left, Examples 1 through 6; Method 2 – Trade First, Examples 1 through 6; Method 3 – Add Up, Examples 1 through 8; Method 4 – Add Up to Zero, Examples 1 & 2; Decimals Around Us: Length in Metric Units, The Tools, Examples 1 through 5; Pencils: Examples 1 through 5; Money: Examples 1 through 5; Track Meet: Examples 1 through 5; School Supplies

Lesson 2.5 ⇨ ESTIMATE YOUR REACTION TIME

Lesson 2.6 ⇨ CHANCE EVENTS

**MAT+ / Understanding Probability / Topic 1 – What’s Possible?** / The Language of Chance; Possible Outcomes: What Are They? Examples 1 through 8; Practice Questions; Topic test

Lesson 2.7 ⇨ ESTIMATING PRODUCTS

Lesson 2.8 ⇨ MULTIPLICATION OF WHOLE NUMBERS AND DECIMALS

Lesson 2.9 ⇨ THE LATTICE METHOD OF MULTIPLICATION

**MAT+ / Understanding Whole Numbers and Integers / Topic 3 – Multiplying and Dividing Whole Numbers** / Multiplication Facts: Groups of 6,7,8,9; Commutative Property:  $5 \times 1 = 1 \times 5$ , etc.; The 10x10 Multiplication Table: User Picks, Computer Picks; The 12x12 Multiplication Table: Associative Property, Examples 1,2; Multiples of 10, 100, 1000: Patterns in Multiplication by 10, Patterns in Multiplication by 100, Patterns in Multiplication by 1000, Examples 1,2,3; Multiplying by a Single Digit Number: Repeated Addition: Repeated Addition Examples 1 through 4; Partial Products Examples 1 through 6, Questions 1,2,3; Distributive Property; Lattice Method; The Standard Method;

Multiply by a Two Digit Multiplier: Partial Products; The Distributive Method; The Lattice Method; The Standard Method

Lesson 2.10 ⇨ COMPARING MILLIONS, BILLIONS, AND TRILLIONS

**MAT+ / Understanding Whole Numbers and Integers / Topic 1 – The Meaning of Whole Numbers** CAN/US / Millions: Examples 1 through 4, The Number Line; Billions: Example 1; Comparing Large Numbers: Examples 1 through 4; Ordering Large Numbers: Examples 1 through 4

### **Unit 3: Geometry Explorations and the American Tour**

Lesson 3.1 ⇨ INTRODUCTION TO THE AMERICAN TOUR

Lesson 3.2 ⇨ AMERICAN TOUR: POPULATION ESTIMATES

Lesson 3.3 ⇨ EXPLORING ANGLE MEASURES

Lesson 3.4 ⇨ USING A PROTRACTOR

**Understanding MAT+ / Measurement and Geometry / Topic 5 – Angles and Their Measure** / In This Topic; Angles – An Introduction; the Degree; Classifying Angles: Classifications, Memory Game; Measuring Angles; Practice Questions; Topic Test

Lesson 3.5 ⇨ USING A COMPASS

Lesson 3.6 ⇨ CONGRUENT TRIANGLES

Lesson 3.7 ⇨ PROPERTIES OF POLYGONS

**MAT+ / Understanding Measurement and Geometry / Topic 2-Perimeter and Area of Polygons** / Polygons – What are they?: Concept, A Triangle is, A Quadrilateral is, A Pentagon is, A Hexagon is, An Octagon is, Classify Polygons

Lesson 3.8 ⇨ REGULAR TESSELLATIONS

**MAT+ / Understanding Graphing / Topic 4 – Transformations** / Tessellations: Introduction, Examples 1 through 5

Lesson 3.9 ⇨ ANGLES OF POLYGONS

**MAT+ / Understanding Measurement and Geometry / Topic 6 – Angles and Polygons** / Parallel Lines; Example with Parallel Lines; Angles in Triangles: Exploration, An Explanation, Exterior Angles; Angles in Polygons: Methods 1 & 2, Exterior Angles in a Polygon

Lesson 3.10 ⇨ SOLVING PROBLEMS USING THE GEOMETRY TEMPLATE

## Unit 4: Division

Lesson 4.1 ⇒ DIVISION FACTS AND EXTENSIONS

Lesson 4.2 ⇒ THE PARTIAL-QUOTIENT DIVISION ALGORITHM

**MAT+ / Understanding Whole Numbers and Integers / Topic 3 – Multiplying and Dividing Whole Numbers** / Divide by a Single Digit Divisor: Fair Sharing Examples 1 & 1, Questions 1 through 6; Whole Numbers Around Us: Examples 1 through 11

**MAT+ / Understanding Whole Numbers and Integers / Topic 8 –Dividing Integers** / Division to Multiplication; The Division Table: Instructions, Patterns, Practice; The Inverse of Multiplication: Examples 1 & 2; Summaries 1 & 2; Example Questions 1 through 4; Word Problems: Casino, Plant, Graham’s Walk; Practice Questions; Topic Test

Lesson 4.3 ⇒ AMERICAN TOUR: FINDING DISTANCES ON A MAP

Lesson 4.4 ⇒ DIVISION OF DECIMAL NUMBERS

Lesson 4.5 ⇒ INTERPRETING THE REMAINDER

Lesson 4.6 ⇒ SKILLS REVIEW WITH *FIRST TO 100*

## Unit 5: Fractions, Decimals, and Percents

Lesson 5.1 ⇒ FRACTION REVIEW

**MAT+ / Understanding Fractions / Topic 1 – The Meaning of Fractions** / Fractions in the News; Introduction – Think, Write, Say: Circle, Squares, Balls, Examples; Parts of a Fraction; Introduce Fractions: Part of a Whole, One Half, One Third, One Quarter; Parts of a Whole: Two Fifths, Three Eighths, Seven Tenths; Write the Fraction: Questions 1 through 4; Fraction of a Set: Examples 1 through 3; Fraction of a Gas Tank; Fraction Strips: Concepts 1 through 4; Comparison of Fractions: The Symbol – Greater Than, Less Than, Greater and Less Than, Concepts 1 & 2, Examples 1 through 4; Fractions on a Number Line: Halves, Thirds, Quarters, Summary; Pattern Blocks: Examples 1 through 4; Fraction of Pie; The Clock; fractions of Odd Shapes; Word Problems; Fruit Basket: Questions 1 through 4; School Supplies; Practice Questions; Topic Test

Lesson 5.2 ⇒ MIXED NUMBERS

**MAT+ / Understanding Fractions / Topic 13 – Improper Fractions and Mixed Numbers** / The Concept: Packages, Clock; Improper Fractions and Mixed Numbers – What Are They?

Lesson 5.3 ⇒ ORDERING FRACTIONS

**MAT+ / Understanding Fractions / Topic 1 – The Meaning of Fractions /**  
Fraction Strips: Concepts 1 through 4; Comparison of Fractions: The Symbol –  
Greater Than, Less Than, Greater and Less Than, Concepts 1 & 2, Examples 1  
through 4; Fractions on a Number Line: Halves, Thirds, Quarters, Summary

Lesson 5.4 ⇒ TWO RULES FOR FINDING EQUIVALENT FRACTIONS

**MAT+ / Understanding Fractions / Topic 3 – Equivalent Fractions /**  
Introduction: Square, Triangle; Pattern Blocks: Hexagon 1,2; Fraction Strips:  
Concepts 1,2; The Clock: Introduction 1,2, Examples; Equivalent Fractions on a  
Number Line; Comparison of Fractions; Equivalent Fractions in a Multiplication  
Table; One; Equivalent Fractions – The Pattern; Example Questions; Greatest  
Common Factor; Simplifying Fractions; Memory Game; Practice Questions;  
Topic Test

Lesson 5.5 ⇒ FRACTIONS AND DECIMALS: PART 1

Lesson 5.6 ⇒ FRACTIONS AND DECIMALS: PART 2

Lesson 5.7 ⇒ FRACTIONS AND DECIMALS: PART 3

**MAT+ / Understanding Fractions / Topic 15 – Fractions and Decimals /**  
Compare Fractions Methods 1 & 2; Fraction to Decimals; Repeating Decimals:  
An Example, How to Write Them; Decimals to Fractions: Place Value, Examples  
1 through 5; Rounding; My Day; Fraction to Decimal Division Table; Practice  
Questions; Topic Test

Lesson 5.8 ⇒ USING A CALCULATOR TO CONVERT FRACTIONS TO  
PERCENTS

**MAT+ / Understanding Fractions / Topic 6 – Percent, Fractions, Decimals /**  
Expressing a Percent as a Fraction: Introduction with/without Graphics

Lesson 5.9 ⇒ BAR AND CIRCLE GRAPHS

**MAT+ / Understanding Graphing / Topic 2 – Statistics /** An Introduction: Bar  
Graph 1 & 2; Presenting Data: Bar Graphs, Circle or Pie Graphs

Lesson 5.10 ⇒ THE PERCENT CIRCLE: READING CIRCLE GRAPHS

Lesson 5.11 ⇒ THE PERCENT CIRCLE: MAKING CIRCLE GRAPHS

**MAT+ / Understanding Graphing / Topic 2 – Statistics /** Presenting Data:  
Circle or Pie Graphs

Lesson 5.12 ⇒ AMERICAN TOUR: SCHOOL DAYS

## **Unit 6: Using Data; Addition and Subtraction of Fractions**

### Lesson 6.1 ⇒ ORGANIZING DATA

**MAT+ / Understanding Graphing / Topic 2 – Statistics / Collecting Data:**  
Throw a Die, Throw 2 Dice, Voting, Primary Data & Secondary Data – Gathering Methods

### Lesson 6.2 ⇒ NATURAL MEASURE OF LENGTH

**MAT+ / Understanding Measurement and Geometry / Topic 1 – An Introduction to Measurement / Measurement in the News; A Glimpse into the Past; Metric and U.S.A. Standard Measurement Systems: Searching for the Standard Unit**

### Lesson 6.3 ⇒ STEM-AND-LEAF PLOTS FOR HAND AND FINGER MEASURES

**MAT+ / Understanding Graphing / Topic 2 – Statistics / Presenting Data:**  
Stem-and-Leaf Diagram: Examples 1 & 2

### Lesson 6.4 ⇒ MYSTERY PLOTS

**MAT+ / Understanding Graphing / Topic 2 – Statistics / Scatter Plots**

### Lesson 6.5 ⇒ SAMPLE SIZE AND GOOD CONCLUSIONS

### Lesson 6.6 ⇒ ANALYSIS OF SAMPLE DATA

**MAT+ / Understanding Graphing / Topic 2 – Statistics / Measures of Central Tendency: Introduction**

### Lesson 6.7 ⇒ AMERICAN TOUR: CLIMATE

### Lesson 6.8 ⇒ USING A SLIDE RULE TO ADD AND SUBTRACT FRACTIONS

**MAT+ / Understanding Fractions / Topic 8 – Adding Fractions / Pattern Blocks; Fraction Strips; Percent Strips; Decimal Strips; Adding Fractions on a Number Line; Word Problems**

**MAT+ / Understanding Fractions / Topic 9 - Subtracting Fractions / Pattern Blocks; The Clock; Fraction Strips; Percent Strips; Decimal Strips; Subtracting Fractions on a Number Line; Word Problems**

### Lesson 6.9 ⇒ CLOCK FRACTIONS AND COMMON DENOMINATORS

### Lesson 6.10 ⇒ QUICK COMMON DENOMINATORS

**MAT+ / Understanding Fractions / Topic 3 – Equivalent Fractions /** Greatest Common Factor: 12 and 18, 30 and 40, 70 and 42; Simplifying Fractions

## **Unit 7: Exponents and Negative Numbers**

Lesson 7.1 ⇨ EXPONENTIAL NOTATION

Lesson 7.2 ⇨ EXPONENTIAL NOTATION FOR POWERS OF 10

**MAT+ / Understanding Exponents / Topic 1 – The Meaning of Exponents /** Introduction – The Money Game; Introduction – Bacteria Doubling; Introduction – Paper Folding; Exponents, Powers, Bases; Powerful Explosions; Introductory Examples 1 through 5; Examples – Substitution; Examples - Order of Operation; Practice Questions; Topic Test

Lesson 7.3 ⇨ SCIENTIFIC NOTATION

**MAT+ / Understanding Exponents / Topic 4 – Scientific Notation /** Why Use Scientific Notation?; Scientific Notation for Large Numbers: Introduction, Chart, The Rule, The Steps; Scientific Notation for Small Numbers: Introduction, Chart, The Steps; Examples: 1 through 4; Practice Questions

Lesson 7.4 ⇨ PARENTHESES IN NUMBER SENTENCES

Lesson 7.5 ⇨ ORDER OF OPERATIONS

**MAT+ / Understanding Exponents / Topic 1 – The Meaning of Exponents /** Order of Operation

Lesson 7.6 ⇨ USING NEGATIVE NUMBERS

Lesson 7.7 ⇨ ADDITION OF POSITIVE AND NEGATIVE NUMBERS

Lesson 7.8 ⇨ SUBTRACTION OF POSITIVE AND NEGATIVE NUMBERS

Lesson 7.9 ⇨ USING A SLIDE RULE TO ADD AND SUBTRACT

**MAT+ / Understanding Whole Numbers and Integers / Topic 4 – The Meaning of Integers /** Integers Around Us: Temperature, Helicopter, Submarine, Elevator; The Integer Line; Opposite Integers; Absolute Values; Comparing Integers; Example Questions

**MAT+ / Understanding Whole Numbers and Integers / Topic 5 – Adding Integers /** Writing Positive Integers: Examples 1,2,3; Word Problems; Practice Questions

**MAT+ / Understanding Whole Numbers and Integers / Topic 6 – Subtraction of Integers /** Example Questions 1 through 6; Going for a Walk; Word Problems; Practice Questions

Lesson 7.10 ⇨ CALCULATOR PRACTICE: WORKING WITH NEGATIVE NUMBERS

**Unit 8: Fractions and Ratios**

Lesson 8.1 ⇨ REVIEW: COMPARING FRACTIONS

**MAT+ / Understanding Fractions / Topic 3 – Equivalent Fractions / Comparison of Fractions**

Lesson 8.2 ⇨ ADDING MIXED NUMBERS

**MAT+ / Understanding Fractions / Topic 13 – Improper Fractions and Mixed Numbers / Adding Mixed Numbers**

Lesson 8.3 ⇨ SUBTRACTING MIXED NUMBERS

Lesson 8.4 ⇨ CALCULATOR FRACTIONS; *FRACTION ACTION, FRACTION FRICTION*

Lesson 8.5 ⇨ FRACTIONS OF FRACTIONS

Lesson 8.6 ⇨ AN AREA MODEL FOR FRACTION MULTIPLICATION

Lesson 8.7 ⇨ MULTIPLICATION OF FRACTIONS AND WHOLE NUMBERS

**MAT+ / Understanding Fractions / Topic 10 - Multiplying Fractions / Word Problems; A Summary; The Meaning of “OF”; Order in Multiplying; Multiplying Fraction with Large Numbers; Practice Questions**

Lesson 8.8 ⇨ MULTIPLICATION OF MIXED NUMBERS

Lesson 8.9 ⇨ FINDING A PERCENT OF A NUMBER

Lesson 8.10 ⇨ USING UNIT FRACTIONS AND UNIT PERCENTS TO FIND THE WHOLE

**MAT+ / Understanding Percent / Topic 2 – Percent to Fraction/ Decimal / Expressing Percent as a Fraction: Introduction without Graphics, Introduction with Graphics, Fraction in Simplest Form – Greatest Common Factor, Simplifying Fractions**

**MAT+ / Understanding Percent / Topic 3 – Fraction/Decimal to Percent / Expressing a Fraction as a Percent: An Example, Methods 1 & 2**

**MAT+ / Understanding Percent / Topic 5 – Percent of a Number / The Concept: Examples 1 through 6; The Bouncing Ball; Grades; Practice Questions**

Lesson 8.11 ⇨ AMERICAN TOUR: RURAL AND URBAN

Lesson 8.12 ⇨ FRACTION DIVISION

**MAT+ / Understanding Fractions / Topic 11 – Dividing Fractions /**

Understanding Division; Examples of Division; Patterns from Examples; Another Explanation; Examples without Diagrams; Practice Questions

## **Unit 9: Coordinates, Area, Volume, and Capacity**

Lesson 9.1 ⇨ HIDDEN TREASURE: A COORDINATE GAME

Lesson 9.2 ⇨ COORDINATE GRAPHS: PART 1

Lesson 9.3 ⇨ COORDINATE GRAPHS: PART 2

**MAT+ / Understanding Graphing / Topic 3 – Points on a Grid /** In This Topic; Josh’s Neighbourhood: Concept, Number Houses; Grids on Maps; Ordered Pairs: Axis, Quadrants, Find a Point, Order in Important, Examples; Shapes, Battleship

Lesson 9.4 ⇨ AREAS AND RECTANGLES

Lesson 9.5 ⇨ THE RECTANGLE METHOD FOR FINDING AREA

Lesson 9.6 ⇨ FORMULAS FOR THE AREA OF TRIANGLES AND PARALLELOGRAMS

**MAT+ / Understanding Measurement and Geometry / Topic 2 – Perimeter and Area of Polygons /** Amount of Surface: The Driveway; Area Estimation; Area of a Rectangle: Examples 1 & 2

Lesson 9.7 ⇨ EARTH’S WATER SURFACE AND THE SCHOOL’S LAND AREA

**MAT+ / Understanding Measurement and Geometry / Topic 4 – Solids – Volume and Surface Area /** Surface Area of a Solid: The Concept; Surface Area of a Pyramid; Surface Area of a Cylinder; Surface Area of a Sphere

Lesson 9.8 ⇨ VOLUME OF RECTANGULAR PRISMS

Lesson 9.9 ⇨ VOLUME OF PRISMS

**MAT+ / Understanding Measurement and Geometry / Topic 4 – Solids – Volume and Surface Area /** Volume of a Solid: The Concept; Volume of a Prism

Lesson 9.10 ⇨ CAPACITY: LITER, MILLILITER, AND CUBIC CENTIMETER

## Unit 10: Algebra Concepts and Skills

Lesson 10.1 ⇨ PAN-BALANCE PROBLEMS

Lesson 10.2 ⇨ PAN-BALANCE PROBLEMS WITH TWO BALANCES

**MAT+ / Understanding Equations / Topic 1 – Tiles, Balances, and Equations**  
/ Definitions: Introduction, Summary Parts 1,2; The Meaning of “Solving and Equations”; Solve by Systematic Trials; Recall Tile Concepts; Balances –An Introduction; Tiles, Balances, and Equations; Practice Questions; Topic Test

Lesson 10.3 ⇨ ALGEBRAIC EXPRESSIONS

**MAT+ / Understanding Algebra / Topic 1 – Introduction to Algebraic Thinking** / Trick #1 – Whole Numbers; Trick #2 – Whole Numbers; Trick #3 – Whole Numbers; Trick #1 – Integers; Trick #2 – Integers; Trick #3 – Integers; Pictures to Words – Whole Numbers; Pictures to Words – Integers; Function Machine; Summary; Practice Questions; Topic Test

**MAT+ / Understanding Algebra / Topic 2 – Tiles and Algebra** / Combining Opposites: Singles, Bars, Squares; Summary; Practice Questions

**MAT+ / Understanding Algebra / Topic 3 – Patterns, Patterns, Patterns** / Introduction: Math is Patterns; Geometric Patterns: Examples 1 through 8; Number Patterns: Examples 1 through 6; Number and Geometric Patterns: Examples 1 & 2; Patterns to Formulas: Examples 1,2,3

**MAT+ / Understanding Algebra / Topic 4 – Patterns, Formulas, Substitution**  
/ Introduction – Math is Patterns; Expressions, Terms, Variables; Patterns to Formulas: Examples 1,2,3

Lesson 10.4 ⇨ RULES, TABLES, AND GRAPHS: PART 1

**MAT+ / Understanding Graphing / Topic 1 – Reading and Sketching Graphs**  
/ In This Topic; Graphs without a Scale: Concept – Age and Weight, Examples 1 through 13; Graphs with a Scale: Concept – Distance and Time, Examples 1 through 14; Discrete Data; Continuous Data; Extrapolation; Practice Questions; Topic Test

Lesson 10.5 ⇨ AMERICAN TOUR: PREDICTING OLD FAITHFUL’S NEXT ERUPTION

Lesson 10.6 ⇨ RULES, TABLES, AND GRAPHS: PART 2

Lesson 10.7 ⇨ READING GRAPHS

**MAT+ / Understanding Graphing / Topic 1 – Reading and Sketching Graphs**  
/ In This Topic; Graphs without a Scale: Concept – Age and Weight, Examples 1

through 13; Graphs with a Scale: Concept – Distance and Time, Examples 1 through 14; Discrete Data; Continuous Data; Extrapolation; Practice Questions; Topic Test

Lesson 10.8 ⇒ CIRCUMFERENCE OF A CIRCLE

Lesson 10.9 ⇒ AREAS OF CIRCLES

**MAT+ / Understanding Measurement and Geometry / Topic 3 – The Circle /** In This Topic; Circle All Around Us!; Radius, Circumference, Diameter;  $\pi$ ...A Special Number: Introduction, How do we Measure Circumference?, Measuring Circles, Summary; Circumference of a Circle: Circumference, Examples 1 through 4; Area of a Circle: Recall Area, Area Explorations 1 & 2, Examples 1 through 5; Practice Questions; Topic Test

## **Unit 11: Volume**

Lesson 11.1 ⇒ REVIEW OF GEOMETRIC SOLIDS: PART 1

Lesson 11.2 ⇒ REVIEW OF GEOMETRIC SOLIDS: PART 2

**MAT+ / Understanding Measurement and Geometry / Topic 4 – Solids- Volume and Surface Area /** In This Topic; Classifying Solids: A Solid is..., Recall Polygons, A Polyhedron is, A Prism is, Some Special Pyramids, A Cylinder is, A Cone is, Platonic Solids

Lesson 11.3 ⇒ VOLUME OF CYLINDERS

Lesson 11.4 ⇒ VOLUME OF PYRAMIDS AND CONES

**MAT+ / Understanding Measurement and Geometry / Topic 4 – Solids- Volume and Surface Area /** Volume of a Solid: The Concept; Volume of a Prism, Volume of a Cylinder, Volume of a Pyramid

Lesson 11.5 ⇒ FINDING VOLUME BY A DISPLACEMENT METHOD

Lesson 11.6 ⇒ CAPACITY AND WEIGHT

Lesson 11.7 ⇒ SURFACE AREA

**MAT+ / Understanding Measurement and Geometry / Topic 4 – Solids- Volume and Surface Area /** Surface Area of a Solid: The Concept, Surface Area of a Pyramid, Surface Area of a Cylinder, Surface Area of a Sphere

## **Unit 12: Probability, Ratios, and Rates**

Lesson 12.1 ⇒ FACTOR TREES

Lesson 12.2 ⇒ CHOICES, TREE DIAGRAMS, AND PROBABILITY

**MAT+ / Understanding Probability / Topic 1 – An Introduction to Probability /**  
The Language of Chance; Impossible to Certain: Activities 1 & 2; Probability Lines:  
Lines 1 & 2; Experiments with Spinners: Experiments 1 through 6; The Spinner  
Game: Boards 1 & 2; IT's in the Bag; Tree Diagrams: Meals, Socks

Lesson 12.3 ⇒ AMERICAN TOUR: RATIO EXPLORATION

Lesson 12.4 ⇒ RATIOS OF PARTS TO WHOLES

Lesson 12.5 ⇒ NUMBER MODELS FOR RATIO NUMBER STORIES

**MAT+ / Understanding Percent / Topic 4 – Ratios and Proportions /** Ratios in  
the News: What is a Ratio?; Writing Ratios: Concept. Examples 1 through 4;  
Ratios and Your Body; Practice Questions; Topic Test

Lesson 12.6 ⇒ FINDING YOUR HEAR RATE

Lesson 12.7 ⇒ COLLECTING, GRAPHING, AND INTERPRETING  
EXERCISE DATA

**MAT+ / Understanding Graphing / Topic 1 – Reading and Sketching Graphs**  
/ In This Topic; Graphs without a Scale: Concept – Age and Weight, Examples 1  
through 13; Graphs with a Scale: Concept – Distance and Time, Examples 1  
through 14; Discrete Data; Continuous Data; Extrapolation; Practice Questions;  
Topic Test

Lesson 12.8 ⇒ FIDING YOU CARDIAC OUTPUT

Lesson 12.9 ⇒ AMERICAN TOUR: END-OF-YEAR PROJECTS