

CORRELATION
of
the 10 UNDERSTANDING MATH PLUS PROGRAMS & UNDERSTANDING NUMERATION PLUS PROGRAMS
with
South Carolina MATHEMATICS CURRICULUM STANDARDS

Grades 6 to 8 MEASUREMENT

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

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

Grades 6–8: Measurement

STANDARD I. Understand measurable attributes of objects and the units, systems, and processes of measurement.

EXPECTATION A. Understand both metric and customary systems of measurement.

6	7	Understanding Math PLUS Program & Topic	8
	1. Explain the relationship between the metric system and the base-ten number system.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 1: An Introduction to Measurement Metric and U.S.A. Standard Measurement Systems Searching for the Standard Unit Related Units from Metric Prefixes Metric Prefixes at Work	

EXPECTATION B. Understand relationships among units and convert from one unit to another within the same system.

6	7	Understanding Math PLUS Program & Topic	8	Understanding Math PLUS Program & Topic
	1. Compare and convert units of measure for length, weight/mass, and volume within the U.S. customary system and the metric system.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 1: An Introduction to Measurement Converting Between Metric Units The Ruler	1. Use dimensional analysis to convert from one unit to another.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 1: An Introduction to Measurement Converting Between Metric Units My Body Rudy's Run Practice Questions
	2. Add and subtract mixed units of measure and express answers in appropriate form.			

EXPECTATION C. Understand, select, and use units of appropriate size and type to measure angles, perimeter, area, surface area, and volume.

6	Understanding Math PLUS Program & Topic	7	Understanding Math PLUS Program & Topic	8	Understanding Math PLUS Program & Topic
<p>1. Estimate angle measure using 45 degrees, 90 degrees, 180 degrees, 270 degrees, and 360 degrees as referents and use the appropriate tools to measure any angle.</p> <p>2. Use appropriate units of measure to label angles, perimeter, and area.</p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 2: Perimeter and Area of Polygons Walk Around a Polygon Amount of Surface Area</p> <p>Topic 5: Angles and their Measure The Degree Classifying Angles Measuring Angles Practice Questions</p>	<p>1. Use appropriate units of measure to label surface area and volume.</p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 4: Solids – Volume and Surface Area Surface Area of a Solid Volume of a Solid</p>		

STANDARD II. Apply appropriate techniques, tools, and formulas to determine measurements.

EXPECTATION A. Use common benchmarks to select appropriate methods for estimating measurements.

6	Understanding Math PLUS Program & Topic	7	Understanding Math PLUS Program & Topic	8
<p>*1. Using standard and nonstandard units of measure, estimate and then determine length, weight/mass, area, and volume/capacity.</p> <p>2. Estimate and justify estimates of perimeter and area of irregular shapes.</p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 2: Perimeter and Area of Polygons Problems Section</p>	<p>1. Use appropriate methods to approximate the surface area and volume of irregular figures.</p>	<p>MAT+ <u>Understanding Measurement and Geometry</u> Topic 4: Solids – Volume and Surface Area Surface Area of a Solid Volume of a Solid</p>	

EXPECTATION B. Select and apply techniques and tools to accurately find length, area, volume, and angle measures to appropriate levels of precision.

6	Understanding Math PLUS Program & Topic	7	Understanding Math PLUS Program & Topic	8
1. Select and use appropriate tools and units to measure to the degree of accuracy required in a particular situation.		1. Analyze a variety of measurement situations to determine the necessary degree of accuracy and precision.		

EXPECTATION C. Develop and use formulas to determine the circumference of circles and the area of triangles, parallelograms, trapezoids, and circles and develop strategies to find the area of more-complex shapes.

6	Understanding Math PLUS Program & Topic	7	Understanding Math PLUS Program & Topic	8	Understanding Math PLUS Program & Topic
1. Investigate and describe the relationship between areas of rectangles and triangles or other quadrilaterals.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 2: Perimeter and Area of Polygons Area of a Rectangle Area of a Triangle Relationships – Area & Perimeter The Information The Graph	1. Use measurements and formulas to solve real-world and mathematical problems.	MAT+ <u>Understanding Measurement and Geometry</u> <i>All Sections</i>	*1. Find the area of irregular shapes. 2. Find the area of a trapezoid using the formula.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 2: Perimeter and Area Given Area & Perimeter – Create Shape Examples 1 through 4 Problems Section
*2. Develop and apply the formulas for the area of triangles and parallelograms.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 2: Perimeter and Area of Polygons Area of a Parallelogram Area of a Triangle	2. Using concrete materials or computer models, derive approximations for pi from measurements for circumference and diameter.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 3: The Circle Radius, Circumference, Diameter PI...A Special		

	Given Area & Perimeter – Create Shape Examples 1 through 4		Number Introduction How do we Measure Circumference Measuring Circles Summary		
		*3. Create and solve problems by finding the circumference and/or area of a circle when given the diameter or radius.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 3: The Circle Circumference of a Circle Examples 1 through 4		

EXPECTATION D. Develop strategies to determine the surface area and volume of selected prisms, pyramids, and cylinders.

6	7	Understanding Math PLUS Program & Topic	8	Understanding Math PLUS Program & Topic
	*1. Investigate and describe the relationship between the area of the base and the volume of a prism, pyramid, and cylinder.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 4: Solids – Volume and Surface Area Volume of a Prism, Cylinder, Pyramid	1. Investigate and describe the relationship between the area of the faces and the surface area of prisms, pyramids, and cylinders.	MAT+ <u>Understanding Measurement and Geometry</u> Topic 4: Solids – Volume and Surface Area Surface Area of a Pyramid, Cylinder

EXPECTATION E. Solve problems involving scale factors, using ratio and proportion.

6	Understanding Math PLUS Program & Topic	7	Understanding Math PLUS Program & Topic	8	Understanding Math PLUS Program & Topic
1. Use a scale to find distance.		*1. Determine the unit rate.		*1. Use the properties of similar figures to determine the length of a missing side.	

EXPECTATION F. Solve simple problems involving rates and derived measurements for such attributes as velocity and density.

6	7	Understanding Math PLUS Program & Topic	8	Understanding Math PLUS Program & Topic
	1. Apply rates to solve problems in real-world situations.		1. Use measurements and formulas to solve real-world and mathematical problems.	MAT+ <u>Understanding Measurement and Geometry</u> <i>All Sections</i>