LITCHFIELD PUBLIC SCHOOLS
Core Curriculum Scope and Sequence
Integrated I

Essential Questions
How are quantitative relationships represented by numbers?
How can collecting, organizing and displaying data help us analyze information and make reasonable predictions and informed decisions?
How do geometric relationships and measurements help us to solve problems and make sense of our world?
How do patterns and functions help us describe data and physical phenomena and solve a variety of problems?

	CT Frameworks/ Standards	Content and Skill Objectives Students will be able to:	Assessments	Resources
UNIT 1 CONNECTING WITH ALGEBRA 7 WEEKS	CT(Core)1.1 Understand and describe patterns and functional relationships. CT(Core) 1.1(a) Describe relationships and make generalizations about patterns and functions. CT(Core) 2.1 Understand that a variety of numerical representations can be used to describe quantitative relationships. CT(Core) 2.2(a) Develop strategies for computation and estimation using properties of number systems to solve problems. CT(Core)2.2(a)(1) Select and use appropriate methods for computing to solve problems in a variety of contexts.	Patterns: • Find & describe patterns in number, picture, and different sequences. OrderOfOperations: • Simplify numeric expressions through the application of the order of operations. • Substitute a numeric value in for a variable and simplify through the application of the order of operations. ExponentsandPowers: • Define Power, Exponent & Base. • Evaluate expressions with exponents. • Apply Product & Quotient Rules for exponents to simplify expressions. WritingAlgebraicExpressions: • Translate verbal expressions to algebraic expressions, and vice versa. • Evaluate algebraic expressions.	Class Work Homework Teacher Made Worksheets Teacher Observation CAPT simulation Quizzes Unit Tests CAPTPractice: Patterns High-5, 3-Level Pyramid, Ray & Angles, Perfect Squares, Triangular Numbers	Scholastic: AlgebraReadiness Grades 4-8 @2005 SkillsForSuccess ALGEBRA Mathworksheetscenter.com Kuta – Website for worksheets Glencoe Pre-Algebra D.C. Heath: Pre-Algebra Practice Workbook @ 1992 Practice Worksheets BasicAlgebra @1983

Unit 1 Continued	CT(Core)4.1 Collect, organize and display data using appropriate statistical and graphical methods. CT(Core) 4.1a Create the appropriate visual or graphical representation of real data CT(Core)2.1a(2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, and percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, locations and scales. CT(Core)2.2a(2) Solve problems involving scientific notation and absolute value. CT(Core)1.2 Represent and analyze quantitative relationships in a variety of ways. CT(Core)1.2a Represent and analyze linear and non-linear functions and relations symbolically and with tables and graphs. CT(Core)1.2a(2) Identify an appropriate symbolic representation for a function or relation displayed	Problem-SolvingMethods: • Solve CAPT Simulation Problems by: • Looking for a pattern. • Drawing a picture. • Making a table to collect data. • Acting it out. • Using a smaller problem. • Extrapolate to estimate answers. LikeTerms: • Identify like-terms. • Compare and contrast like-terms. • Add and subtract like-terms. DistributiveProperty: • Use the distributive property to simplify numeric expressions. • Use the distributive property to simplify algebraic expressions. Intro.ScientificNotation: • Write numbers in scientific notation. • Convert numbers from scientific notation to decimal notation. • Apply the Product & Quotient Rule of exponents to simplify expressions written in scientific notation. EvaluatingExpressions: FunctionNotation: • Use the function notation, f(x), to substitute a numeric value in for a variable and simplify through the application of the order of operations. • Evaluate a function by using a table of values.	CAPTPractice: Math & A Sheet of Paper Video- surface area rectangular prism	Exercises worksheets CAPT Released Items SMARTBoard@

Unit 1 continued	graphically or verbally. CT(Core) 3.2 Use spatial reasoning, location and geometric relationships to solve problems. CT(Core) 3.2a(1) Interpret geometric relationships using algebraic equations and vice versa. CT(Core) 3.3a(4) Use two-dimensional representations and formal and informal methods to solve surface area and volume problems. CT(Core) 3.2a Verify geometric relationships using algebra, coordinate geometry and transformations. CT(Core) 3.3 Develop and apply units, systems, formulas and appropriate tools to estimate and measure. CT (Core) 3.3a(1) Select appropriate units, scales, degree of precision, and strategies to determine length, angle measure, perimeter, circumference and area of plane geometric figures.	<u>Commutative&AssociativeProperties</u>: • Identify properties. • Use properties to solve equations. <u>SolutionSetsofSentences</u> • Given a set of numbers, determine what value satisfies the equation. <u>GeometricFormulas</u>: • Provide & evaluate formulas that calculate the perimeter and area of squares, rectangles, parallelograms, triangles, trapezoids & circles. • Write and solve appropriate algebraic equations that represent the perimeter of an object and area of rectangles, parallelograms, trapezoids, triangles, and circles. • Calculate the perimeter and area of rectangles and irregular shapes made from rectangles. • Choose the appropriate formula for the problem. • Determine appropriate labels.		

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UNIT 2 USING RULES OF ALGEBRA WEEKS	CT(Core) 2.1 Understand that a variety of numerical representations can be used to describe quantitative relationships. CT(Core) 2.1(a) Extend the understanding of number to include integers, rational numbers and real numbers. CT(Core) 2.1a (1) Compare, locate, label and order real numbers on number lines, coordinate grids, and measurement tools. CT(Core)2.1a (2) Select and use an appropriate form of number (integer, fraction, decimal, ratio, and percent, exponential, scientific notation, irrational) to solve practical problems involving order, magnitude, measures, labels, and locations. CT(Core)2.2b Solve proportional reasoning problems	AddingIntegers&AbsoluteValue • Perform arithmetic operations with rational numbers. RealNumbers: • Order real numbers on a number line. • Use additive inverses & absolute value to add &subtract positive and negative real numbers. Multiplication&DivisionofRealNumbers: • Apply the rules for multiplying and dividing signed numbers Mixed Operations LikeTermswithRealNumberCoefficients: • How to perform arithmetic operations with rational numbers. NegativeFactors: • Distribute negative to a quantity. Rate&Ratios: • Define and solve problems applying rates and ratios.	Class Work Homework Teacher Made Worksheets Teacher Observation CAPT simulation Quizzes Unit Tests CAPT Practice: Mr. Southard's Alpacas	PowerPoint Integers You-Tube – Same signs add & keep Scholastic: Algebra Readiness Grades 4-8 @2005 SkillsForSuccess ALGEBRA You-Tube: Multiply Integer Song Mathworksheetscenter.com Kuta – Website for worksheets Glencoe Pre-Algebra D.C. Heath: Pre-Algebra Practice Workbook @ 1992 Practice Worksheets BasicAlgebra @1983

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UNIT 3	CT Frameworks/ Standards	Content and Skill Objectives Students will be able to:	Assessments	Resources
FUN WITH FRACTIONS 2 WEEKS	CT(Core) 2.1a(1) Compare, locate, label and order real numbers on number lines, coordinate grids, and measurement tools. CT(Core)2.2 Use numbers and their properties to compute flexibly and fluently, and to reasonably estimate measures and quantities. CT(Core)2.2a Develop strategies for computation and estimation using properties of number systems to solve problems. CT(Core)2.2a(1) Select and use appropriate methods for computing to solve problems in a variety of contexts.	• Perform arithmetic operations with rational numbers. • Locate, label, and order real numbers on the number line. • Compute the sum, difference, product and quotient of real numbers.	Class Work Homework Teacher Made Worksheets Teacher Observation CAPT simulation Quizzes Unit Tests It Pays to Stay In School CAPTPractice: Hugo's Pizza – area & perimeter of squares & circles	Glencoe: Assessment& Intervention Geometry Prerequisite Skills Workbook @ Skill # CAPT Released Items SMARTBoard@

	CT Frameworks/ Standards	Content and Skill Objectives Students will be able to:	Assessments	Resources
UNIT 4 SOLVE EQUATIONS 2 WEEKs	CT(Core)1.3 Use operations, properties and algebraic symbols to determine equivalence and solve problems. CT(Core)1.3a Manipulate equations, inequalities and functions to solve problems. CT(Core)1.3a(2) Determine equivalent representations of an algebraic equation or inequality to simplify and solve problems.	• Define a variable. • Solve 1 step equations using addition & subtraction. • Solve 1 step equations using multiplication & division. • Solve 2-step Equations. • Write equations to solve 1-step word problems. • Solve multi-step equations. • Combine like terms and solve Equations. • Distribute a negative to simplify expressions and solve equations. • Solve equations with variables on both sides.	Class Work Homework Teacher Made Worksheets Teacher Observation CAPT simulation Quizzes Unit Tests	BasicAlgebra @1983 Exercises worksheets Scholastic: AlgebraReadiness Grades 4-8 @2005 SkillsForSuccess ALGEBRA Mathworksheetscenter.com Kuta – Website for worksheets Glencoe Pre-Algebra D.C. Heath: Pre-Algebra Practice Workbook @ 1992 Practice Worksheets CAPT Released Items SMARTBoard@

	CT Frameworks/ Standards	Content and Skill Objectives	Assessments	Resources
		Students will be able to:		
UNIT 5 BASIC GEOMETRIC FIGURES	CT(Core) 3.1 Use properties and characteristics of two- and three-dimensional shapes and geometric theorems to describe relationships, communicate ideas and solve problems. CT (Extended) 3.1(b) (1) Recognize that the familiar geometry of Euclid is based on a particular set of axioms and that a different set of axioms would lead to a different geometry. CT (Core) 3.2a(3) Apply transformations to plane figures to determine congruence, similarity, symmetry and tessellations. CT (Core) 3.2 Use spatial reasoning, location and geometric relationships to solve problems. CT (Core) 3.3a(1) Select appropriate units, scales, degree of precision, and strategies to determine length, angle measure, perimeter, circumference and area of plane geometric figures.	<u>Geometry</u>: • Draw & label with the correct notation models geometric figures. Include points, lines, planes, segments & rays. • Determine the characteristics of points, lines and planes. • Write the proper notation to identify specific geometric figures given a picture. • Use basic visual instincts to evaluate given geometric illusions. • Construct an optical illusion. • Master the use of a straight edge and compass by constructing geometric shapes. • Recognize the relationships among points, lines, and planes using postulates. <u>LinearMeasure&Betweeness</u> • How to accurately measure the length of an object. • Use a metric ruler to measure an object to the nearest centimeter and/or millimeter. • Use a customary unit ruler to measure an object to the nearest inch, half-inch, quarter-inch, eighth-inch, and sixteenth-inch. <u>CongruentFigures</u> • Draw, label and Congruent Segments. • Use congruent segments to solve problems. • Use the segment addition postulate and algebraic expressions to solve problems. • Identify and apply definitions of Betweeness, collinear, coplanar, non-collinear, and non-coplanar. • Identify, draw and write the proper notations for the	Class Work Homework Teacher Made Worksheets Teacher Observation CAPT simulation Quizzes Unit Tests	Merrill: Informal Geometry Text 1988 Computer Software: Geometer's Sketchpad String Art Project Computer Lab - Draw & Measure Segments and Angles SMARTBoard@

		midpoint of a segment and segment bisector. <u>Angles</u> • Identify, draw & label angles & their parts. • Measure angles & draw angles and segment bisectors of a particular degree. • Classify Angles according to A,R,O,S. • Use angle bisectors to solve problems. • Measure Segments and Angles		

	CT Frameworks/ Standards	Content and Skill Objectives	Assessments	Resources
		Students will be able to:		
UNIT 6 ANALYZING LINEAR PATTERNS	CT(Core) 1.2a Represent and analyze linear and non-linear functions and relations symbolically and with tables and graphs. CT(Core) 1.2a(1) Represent functions and relations on the coordinate plane. CT(Core) 1.2a(2) Students will be able to identify an appropriate symbolic representation for a function or relation displayed graphically or verbally. CT(Core) 1.2a(3) Students will be able to recognize and explain the meaning of the slope and x- and y- intercepts as they relate to a context, graph, table or equation. CT(Core) 4.1a(2) Develop, use and explain applications and limitations of linear and nonlinear models and regression in a variety of contexts. CT(Core) 4.2a(1) Estimate an unknown value between data points on a graph (interpolation) and make predictions by extending the graph	• Understand slope in a variety of ways. • Determine the slope of a line given either a graph, a table, or two points on the line • Appropriately move from one point on a graph to another through a "rise" and "run" approach. • Compute with rational numbers. • Calculate slope (rate of change – real-life situations) • Determine slope (positive, negative, zero, undefined) based on a graph. • Write the equation of a line in point-slope form given the slope and a point on the line. • Write the equation of a line in point-slope form given two points on the line. • Write the equation of a line in slope-intercept form given the graph. • Write the equation of a line in slope-intercept form given the slope and intercepts. • Write the equation of a line given a written description of the line • Graph with table of values • Graphs of linear equations, solve for y • Use slope and y-intercept to graph Lines • Graphing Lines in slope y-intercept form • Graph Horizontal and vertical lines (y=# and x=#) • Create scatter plots and lines of best fit from a set of data.	Class Work Homework Teacher Made Worksheets Teacher Observation CAPT simulation Quizzes Unit Tests	BasicAlgebra @1983 Exercises worksheets Scholastic: AlgebraReadiness Grades 4-8 @2005 SkillsForSuccess ALGEBRA Mathworksheetscenter.com Kuta – Website for worksheets Glencoe Pre-Algebra D.C. Heath: Pre-Algebra Practice Workbook @ 1992 Practice Worksheets CAPT Released Items SMARTBoard@

	(extrapolation). CT(Core) 2.1a (1) Compare, locate, label and order real numbers on number lines, coordinate grids, and measurement tools.			