

**Dorchester County Public Schools
Middle School Math - Grade 7
Curriculum Map and Pacing Guide**

Unit 1, Standard 6.0 Knowledge of Number Relationships and Computation - Students will describe, represent, or apply number or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

| Text/Text Topic | MSA Code | VSC Objective/Assessment Limit | Time Frame | Calculator Use | Vocabulary |
|---|-----------------|--|---------------------|-----------------------|---|
| 2-1, Exponents | 7.6.A.1a | Read, write and represent whole numbers. AL- Use exponential notation with bases no more than 12 and exponents no more than 3 in standard form (0-1000) <i>*Review base 10.</i> <i>*Expose students to scientific notation with negative exponents.</i> | Start Aug. 28, 2008 | Yes | Power Exponent Base Rational number |
| 2-1 Exponents | 7.6.C.1.e | Use the laws of exponents to simplify expressions . AL- Use the rules of exponents (power \times Power or power divided by power) with the whole number base (0 -100) and exponents (0-10) <i>*Show students why this works.</i> | | No | Terminating decimal Equivalent fraction |
| 3-7 Decimals | 7.6.A.1.b | Express decimals using expanded form. AL - Use decimals with no more than 4 decimal places (0 - 100) <i>*Show using addition and multiplication.</i> | | Yes | Improper fractions Mixed number Numerator |
| 3-3, 3-4, 3-5 Integers (+, -, .x,/) | 7.6.C.1.a | Add, subtract, multiply and divide integers AL- Use one operation (-100 to 100) <i>*Students should practice numbering number lines.</i> <i>*Students should write out their own problems and talk out the problems.</i> | | No | Denominator Commutative property Associative property |
| 3-7,3-8, 3-9, 6-1 Equivalent Fractions and Decimals | 7.6A.1.c | Determine equivalent forms of rational numbers expressed as fractions, decimals, percents and ratios. AL - Use positive rational numbers (0-100) <i>*Use physical models (manipulatives) to build understanding.</i> | | No | Identity property |

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|--|-----------|--|--|-----|---|
| 3-10 Comparing and Ordering Rational Numbers | 7.6.A.1.d | Compare, order, and describe rational numbers with or without relational symbols ($<$, $>$, $=$) AL- Use no more than 4 fractions with denominators that are factors of 300 that are less than 101 (0-100), decimals with no more than 4 decimal places (0-100) percents (0-100) or integers (-100 to 100) | | Yes | Square root Perfect square Percent Ratio Rate Unit rate Proportion Cross product |
| 4-7,4-10, 4-11 Multiplying Fractions and Mixed Numbers | 7.6.C.1.b | Add, subtract and multiply positive fractions and mixed numbers. AL- Use no more than 2 operations and positive fractions or mixed numbers with denominators as factors of 300 or less than 101. (0 - 2000) | | No | |
| 5-1,5-2, 5-3 Identifying and Writing Proportions Solving Proportions | 7.6.C.3.a | Determine equivalent ratios. AL- Use denominators as factors of 300 but less than 101 and whole numbers. (0- 100) | | Yes | |
| 5-5, 5-6, 6-3,6-4 Percent of a Number Similar Figures and Proportions | 7.6.C.3.b | Determine and use rates, unit rates and percents as ratios in the context of a problem. AL- Use whole numbers. (0-1000) | | Yes | |
| Supplement/ Not in text Properties | 7.6.C.1.f | Identify and use the properties of addition and multiplication to simplify expressions. AL- Use the commutative property of addition or multiplication, associative property of addition or multiplication, or the identity property for zero or one with whole numbers. (0-100) <i>*Use terminology throughout the school year.</i> | | Yes | |

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|--|-----------|---|-----------------------------|-----|--|
| 8-7 Powers and Roots | 7.6.C.1.d | Calculate powers of integers and square roots of perfect square whole numbers. AL- Use exponents of no more than 3 integers (-10 to 20) or square roots of perfect square whole numbers. <i>*Show students why this works.</i> | | No | |
| 4-1,4-9,6-2 Estimate with Decimals | 7.6.C.2.a | Determine appropriate sums, differences, products and quotients. AL - Use no more than 3 positive rational numbers. (0 - 1000) <i>* Students will use the calculator for the initial calculation, then round their answer.</i> | End Sept. 29, 2008 | Yes | |

Review- Number Relationships/Computation - September 30, 2008
Unit Exam #1 - Number Relationships/Computation- October 2 and 3, 2008

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Unit 2, Standard 1.0 Knowledge of Algebra, Patterns, and Functions - Students will algebraically represent, model, analyze, or solve mathematical or real-world problems involving patterns or functional relationships.

| Text/Text Topic | MSA Code | VSC Objective/Assessment Limit | Time Frame | Calculator Use | Vocabulary |
|--|-----------------|---|-------------------|-----------------------|---|
| 2-3 Order of Operations | 7.1.B.1.c | Evaluate numeric expressions using the order of operations. AL- use one more than 4 operations (+, -, x,/ with no remainders) with or without up to two set of parenthesis, brackets, or a division bar, with whole number (0 - 200) fractions with denominators as factors of 100, or decimals with no more than 3 decimal places (0 - 100) | Start Oct. 6 | No | Function Sequence Numerical expression Order of operations |
| 2-7 Variables and Algebraic Expressions | 7.1.B.1.b | Evaluate an algebraic expression. AL - Use one unknown and no more than tow operations (+, -, x,/ with no remainders) with whole numbers (0-200), fractions with denominators as factors of 100 (0-100), or decimals with no more than three decimal places (0-100) | | No | Variable Constant Algebraic expression |
| 12-1, 12-2 Introduction to Functions Find a Pattern in Sequences | 7.1.A.1.a | Complete a function table with a given two-operation rule. AL - Use the operations (+, -, x) numbers no more than 20 in the rule and whole numbers (0-500) | | Yes | Evaluate Verbal expression |

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|--|-----------|--|-------------------|-----|---|
| 2-8 Translate Words into Math | 7.1.B.1.a | Write an algebraic expression to represent unknown quantities. AL - Use one unknown and one or two operations (+, -, x, / with no remainders) with whole numbers, fractions with denominators as factors of 100, or decimals with no more than three decimal places (0 - 100) | End Oct. 21 | Yes | Coordinate plane x-axis y-axis origin quadrant ordered pair rational numbers Inequality Arithmetic sequences Geometric sequences |
|--|-----------|--|-------------------|-----|---|

Review- Algebra (A) - October 22, 2008
Unit Exam #2- Algebra (A) - October 23 and 24, 2008

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| Text/Text Topic | MSA Code | VSC Objective/Assessment Limit | Time Frame | Calculator Use | Vocabulary |
|---|-----------------|--|-------------------|-----------------------|-------------------|
| 3.7 Fractions and Decimals | 7.1.C.1.a | Represent rational numbers on a number line. AL- Use rational numbers (-100 to 100) | Start Oct. 27 | Yes | |
| 3-2 The Coordinate Plane | 7.1.C.1.b | Graph ordered pairs in the coordinate plane. AL - use no more than 4 ordered pairs of rational numbers (-20 to 20) | | Yes | |
| 12.3 Interpreting Graphs | 7.1.C.2.a | Identify and describe the change represented in a table of values. AL - Identify increase, decrease or no change | | Yes | |
| 3-6 ,4-6, 4-12 Solving Equations- Integers Fractions Decimals | 7.1.B.2.a | Write equations and inequalities to represent relationships. AL - Use a variable, the appropriate relational symbol, ($<$, \leq, \geq, $>$, $=$), and one or two operational symbols ($+$, $-$, \times, $/$) on either side and use whole numbers, fractions with denominators as factors of 100, or decimals with no more than 3 decimal places (0 - 500) | | Yes | |
| | 7.1.B.2.e | Apply given formulas to a problem solving situation. AL - Use formulas having no more than three variables and up to two operations, with whole numbers, fractions with denominators as factors of 100, or decimals with no more than three decimal places (0-100) | | No | |
| 3-6, 4-6 , 4-12, 11-1 , 11-2, Solving Equations (Multi- Step, Integers, Decimals, Fractions, 2-Step) | 7.1.B.2.b | Determine the unknown in a linear equation. AL - Use one or two operations ($+$, $-$, \times) and the unknown only once with whole numbers (0-500), fractions with denominators as factors of 100 (0 - 50), or decimals with no more than three decimal places (0- 100) | | No | |
| 11-5, 11-6 Solving Inequalities. ($+$, $-$, \times , $/$) | 7.1.B.2.c | Solve for the unknown in an inequality. AL- Use an inequality with one variable with a positive whole number coefficient and one operation ($=$, $-$, \times, $/$ with no remainders) using whole numbers or decimals with no more than 2 decimal places (0 - 500) | | No | Solution set |

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| 11-4 Inequalities | 7.1B.2.d | Identify or graph solutions of inequalities on a number line. AL - Use whole numbers | | No | |
|----------------------|----------|---|--|----|--|

Review - Algebra (B) -November 14, 2008

Unit Exam 3 - Algebra (B)- November 17 and 18, 2008

Review- Benchmark 1, Number Relationships and Algebra - November 19, 2008

Benchmark 1, Number Relationships and Algebra - November 20 and 21, 2008

Unit 4, Standard 2.0 Knowledge of Geometry - Students will apply the properties of one-, two-, and three dimensional geometric figures to describe, reason, or solve problems about shape, size, position or motion of objects.

| Text/Text Topic | MSA Code | VSC Objective/Assessment Limit | Time Frame | Calculator Use | Vocabulary |
|---|-----------------|--|-------------------|-----------------------|---|
| 7-2 , 7-3 Angles Parallel and Perpendicular Lines | 7.2.A.1.a | Identify and describe angles formed by intersecting lines, line segments, and rays. AL-Use vertical, adjacent, complementary, or supplementary angles (include the angle symbol <m) | Start Nov. 24 | Yes | Angle Vertex Right angle Acute angle |
| 7-3 Parallel and Perpendicular Lines | 7.2.A.1.b | Identify angles formed when two parallel lines are cut by a transversal. | | Yes | Obtuse angle Straight angle Complementary angle |
| 7-2, 7-3 Angles Parallel and Perpendicular Lines | 7.2.A.2.b | Determine the measurement of angles formed by intersecting lines, line segments and ray. AL - Use vertical, adjacent, complementary or supplementary angles. | | Yes | Supplementary angle Circle Radius |

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| 7-8 Angles In Polygons | 7.2.A.2.a | Determine a missing angle measurement using the sum of the interior angles of polygons. AL - Use angle measures in a quadrilateral | | Yes | Line segment Perpendicular Parallel |
| 7-8 Constructions | 7.2.C.1b | Construct geometric figures using a variety of construction tools. AL - Construct a circle using a given line segment as the radius in whole number inches or centimeters | | Yes | Skew Vertical angles Transversal |
| 7-8 Constructions | 7.2.C.1b | Construct geometric figures using a variety of construction tools. AL- Construct a line segment congruent to a given live segment. | | Yes | Polygon Diagonal |
| 7-8 Construct Bisectors and Congruent Angles | 7.2.C.1c | Construct geometric figures using a variety of construction tools. AL- Construct a perpendicular bisector to a given line segment or a bisector of a given angle | | Yes | Side to side rule Transformation Image Translation |
| 7-9 Congruent Figures | 7.2.D.1a | Determine the congruent parts of polygons. AL- Use the length of corresponding sides or the measure of corresponding angles and whole numbers | | Yes | Rotation Reflection |
| 7-10 Trans- formations | 7.2.E.1a | Identify, describe and plot the results of one transformation on a coordinate plane. AL - Identify and plot the result of one transition (horizontal or vertical), reflection (horizontal or vertical, or rotation about a given point (90 or 180 degrees) | End Dec. 16 | Yes | Line of reflection |

Review - Geometry - December 17, 2008
Unit Exam 4 - Geometry - December 18 and 19, 2008

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Unit 5, Standard 3.0 Measurement - Students will identify attributes, units, or systems of measurements or apply a variety of techniques, formulas, tools or technology for determining measurements.

| Text/Text Topic | MSA Code | VSC Objective/Assessment Limit | Time Frame | Calculator Use | Vocabulary |
|--|-----------------|--|-------------------|-----------------------|--|
| 8-4, 8-5 Area of Parallelograms Area of Trapezoids and Triangles | 7.3.C1a | Estimate and determine the area of quadrilaterals. AL - Use parallelograms or trapezoids and whole number dimensions. (0 - 1000) | Start Jan. 5 | Yes | Scale model Scale drawing Scale Area Net Surface area |
| 9-4 Surface Area of Prisms, Cylinders and Spheres | 7.3.C.1c | Determine the surface area of geometric solids. AL- Use rectangular prisms with whole number dimensions. (0-1000) | | Yes | |
| 5-7 Scale Drawings and Scale Models | 7.3.C.2a | Determine the missing dimension for a figure using scale. AL - use a polygon with no more than 8 sides using whole numbers (0-1000) | | Yes | |
| 5-7 Scale Drawings and Scale Models | 7.3C.2b | Determine the distance between 2 points using a drawing and a scale. AL- Use a scale of 1cm =?, $\frac{1}{4}$ inch =?, or $\frac{1}{2}$ inch = ? and whole numbers (0 - 1000) | | Yes | |
| Estimating Pi | 7.3.C.1c | Estimate pi using physical models. (Model the area of a circle by combining pieces of circle to form a rectangle and ratio of circumference to radius using string) | End Jan. 19 | | |

Review - Measurement - January 20, 2008

Unit Exam 5 - Measurement - January 21 and 22, 2008

Review Benchmark 2 - Numbers, Algebra, Geometry, Measurement - January 26, 2008

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Benchmark 2 - Numbers, Algebra, Geometry and Measurement -January, 27 and 28, 2008

Unit 6, Standard 4.0 Statistics- Students will collect, organize, display, analyze or interpret data to make decisions or predictions.

| Text/Text Topic | MSA Code | VSC Objective/Assessment Limit | Time Frame | Calculator Use | Vocabulary |
|---|--------------------------|---|-------------------|-----------------------|--|
| 1-3 Frequency Tables and Stem and Leaf Plots | 7.4.A.1a | Organize and display data using back to back stem and leaf plots. AL - use no more than 20 data pieces using whole numbers (0 -99) | Start Jan. 29 | Yes | Frequency table Back to back stem leaf plot |
| 1-9 Misleading Graphs | 7.4.B.1a 7.4.B.1c | Recognize and analyze faulty interpretation or representation of data. AL- Use whatever the choice of graphical display or the scale leads to faulty interpretation or representation of data. Analyze misleading data representation | | Yes | Mean Median Mode Range Outlier Circle graph |
| 1-5 Reading and Interpreting Circle Graphs | 7.4.B.1b | Determine the best choice of a data display. AL - Use a given data set. | | Yes | |
| 1-2 Mean, Median, Mode, and Range | 7.4.B.2a | Analyze measures of central tendency to determine or apply mean, median, mode. AL - Use no more than 15 pieces of data for the mean or median, or 15 to 30 pieces of data for the mode, using whole numbers or decimals with no more than 2 decimal places (0 - 100) | | Yes | |
| Circle Graphs | 7.4.A.1.b | Organize and display data to make circle graphs | End Feb. 10 | | |

Review - Statistics - February 11, 2008

Unit Exam 6 - Statistics - February 12 and 13, 2008

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Unit 5, Standard 5.0: Probability- Students will use experimental methods or theoretical reasoning to determine probabilities to make predictions or solve problems about events whose outcomes involve random variation.

| Text/Text Topic | MSA Code | VSC Objective/Assessment Limit | Time Frame | Calculator Use | Vocabulary |
|---|-----------------|--|-------------------|-----------------------|--|
| 10-3 Make a List to Find a Sample Space | 7.5.A.1a | Determine the number of outcomes. AL- Use no more than 3 independent events with a sample space of no more than 6 outcomes in each event. | Start Feb. 6 | Yes | Experiment Outcome Event |
| 10-5 Probability of Independent and Dependent Events | 7.5.B.1a | Express the probability of an event as a fraction, a decimal, or a percent. AL - Use a sample space of no more than 35 outcomes and decimals with no more than 2 decimal places | | Yes | Probability Equally likely Experimental probability Trial |
| 10-2 Experimental Probability | 7.5.C.1a | Make predictions and express the probability or the results as a fraction, a decimal, and a percent with no more than 2 decimal places, or a percent. AL - Use results of 25 or 50. | | Yes | Sample space Fundamental counting principal |
| 10-2 Experimental Probability | 7.5.C.2 | Conduct a probability experiment | End Feb. 27 | Yes | Independent events Dependent events |

Review - Probability - February 25, 2008

Unit Exam 7 - Probability - February 26 and 27, 2008

Review - Benchmark 3 - March 3, 2008

Benchmark 3 (All Standards will be covered) - March 5 and 6, 2008

Review for MSA - March 9 - 23, 2008

MSA - March 24 and 25, 2008

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POST MSA

Standard 6.0 Knowledge of Number Relationships and Computations - Students will describe, represent, or apply numbers or their relationships or will estimate or compute using mental strategies, paper/pencil or technology.

| Text/Topic | MSA Code | VSC Objective - Assessment Limits | Time | Calculator Use | Vocabulary |
|--|-----------|--|----------------------------|----------------|--|
| 2-1 Adding Integers | 8.6.C.1.a | Add, subtract, multiply and divide integers AL - Use one operation (-1000 to 1000) <i>*Show students how to correctly number a number line.</i> | Begin on March 30 | No | Integer Absolute Value Gain Lose Ascending Descending |
| 2-2 Subtracting Integers | 8.6.C.1.a | Add, subtract, multiply and divide integers AL - Use one operation (-1000 to 1000) | | No | |
| 2-3 Multiplying and Dividing Integers | 8.6.C.1.a | Add, subtract, multiply and divide integers AL - Use one operation (-1000 to 1000) | | No | |
| 2-6 Exponents | 8.6.C.1.b | Calculate powers of integers and square roots of perfect square whole numbers AL - Use powers with bases no more than 12 and exponents no more than 3, or square roots of perfect squares no more than 144 <i>*Show students why this works.</i> | | No | Exponent Exponential Form Power |

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|--|-----------|---|--|-----|---|
| 2-7 Properties of Exponents | 8.6.C.1.c | Identify and use the laws of exponents to simplify expressions AL - Use the rules of power times power or power divided by power with the same integer as a base (-20 to 20) and exponents (0-10) <i>*Show students why this works.</i> | | No | |
| 2-9 Scientific Notation | 8.6.A.1.a | Read, write and represent rational numbers AL - Use exponential notation or scientific notation (-10,000 to 1,000,000,000) | | Yes | Scientific Notation |
| 3-8 Squares and Square Roots | 8.6.C.1.b | Calculate powers of integers and square roots of perfect square whole numbers AL - Use powers with bases no more than 12 and exponents no more than 3, or square roots of perfect squares no more than 144 <i>*Students should memorize perfect squares.</i> | | No | Perfect Square |
| 3-9 Finding Square Roots | 8.6.C.2.a | Estimate the square roots of whole numbers AL- Use whole numbers (01-100) <i>*Students should memorize perfect squares</i> | | Yes | |
| Pg. 770 Compare and Order Rational Numbers | 8.6.A.1.b | Compare, order, and describe rational numbers with and without relational symbols (<, >, =) AL - Use no more than 4 integers (-100 to 100) or positive rational numbers (0-100) using equivalent forms or absolute value | | Yes | Pg. 770 Compare and Order Rational Numbers |
| Text pg. 769 Properties | 8.6.C.1.d | Use properties of addition and multiplication to simplify expressions AL - Use the commutative property, associative property, additive inverse property, the distributive property, or the identity property for one or zero with integers (-100 to 100) | | Yes | Associative Property Commutative Property Properties of Operations |

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| | | | | | Multiplicative Inverse Additive Inverse Distributive Property |
| 7-2 Ratios, Rates, and Unit Rates | 8.6.C.3.a | Determine unit rates AL - Use positive rational numbers (0-100) | | yes | Rate Unit Price/Rate |
| 7-4 Solving Proportions | 8.6.C.3.c | Solve problems using proportional reasoning AL - Use positive rational numbers (0-1000) | | yes | |
| 8-4 Percent Increase or Decrease | 8.6.C.3.b | Determine or use percents, rates of increase and decrease, discount, commission, sales tax, and simple interest in the context of a problem AL - Use positive rational numbers (0-10,000) | | yes | Commission Commission Rate Interest Percent Change Percent Decrease Percent Increase Rate of Interest |
| 8-6 Applications of Percents | 8.6.C.3.b | Determine or use percents, rates of increase and decrease, discount, commission, sales tax, and simple interest in the context of a problem AL - Use positive rational numbers (0-10,000) | | yes | |
| 8-7 More Applications of Percents | 8.6.C.3.b | Determine or use percents, rates of increase and decrease, discount, commission, sales tax, and simple interest in the context of a problem AL - Use positive rational numbers (0-10,000) | End on April 30 | yes | |

Review - Numbers - May 1, 2008

Post MSA Unit Exam - May 4 and 5, 2008

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| Combine Transformations | | results of multiple transformations on a coordinate plane AL - Identify or plot the result of two transformations on one figure using translations (horizontal or vertical), reflections (horizontal or vertical), or rotations about a given point (90° or 180°) | | | Rotation Transformation Translation |
| Text pgs. 232-233 Constructions | 8.2.C.1.b | Construct perpendicular line segments AL - Provide a given point on a given line segment | | yes | |
| Draw Quadrilaterals | 8.2.C.1.a | Draw quadrilaterals AL - Provide given whole number dimensions in inches or centimeters or angle measurements | | Yes | |
| Construct Triangles | 8.2.C.1.c | Construct triangles AL - Construct a triangle congruent to a given triangle | | Yes | |
| 7-6 Similar Figures | 8.2.D.1.a | Determine similar parts of polygons AL - Use the length of corresponding sides or the measure of corresponding angles and rational numbers with no more than 2 decimal places (0-1000) | | Yes | Similarity |
| 6-3 The Pythagorean Theorem | 8.2.A.1.b 8.2.A.2.b | Identify and describe the relationship among the parts of a right triangle | End on June 2 | yes | Hypotenuse Pythagorean Theorem |

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| | | <p>AL - Use the hypotenuse or the legs of right triangles</p> <p>Apply right angle concepts to solve real-world problems</p> <p>AL - Use the Pythagorean Theorem</p> | | yes | |
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Review - Geometry - June 3, 2008

Unit Exam 4 - Geometry - June 4 and 5, 2008

Additional suggested topics:

- Simplifying algebraic expressions (Combining like terms)
- Arithmetic sequences
- Geometric sequences