

Ware Public Schools

MATH CURRICULUM - Grades 8-12

SUBJECT MATTER: Math - Number Sense and Operations

Grade: 8

Standard	Content	Skills	Assessment	Teacher Resources & Notes
			FOR ALL UNITS: Prentice Hall: <u>Mathematics Course 3</u> <ul style="list-style-type: none"> ▪ Pre-assessments ▪ Checkpoint Quizzes ▪ Chapter Test ▪ Alternative Assessments ▪ Test Generator (Software) ▪ Lesson Quick Quizzes <u>Problem of the Day</u> <u>Daily Mental Math</u> MCAS Questions	FOR ALL UNITS: Prentice Hall: <u>Mathematics Course 3</u> Prentice Hall: Teacher Resource Aids <ul style="list-style-type: none"> ▪ Practice ▪ Reteaching ▪ Enrichment ▪ Chapter Projects ▪ Problems Solving ▪ Cumulative Review ▪ Presentations Plus (Software) <u>Word Wall & Charts</u>
8.N.1 Compare, order, estimate, and translate among integers, fractions and mixed numbers (i.e., rational numbers), decimals, and percents.	Rational Numbers	The students will be able to: <ol style="list-style-type: none"> 1. Define place value. 2. Round, compare, and estimate decimals, fractions, mixed numbers, & percents, 3. Define integers. 4. Solve integer problems. <u>Vocabulary:</u> Rational numbers, relatively	Problem of the Day Lesson Quick Quiz Formative Assessment: <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists Daily Class Work	Text Lessons: 4-2 to 4-5 pp. 190-210 <u>Materials:</u> <u>Technology:</u>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
		prime, terminating decimal, repeating decimal, least common multiples (LCM), least common denominator, reciprocal, multiplicative inverse	<u>Project Assessment Suggestions:</u>	
8.N.2 Define, compare, order, and apply frequently used irrational numbers, such as $\sqrt{2}$ square root of 2, and π .	Irrational Numbers	The students will be able to: <ol style="list-style-type: none"> 1. Define irrational numbers. 2. Order and compare irrational numbers. 3. Apply frequently used irrational numbers such as pi and square roots to appropriate situations. <u>Vocabulary:</u> Perfect square, square root, irrational numbers, real numbers	Problem of the Day Lesson Quick Quiz Formative Assessment: <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <u>Project Assessment Suggestions:</u>	Text Lesson: 4-8 pp. 221-225 <u>Materials:</u> <u>Technology:</u>
8.N.3 Use ratios and proportions in the solution of problems, in particular, problems involving unit rates, scale factors, and rate of change.	Ratio & Proportion	The students will be able to: <ol style="list-style-type: none"> 1. Define ratio and proportion. 2. Solve problems involving proportion. 3. Use scale drawings. 4. Understand and use maps drawn in scale. <u>Vocabulary:</u> Rate, unit rate, conversion factor, dimensional analysis, proportion, cross products, similar figures, congruent angles	Problem of the Day Lesson Quick Quiz Formative Assessment: <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <u>Project Assessment Suggestions:</u>	Text Lessons: 5-1 pp. 243-247 5-2 pp. 248-252 5-4 pp. 258-263 5-5 pp. 265-270 Extension: “Rate of Change,” Text pages 134 - 135 <u>Materials:</u> <u>Technology:</u>

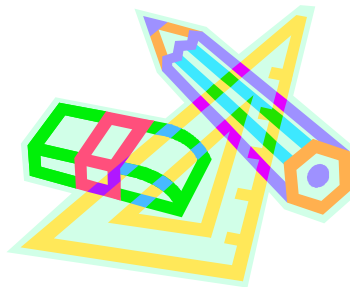
Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.N.4 Represent numbers in scientific notation, and use them in calculations and problem situations.	Scientific Notation	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Understand and use scientific notation. 2. Apply scientific notation to real-world problem situations. <p><u>Vocabulary:</u> Scientific notation</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 7-1 pp. 365-369 7-2 pp. 370-374 7-3 pp. 376-381</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
8.N.5 Apply number theory concepts, including prime factorization and relatively prime numbers, to the solution of problems.	Fraction & Number Theory	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Define prime and composite numbers. 2. Find the GCF (greatest common factors) and the LCM (least common multiple) among two or more numbers. <p><u>Vocabulary:</u> Divisible, prime number, composite number, prime factorization, greatest common factor (GCF), rational number, relatively prime</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 4-1 pp. 185-189 4-2 pp. 190-195 4-3 pp. 196-200</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.N.6 Demonstrate an understanding of absolute value, e.g., $ -3 = 3 = 3$.	Absolute Value	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Define and use absolute value. <p><u>Vocabulary:</u> Opposites, integers, absolute value</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 1-3 pp. 16-21</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
8.N.7 Apply the rules of powers and roots to the solution of problems. Extend the Order of Operations to include positive integer exponents and square roots.	Order of Operations & Square Roots	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use exponents appropriately. 2. Apply the rules of exponents. <p><u>Vocabulary:</u> Factor, exponent, base, power, order of operations, simplify, evaluate, perfect square, square roots</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p>Project Assessment Suggestions:</p>	<p>Text Lessons: 1-1 pp. 5-11 1-7 pp. 39-44 4-8 pp. 221-225</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.N.8 Demonstrate an understanding of the properties of arithmetic operations of rational numbers. Use the associative, commutative, and distributive properties; properties of the identity and inverse elements (e.g., $-7 + 7 = 0$; $3/4 \cdot 4/3 = 1$); and the notion of closure of a subset of the rational numbers under an operation (e.g., the set of odd integers is closed under multiplication but not under addition).</p>	<p>Properties of Real Numbers</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Know and apply the Associative, Commutative, and Distributive Properties. 2. Understand and explain the meaning of “closure” under a particular operation. 3. Recognize and use identities, inverses, and multiplication properties of 0 and 1. <p><u>Vocabulary:</u> Variable, algebraic expressions, simplify, evaluate, Order of Operations, Commutative Property of Addition and Multiplication, Associative Property of Multiplication and Addition, Identity Property of Addition and Multiplication, Distributive Property</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p>Project Assessment Suggestions:</p>	<p>Text Lessons: 1-4 pp. 22-27 1-8 pp. 45-51 2-1 pp. 61-66 4-8 pp. 221-225</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.N.9 Use the inverse relationships of addition and subtraction, multiplication and division, and squaring and finding square roots to simplify computations and solve problems, e.g. multiplying by $1/2$ or 0.5 is the same as dividing by 2</p>	<p>Inverse & Square Root Relationships</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Simplify expressions. 2. Use inverse operations to solve one and two step equations. 3. Use squaring & square roots to solve equations. <p><u>Vocabulary:</u> Equation, Additive,</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work 	<p>Text Lessons: 2-1 pp. 61-66 2-2 pp. 69-72 2-3 pp. 73-77 2-4 pp. 78-83 4-8 pp. 221-225</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
		Subtraction, Multiplication, Division Properties of Equality, solution, isolate, inverse operations, algebra tiles, term, like terms, square root, simplify	Project Assessment Suggestions:	
8.N.10 Estimate and compute with fractions (including simplification of fractions), integers, decimals, and percents (including those greater than 100 and less than 1).	Estimation & Computation	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Simplify fractions. 2. Estimate solutions. 3. Add, subtract, multiply, and divide with fractions, integers, and decimals. 4. Add, subtract, multiply, and divide with percent (greater than 100 and less than 1.) <p><u>Vocabulary:</u> Additive inverse, reciprocal, multiplicative inverse, percent</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p>Project Assessment Suggestions:</p>	<p>Text Lessons: 1-4 pp. 22-27 1-5 pp. 28-32 4-4 pp. 201-204 4-5 pp. 205-210 6-1 pp. 303-308 6-2 pp. 309-313 6-3 pp. 314-319</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
8.N.11 Determine when an estimate rather than an exact answer is appropriate and apply in problem situations.	Estimate/Exact Answers	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Distinguish between an exact and estimate answer. 2. Determine when an exact answer is an appropriate solution. <p><u>Vocabulary:</u> Estimation, exact answer</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p>Project Assessment Suggestions:</p>	<p>“Estimating with Dimensional Analysis” Text page 250 “Using Estimation” Text page 355 “Estimating with Square Roots” Text page 222 “Estimating Percents” Text page 309</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.N.12 Select and use appropriate operations - addition, subtraction, multiplication, division, and positive integer exponents— to solve problems with rational numbers (including negatives).</p>	<p>Operations Problem Solving</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve one and two step equations. 2. Solve equations by combining like terms using the Distributive Property, and using the Properties of Equality. 3. Solve literal equations. 4. Apply solutions of equations to problem solving. <p><u>Vocabulary:</u> Properties of Addition: Commutative, Associative, Identity; Properties of Multiplication: Commutative, Associative, Identity, Distributive; inverse operations, solution, isolate, algebra tiles, linear equation, system of linear equations</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 1-8 pp. 45-51 2-1 pp. 61-66 2-2 pp. 69-72 2-4 pp. 78-83 3-2 pp. 122-126 3-7 pp. 152-156</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>



SUBJECT MATTER: Math – Patterns, Relationships, and Algebra***Grade: 8***

Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.P.1 Extend, represent, analyze, and generalize a variety of patterns with tables, graphs, words, and, when possible, symbolic expressions. Include arithmetic and geometric progressions, e.g., compounding	Patterns	The students will be able to: 1. Find patterns among integers. 2. Represent and analyze patterns. 3. Problem solve using patterns. <u>Vocabulary:</u> Patterns, geometric progressions	Problem of the Day Lesson Quick Quiz Formative Assessment: <ul style="list-style-type: none">Teacher ObservationQuestioningClass Participation ChecklistsDaily Class Work <u>Project Assessment Suggestions:</u>	Text Lessons: 8-4 pp. 426-429 10-5 pp. 557-562 <u>Materials:</u> <u>Technology:</u>
8.P.2 Evaluate simple algebraic expressions for given variable values, e.g., $3a2 - b$ for $a = 3$ and $b = 7$.	Algebraic Expressions	The students will be able to: 1. Evaluate simple expressions using addition, subtraction, multiplication, and division. 2. Evaluate algebraic Expressions using the Order of Operations. <u>Vocabulary:</u> Variable, algebraic expression	Problem of the Day Lesson Quick Quiz Formative Assessment: <ul style="list-style-type: none">Teacher ObservationQuestioningClass Participation ChecklistsDaily Class Work <u>Project Assessment Suggestions:</u>	Text Lesson: 1-1 pp. 5-10 <u>Materials:</u> <u>Technology:</u>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.P.3 Demonstrate understanding of the identity $(-x)(-y) = xy$. Use this identity to simplify algebraic expressions, e.g., $(-2)(x+2) = 2x - 4$.</p>	<p>Simplify Expressions</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Understand the identity property. 2. Use the identity property to simplify algebraic expressions. <p><u>Vocabulary:</u> Identity Property, algebraic expression, simplify</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 1-8 pp. 45-51</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.P.4 Create and use symbolic expressions and relate them to verbal, tabular, and graphical representations.</p>	<p>Algebraic Expressions</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Create and evaluate algebraic expressions. 2. Show equivalence between the logic underlying each equation, table, or graph. <p><u>Vocabulary:</u> Variable, algebraic expression, sequence, term, like terms</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 1-1 pp. 5-10 2-3 pp. 73-78 12-1 pp. 637-641</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.P.5 Identify the slope of a line as a measure of its steepness and as a constant rate of change from its table of values, equation, or graph. Apply the concept of slope to the solution of problems.</p>	<p>Slope & Rate of Change</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify slopes of horizontal, vertical, oblique lines from table values, equations, etc. 2. Find the rate of change from various representations (graph, ordered pairs, etc.) 3. Use slopes to solve problems. <p><u>Vocabulary:</u> Slope, line of slope, y-intercept, x-intercept, rate of change, vertical change, horizontal change</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 3-3 pp. 128-133 3-4 pp. 136-141 3-5 pp. 142-145</p> <p>Extension: “Rate of Change” Text, pages 134-135</p> <p>Technology: “Graphing Lines” Text, page 127</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.P.6 Identify the roles of variables within an equation, e.g., $y = mx + b$, expressing y as a function of x with parameters m and b.</p>	<p>Slope Equation</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve linear equations with two variables. 2. Write linear equations in the form $y = mx + b$. 3. Graph equations of the form $y = mx + b$. <p><u>Vocabulary:</u> Solution, linear equation, slope, x-intercept, y-intercept</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 3-2 pp. 122-127 3-3 pp. 128-133</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.P.7 Set up and solve linear equations and inequalities with one or two variables, using algebraic methods, models, and/or graphs.	Linear Systems	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve linear equations with one or two variables. 2. Solve and graph inequalities. 3. Solve equations and inequalities using different methods. <p><u>Vocabulary:</u> Equation, solution, isolate, inverse operations, equality properties, inequality, graph of an inequality, properties of inequalities,</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 2-1 pages 61-67 2-2 pages 69-72 2-5 pages 85-88 2-6 pages 90-96 2-7 pages 97-102 2-8 pages 103-106</p> <p>Investigation: “ Solving Equations with Tiles” text page 68</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
8.P.8 Explain and analyze— both quantitatively and qualitatively, using pictures, graphs, charts, or equations— how a change in one variable results in a change in another variable in functional relationships, e.g., $C = \pi d$, $A = \pi r^2$ (A as a function of r), A rectangle = lw (A rectangle as a function of l and w).	Plane Geometry & Functions	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Represent functions with equations and tables. 2. Use function notation. 3. Understand and use the functional relationships as represented in area, circumference, and perimeter formulas <p><u>Vocabulary:</u> Function, function rule, linear function, formulas, area, perimeter, circumference</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 4-6 pp. 212-216 8-7 pp. 441-446 8-8 pp. 447-452 12-2 pp. 643-647 12-3 pp. 648-652</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.P.9 Use linear equations to model and analyze problems involving proportional relationships. Use technology as appropriate.	<p>Graphing Linear Equations</p> <p>Proportion</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve proportions. 2. Use proportions to identify similar figures and find unknown lengths in similar figures. 3. Use calculators to solve proportional problems. <p><u>Vocabulary:</u> Proportion, cross products, similar figures, congruent angles</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 5-4 pp. 258-264 5-5 pp. 265-270</p> <p><u>Materials:</u></p> <p><u>Technology:</u> Use graphing calculators</p>
8.P.10 Use tables and graphs to represent and compare linear growth patterns. In particular, compare rates of change and x- and y-intercepts of different linear patterns.	<p>Linear Patterns</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. To understand rate of change. 2. To interpret tables and graphs to compare rate of change of different linear functions. <p><u>Vocabulary:</u> Rate of change, x-intercept, y-intercept</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Extension, “Rate of Change” Text, pp. 134 - 135</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.G.1 Analyze, apply, and explain the relationship between the number of sides and the sums of the interior and exterior angle measures of polygons.</p>	<p>Polygons Angles/Sides</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> To find the angle measure of a polygon. Investigate and apply the relationship between the number of sides and interior and exterior angle sum measures of polygons. <p><u>Vocabulary:</u> Regular polygon, interior angle, exterior angle</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> Teacher Observation Questioning Class Participation Checklists Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Investigation: Text page 435 “Sum of Angles of a Polygon”</p> <p>Text Lesson: 8-6 pp. 436-439</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.G.2 Classify figures in terms of congruence and similarity, and apply these relationships to the solution of problems.</p>	<p>Congruent & Similar Figures</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> To identify parts of congruent figures. To identify similar figures To find unknown lengths in similar figures <p><u>Vocabulary:</u> Congruent figures, similar figures, congruent angles</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> Teacher Observation Questioning Class Participation Checklists Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 5-5 pp. 265-270 8-3 pp. 420-425</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.G.3 Demonstrate an understanding of the relationships of angles formed by intersecting lines, including parallel lines cut by a transversal.</p>	<p>Lines: Intersecting & Parallel</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Find the measure of angles formed by parallel lines. 2. Identify parallel lines. <p><u>Vocabulary:</u> Transversal, parallel lines, corresponding angles, alternate interior angles</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 8-2 pp. 413-418 Extension: “Parallel and Perpendicular Lines,” p. 419</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.G.4 Demonstrate an understanding of the Pythagorean theorem. Apply the theorem to the solution of problems.</p>	<p>Pythagorean Theorem</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Know and apply the Pythagorean Theorem. 2. Identify right triangles. <p><u>Vocabulary:</u> Legs, hypotenuse, Pythagorean Theorem</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 4-6 pp 226-231</p> <p>Extension: “Area and the Pythagorean Theorem,” p. 232</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

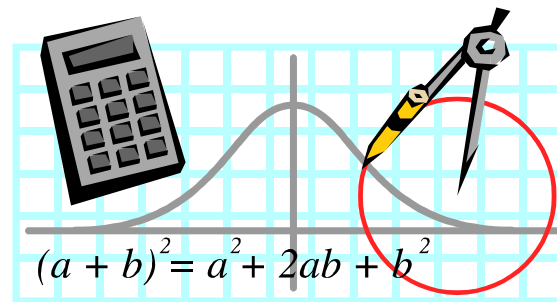
Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.G.5 Use a straight-edge, compass, or other tools to formulate and test conjectures, and to draw geometric figures.	Geometric Tools	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use appropriate tools to construct congruent segments and angles. 2. To construct bisectors. <p><u>Vocabulary:</u> Compass, midpoint, segment bisector, perpendicular bisector, angle bisector, protractor</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 8-9 pp. 454- 460 “Drawing a Diagram” p. 461</p> <p><u>Materials:</u></p> <p><u>Technology:</u> Construction Software</p>
8.G.6 Predict the results of transformations on unmarked or coordinate planes and draw the transformed figure, e.g., predict how tessellations transform under translations, reflections, and rotations.	Transformations	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. To graph and describe translations. 2. To graph reflections and identify lines of symmetry. 3. To graph rotations and identify rotational symmetry. <p><u>Vocabulary:</u> Transformation, translation, image, reflection, line of reflection, reflectional symmetry, line of symmetry, rotation, center of rotation, angle of rotation, rotational symmetry</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 3-8 pp. 157-162 3-9 pp. 163- 168 3-10 pp. 169-174</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.G.7 Identify three-dimensional figures (e.g., prisms, pyramids) by their physical appearance, distinguishing attributes, and spatial relationships such as parallel faces.</p>	<p>Three-Dimensional Figures</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Define three-dimensional figures. 2. Describe the physical characteristics of solid figures <p><u>Vocabulary:</u> Solids, prism, pyramid, cylinder, cone, polyhedron, skew lines, parallel lines</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 9-1 pp. 471-475</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.G.8 Recognize and draw two-dimensional representations of three-dimensional objects, e.g., nets, projections, and perspective drawings.</p>	<p>Three-Dimensional Drawings</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify and sketch geometric solids. 2. Find the number of vertices, faces, and edges in a solid. <p><u>Vocabulary:</u> Solids, base plan, isometric view, net vertices, edge, face</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 9-1 pp. 471-475 9-2 pp. 476-480 9-3 pp. 481-485</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.M.1 Select, convert (within the same system of measurement), and use appropriate units of measurement or scale.	Conversions	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Develop measurement sense in customary and metric units. 2. Apply dimensional analysis to problem solving situations. <p><u>Vocabulary:</u> Conversion factor, dimensional analysis, Customary System, Metric System</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 5-2 pp. 248-252</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
8.M.2 Given the formulas, convert from one system of measurement to another. Use technology as appropriate.	Conversion Formulas	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Convert from one system to another when given the respective formula. <p><u>Vocabulary:</u> Formula</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson:</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.M.3 Demonstrate an understanding of the concepts and apply formulas and procedures for determining measures, including those of area and perimeter/circumference of parallelograms, trapezoids, and circles. Given the formulas, determine the surface area and volume of rectangular prisms, cylinders, and spheres. Use technology as appropriate.</p>	<p>Area, Perimeter, Surface Area, & Volume</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Find the area of a square, rectangle, triangle, trapezoid, and circle. 2. Define and find the perimeter of a figure. 3. Find the surface area of a prism. 4. Find the volume of a prism. <p><u>Vocabulary:</u> Formula, circumference, area, surface area, lateral area, volume</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 4-6 pp. 212-216 8-7 pp. 441-446 8-8 pp. 447-452 9-4 pp. 488-493 9-6 pp. 500-505</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.M.4 Use ratio and proportion (including scale factors) in the solution of problems, including problems involving similar plane figures and indirect measurement.</p>	<p>Ratio & Proportions</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify corresponding parts of similar polygons. 2. Solve problems involving similar triangles. 3. Solve problems involving scale drawings. 4. Solve problems using proportion. 5. Measure indirectly using similar triangles. <p><u>Vocabulary:</u> Proportion, cross products, similar triangles, indirect</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment</u></p>	<p>Text Lessons: 5-4 pp. 258-263 5-5 pp. 265-270 5-6 pp. 271-276 5-7 pp. 278-281 5-8 pp. 282-286</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
		measurement, scale, scale model, scale factor, dilation, enlargement, reduction.	<u>Suggestions:</u>	
8.M.5 Use models, graphs, and formulas to solve simple problems involving rates, e.g., velocity and density.	Rates Problem Solving	<p>The students will be able to:</p> <ol style="list-style-type: none"> Solve problems involving rates using various methods (models, graphs, or formulas). <p><u>Vocabulary:</u> Rate, unit rate,</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lesson: 5-1 pp. 243-247</p> <p>Extension: “Using a Variable” Text page 293</p> <p>Extension: “Rate of Change” Text pp. 134 -135</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>



Standard	Content	Skills	Assessment	Teacher Resources & Notes
8.D.1 Describe the characteristics and limitations of a data sample. Identify different ways of selecting a sample, e.g., convenience sampling, responses to a survey, random sampling.	Data Sampling	The students will be able to: 1. Conduct surveys. <u>Vocabulary:</u> Population, sample, random sample, systematic sample, stratified sample, biased questions, survey	Problem of the Day Lesson Quick Quiz Formative Assessment: Teacher Observation Questioning Class Participation Checklists Daily Class Work <u>Project Assessment Suggestions:</u>	Text Lesson: 11-7 pp. 621 -626 <u>Materials:</u> <u>Technology:</u>
8.D.2 Select, create, interpret, and utilize various tabular and graphical representations of data, e.g., circle graphs, Venn diagrams, scatterplots, stem-and-leaf plots, box-and-whisker plots, histograms, tables, and charts. Differentiate between continuous and discrete data and ways to represent them.	Graphing	The students will be able to: 1. Read graphs critically and make various graphs (Venn diagrams, circle graphs, scatterplots, stem-and-leaf plots, box-and-whisker plots, histograms, tables, and charts. 2. Organize data in a frequency table. 3. Differentiate between continuous and discrete data. <u>Vocabulary:</u> Frequency table, line plot, histogram, stem-and-leaf plots, box-and-whiskers plot, quartiles, scatter plots, positive trend, negative trend, no trend, trend line, circle central angle, discrete data, couous datantin	Problem of the Day Lesson Quick Quiz Formative Assessment: ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <u>Project Assessment Suggestions:</u>	Text Lessons: 10-1 to 10-7 pp. 533-574 12-3 pp. 648 -652 <u>Materials:</u> <u>Technology:</u>

Standard	Content	Skills	Assessment	Teacher Resources & Notes
<p>8.D.3 Find, describe, and interpret appropriate measures of central tendency (mean, median, and mode) and spread (range) that represent a set of data. Use these notions to compare different sets of data.</p>	<p>Mean, Median, Mode, & Range</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Find the mean, median, and mode of a set of data. 2. Understand and find the range of a set of data. 3. Determine the upper and lower quartiles of a set of data. 4. Recognize misleading statistics and graphs. <p><u>Vocabulary:</u> Mean, median, mode, range, quartile, central tendency</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 1-6 pp. 33 - 38 10-1 pp. 533 - 538 10-2 pp. 540 - 544 10-4 pp. 552-556</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>
<p>8.D.4 Use tree diagrams, tables, organized lists, basic combinatorics (“fundamental counting principle”), and area models to compute probabilities for simple compound events, e.g., multiple coin tosses or rolls of dice.</p>	<p>Probability</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use tree diagrams and counting principle. 2. To find experimental probability and complements and odds of events. 3. Find combinations by using a list and use combination notation. 4. Find the number of permutations of a set of objects and use permutation notation. <p><u>Vocabulary:</u> Combination, permutations, factorial, experimental probability, theoretical probability, complement, odds in favor, odds against</p>	<p>Problem of the Day</p> <p>Lesson Quick Quiz</p> <p>Formative Assessment:</p> <ul style="list-style-type: none"> ▪ Teacher Observation ▪ Questioning ▪ Class Participation Checklists ▪ Daily Class Work <p><u>Project Assessment Suggestions:</u></p>	<p>Text Lessons: 11-1 pp. 591-594 11-2 pp. 595-599 11-3 pp. 600-604 11-4 pp. 606-610 11-6 pp. 616-620</p> <p><u>Materials:</u></p> <p><u>Technology:</u></p>

SUBJECT MATTER: Algebra 1 (Semester 1)**Grades: 8-12**

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Number and Number Operations	<p>How do graphs and tables help to organize data?</p> <p>Why do we use variables?</p> <p>Is it more efficient to use variables or numbers?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Represent numbers and number operations 2. Use grouping symbols 3. Evaluate variable expressions 4. Represent real-life quantities 5. Evaluate expressions containing exponents 6. Use order of operations to evaluate algebraic expressions 7. Evaluate expressions with a calculator 8. Check and solve equations 9. Check solutions of inequalities 10. Translate verbal phrases and sentences into algebraic equations and inequalities 11. Use algebra to solve real-life problems 12. Make an algebraic model for a real-life problem 13. Use tables and graphs to organize data 	<p>Create flash terms for vocabulary terms</p> <p>Find 5 graphs/tables from magazines or newspapers</p> <p>Alternate assessment chapter 1 math log</p> <p>MCAS multiple choice/short answer questions</p> <p>Quizzes and Tests</p> <p>Class work</p> <p>Homework</p>	<p>Extra practice workbook</p> <p>DOE website</p> <p>Alternate Assessment workbook</p> <p>Teacher created quizzes and tests</p> <p>Formal Assessments workbook</p>	<p>8.N.1</p> <p>8.N.6</p> <p>8.N.7</p> <p>8.N.8</p> <p>8.N.12</p> <p>8.P.4</p> <p>A1.N.2</p> <p>A1.N.3</p> <p>A1.P.10</p>
Rules of Algebra	<p>What is the difference between a ratio and a rate?</p> <p>Why is it better to buy things at a supermarket in large quantities?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Graph and compare real numbers 2. Find opposites and absolute values 3. Add, subtract, multiply and divide real numbers 4. Add, subtract, multiply and divide real numbers using a calculator 5. Simplify the difference of two algebraic 	<p>Open response questions</p> <p>Go to the supermarket and copy unit prices for 2 items in different</p>	<p>Extra Practice workbook</p> <p>DOE Website</p> <p>Alternate Assessment workbook</p> <p>Teacher created quizzes and</p>	<p>8.P.2</p> <p>A1.N.1</p> <p>A1.N.2</p> <p>A1.N.4</p> <p>8.D.2</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		expressions 6. Organize data in a matrix 7. Add and subtract matrices 8. Use the distributive property 9. Simplify expressions by combining like terms 10. Express division as multiplication 11. Use rates and ratios to relate quantities	quantities MCAS open response, multiple choice and short answer questions Quizzes and tests Homework Class work	tests Formal Assessments workbook Algebra tiles	8.P.2
Solving Linear Equations	In what ways can equations of lines be graphed? In what ways can slope or rate of change be calculated, measured and graphed?	The students will be able to: 1. Solve equations systematically using addition, subtraction and division 2. Use two or more transformations to solve an equation 3. Collect variables on one side of an equation 4. Use algebraic models in real-life situations 5. Use a problem-solving plan for problems that fit a linear model 6. Find exact and approximate solutions of equations with decimals 7. Solve problems that use decimal measurements 8. Solve literal equations for a specified variable 9. Use a coordinate plane to match points with ordered pairs of numbers 10. Use a scatterplot 11. Draw scatterplots using a graphing calculator	Plot ordered pairs in the coordinate plane to create a picture Ball Drop lab MCAS open response, short answer and multiple choice questions Graphing calculator activity Quizzes and tests Homework Class work	Cartesian Cartoons workbook by Mystery Media Algebra with Pizzazz Extra Practice workbook Teacher created quizzes and tests Formal Assessments workbook DOE website	8.P.7 A1.P.2 A1.N.4 A1.D.1 10.P.8 10.P.12

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Graphing Linear Equations	<p>How are the graphs of linear equations used to solve real-life problems?</p> <p>What is the relationship between parallel lines and between vertical and horizontal lines?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> Graph horizontal and vertical lines Use equations of horizontal and vertical lines in real-life settings Graph a linear equation from a table of values Interpret graphs of linear equations Use a graphing calculator to sketch linear equations Find the intercepts of the graph of a linear equation Use intercepts to sketch a quick graph of a line Find the slope of a line using two of its points Interpret slope as a constant rate of change Find the slope and y-intercept of an equation Use the slope-intercept form to sketch a line and solve problems Approximate solutions of real-life problems by using a graph Graph an absolute value equation Model a real-life situation using graphs of absolute value equations Solve and check absolute value equations algebraically Use a graph to check solutions of absolute value equations. 	<p>Graphing calculator activity</p> <p>Quizzes and tests</p> <p>MCAS open response, short answer and multiple choice questions</p> <p>Homework</p> <p>Class work</p>	<p>Extra practice workbook</p> <p>DOE website</p> <p>Formal Assessments workbook</p> <p>Teacher created quizzes and tests</p>	<p>10.P.2</p> <p>A1.P.5</p> <p>A1.P.10</p>
Writing Linear Equations	<p>How are different forms of the equation of a line written so that they help solve real-world problems?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> Use the slope-intercept form to write an equation of a line. Model a real-life situation with a linear equation. 	<p>Charity Walk-a-thon Project</p> <p>Problem solving packet</p>	<p>Teacher generated project</p> <p>Teacher generated problem solving packet</p>	<p>A1.P5</p> <p>A1.D2</p> <p>A1.P.6</p> <p>A1.P.11</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		<ol style="list-style-type: none"> 3. Use the slope and any point on the line to write an equation of the line 4. Write an equation of a line given two points on the line 5. Find a linear equation that approximates a set of data points 6. Use scatter plots to determine positive, negative, or no correlation 7. Use a graphing calculator to find the best fitting line 8. Transform a linear equation into standard form 9. Use the point slope form to write a linear equation 10. Create and use linear models to solve problems 	<p>Have students create own word problems</p> <p>Graphing calculator activity</p> <p>Quizzes and tests</p> <p>MCAS open response, short answer and multiple choice questions</p> <p>Homework Class work</p>	<p>Extra Practice workbook</p> <p>Teacher created quizzes and tests</p> <p>Formal Assessments workbook</p> <p>DOE website</p>	
Solving and Graphing Inequalities	How are linear inequalities and their graphs useful in solving problems?	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve and graph linear inequalities in one variable 2. Write and use a linear inequality as a model for a real-life situation 3. Solve and graph compound inequalities 4. Model a real-life situation with inequalities 5. Solve absolute value equations 6. Graph a linear inequality in two variables 7. Use a graphing calculator to sketch the graph of an inequality in two variables 	<p>Have students create their own word problems on inequalities</p> <p>Find examples of time line, picture and circle graphs in magazines and newspapers</p> <p>Graphing calculator activity</p>	<p>Extra Practice workbook</p> <p>DOE website</p> <p>Formal Assessments workbook</p> <p>Algebra with Pizzazz workbook</p> <p>Teacher generated quizzes and tests</p>	<p>A1.P.10</p> <p>A1.P.12</p> <p>A1.N.2</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Start of Semester 2 Solving Systems of Equations	<p>How can solving systems of equations help determine the proper mixture of chemical solutions?</p> <p>How can solving systems of linear inequalities help businesses find ways to maximize profit and minimize cost?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve a system of linear equations by graphing 2. Model real-life situations using a system of linear inequalities 3. Use a graphing calculator to graph a linear system 4. Use substitution to solve a linear system 5. Use linear combinations to solve a linear system 6. Write and use a linear system as a real-life model 7. Visualize the solution possibilities for linear systems 8. Identify a linear system that has many solutions 9. Solve a system of linear inequalities by graphing 10. Solve a linear programming problem 	<p>Quizzes and tests</p> <p>MCAS open response, short answer and multiple choice questions</p> <p>Homework</p> <p>Class work</p>	<p>Extra Practice workbook</p> <p>DOE website</p> <p>Formal Assessments workbook</p> <p>Algebra with Pizzazz workbook</p> <p>Teacher generated quizzes and tests</p>	A1.P.12
Powers and Exponents	<p>In what ways can powers and roots be used to solve real-life problems?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use the multiplication properties of exponents to evaluate powers and simplify expressions 2. Use the powers and the exponential change equation as models 3. Use negative and zero exponents in algebraic expressions 4. Use powers as models 5. Use the division properties of exponents to evaluate powers and simplify expressions 6. Use scientific notation to express large and small numbers 	<p>Quizzes and tests</p> <p>MCAS open response, short answer and multiple choice questions</p> <p>Homework</p> <p>Class work</p> <p>Have the students create their own</p>	<p>Extra Practice workbook</p> <p>DOE website</p> <p>Formal Assessments workbook</p> <p>Algebra with Pizzazz workbook</p> <p>Teacher generated quizzes and tests</p>	<p>A1.P.11</p> <p>A1.P.1</p> <p>A1.N.1</p> <p>A1.N.4</p> <p>A1.N.2</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		7. Perform operations with numbers in scientific notation, with and without a calculator 8. Use scientific notation to solve real-life problems 9. Use the compound interest formula 10. Use models for exponential growth and decay to solve real-life problems 11. Use a calculator to find a best-fitting exponential growth and decay model	growth and decay problems to solve		
Square Roots and The Pythagorean Theorem	In what ways can we use the Pythagorean Theorem to solve real-life problems? How are quadratic equations and their graphs useful for solving real-world problems?	The students will be able to: 1. Evaluate and approximate square roots 2. Use the Pythagorean Theorem 3. Solve a quadratic equation by finding square roots 4. Use quadratic models in real-life settings 5. Sketch the graph of quadratic equations 6. Use the quadratic formula to solve a quadratic equation 7. Find the number of solutions of a quadratic equation by using the discriminant 8. Use the discriminant to solve real-life models 9. Sketch the graph of quadratic inequalities 10. Use quadratic inequalities as real-life models 11. Choose a model that best fits a collection of data	Quizzes and tests MCAS open response, short answer and multiple choice questions Homework Class work Graphing calculator activity Perform ball drop experiment then calculate actual time	Extra Practice workbook DOE website Formal Assessments workbook Algebra with Pizzazz workbook Teacher generated quizzes and tests	A1.N.1 A1.N.2 A1.P.9 A1.D.1 A1.P.11
Polynomials and Factoring	In what ways can factoring polynomials be used to solve real-life problems?	The students will be able to: 1. Add and subtract polynomials 2. Use polynomials as models 3. Multiply two polynomials using the distributive property and the FOIL	Quizzes and tests MCAS open response, short answer and	Extra Practice workbook DOE website Formal Assessments workbook	A1.P.7 A1.P.8 A1.P.9

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<p>How can the graphing calculator be used to interpret polynomials?</p> <p>Is solving quadratics by factoring more efficient than using the quadratic formula?</p>	<p>method</p> <ol style="list-style-type: none"> 4. Use polynomials in real-life settings 5. Use patterns for the product of a sum and difference and for the square of a binomial 6. Factor polynomials, including the difference of two squares and perfect square trinomials 7. Use factoring in real-life models 8. Factor a quadratic trinomial or recognize that it can't be factored 9. Use factoring to solve a quadratic equation 10. Use a graphing calculator to obtain a graphic interpretation of polynomial addition and subtraction 11. Solve quadratic equations by completing the square 	<p>multiple choice questions</p> <p>Homework</p> <p>Class work</p>	<p>Algebra with Pizzazz workbook</p> <p>Teacher generated quizzes and tests</p> <p>Teacher generated factoring packet</p>	
<p>Using Proportions and Rational Equations</p>	<p>How can we use ratios and proportions to solve word problems?</p> <p>How can probability be used to predict future events?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve proportions 2. Use proportions to solve real-life problems 3. Solve percent problems 4. Use percents in real-life problems 5. Use direct and inverse variation 6. Use direct and inverse variations in real-life settings 7. Find the probability of an event 8. Use probability in real-life events 9. Simplify a rational expression 10. Use rational expressions as real-life models 11. Multiply and divide rational expressions 12. Divide a polynomial by a monomial or a 	<p>Quizzes and tests</p> <p>MCAS open response, short answer and multiple choice questions</p> <p>Homework</p> <p>Class work</p> <p>Probability Activity</p>	<p>Extra Practice workbook</p> <p>DOE website</p> <p>Formal Assessments workbook</p> <p>Algebra with Pizzazz workbook</p> <p>Teacher generated quizzes and tests</p>	<p>A1.D.3</p> <p>A1.P.11</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		binomial 13. Solve rational equations 14. Use rational equations in real-life settings 15. Use a graphing calculator to find a range in which two graphs resemble each other			
Functions	<p>In what ways do relations, functions and graphs of functions help us interpret real-world events or solve problems?</p> <p>In what ways can data be organized and presented so that the information is clear and concise?</p> <p>What is a box and whisker plot and why is it important?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify functions and use function notation 2. Identify real-life relations that are functions 3. Sketch the graph of quadratic functions 4. Sketch the graph of rational functions 5. Construct a stem and leaf plot 6. Construct a box-and-whisker plot 7. Find the mean, median and mode 8. Use measures of central tendency in real-life situations 	<p>Quizzes and tests</p> <p>MCAS open response, short answer and multiple choice questions</p> <p>Homework</p> <p>Class work</p>	<p>Extra Practice workbook</p> <p>DOE website</p> <p>Formal Assessments workbook</p> <p>Algebra with Pizzazz workbook</p> <p>Teacher generated quizzes and tests</p>	<p>A1.P.3</p> <p>A1.P.4</p> <p>A1.D.1</p>
Radicals and More Connection to Geometry	<p>What is a square root?</p> <p>How can radicals be used to model real-life problems?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Find the distance between two points 2. Find the midpoint between two points 3. Simplify radicals by applying their properties 4. Use radicals in real life situations 5. Add and subtract radical expressions 	<p>Quizzes and tests</p> <p>MCAS open response, short answer and multiple choice questions</p> <p>Homework</p> <p>Class work</p>	<p>Extra Practice workbook</p> <p>DOE website</p> <p>Formal Assessments workbook</p> <p>Algebra with Pizzazz workbook</p> <p>Teacher generated quizzes and tests</p>	<p>A1.N.3</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
<p>Working with Data</p>	<p>Grids and Spreadsheets</p> <ul style="list-style-type: none"> How can we use coordinates to locate points on various types of graphs? How are coordinates used in spreadsheets? <p>Graphing Data</p> <ul style="list-style-type: none"> What are the different ways that we can create graphs to represent data relationships? What do the different types of graphs tell us about the data? When is one type of graph better to use than another? 	<p>The students will be able to:</p> <ol style="list-style-type: none"> Describe and give information on locations of points using number lines and circular grids. Use ordered pairs to locate points on a grid. Locate positions on maps and spreadsheets using row and column coordinates. Apply and reflect on how coordinates are used in grids, maps, and spreadsheets. Compare and interpret information shown in bar graphs and circle graphs. Prepare bar graphs from a table of data. Note trends and make predictions based on line-graph displays. Interpret information from graphs that use pictures and symbols. Apply and reflect on the use of bar graphs, circle graphs, line graphs, and pictographs to display information. Use mean, median, and mode to summarize data. Display data in a stem-and-leaf plot as a way of analyzing the data's shape. Use a scatter plot, eyeball a trend line, and make predictions. Apply and reflect on how measures of central tendency, stem-and leaf plots, box and whisker plots and scatter plots can be used to analyze data. Apply and synthesize key terms and 	<p>Quizzes and Tests taken from teacher's resources</p> <p>Teacher created quizzes and tests</p> <p>Projects taken from teacher's resources</p> <p>Teacher created projects including "teaching a lesson at home", "interviewing adult users of math", and other non-traditional assessments</p> <p>Homework and class work exercises and worksheets including MCAS practice questions</p>	<p>See listing above and: Manipulatives – both purchased and teacher made</p> <p>Measurement tools</p> <p>MCAS practice workbooks and the DOE website</p> <p>Various websites depending on availability</p>	<p>10.D.1 10.D.2</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<p>Analyzing Data</p> <ul style="list-style-type: none"> • What are the measures of central tendency and how can we use them well to explain data? • How can we create a scatter plot and use it to create equations that express the relationship between the two types of dependent data and make predictions? 	<p>appropriate vocabulary.</p>			
<p>Communicating Mathematics</p>	<p>Communicating Through Technology</p> <ul style="list-style-type: none"> • How are exponents used? • How are exponential expressions evaluated? • How does order of operations insure consistent results? • How do we follow order of operations? 	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use exponents for calculations that require repeated multiplication. 2. Use estimating and rounding techniques. 3. Estimate square roots between consecutive whole numbers and find accurate values on a calculator. 4. Perform complex calculations by following the order of operations. 5. Apply computation properties and techniques. 6. Model signed numbers using a number line, algebra tiles and other physical models. 7. Add signed numbers. 	<p>Quizzes and Tests taken from teacher's resources</p> <p>Teacher created quizzes and tests</p> <p>Projects taken from teacher's resources</p> <p>Teacher created projects including "teaching a lesson at home",</p>	<p>See listing above and:</p> <p>Manipulatives – both purchased and teacher made</p> <p>Measurement tools</p> <p>MCAS practice workbooks and the DOE website</p> <p>Various websites depending on availability</p>	<p>10.N.1</p> <p>10.N.2</p> <p>10.N.3</p> <p>10.N.4</p> <p>10.P.3</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<ul style="list-style-type: none"> How do we use the properties of numbers? <p>Communicating Through Signed Numbers</p> <ul style="list-style-type: none"> Why and how do we use signed numbers? How do we perform operations on signed numbers? <p>Communicating With Expressions</p> <ul style="list-style-type: none"> How do we represent unknown quantities? How do we use and manipulate algebraic expressions? 	<ol style="list-style-type: none"> Subtract signed numbers by adding the opposite. Multiply and divide signed numbers. Apply operations on signed numbers. Distinguish constants and variables and model with expressions. Evaluate an expression by replacing the variable. Combine algebraic expressions by modeling them with algebra tiles. Compute mentally and simplify expressions using the distributive property. Simplify expressions by combining like terms. Apply methods for simplifying expressions including area problems. Apply and synthesize key terms and appropriate vocabulary. 	<p>“interviewing adult users of math”, and other non-traditional assessments</p> <p>Homework and class work exercises and worksheets including MCAS practice questions</p>		
<p>Drawings and Patterns</p>	<p>Designs</p> <ul style="list-style-type: none"> What are the types of symmetry? How is symmetry used? How are tessellations made? <p>Transformations</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> Recognize line and point symmetry in designs. Recognize designs based on tessellations. Use properties of tessellations and symmetry to create a design. Recognize and create congruent images made by sliding, flipping, or turning and figure. 	<p>Quizzes and Tests taken from teacher’s resources</p> <p>Teacher created quizzes and tests</p> <p>Projects taken from teacher’s</p>	<p>See listing above and:</p> <p>Manipulatives – both purchased and teacher made</p> <p>Measurement tools</p> <p>MCAS practice workbooks and the DOE website</p> <p>Various websites depending on</p>	<p>10.P.1 10.G.1 10.G.9</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<ul style="list-style-type: none"> • What are transformations and how do we express them? • How are transformations used to describe changes in figures? <p>Patterns</p> <ul style="list-style-type: none"> • How can we identify and express patterns in numbers, symbols, and figures? • Why is it useful to know the pattern in any given situation? 	<ol style="list-style-type: none"> 5. Find translation images of points on a coordinate grid. 6. Recognize and apply the properties of a reflection transformation. 7. Use a variety of transformations to produce a design. 8. Identify and continue patterns of numbers, letters, and figures. 9. Generalize a pattern in a sequence of numbers with an algebraic expression. 10. Relate number sequences to patterns of figures. 11. Apply and synthesize key terms and appropriate vocabulary. 	<p>resources</p> <p>Teacher created projects including “teaching a lesson at home”, “interviewing adult users of math”, and other non-traditional assessments</p> <p>Homework and class work exercises and worksheets including MCAS practice questions</p>	<p>availability</p>	
Equations	<p>Using Variables</p> <ul style="list-style-type: none"> • How do we use variables to express missing quantities in formulas? • How are formulas used to find missing values? • How do we use models and number sense to solve equations? 	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Express relationships with formulas, and use substitution to find values. 2. Solve algebraic equations using number sense. 3. Solve an algebraic equation by setting up an equation box with algebra tiles. 4. Apply the relationship between variables, formulas, and equations. 5. Draw and interpret equations as balance-scale diagrams. 6. Identify and use strategies for isolating the variable in one-step equations. 7. Isolate the variable in an equation like 	<p>Quizzes and Tests taken from teacher’s resources</p> <p>Teacher created quizzes and tests</p> <p>Projects taken from teacher’s resources</p> <p>Teacher created projects including</p>	<p>See listing above and:</p> <p>Manipulatives – both purchased and teacher made</p> <p>Measurement tools</p> <p>MCAS practice workbooks and the DOE website</p> <p>Various websites depending on availability</p>	<p>10.P.3 10.P.6 10.M.1</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<p>Solving Equations</p> <ul style="list-style-type: none"> • How do we express relationships with equations? • What strategies will help us to solve equations? • How can we use inverse operations to solve a formula for a different variable? 	<p>$ax=b$ by multiplying both sides by $1/a$.</p> <ol style="list-style-type: none"> 8. Solve equations like $ax + b = c$ by isolating the variable in two steps. 9. Solve a variety of equations using properties of equality. 10. Solve formulas to find quantities such as simple geometric areas, perimeters, and volumes. 11. Apply and synthesize key terms and appropriate vocabulary. 	<p>“teaching a lesson at home”, “interviewing adult users of math”, and other non-traditional assessments</p> <p>Homework and class work exercises and worksheets including MCAS practice questions</p>		



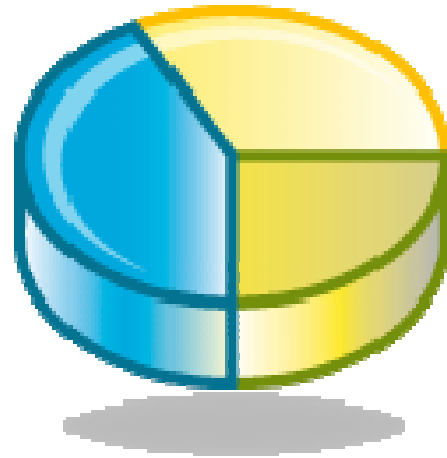
Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Spatial Relationships	<p>Size</p> <ul style="list-style-type: none"> ▪ How can we represent three dimensional objects using two dimensional drawings? ▪ How are perimeter and area used to describe the size of objects? ▪ What measurements are appropriate when describing objects in two or three dimensions? <p>Polygons and Circles</p> <ul style="list-style-type: none"> ▪ How do we find and use the area of polygons in real problems? ▪ How do we compare objects by their size and shape? <p>Nets, Surface Area, and Volume</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use isometric projection and perspective drawings to represent three-dimensional solids. 2. Use units of measure to find and compare perimeters and areas of two-dimensional shapes. 3. Use units of measure to find and compare volumes of solids. 4. Determine appropriate ways to measure the size of a room and apply volume in other ways. 5. Find the areas of polygons (triangles, parallelograms, and trapezoids) by using their dimensions. 6. Show objects, surfaces, and circular regions using orthographic projections. 7. Compare areas of figures with the same perimeter. 8. Apply and synthesize key terms and appropriate vocabulary. 9. Find surface area of solids using nets 10. Find volumes of prisms 11. Find surface areas and volumes of cylinders, pyramids, and cones. 12. Compare surface areas of rectangular prisms with the same volume. 13. Apply and synthesize key terms and appropriate vocabulary. 	<p>Quizzes and Tests taken from teacher’s resources</p> <p>Teacher created quizzes and tests</p> <p>Projects taken from teacher’s resources</p> <p>Teacher created projects including “teaching a lesson at home”, “interviewing adult users of math”, and other non-traditional assessments</p> <p>Homework and class work exercises and worksheets including MCAS practice questions</p>	<p>See listing above and:</p> <p>Manipulatives – both purchased and teacher made</p> <p>Measurement tools</p> <p>MCAS practice workbooks and the DOE website</p> <p>Various websites depending on availability</p>	<p>10.G.1 10.M.1 10.M.2 10.M.3 10.G.10</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<ul style="list-style-type: none"> ▪ How are nets used to find surface area? ▪ How are surface area and volume used to describe and compare figures? 				
Ratio and Proportion	<p>Using Ratios to Compare</p> <ul style="list-style-type: none"> ▪ How do we use decimals, ratios, and fractions interchangeably? ▪ How are ratios and rates useful in comparing quantities or in finding missing measurements? <p>Similarity and Scaling</p> <ul style="list-style-type: none"> ▪ What are the relationships between the angles of a polygon? ▪ How can we use the angle properties to describe the polygon and find missing angles? ▪ What are similar 	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use ratios to compare quantities, and will express ratios as fractions, decimals, and percentages. 2. Analyze change using ratios. 3. Use ratios to express rates. 4. Use proportions to find unknown values. 5. Use ratios to analyze survey results. 6. Apply and synthesize key terms and appropriate vocabulary. 7. Measure angles and use angle relationships in polygons. 8. Identify similar figures and use their properties to measure indirectly. 9. Use ratios and proportions to analyze and make scale drawings and models. 10. Use the Pythagorean Theorem and other properties of right triangles. 11. Use similarity properties to enlarge a drawing. 12. Apply and synthesize key terms and appropriate vocabulary. 	<p>Quizzes and Tests taken from teacher's resources</p> <p>Teacher created quizzes and tests</p> <p>Projects taken from teacher's resources</p> <p>Teacher created projects including "teaching a lesson at home", "interviewing adult users of math", and other non-traditional assessments</p> <p>Homework and class work exercises and worksheets including MCAS</p>	<p>See listing above and:</p> <p>Manipulatives – both purchased and teacher made</p> <p>Measurement tools</p> <p>MCAS practice workbooks and the DOE website</p> <p>Various websites depending on availability</p>	<p>10.G.4 10.G.5</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	figures? <ul style="list-style-type: none"> ▪ How can similar figures be used to solve problems and draw figures? ▪ How does the Pythagorean Theorem work and how can we use it to find the missing side of a triangle? 		practice questions		
Probability and Decision Making	Probability <ul style="list-style-type: none"> ▪ What is probability? ▪ How is probability predicted? ▪ How can we make decisions based on the probability of an event? Counting and Probability <ul style="list-style-type: none"> ▪ How many ways can an event happen? ▪ What is the difference between an arrangement and a combination? 	The students will be able to: <ol style="list-style-type: none"> 1. Analyze the chance of winning games. 2. Present probability as a ratio. 3. Find theoretical probabilities. 4. Use simulations to calculate the probability of an event 5. Use various techniques for determining probabilities. 6. Apply and synthesize key terms and appropriate vocabulary. 7. Use techniques to determine the number of possibilities for a given event. 8. Identify all the possible arrangements for a set of objects. 9. Identify all possible groups from a set of objects when order is not important. 10. Promote critical-thinking skills needed to interpret informal probability statements. 11. Use simulation to determine probabilities for matching groups. 12. Apply and synthesize key terms and appropriate vocabulary. 	Quizzes and Tests taken from teacher's resources Teacher created quizzes and tests Projects taken from teacher's resources Teacher created projects including "teaching a lesson at home", "interviewing adult users of math", and other non-traditional assessments Homework and	See listing above and: Manipulatives – both purchased and teacher made Measurement tools MCAS practice workbooks and the DOE website Various websites depending on availability	10.D.1 10.D.3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<ul style="list-style-type: none"> ▪ How can we use simulations to model possible outcomes? 		class work exercises and worksheets including MCAS practice questions		
Functions	<p>Dependent Relationships</p> <ul style="list-style-type: none"> ▪ How can we express the relationship between two dependent quantities? ▪ How can graphs help us to explain and use the relationships between two dependent quantities? <p>Linear Functions</p> <ul style="list-style-type: none"> ▪ How can we identify linear relationships expressed in graphs, tables, and equations? ▪ How can linear relationships be graphed easily? <p>Functions with Curved Graphs</p> <ul style="list-style-type: none"> ▪ What 	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify how change in one quantity produces change in another quantity. 2. Use equation to express relationships between quantities. 3. Graph the relationships between quantities. 4. Write an equation to express the relationship between quantities. 5. Apply and synthesize key terms and appropriate vocabulary. 6. Identify linear functions from written descriptions and tables of values. 7. Graph linear functions using slopes and y- intercepts. 8. Use knowledge of linear functions in the context of the study of elasticity. 9. Apply and synthesize key terms and appropriate vocabulary. 10. Investigate quadratic functions. 11. Examine square root and exponential functions. 12. Investigate the graphs of complex equations. 13. Apply and synthesize key terms and appropriate vocabulary. 	<p>Quizzes and Tests taken from teacher’s resources</p> <p>Teacher created quizzes and tests</p> <p>Projects taken from teacher’s resources</p> <p>Teacher created projects including “teaching a lesson at home”, “interviewing adult users of math”, and other non-traditional assessments</p> <p>Homework and class work exercises and worksheets including MCAS practice questions</p>	<p>See listing above and:</p> <p>Manipulatives – both purchased and teacher made</p> <p>Measurement tools</p> <p>MCAS practice workbooks and the DOE website</p> <p>Various websites depending on availability</p>	<p>10.P.1 10.P.2 10.P.5</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	characteristics and graphs do relationships that are not linear have? <ul style="list-style-type: none"> ▪ How are these relationships and graphs useful? 				

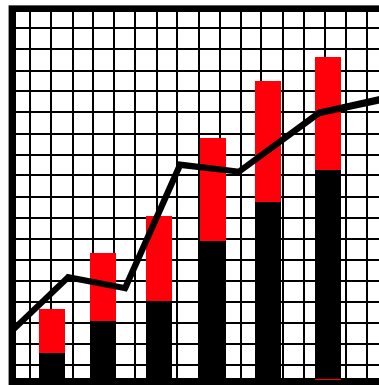


Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Equations and Inequalities	Have the skills and strategies I learned in Algebra I given me a solid foundation to continue on in Algebra II? Can real-life word problems be solved using linear equation techniques?	The students will be able to: <ol style="list-style-type: none"> 1. Use a number line to graph and order real numbers 2. Identify and use properties of real numbers 3. Evaluate algebraic expressions 4. Simplify algebraic expressions by combining like terms 5. Solve linear equations and use them to solve real -life problems 6. Rewrite equations 7. Solve simple and compound inequalities 8. Solve absolute value equations and inequalities 	Homework, quizzes and tests Classroom worksheets and puzzles	Algebra II Text Warm Up exercises and Daily quiz Chapter 1 Resource Book Basic Skills Workbook Practice Workbook with Examples Standardized Text Booklet Warm Transparencies Solution Key Calculators Algebra with Pizzazz Teacher generated worksheets, quizzes and tests Previous MCAS Test Questions	AII.N.2 10.N.2 AII.P.10 AII.P.11 AII.P.2 AII.P.8
Linear Equations and Functions	Can you determine the relationship between two variables or two sets of data? Many relationships are linear and will	The students will be able to: <ol style="list-style-type: none"> 1. Represent relations and functions 2. Graph and evaluate linear functions 3. Find slopes of lines and classify parallel and perpendicular lines 4. Use slope-intercept and standard form to graph 5. Write linear equations and direct 	Homework, quizzes and tests Classroom worksheets and puzzles	Algebra II Text Warm Up exercises and Daily quiz Chapter 1 Resource Book Basic Skills Workbook	AII.P.3 AII.P.5 AII.P.6 AII.P.11 AII.P.12

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	<p>you be able to describe them algebraically?</p>	<p>variation equations</p> <ol style="list-style-type: none"> 6. Use a scatter plot and approximate the best fitting line 7. Graph linear inequalities and solve real-life problems 8. Write and graph piecewise functions 9. Graph and model absolute value functions 		<p>Practice Workbook with Examples</p> <p>Standardized Text Booklet</p> <p>Warm Transparencies Solution Key</p> <p>Calculators</p> <p>Algebra with Pizzazz</p> <p>Teacher generated worksheets, quizzes and tests</p> <p>Previous MCAS Test Questions</p>	<p>AII.P.8</p>
<p>Systems of Linear Equations and Inequalities</p>	<p>Can you apply linear algebra to widespread uses in business and science?</p> <p>Are you able to choose the appropriate technique for solving systems of equations?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Graph and solve systems of linear equations by substitution and linear combination methods 2. Use linear systems to model real-life situations 3. Graph a system of linear inequalities to find solutions of the system 4. Plot points in three dimensions 5. Graph a linear equation in three variables using the intercepts 	<p>Homework, quizzes and tests</p> <p>Classroom worksheets and puzzles</p>	<p>Algebra II Text</p> <p>Warm Up exercises and Daily quiz</p> <p>Chapter 1 Resource Book</p> <p>Basic Skills Workbook</p> <p>Practice Workbook with Examples</p> <p>Standardized Text Booklet</p> <p>Warm Transparencies Solution Key</p> <p>Calculators</p>	<p>AI.P.12 AII.P.10 10.P.8</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
				Algebra with Pizzazz Teacher generated worksheets, quizzes and tests Previous MCAS Test Questions	
Quadratic Functions	How can we transfer our knowledge of solving linear equations to Quadratic ones? Are there times when one method is more preferable than another?	The students will be able to: 1. Review all factoring techniques 2. Learn to simplify all types of square roots 3. Solve quadratic equations by factoring, isolating the squared term, completing the square, and the quadratic formula 4. Understand the use of the discriminant 5. Graph quadratic functions 6. Graph quadratic inequalities 7. Perform operations with complex numbers	Homework, quizzes and tests Classroom worksheets and puzzles Factoring packet	Algebra II Text Warm Up exercises and Daily quiz Chapter 1 Resource Book Basic Skills Workbook Practice Workbook with Examples Standardized Text Booklet Warm Transparencies Solution Key Calculators Algebra with Pizzazz Teacher generated worksheets, quizzes and tests Previous MCAS Test Questions	AL.P.9 AII.P.7 AII.P.8 AII.P.12 AII.N.1 10.P.5
Polynomials and Polynomial Functions	Can you use the Laws of Exponents to manipulate equations and expressions and	The students will be able to: 1. Use properties of exponents to evaluate and simplify expressions 2. Use exponents and scientific notation to	Homework, quizzes and tests Classroom	Algebra II Text Warm Up exercises and Daily quiz	AII.N.2 AL.P.7 AL.P.8 10.P.3

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
	use them to set up formulas for everyday life?	solve real-life problems 3. Add, subtract, and multiply polynomials 4. Factoring cubes and factoring by grouping 5. Perform long division	worksheets and puzzles	Chapter 1 Resource Book Basic Skills Workbook Practice Workbook with Examples Standardized Text Booklet Warm Transparencies Solution Key Calculators Algebra with Pizzazz Teacher generated worksheets, quizzes and tests Previous MCAS Test Questions	10.P.4



SUBJECT MATTER: Geometry**Grade: 9-12**

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Basics of Geometry	What are the basic terms used in Geometry and how is inductive reasoning used to make correct decisions?	The students will be able to: <ol style="list-style-type: none"> 1. Find and describe patterns 2. Use inductive reasoning 3. Understand basic defined and undefined terms 4. Sketch the intersections of lines and planes 5. Use segment and angle postulates 6. Use the distance formula 7. Classify angles 8. Bisect a segment and an angle 9. Identify vertical angles and linear Pairs 10. Pairs 11. Identify complementary and supplementary angles 12. Find perimeter and area of plane figures 13. Have master all vocabulary introduced in the chapter preview 	Homework, Quizzes and Tests Worksheets Puzzles Drawings	Geometry Text Application Lesson Openers Visual Approach Openers Activity Lesson Openers Chapter 1 Resource Book Teacher generated tests and quizzes Algebra with Pizzazz Cartesian Coordinate Workbook Calculator Protractor Compass	10.P.1 10 G.1 10 G.2 10.G.7 10.M.1
Reasoning and Proof	Can you recognize and analyze conditional statements? Are you able to use properties to justify your arguments?	The students will be able to: <ol style="list-style-type: none"> 1. Recognize and analyze a conditional statement 2. Use definitions and biconditional statements 3. Understand and use symbolic notation 4. Apply the laws of logic 5. Use properties from Algebra 6. Use properties of length and measure to justify segment and angle relationships 7. Justify statements and begin writing formal proofs 	Homework, Quizzes and Tests Worksheets Puzzles Logic Scissor Exercise	Geometry Text Application Lesson Openers Visual Approach Openers Activity Lesson Openers Chapter 2 Resource Book Teacher generated tests and quizzes Algebra with Pizzazz	10.G.2 10.N.1

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		9. Use angle congruence properties and prove special properties about special pairs of angles. 10. Have master all vocabulary introduced in the chapter preview		Cartesian Coordinate Workbook Calculator Protractor Compass	
Parallel and Perpendicular Lines	How do the properties of parallel and perpendicular lines help you understand the world around you and how do they relate with Algebra?	The students will be able to: 1. Identify relationships between lines 2. Identify angles formed by transversals 3. Write proofs and prove results about parallel lines 4. Use properties of parallel lines to solve real-life problems 5. Be able to prove that two lines are parallel 6. Find slopes of lines and use slope to identify parallel and perpendicular lines 7. Write equations of parallel and perpendicular lines 8. Have master all vocabulary introduced in the chapter preview	Homework, Quizzes and Tests Worksheets Interdisciplinary Project Puzzles	Geometry Text Application Lesson Openers Visual Approach Openers Activity Lesson Openers Chapter 3 Resource Book Teacher generated tests and quizzes Algebra with Pizzazz Cartesian Coordinate Workbook Calculator Protractor Compass	10.G.8 10.G.3
Congruent Triangles	What information is needed in order to prove that triangles are congruent? Will these aid your real life problems in fields such as art, architecture, and engineering?	The students will be able to: 1. Classify triangles by their sides and angles 2. Find the measures in triangles 3. Identify congruent figures and corresponding parts 4. Prove triangle congruence by:SSS, SAS,ASA,AAS 5. Use triangle congruence to plan and write proofs	Homework, Quizzes and Tests Worksheets Puzzles Visual Congruence	Geometry Text Application Lesson Openers Visual Approach Openers Activity Lesson Openers Chapter 4 Resource Book Teacher Generated Tests and Quizzes	10.G.5 10.G.4 10.G.2 10.G.6 10.G.7

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		<ol style="list-style-type: none"> Employ the properties of isosceles, equilateral, and right triangles Place geometric figures in a coordinate plane and write a coordinate proof Have master all vocabulary Introduced in the chapter preview 	coloring	Algebra with Pizzazz Cartesian coordinate workbook Calculator Protractor Compass	
Properties of Triangles	As you study the properties of special segments of triangle will you be able to apply them to more complex figures?	The students will be able to: <ol style="list-style-type: none"> Use properties of angle bisectors to identify equal distances Use the properties of angle bisectors in a triangle Identify and use the altitudes, medians, and midsegments of a triangle Use triangle measurements to decide which side is longer or which angle is largest in a triangle Use triangle inequality Have mastered all vocabulary introduced in the chapter preview. 	Homework, Quizzes and Tests Worksheets Puzzles Drawings for circumcenter, and incenter, median altitude and midsegments Drawing Quiz	Geometry Text Application Lesson Openers Visual Approach Openers Activity Lesson Openers Chapter 5 Resource Book Teacher generated Tests and Quizzes Algebra with Pizzazz Cartesian coordinate workbook Calculator Protractor Compass	10.G.8 G.G.1 G.G.10
Quadrilaterals	How do the properties of quadrilaterals differ from those learn with triangles? How do these non-rigid structures occur in real-life problems?	The students will be able to: <ol style="list-style-type: none"> Identify, name, and describe polygons Find the sum of the measures of the interior angles of a quadrilateral Learn and use the properties of parallelograms Proving quadrilaterals are parallelogram Use the properties of a rhombus, square, and rectangle 	Kite Project Quadrilateral tan gram activity Homework, Quizzes and Tests	Geometry Text Application Lesson Openers Visual Approach Openers Activity Lesson Openers Chapter 5 Resource Book Teacher generated Tests and	10.G.1 G.G.1 10.M.1 10.D.1 10.D.2

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		<ol style="list-style-type: none"> 6. Use the properties of trapezoids and kites 7. Identify special quadrilaterals based on limited information 8. Find areas of all figures discussed in chapter 9. Use a box and whisker graph 	<p>Worksheets</p> <p>Puzzles</p> <p>Visual</p>	<p>Quizzes</p> <p>Algebra with Pizzazz</p> <p>Cartesian coordinate workbook</p> <p>Calculator Protractor Compass</p>	
Transformations	How are the four rigid transformations used in real-life to create designs for applications such as stenciling, carpentry, surveying and architecture?	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify the three basic rigid transformations 2. Identify reflections and their relationships to the line of symmetry 3. Use rotational symmetry in real-life situations such as logo designs 4. Draw transformations, to include rotations glides and translations. 	<p>MIRA Worksheets</p> <p>Paper folding and student drawings</p> <p>Homework Quizzes and Tests</p>	<p>MIRAS and MIRA</p> <p>Worksheets</p> <p>Geometry Text</p> <p>Application Lesson Openers Visual Approach Openers Activity Lesson Openers</p> <p>Chapter 5 Resource Book</p> <p>Teacher generated Tests and Quizzes</p> <p>Calculator Protractor Compass</p>	<p>G.G.3 10.G.7 10.G.9 10.G.1</p>

SUBJECT MATTER: Basic Geometry**Grade: 10-12**

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Basics of Geometry	<p>What is the difference between a line and a line segment?</p> <p>Why is it important to have precise definitions?</p> <p>What does it mean for two segments to have the same size?</p> <p>What type of angles do most packages have?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Find and describe patterns 2. Use inductive reasoning to make real-life conjectures 3. Draw and label points, lines and planes 4. Understand and use the basic undefined terms and defined terms of geometry 5. Draw and label segments and angles 6. Use segment postulates 7. Use the distance formula to measure distance 8. Measure angles and lines using a compass, protractor and ruler. 9. Use angle postulates 10. Classify angles as acute, right, obtuse or straight 11. Bisect segments and angles 12. Identify vertical angles and linear pairs 13. Identify complementary and supplementary angles 14. Find the perimeter and area of common plane figures 	<ul style="list-style-type: none"> • Model intersections with index cards • Use snap cubes to create patterns • Identify intersections of points, lines and planes using 3-D models • Class-work • Homework • Quizzes and tests • MCAS practice questions • Folding bisectors activity • Taxicab geometry project • Finding distance of walking time at the 	<p>Chapter 1 resource book</p> <p>DOE website</p> <p>Teacher created activities</p> <p>Geometry workbook by Instructional Fair</p> <p>Reproducibles</p> <p>Teacher created quizzes and tests</p>	<p>G.G.1</p> <p>G.G.4</p> <p>G.G.7</p> <p>G.M.1</p>

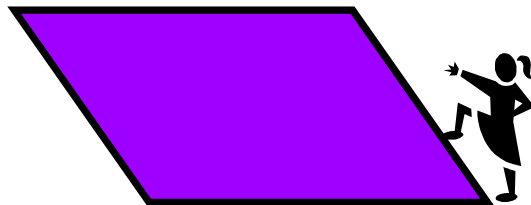
Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
			Pentagon		
Reasoning and Proof	<p>Why do we need undefined terms?</p> <p>If a statement is true, is its converse always true?</p> <p>Why do we need proofs?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Recognize and analyze a conditional statement 2. Write postulates about points, lines and planes using conditional statements 3. Recognize and use definitions 4. Recognize and use biconditional statements 5. Use symbolic notation to represent logical statements 6. Form conclusions by applying the laws of logic to true statements 7. Use properties from algebra 8. Use properties of length and measure to justify segment and angle relationships 9. Justify statements about congruent segments 10. View statements and reasons in a proof 11. Use angle congruence properties 12. View statements and reasons about special pairs of angles 13. Discuss the difference between deductive and inductive reasoning 	<ul style="list-style-type: none"> • Paper folding angle activity • MCAS practice questions • Finding conditional statements in discipline codes • Converting temperature scales between Fahrenheit and Celsius • Interdisciplinary activity on construction workers • Class-work • Homework • Quizzes and 	<p>Official's Logic Problems</p> <p>Chapter 2 resource book</p> <p>DOE website</p> <p>Teacher created quizzes and tests</p> <p>Geometry workbook</p>	<p>G.G.2</p> <p>G.G.4</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
			tests		
Perpendicular and Parallel Lines	<p>How can parallel lines model real-life situations?</p> <p>How do carpenters use properties of parallel lines?</p> <p>Can you find examples of parallel lines in nature?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify relationships between lines 2. Identify angles formed by transversals 3. Study different types of proof 4. Write two column proofs 5. Prove results about perpendicular lines 6. Prove and use results about parallel lines and transversals 7. Use properties of parallel lines to solve real-life problems 8. Prove that two lines are parallel 9. Construct parallel lines using a straight edge and compass 10. Find slopes of lines 11. Use slopes of lines to identify parallel lines 12. Write equations of parallel lines in a coordinate plane 13. Use slope to identify perpendicular lines in the coordinate plane 14. Write equations of perpendicular lines 	<ul style="list-style-type: none"> • Find angles of sails on tall ships • Find slope of tiers of Globe Theatre • Find angles of different shots in billiards • Class-work • Tests and quizzes • Homework • MCAS practice questions 	<p>Chapter 3 resource book</p> <p>DOE website</p> <p>Teacher created quizzes and tests</p> <p>Geometry workbook</p>	<p>G.G.2</p> <p>G.G.4</p> <p>G.G.6</p> <p>G.G.11</p> <p>G.G.13</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Congruent Triangles	<p>How do we classify triangles?</p> <p>Why are triangles used in construction of bridges and buildings?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Classify triangles by their sides and angles 2. Find angle measure in triangles 3. Identify congruent figures and corresponding parts 4. Prove that two triangles are congruent 5. Prove that two triangles are congruent using the SSS, SAS, ASA and AAS congruence theorems 6. Use congruence theorems in real-life 7. Use congruent triangles to plan and write proofs 8. Use congruent triangles to prove constructions are valid 9. Use properties of isosceles and equilateral triangles 10. Use properties of right triangles 11. Place geometric figures in a coordinate plane 12. Write a coordinate proof 	<ul style="list-style-type: none"> • Find angles of a Truss bridge • Find areas of people's yards to calculate acreage and set a price • Measure angles in Flags • Class-work • Homework • Quizzes and tests • MCAS practice questions 	<p>Chapter 4 resource book</p> <p>DOE website</p> <p>Teacher created quizzes and tests</p>	<p>G.G.2 G.G.5 G.G.7 G.G.8</p>
Properties of Triangles	<p>What is an ideal kitchen work triangle?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use properties of perpendicular bisectors 2. Use properties of angle bisectors to identify equal distances 3. Use properties of perpendicular bisectors of a triangle 4. Use properties of angle bisectors of a triangle 5. Identify the mid-segments of a triangle 6. Use properties of mid-segments of triangles 7. Learn how to evaluate and approximate square roots 	<ul style="list-style-type: none"> • Design a baseball diamond • Measure fields to set up irrigation systems • Finding optimization • Measuring sides of a building's superstructure 	<p>Chapter 5 resource book</p> <p>DOE website</p> <p>Teacher created quizzes and tests</p>	<p>G.G.1 G.G.3 G.G.10</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		8. Learn to simplify square roots 9. Perform basic operations on radicals 10. Use triangle measurements to decide which side is longest or which angle is largest 11. Use the Triangle Inequality	<ul style="list-style-type: none"> • Class-work • Homework • Quizzes and tests • MCAS practice questions 		
Quadrilaterals	Is a square always a rectangle or is a rectangle always a square?	The students will be able to: <ol style="list-style-type: none"> 1. Identify, name and describe polygons 2. Use the sum of the measures of the interior angles of a quadrilateral 3. Use some properties of parallelograms 4. Use properties of parallelograms in real-life situations 5. Prove that a quadrilateral is a parallelogram 6. Use coordinate geometry with parallelograms 7. Use properties of sides and angles of rhombuses, rectangles, and squares 8. Use properties of diagonals of rhombuses, rectangles and squares 9. Use properties of trapezoids and kites 10. Identify special quadrilaterals based on limited information 11. Prove that a quadrilateral is a special type of quadrilateral 12. Find the areas of squares, rectangles, parallelograms, triangles, kites and rhombuses 	<ul style="list-style-type: none"> • Find shapes in a spider web • Find area of bluebird houses • Create a formula for angles of a polygon • Identify shapes in states of United States • Quadrilateral Tangram Activity • Class-work • Homework • Quizzes and tests • MCAS practice questions 	Chapter 6 resource book DOE website Teacher created project, quizzes and tests	G.G.3 G.G.6 G.G.12 G.G.17

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Transformations	What are some of the differences between a reflection of a figure and the figure itself?	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify the three basic rigid transformations 2. Use transformations in real-life situations 3. Identify and use reflections in a plane 4. Identify relationships between reflections and line symmetry 5. Identify rotations in a plane 6. Use rotational symmetry in real-life situations 7. Identify and use translations in a plane 8. Represent transformations as compositions of simpler transformations 	<ul style="list-style-type: none"> • Mira activities • Find rotations and reflections in Braille coding system • Find measure of angles in ferris wheel • Design a putting green with bunkers of the same shape • Read musical notations and observe patterns • Class-work • Homework • Quizzes and tests • MCAS practice questions 	<p>Chapter 7 resource book</p> <p>DOE website</p> <p>Teacher created quizzes and tests</p> <p>Geometry workbook</p> <p>Mira workbook</p>	G.G.15



Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Real and Complex Numbers	<p>What are natural numbers?</p> <p>I thought you couldn't take the square root of a negative number?</p> <p>How can factoring help you solve a real life problem?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Identify natural numbers, whole numbers, positive and negative integers and real numbers. 2. Use the Number of Factors Theorem. 3. Find the GCF and LCM of numbers using prime factorization and the Euclidean Algorithm. 4. Identify rational and irrational numbers. 5. Perform operations on radicals. 6. Write repeating decimals as a ratio of integers. 7. Use properties of real numbers. 8. Identify complex numbers. 9. Evaluate expressions that have complex numbers. 10. Graph complex numbers. 11. Add, subtract, multiply and divide polynomials. 12. Factor polynomials over the set of real numbers. 13. Factor polynomials over the set of complex numbers. 14. Perform operations with rational expressions. 	<p>Demonstrate an understanding of factoring using manipulatives</p> <p>MCAS multiple choice/short answer questions</p> <p>Quizzes and Tests</p> <p>Class work</p> <p>Homework</p>	<p>Teacher generated tests and quizzes</p> <p>DOE website</p> <p>Numb3rs video: Toxin</p> <p>Numb3rs extension exercise: The Konigsberg Bridge Problem</p> <p>Algebra with Pizazz</p> <p>Merrill Algebra 2 workbook</p>	<p>10.N.1</p> <p>10.N.3</p> <p>10.P.3</p> <p>10.P.4</p> <p>10.P.5</p> <p>10.P.6</p> <p>10.P.7</p> <p>12.N.1</p>
Equations and Inequalities	<p>How are quadratic equations useful for solving real world problems?</p> <p>What is a literal equation?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Solve 1st degree equations. 2. Solve literal equations. 3. Solve quadratic equations by factoring, completing the square, and by using the quadratic formula. 4. Use the discriminant to determine the nature of a solution's roots. 	<p>Create real world problems using 1st degree equations</p> <p>MCAS multiple choice/short answer questions</p>	<p>Teacher generated tests and quizzes</p> <p>DOE website</p> <p>Algebra with Pizazz</p> <p>Merrill Algebra 2 workbook</p>	<p>10.M.2</p> <p>12.P.7</p> <p>12.P.8</p> <p>12.P.11</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		<ol style="list-style-type: none"> 5. Use the quadratic equation to solve word problems. 6. Solve quadratic inequalities. 7. Solve equations that contain rational expressions. 8. Solve higher degree equations by factoring. 9. Solve problems using the Remainder and Factor Theorems. 10. Use synthetic division to solve polynomial equations. 11. Use the Rational Root Theorem to solve polynomial equations. 	<p>Quizzes and Tests</p> <p>Class work</p> <p>Homework</p>		
Sequences, Series and Induction	<p>Is it possible to find a sum of an infinite series?</p> <p>How can you use Pascal's triangle to solve math problems?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Find the terms of arithmetic and geometric sequences. 2. Find the sum of arithmetic and geometric sequences. 3. Use sigma notation to write the sum of an arithmetic sequence. 4. Find the value of a sum written in sigma notation. 5. Write a recursive formula for arithmetic and geometric sequences. 6. Find arithmetic and geometric means between given numbers. 7. Find the sum of an infinite geometric series. 8. Use the Principle of Mathematical Induction to prove statements are true. 9. Use the Binomial Theorem to expand binomials. 10. Use Pascal's Triangle to expand binomials. 11. Study implications of Pascal's Triangle. 	<p>Create real world problems that use sequencing</p> <p>Quizzes and Tests</p> <p>Class work</p> <p>Homework</p>	<p>Teacher generated tests and quizzes</p> <p>Numb3rs video: In Plain Sight</p> <p>Numb3rs extension exercise: Follow the Flock</p> <p>Merrill Algebra 2 workbook</p> <p>McDougal Littel Algebra 2</p> <p>McDougal Littel Algebra 2 resource book for Chapter 11</p>	<p>12.P.1</p> <p>12.P.2</p> <p>12.P.3</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
		12. Find a specified term of a binomial expansion.			
Exponents and Logarithms	<p>In what ways can exponents be used to solve real world problems?</p> <p>What is a logarithm?</p> <p>What is the “number” e?</p> <p>How can you use math to calculate radioactive decay?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Evaluate negative and zero exponents. 2. Evaluate fractional exponents. 3. Solve equations applying exponent properties. 4. Graph exponential equations. 5. Solve exponential equations. 6. Learn about the “number” e. 7. Use the “number” e to solve exponential growth and decay problems. 8. Evaluate logarithms. 9. Evaluate logarithm expressions and equations. 10. Evaluate common and natural logarithms. 11. Use the change of base form to evaluate logarithms. 	<p>Describe the idea of a logarithm.</p> <p>Explain in writing using examples.</p> <p>Quizzes and Tests</p> <p>Class work</p> <p>Homework</p>	<p>Teacher generated tests and quizzes</p> <p>DOE website</p> <p>Numb3rs video: Calculated Risk</p> <p>Numb3rs extension exercise: Financial Futures</p> <p>Algebra with Pizazz</p> <p>Merrill Algebra 2 workbook</p> <p>McDougal Littel Algebra 2</p> <p>McDougal Littel Algebra 2 Workbook for chapter 8</p>	<p>10.P.1</p> <p>10.P.7</p> <p>12.N.2</p> <p>12.P.4</p> <p>12.P.11</p>
Matrices	<p>How can matrices be used to solve systems of equation?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Find determinants of square matrices. 2. Use expansion by minors to find determinants. 3. Add, subtract and multiply matrices. 4. Perform scalar multiplication. 5. Find inverses of matrices. 6. Use Cramer’s rule to solve systems of equations. 7. Use row operations to solve augmented matrices. 	<p>Quizzes and Tests</p> <p>Class work</p> <p>Homework</p>	<p>Teacher generated tests and quizzes</p> <p>Numb3rs video: Spree part I</p> <p>Numb3rs extension exercise: The Missing City</p> <p>McDougal Littel Algebra 2</p> <p>McDougal Littel Algebra 2 Workbook for chapter 4</p>	<p>10.P.8</p> <p>12.P.9</p> <p>12.P.10</p> <p>12.P.11</p>

Unit/Theme	Content and Essential Questions	Skills	Methods of Assessment	Teacher Resources & Notes	Framework Strand/s & Standard/s
Probability	<p>How many possible Massachusetts license plates are there?</p> <p>How many different batting orders are possible on a 9 person baseball team?</p> <p>How many different combinations are there for your gym locker?</p>	<p>The students will be able to:</p> <ol style="list-style-type: none"> 1. Use the Fundamental Counting Principle to count the number of possibilities of an event. 2. Use permutations and combinations to solve everyday problems. 3. Find the probability of simple events. 4. Find theoretical, geometric and experimental probabilities. 5. Find the probability of compound events. 6. Use complements to find the probability of an event. 7. Find the probability of dependent and independent events. 	<p>MCAS multiple choice/short answer questions</p> <p>Quizzes and Tests</p> <p>Class work</p> <p>Homework</p>	<p>Teacher generated tests and quizzes</p> <p>Numb3rs videos: Traffic, Spree Part II, Scorched</p> <p>Numb3rs extension exercise: Birthday Surprise, Galton Board, The Power of Powers</p> <p>McDougal Littel Algebra 2</p> <p>McDougal Littel Algebra 2 Workbook for chapter 12</p>	<p>12.D.1</p> <p>12.D.6</p> <p>12.D.7</p>

