

Zanesville City Schools
Standard-based Curriculum Assessment Map
2007-2009

www.zanesville.k12.oh.us

www.mvesc.k12.oh.us

Quarter: 1st Nine Weeks

Course: Math

Grade Level: 8

Revised March 21, 2008

CONCEPT/TOPIC with Text & Resources Connections {Chap.lesson}	Indicators (clustered and sequenced) Bold = Power indicator; Sub-indicators numbered 1), 2), 3) etc.	Common Quarterly Assessment Link
Using Exponents {Chapter 2}	<p>N8.1. Use scientific notation to express large numbers and small numbers between 0 and 1. 1) Vocabulary: standard form vs. scientific notation</p> <p>N8.7. Find the square root of perfect squares, and approximate the square root of non-perfect squares as consecutive integers between which the root lies; e.g. square root of 130 is between 11 and 12. 1) Review calculator buttons. Compare "y^x" button to "exp" button</p> <p>N8.8. Add, subtract, multiply, divide and compare numbers written in scientific notation.</p>	
Numbers and Operations {Chapter 3} {Chapter 1}	<p>N8.2. Recognize that natural numbers, whole numbers, integers, rational numbers and irrational numbers are subsets of the real number system. 1) Compare and contrast using Venn diagram</p> <p>N8.3. Apply order of operations to simplify expressions and perform</p>	

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	<p style="text-align: center;">computations involving integer exponents and radicals.</p> <p>N8.4. Explain and use the inverse and identity properties and use inverse relationships (addition/subtraction, multiplication/division, squaring/square roots) in problem solving situations. 1) Tie into solving linear equations</p> <p>N8.5. Determine when an estimate is sufficient and when an exact answer is needed in problem situations, and evaluate estimates in relation to actual answers; e.g., very close, less than, greater than.</p> <p>N8.6. Estimate, compute and solve problems involving rational numbers, including ratio, proportion and percent, and judge the reasonableness of solutions. 1) Tie into measurement</p>	
<p style="text-align: center;">Patterns and Algebra {Chapter 1}</p>	<p>A8.2. Generalize patterns and sequences by describing how to find the nth term.</p>	

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	<p>A8.8. Write, simplify and evaluate algebraic expressions (including formulas) to generalize situations and solve problems.</p> <p>A8.9. Solve linear equations and inequalities graphically, symbolically and using technology.</p>	
<p>Data Analysis {Chapter 4}</p>	<p>D8.4. Compare two sets of data using measures of center (mean, mode, median) and measures of spread (range, quartiles, interquartile range, percentiles).</p> <p>D8.5. Explain the mean's sensitivity to extremes and its use in comparison with the median and mode.</p>	

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Units of Measurement {Supplemental Materials}	<p>M8.1. Compare and order the relative size of common U.S. customary units and metric units; e.g., mile and kilometer, gallon and liter, pound and kilogram.</p> <p>M8.2. Use proportional relationships and formulas to convert units from one measurement system to another; e.g., degrees Fahrenheit to degrees Celsius.</p> <p>M8.3. Use appropriate levels of precision when calculating with measurements.</p>	

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CONCEPT/TOPIC with Text & Resources Connections {Chap.lesson}	Indicators (clustered and sequenced) Bold = Power indicator; Sub-indicators numbered 1), 2), 3) etc.	Common Quarterly Assessment Link
Area and Volume {Chapter 6}	<p>M8.4. Derive formulas for surface area and volume and justify them using geometric models and common materials. For example, find:</p> <ul style="list-style-type: none"> a. the surface area of a cylinder as a function of its height and radius; b. that the volume of a pyramid (or cone) is one-third of the volume of a prism (or cylinder) with the same base area and height. <p>M8.5. Determine surface area for pyramids by analyzing their parts.</p> <p>M8.9. Demonstrate understanding of the concepts of perimeter, circumference and area by using established formulas for triangles, quadrilaterals, and circles to determine the surface area and volume of prisms, pyramids, cylinders, spheres and cones. (Note: Only volume should be calculated for spheres and cones.)</p> <p>M8.10. Use conventional formulas to find the surface area and volume of prisms, pyramids and cylinders and the volume of spheres and cones to a specified level of precision.</p>	

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Polygons {Chapter 5}	<p>M8.8. Find the sum of the interior and exterior angles of regular convex polygons with and without measuring the angles with a protractor.</p> <p>G8.1. Make and test conjectures about characteristics and properties (e.g., sides, angles, symmetry) of two-dimensional figures and three-dimensional objects.</p> <p>G8.2. Recognize the angles formed and the relationship between the angles when two lines intersect and when parallel lines are cut by a transversal.</p> <p>G8.6. Draw nets for a variety of prisms, pyramids, cylinders and cones.</p>	
Data Analysis {Chapter 4}	<p>D8.1. Use, create and interpret scatter plots and other types of graphs as appropriate.</p> <p>D8.2. Evaluate different graphical representations of the same data to determine which is the most appropriate representation for an identified purpose; e.g., line graph for change over time, circle graph for part-to-whole comparison, scatter plot for relationship between</p>	

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	<p>two variants.</p> <p>D8.3. Differentiate between discrete and continuous data and appropriate ways to represent each.</p>	
<p>Using Graphs {Chapter 5}</p>	<p>G8.4. Represent and analyze shapes using coordinate geometry; e.g., given three vertices and the type of quadrilateral, find the coordinates of the fourth vertex.</p> <p>A8.1. Relate the various representations of a relationship; i.e., relate a table to graph, description and symbolic form.</p> <p>A8.7. Use symbolic algebra (equations and inequalities), graphs and tables to represent situations and solve problems.</p>	
<p>Transformations {Chapter 5}</p>	<p>G8.5. Draw the results of translations, reflections, rotations and dilations of objects in the coordinate plane, and determine properties that remain fixed; e.g., lengths of sides remain the same under translations.</p>	

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Revised: May 9, 2008

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<p>Proportional Reasoning {Chapter 7}</p>	<p>M8.6 Solve and determine the reasonableness of the results for problems involving rates and derived measurements, such as velocity and density, using formulas, models and graphs.</p> <p>M8.7 Apply proportional reasoning to solve problems involving indirect measurements or rates.</p> <p>1) Writing proportions 2) Solving proportions</p> <p>G8.3 Use proportions in several forms to solve problems involving similar figures (part-to-part, part-to-whole, corresponding sides between figures).</p> <p>1) Meaning of congruence and similarity 2) Solve proportions</p>	
<p>Perimeter, Area, Surface Area and Volume</p>	<p>M8.3 Use appropriate levels of precision when calculating with measurements.</p> <p>M8.4 Derive formulas for surface area and volume and justify them using geometric models and common materials. For example, find:</p>	

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Quarter: 3rd Nine Weeks

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Grade Level: 8

Revised: May 9, 2008

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{Chapter 6}	<p>a. the surface area of a cylinder as a function of its height and radius; b. that the volume of a pyramid (or cone) is one-third of the volume of a prism (or cylinder) with the same base area and height.</p> <p>1) Understand the difference between surface area and volume</p> <p>M8.5 Determine surface area for pyramids by analyzing their parts</p> <p>1) Find areas of rectangles and triangles</p> <p>M8.9 Demonstrate understanding of the concepts of perimeter, circumference and area by using established formulas for triangles, quadrilaterals, and circles to determine the surface area and volume of prisms, pyramids, cylinders, spheres and cones. (Note: Only volume should be calculated for spheres and cones.)</p> <p>1) Areas of 2-dimensional figures 2) Simplifying formulas</p> <p>M8.10 Use conventional formulas to find the surface area and volume of prisms, pyramids and cylinders and the volume of spheres and cones to a specified level of precision.</p> <p>1) Simplifying formulas 2)</p>	

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Transformations and Views {Chapter 5}	<p>G8.5 Draw the results of translations, reflections, rotations and dilations of objects in the coordinate plane, and determine properties that remain fixed; e.g., lengths of sides remain the same under translations.</p> <p>1) Perform translations plotting points and understanding similarity.</p> <p>G8.6 Draw nets for a variety of prisms, pyramids, cylinders and cones.</p> <p>1) Draw representations of 3-D geometric objects from different views</p>	
Equations {Chapter 10}	<p>A8.1 Relate the various representations of a relationship; i.e., relate a table to graph, description and symbolic form.</p> <p>A8.3 Identify functions as linear or nonlinear based on information given in a table, graph or equation.</p> <p>1) represent and analyze patterns, rules and functions with words, tables, and graphs.</p> <p>A8.4 Extend the uses of variables to include covariants where y depends on x.</p> <p>A8.6 Describe the relationship between the graph of a line and its equation, including being able to explain the meaning of slope as a constant rate of change and y-intercept in real-world problems.</p>	

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	<p>A8.7 Use symbolic algebra (equations and inequalities), graphs and tables to represent situations and solve problems.</p> <p>A8.9 Solve linear equations and inequalities graphically, symbolically and using technology.</p> <p>A8.12 Solve simple quadratic equations graphically; e.g., $y = x^2 - 16$.</p> <p>A8.13 Compute and interpret slope, midpoint and distance given a set of ordered pairs.</p> <p>A8.14 Differentiate and explain types of changes in mathematical relationships, such as linear vs. nonlinear, continuous vs. noncontinuous, direct variation vs. inverse variation.</p> <p>A8.15 Describe and compare how changes in an equation affects the related graphs; e.g., for a linear equation changing the coefficient of x affects the slope and changing the constant affects the intercepts.</p> <p>1) Analyze linear and simple nonlinear relationships to explain how a change in one variable results in the change of another</p>	

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Quarter: 4th Nine Weeks

Course: Math

Grade Level: 8

Revised: April 3, 2008

CONCEPT/TOPIC with Text & Resources Connections {Chap.lesson}	Indicators (clustered and sequenced) Bold = Power indicator; Sub-indicators numbered 1), 2), 3) etc.	Common Quarterly Assessment Link
Operations with Polynomials {Chapter 13}	A8.5. Use physical models to add and subtract monomials and polynomials, and to multiply a polynomial by a monomial.	
Systems of Equations {Chapter 10}	A8.10. Solve 2 by 2 systems of linear equations graphically and by simple substitution. A8.11. Interpret the meaning of the solution of a 2 by 2 system of equations; i.e., point, line, no solution.	
Data Analysis and Probability {Chapter 9}	D8.10. Calculate the number of possible outcomes for a situation, recognizing and accounting for when items may occur more than once or when order is important. D8.11. Demonstrate an understanding that the probability of either of two disjoint events occurring can be found by adding the probabilities for each and that the probability of one independent event following another can be found by multiplying the probabilities	