MATH CURRICULUM MAP Marshfield R-1 Schools								
K Math								
	August/September	October	November	December	January	February	March	April/May
Content	**Number & Operations**; Understand numbers, ways of representing numbers, relationships among numbers & number systems 1A Rote count to 100, **Algebriac Relationship**; Understand patterns relations & functions 1C Sort objects by size, **Geometric & Spatial Relationships;** Specify locations and describe spatial relationships using coordinate geometry and other representational systems 2A Describe, name and interpret relative positions in space (above, below, front, behind), **Measurement;** 1C Describe passage of time using terms such as today, yesterday and tomorrow, **Data & Probability;** Formulate questions that can be addressed with data & collect, organize & display relevant data to answer them 1B Sort items according to their attributes.	**Algebric Relationships;** Understand patterns, relations & functions 1A Recognize or repeat sequences of sound or shapes, **Geometric & Spatial Relations**; Analyze characteristics & properties of two & three-dimensional geometric shapes & develop mathematical arguments about geometric relatiohships. *1A*	**Algebraic Relationships**; Understand patterns, relations & functions 1B Create and continue patterns		**Number & Operations**; Understand numbers, ways of representing numbers, relationships among numbers and number systems 1C Connect number words (orally) and quantities they represent, **Algebraic Relationships;** Use mathematical models to represent and understand quantitative relationships 3A Model situations that involve whole numbers, using pictures, objects or symbols.	**Number & Operations**; Compute fluently & make reasonable estimates 3A Recognize numerals up to 31, **Geometric & Spatial Relationships;** Use visualization, spatial reasoning and geometric modeling to solve problems 4A Recognize geometric shapes in the student's environment (stop sign, number cube and ball), **Measurement**; Understand measurable attributes of objects & the units, systems & the processes of measurement 1D Identify and know the value of a penny, nickel and dime.	**Measurement;** Understand measurable attributes of objects & the units, systems & processes of measurement 1A Compare & order objects according to their size or weight, **Data & Probability**; formulate questions that can be addressed with data & collect, organize and display relevant data to answer them 1C Represent data using physical objects.	**Measurement;** Apply appropriate techniques, tools and formulas to determine measurements 2A Measurement with multiple copies of a unit of the same size (paperclips laid end-to-end) **Data & Probability;** Formulate questions that can be addressed with data and collect, organize & display relevant data to answer them 1A Pose questions and gather data about themselves and their surroundings.
Writing Activities								
Reading Activities								
Other Major Activities								

Math 1st								
	August/September	October	November	December	January	February	March	April/May
Content	Recognizes "how many" in a set of objects N1A; extend patterns of sound, shape, motion, or a simple numeric pattern A1A; Describe how simple repeating patterns are generated A1B; recognize geometric shapes and structures in the student's environment and specify the shape's location G1A; pose questions and gather data about themselves and their surroundings D1A	Recognize and name 2 dimensional shapes using physical models (circle, triangle, trapezoid, rectangle, rhombus, sphere, rectangular prism, cylinder, pyramid) G1A; represent a given situation involving additionN2A; classify objects by size or number A1C; sort and classify items according to their attributes D1B	Model situations that involve addition of whole numbers, using pictures, objects, or symbols A3A; describe, name and interpret relative positions in space (left, right) G5A	Tell time to the nearest hour M1C; represent data using pictures and bar graphs D1C	Compose or decompose numbers using known facts, doubles and close to doubles N1A; describe or represent the mental strategy used to compute an addition problem N3A	Select the appropriate tool for the attribute being measured M1A; use repetition of a single unit to measure something larger than the unit (measure the room with a meter stick M2A; develop fluency with basic number relationships of addition for sums up to twenty N3B	develop fluency with basic number relationships of addition for sums up to twenty N3B; represent a mathematical situation as an expression or number sentence A2A; Use manipulative to model slides and turns G3A	Count money to fifty cents, including quarters and half dollars M1D
Writing Activities								
Reading Activities								
Other Major Activities								

Math 2ND								
	August/September	October	November	December	January	February	March	April/May
Content	Addition and Subtraction Facts. Regrouping Write #s correctly skip counting, patterns, fractions - NO 1A, NO 1B, NO 1C, NO 1D, NO 2A, NO 3A, NO 3B, NO 3C, AR 1A, AR 2B, AR 3A	Pattern blocks extend and create growing patterns. Fact families sort, classify according to attributes. - NO 3B, AR 1A, AR 1B, AR 1C, GSR 1A, DP 1B	Data analysis "Probability Graphing"- DP 1A, DP 1B, DP 1C	Measurement - AR 4A, M 1A, M 2A	Measurement-Time and Money M 1C, M 1D, M 2A	Geometric and Spatial Relationships -GSR 1A, GSR 3A, GSR 3C, GSR 4A	Addition and subtraction skip counting growing patterns - NO 1D, NO 2A, NO 3B, NO 3C, AR 1B, AR 2A	Graphing and Grids- GSR 2A, DP 1C
Writing Activities	Math Journals	Math Journals	Math Journals	Math Journals	Math Journals	Math Journals	Math Journals	Math Journals
Reading Activities	Reading and Solving Word Problems	Reading and Solving Word Problems	Reading and Solving Word Problems	Reading and Solving Word Problems	Reading and Solving Word Problems	Reading and Solving Word Problems	Reading and Solving Word Problems	Reading and Solving Word Problems
Other Major Activities	Mad Minutes, Box cars and one-eyed jacks, flash cards, white board practice	Use pattern blocks to represent numbers. Create fact families.	Students take survey and record in a tally table. Use data to make predictions. Draw items from a bag and use spinners for probability. Students create, read, and interpret graphs.	Using rulers to measure items. Use thermometers and balance scales. Use clocks to tell time.	Use money to count coins and add money amounts	Use hands on manipulative to identify 2 & 3 D shapes. Model flips, turns, slides. Draw lines of symmetry.	White boards, box cars and one-eyed jacks, independent practice.	Students make and read graphs. Use clocks and manipulative to tell time. Use money to count coins and make change.

Math 3rd								
	August/September	October	November	December	January	February	March	April/May
Content	Numbers and operations - Addition, place value Data & Probability (graphs) 1A & 2C & 1D, 3C	Numbers & Operations, Subtraction Data & Probability (prob. Solving) 3C, 2B, 1A	Measurement - Time, Money, Weight, Length, Temperature 1D, 1A, 1C, 2A	Numbers & Operations - Multiplication/Division 2A, 3B	Numbers & Operations, Multiplication/Division 3B	Geometric & Spatial Relationships algebraic rel. 3A, 2C, 3C, 1C, 1A, 2A	Data & Probability, Numbers & Operations (fractions) 1B, 3A, 2A	Review all GLE'S
Writing Activities	Math journal, make own graphs/ class graphs, DESE math prompts	Math journal DESE math prompts	Math Journal DESE Math prompts	Math Journal Flip Books centers, Mult. Write-On Book	Math Journal, Story problems	Math Journal, DESE Math prompts, Write about tan grams/ geoboards	Math Journal DESE Math Prompts	DESE prompts Review
Reading Activities	Math Matters (Nikilyn), Mission Addition, A million Fish, More or Less	Math Matters King's Commissioner	Sir Cumference, How Much is a Million, Alexander Who used to be rich last Sunday, The Go Around $	Two of Everything Amanda Bean's Amazing Dream, Orange has 8 slices, Too Many Kangaroo things to do, King's Chessboard, Anna's mysterious x-jar	A reminder of one division, The Doorbell Rang, Divide and Ride, Hershey's Book	Grandfather Tang's Stormy, Twizzler's Pull and Peel Math, A Cloak for the Dreamer	Math Matters, Give me half, Fraction Action, Hershey's Fractions	Review
Other Major Activities	Flip charts, place value song, math mats, base 10 blocks, place value chart, quizmo, www.gamequarium.com, one eyed jacks (dice games), card games, brain games	www.gamequarium.com assemble the	Let's find out about money, clocks and more clocks, me counting time, Jim and the Beanstalk, Monster Money book, Brain games	Multiplication Mania week, Mult. Rap & Rock, Times Tables the fun way, www.multiplication.com, Hershey's book, multi Macarena, card games, brain games	Unifix cubes, number lines, M7M's activity, brain games	Pattern blocks, tangrams, geo boards, Art projects, brain games	Valentine probability, Dice (rolling), Coins(flipping), brain games	Websites, All manipulative, 2 & 3 dimensional shapes, decimals, division with remainders

Math 4th								
	August/September	October	November	December	January	February	March	April/May
Content	Develop and demonstrate fluency, Count and compute Change *N3B, M1D* Recognize and extend patterns, Classify and describe numeric relationships, Use mathematical models, Represent mathematical situations, Describe and use mathematical manipulation Classify and describe numeric relationships, Rewrite and compare numbers. *A1A, N1D, A3A, A2A, A2B, N1A*	Use mathematical models, Apply properties of operations, Represent operations, Represent mathematical situations, Estimate and justify solutions *A3A, 2C, N2A, A2A, N3A,*	Represent and interpret data, Formulate questions, Describe and evaluate inferences, Create and analyze patterns, Analyze change, Use mathematical models *D1C,D1A,D1A, D3A, A1A, A3A, A4A*	Identify equivalent measure, Use standard or nonstandard measurement, Tell and use units of time Determine unit of measurement, Analyze change, *M1B, M2A, M1C, M1A, G4A, A4A*	Represent and use rational numbers, Compose and decompose numbers, Read, write and compare numbers, Compose and decompose shapes *N1B, N1C, N1A, G1C*	Recognize and extend patterns, Apply geometric measurements use angle measurements, Use coordinates systems, Use transformations on objects, Use symmetry, Recognize and draw 3-D representations *A1A M2C, M2B, G2A, G3A, G3C, G4A*	Describe and use geometric relationships, Compose and decompose shapes, Determine unit of measurement. *G1A, G1C, M1A*	Compute problems N#C
Writing Activities	Mad Minute Drills, Multiplication the Fun Way Activities, Kagan "I have, Who has?" Practice for multiplication and division facts, School House Rock videos, Computer Lab Web sites, Place Value Flip Charts, Number Line-Ups	Mad Minute Drills, Multiplication the Fun Way Activities, Kagan "I have, Who Has?" practice for multiplication and division facts, Math Relay races on the board with 2,3, and 4 digit number multiplied by one digit. Draw pictures showing sets and arrays of multiplication products.	∗m&m Math/Jellybean Math ∗Graphiti math Ordered Pairs, ∗Conversation Heart Activity ∗Kiddie Mix Candy Graph types of candy, ∗Create Sidewalk Chalk Graphs, ∗Fine feathered friends friendly letter ∗Team Survey/Graphing Activity/Write descriptive paragraph/ Make Questions （Good for final activity） ∗Use tangrams/pattern blocks to create geometric patterns. ∗Human Chain to Finish Number Pattern, ∗Use Math Book, Daily Review, Practice, AM and resource books for extra practice.	Graphic organizer; PM7: Measurement & Compare Worksheet: AM exercise Activity sheets 93-96 Telling Time Bingo: Student clocks: website www.teachingtime.co.uk PG 90 in Teach & Text math book; Clocks Activity book, pgs 7-11, Activity sheets 93-96	AM practice, Bubble Gum Math, Pizza Placement, Hershey Fraction Book, Fraction Bars, Fraction Bingo, Multiplication Chart, Overhead Fraction Circles, Jellybean Math, Pattern Blocks, M&M Fractions, Make a number with Index Cards, Can You Beat the Toss? Decimal and Place Value Chart, Prime Time Swimmers, Power Practice Relating Decimals to Money	February review sheet tangrams, Geoboards, Pattern Blocks, AM Exercises, Educational Games, （Quizmo, Bingo） Cheese It Are3a Don't Fence Me In: Area/Perimeter Activity The "Line Song' Design Bookmark-symmetry activity Paragraph: Describe a polygon using geometry vocabulary words, Vocabulary Flash Cards, Venn Diagram: Compare 2 polygons, AM Practices AR-Geometry books, Videos/Films from Library	Tangrams, Geoboards, Pattern Blocks, AM exercises Educational Games, Pretzel Perimeter, AM Practices, Don't Fence Me In: Area and Perimeter Activity, DESE website-released items, AR books-Geometry Films from library	Drills and relay races using 2 digit by 2 digit multiplication problems. Mad Minute Drills, Multiplication the Fun Way Activities, Kagan "I have, Who has?" practice for multiplication and division facts
Reading								

Other Major Activities	multiplication, Pre Test Common Assessment Accelerated Math Exercise, September Common Assessment, AM Exercise/Test	Chapter 5 Common Assessment Test, AM test and exercises as needed	Chapter 4 Test (35 points)	December Common Assessment Test, AM Test and exercises as needed	January Common Assessment, AM Exercise/Test (as needed)	February Common Assessment, AM Test (if needed)	March Common Assessment AM test (if needed)	April common assessment test, AM test and exercise

Math 5th								
	August/September	October	November	December	January	February	March	April/May
Content	Place value, Missing Addends, Sequences, Ordinal Numbers, Subtracting 2 and 3 digit numbers, Adding 2 and 3 digit numbers, Writing Numbers - 999, Adding Money, Even/Odd numbers, Addition Stories, Expanded Form, Reading Scales, Reading Time from a clock, Rounding Numbers to the nearest Ten *N1C,A2A,A1A, N1D, N1A, N2B, N1D,*	Triangles, Rectangles, Squares, and Circles, Naming Fractions, Lines, Segments, Ray and Angles, Subtraction Stories, Drawing Pictures of Fractions, Elapsed Time, Subtracting Three-Digit Numbers with Regrouping, Comparing numbers, Writing Numbers through Hundred Million, Naming Mixed Numbers, Fractions of a Dollar, Reading Fractions and Mixed Numbers, Reading an Inch Scale to the nearest fourth, Capacity. *A1A, G1A, N1B, N1D, G1A, N1B, N1A, M1C, N1A, N1A, N1D, N1A, N1B, N1`A, N1B, N1A, M1A, M1A*	Decimal Numbers, Missing Factors, Multiplying Multiples of 10- and 100, Rounding Numbers to the nearest hundred, Adding and Subtracting Decimal Numbers, Multiplying two-digit numbers, associative Property, Division, Percent *N1B, A2A, N1B, N1A, N2C, A2B, N3D, N2A, N1B*	One-digit division with a reminder, Rounding numbers to the nearest thousand, Multiples, Factors, Using pictures to compare fractions, Rate Word Problems, Multiplying 3 digit numbers, Estimating arithmetic answers, Rate Problems with a given total, Display Data Using Graphs, Remaining Fractions, Multiplying three or more Factors, Polygons, Division with Two-digit answers, Divisor, Dividend and Quotient, Similar and Congruent Figures, Multiplying by Multiples of 10, Division with Two-Digit Answers and a Remainder, Millimeters, Collecting Data and Surveys, Finding Information to solve problems, Geometric Transformations, Fractions of a Set, Measuring Turns, *N2A, N1D, N1D, N1A, A2A, A4A, N3A, N3D, A4A, D2A, D3A, A1B, A3A, N1B, N1A, G1A, M2C, N3D, N2D, N3D, N2A, G1A, N3A, N3C, M1A, M1B, D3A, D3A, A1B, D1A, G1C, G3A, N1B, G1C, G3A*	Division and Three-Digit Answers, Dividing Money, U.S. Customary Units of Weight, Metric Units of Mass, Classifying Triangles, Symmetry, Division with Zeros in the Three Digit Answers, Graphing Relationships, Angle Measures, Tessellations, Counting Change, Decimal Numbers to the Thousandths, Multiplying by 10, by 100 and by 1000, Multiplying Round Numbers Mentally, Multiplying Two Two-Digit Numbers *N2A, N2A, M2E, M1A, M1B, M1A, G1A, G3C,N3D, N2A, A3A, D2A, D1A, D3A, G1A, G1C, N2B, N11B, N1B*	Remainders in Stories about Equal Groups, mixed Numbers and Improper Fractions, Fractions with Manipulative, Decimal Place Value, Classifying Quadrilaterals, Estimating Multiplication and Division Answers, Two Step word Problems, Averages, Mean, Median, Mode, Geometric Solids, Decimal Numbers and Money, Constructing Geometric Mo*dels, Probability, Tables, Schedules, Decimal number line: Tenths and Hundredths* N2A, N1A, N1B, N1A, N1B, G1A, N3A, D2A, D2A, G1A, N1B, G1A, D4A, A1B, A3A, N1A	Fractions Equal to 1 and 1/s,Changing Improper Fractions to Whole or Mixed Numbers, Dividing By 10, Evaluating Expressions, Adding and Subtracting Fractions with common Denominators, Distributive Property, Estimating Area, Reducing Fractions, Prisms, 3-D Shapes, Convert Units of Measurement *N1A, N1A, N2A, N1C, N1D, N2B, N2, A2B, N1A, N1D, G4A, M2C, N1D, G4A, M2E*	Multiplying a 3-digit number, Simplifying Fraction Answers, Renaming Fractions, Common Denominators, Rounding Whole Numbers through Hundred Million, Adding and Subtracting Fractions with Different Denominators, Adding and Subtracting Mixed Numbers with Different Denominators , Solving Equations, Using Money Manipulative to represent Decimal Place value, Roman Numerals. *N1A, N1D N2B, N3B, N2B, N3B,*
Writing Activities								
Reading Activities								
Other Major Activities								

Math 6th								
	August/September	October	November	December	January	February	March	April/May
Content	Number and Operations review, Addition/Subtraction, Multiplication/Division, Problem Solving Strategies, Whole Numbers and Patterns, Compare and Order, Exponents, Properties, Order of Operations, Patterns NO1A, NO2B, NO3A, NO3B, NO3C, GS4B, DP4A, NO2A, NO2C, AR1A, AR1B, AR1C	Intro to Algebra, Expressions, Equations ANO2C, NO3D, AR2A, AR2B, AR3A, GS4B	Decimals, ordering, estimation, operations with equations NO1B, NO1C, NO2B, NO3B, NO3C, M1D, AR3A	Number Theory and Fractions, Divisibility, Factors/GCF, Decimals/Fractions, Operations, Equations NO1D, NO2B, NO2D, NO3B, NO3C, AR3A	Geometri Relationships, Angles, Lines, Triangles, Quadrilaterals, Polygons, Congruency, Transformations AR1A, GS1A, GS1C, GS2A, GS3A, GS3C, GS4A, M1A, M2B, M2C	Measurement and Geometry, standard vs. metric, Conversions, Time and Temperature, Angle Measurement M1A, M1B, M1C, M2A, M2B, M2C, M2E,M DP1C	Collecting and Displaying Data, Tables, Mean, Median, Mode and Range, Bar, Line Frequency, Stem and Leaf Graphs, Ordered Pairs AR1B, AR1C, AR1D, AR4A, GS2A, DP1A, DP1B, DP1C, DP2A, DP3A	MAP Prep, Problem Solving, Ratios and Proportions, Similar Figures, Indirect Measurement Percents, Diagnostics for 7th Grade ALL, NO2B, NO3C, NO3E, AR3A, DP1C
Writing Activities	Math Autobiographies, Mathematical Metaphors, RAFT, Acrostic Poem for Order of Operations, Learning Logs, RAFT	Mind Mapping, Learning Logs, RAFT	Where are the decimals? Real word quest, Learning Logs	Synonym Chart for GCF, Fraction Mind Map, Learning Logs, RAFT	Finding Parallel, Triangle Flip Book, Venn Diagram, Learning Logs, RAFT	My Favorite PI, Learning Logs, RAFT, My Symmetrical Heart	Graph Stories, Survey Says, My Graph Book, Learning Logs	Constructed Response, Where do I go from here?
Reading Activities	Math Curse, Textbook Orientation, Translating Words to Math One Grain of Rice, Vocabulary Challenge	Research uses for algebra, answer the question "When am I ever going to use this?"	The Dot and the Line, Reading Decimals	Divisibility Ditty, Focus on Problem Solving, Skittles Book of Fractions, PS on Location	The Greedy Triangle, Focus on Problem Solving, Problem Solving on Location	Sir Circumference and the Knights of the Round Table, Vocabulary, Challenge, Test Tackler	Finding Real Graphs, Library Research, Multi-step Test Prep, problem solving on location	Key Words, Vocabulary Challenge
Other Major Activities	MAD Minutes (computer lab) go.hrw.com, Language Line-Ups, I Have Who Has, Problem Solving Posters, Order of Operations LAB, Team Pattern Challenge, Operations Foldable, Properties Flip Book	Model Balance Scales, Algebra Tiles LAB, www.thatquiz.com	Base 10 exploration, Place Value Flip Chart, Pass a problem, www.decimalsquares. Com	Factor Game, Fraction Flipper, Fraction Line-Ups, Skittles Fraction Lab	Parallel Line LAB, Transformation Art, Transformation LAB, Symmetry Art, Tessellations LAB	Selecting Tools LAB, Explore Circumference LAB, PI competitions, Constructing Circle Graphs LAB	Power of 10, Valentine Survey, Life Size Graphing	Key Words Personal Posters, Test Prep Model lessons Carousel, Rates of Mad Minutes, Me and My Shadow, Sketch to Scale Drawing LAB, The Golden Rectangle

Math 7th								
	August/September	October	November	December	January	February	March	April/May
Content	Chapter 1 Algebraic Reasoning, Numbers and Patterns, Exponents, Metric Measurement, applying Exponents, Order of Operations, Properties, Variables/Alg Basic Expression	Chapter 3 Applying rational numbers, Estimate with decimals, (+,-,x, divide) decimals, Divide decimal by integers, divide decimal integers by decimal, solve equations with decimal, estimate with fractions	Chapter 5 proportional relationship, ratios, rates, slopes an rate of change, identifying and writing propositions, solving proportions.	Chapter 6 continued, solving percent problems, percent of change, simple integers. Chapter 7 collecting/displaying/ analyzing data frequency tables/stomp-leaf plots, line plots				
Writing Activities	translate words into math, simplifying algebraic expression, equations and their solutions (+,-,x, divide) equations. Chapter 2 integers/rational integers (+,-,x, divide) solve equations with integers, prime factorizations, GCF, LCM	(+,-,x, divide) fractions/mixed numbers, solve equations with fractions Chapter 4, coordinate plane, tables and graphs, interpreting graphs, function, tables, graphs, graphing line and functions.	Customary measurement, similar figures 4 proportions, using similar figures, scale drawings and models. Chapter 6 percents, fraction, decimal, percent of number	Mean, Median Mode, Range, bar graphs, history grams, circle graphs, box and Whitaker plots, line graphs, choosing and appropriate display, populations and samples, scatter plots, misleading graphs.				
Reading Activities	Equivalent fractions/ mixed numbers/decimal comparing and ordering rational number's.							
Other Major Activities								

Math 8th								
	August/September	October	November	December	January	February	March	April/May
Content	Chapter 1, variables an expressions, algebra expressions, integers and absolute value, adding integers sub int. multi + div into, solving equations by adding and subtracting, solving by multiplying or dividing intro to inequalities, rational number, comparing rational numbers, adding and subtraction rational number, multi root numbers divi.	Ordering pairs, graphing on coordinate plane, interpreting graphs and tables functions, equations, tables and graphs, arithmetic sequence.	Squares and square roots, E gh square roots, the real number. The Pythagorean Theorem Ratio's and Properties, Ratios, Retest unit rate, Dimen Analysis, Solving Proportions, similar figures.	Relating Decimal Fractions and %, estimate with percents finding percents, finding a number when the percent is unknown, percent increase and decimal application of percents, simple interest				
Writing Activities	Ration number, add and subtract with unlike denominators, solving equations with rote numbers, solving a 2 step equation	Exponents, look for a pattern in integers, exponents, prop of exponents, scientific notation.	Dilations, indirect measurement scale drawings and scale models.	Pts, lines, planes and angles, parallel and prep. Lines, angels in triangles, classifying polygons.				
Reading Activities								
Other Major Activities								

Pre Algebra 7/8								
	August/September	October	November	December	January	February	March	April/May
Content	Chapter 1, problem solving, numbers and expression, variables and expression, properties, variables and equations	Chapter 3, distributive property, simplifying algebraic exp, solving equations by adding subtracting multiplying, dividing, solving 2 step equations	Chapter 4, cont. multiplying and dividing monomials, negative exponents, scientific notations chapter 5	chapter 6, ratio's and rates, using proportions, scale drawings and models, fraction/decimal/ percents, percent proportions, finding % mentally, using % equations				
Writing Activities	Order pairs and relations, scatter plots Chapter 2, integers and absolute value, add, subtract, multiply and divide integers, coordinate system.	Writing two step equations, using formulas, chapter 4, factors monomials, powers and exponents, prime factorization, GCF, simplifying algebraic fractions	Writing fractions as decimals, rational numbers x and divide rational numbers, add and subtract like fractions, LCM x and divide unlike fractions, measure of central tendency, solve equations with rationales, arithmetic and geometric sequences.	% of change, probability and predictions, Chapter 7, solving equations with grouping symbols, variables on both signs, inequalities (solution) addition and subtraction, multiplying and dividing multi step.				
Reading Activities	Translating expression into words, learning mathematics vocabulary.	Translate verbal problems into equations, powers	factors and multiples	marking comparison, meaning of A7 most and A7 least				
Other Major Activities		Spreadsheet indiv. Perimeter and arch	Fibonacci sequence	Probability simulation				

Algebra I								
	August/September	**October**	**November**	**December**	**January**	**February**	**March**	**April/May**
Content	∗Variable and Expressions *N2D-Alg. I, N3D-Alg I.* ∗Sets – Union/intersection *D1C-Alg. I* ∗Domain/ Range *A1D-Alg. 1* ∗Pythagorean Theorem *N1A-Alg. I, N2B-Alg. I.* ∗Evaluate and simplify Square Roots *N1A-Alg. I, N2B-Alg. I.* ∗Multiplication properties of Algebra (Assoc, Commutative, Identity, Property of Reciprocals, −1, zero, equality, inequality) *N2B- Alg. I*	Multiplication & Algebraic Fractions *N2D-Alg. I* ∗ Signed numbers *N2D-Alg. I* ∗ Area *N1B-Alg. I* ∗ Unit Rates *M2E-Alg. I* ∗ Solving Equations/Inequalities ax=b & ax<b *N2D-Alg. I, A1C-Alg. I* ∗ Factorials *N2D-Alg. I, D1A-Alg. I* ∗ Permutations *N2D-Alg. I, D1A-Alg. I*	Addition Properties of Algebra (Commutative, Associative, Inverse, Distributive, Identity, equality/inequality) *N2D-Alg. I, D2A-Alg. I* ∗ Solving Equations/Inequalities (a + x = b and a + x > b) *N2D-Alg. I, A1C-Alg. I , A2C-Alg. I* ∗ Algebraic Fractions w/like/unlike denominators *N2D-Alg. I* ∗ Two-Dimensional slides *N2B-Alg. I, G4B-Alg. I* ∗ Graphing solutions to Inequalities *A1C-Alg. I, A2C-Alg. I, G4B-Alg. I*	∗ Solving Equations/inequalities involving Subtraction a − x = b *A1C-Alg. I, A2C-Alg. I* ∗ Supplementary & Complementary Angles *N1B-Alg. I, G1B-Alg. I, G4B-Alg. I* ∗Triangle Inequality Theorem *N1B-Alg. I, G1B-Alg. I, G4B-Alg. I* ∗Graphing simple linear equations in the form of x + y = k, x − y = k, y = ax + b and y = ax − b *A1B-Alg. I, A1C-Alg. I, A2A-Alg. I, A2C-Alg. I, A4A-Alg. I, G4B-Alg. I*	∗ Solving Multi-Step Equations/Inequalities (using multiplying through & Chunking methods) *A1D-Alg. 1, A2C-Alg. I;* ∗ Solving Formulas *A2C-Alg. I;* ∗ Graphing Vertical/ Horizontal Lines *A2C-Alg. I, A4A-Alg. I;* ∗ Graphing Using Tables and Graphing Calculator *A1D-Alg. 1, A2A-Alg. I, G4B-Alg.* I; ∗ Piece-Wise Graph Interpretation *A2C-Alg. I, A3A-Alg. I, G4B-Alg. I*	∗ Algebraic Definition of Division (Multiplying by reciprocal) *A2C-Alg. I;* ∗ Solving Problems involving Percents and Ratios *N1B-Alg. I, N3D-Alg. I, N2E-Alg. I;* ∗ Solving Problems Using Unit Rates *N3D-Alg. I, A2C-Alg. I, M2E-Alg. I;* ∗ Calculate Relative Frequencies or probabilities in Situations with a Finite Number of Equally likely outcomes *N3D-Alg. I;* * Find lengths and ratios of similitude in similar figures *N1B-Alg. I, N3E-Alg. I, G1B-Alg. I, G4B-Alg. I;* ∗ Determine Slope of a line given a) a graph b) 2 points c) an equation, *A2C-Alg. I, A4A-Alg. I*	∗ Properties of Slopes ∗ Finding Equations of Lines given a) 2 points b) point and slope c) slope and y-intercept A1D-Alg. 1, A4A-Alg. I;∗ Linear Regression *A1D-Alg. 1, A2A-Alg. I, A3A-Alg. I, G4B-Alg. I, D1A-Alg. I, D2C-Alg. I, D3A-Alg. I;* ∗ Graphing Linear Inequalities *A1C-Alg. I, A2C-Alg. I;*∗ Compound Interest *A2A-Alg. I, A2B-Alg. I, A2C-Alg. I;*∗ Evaluate integer powers of real numbers *N1C-Alg. I;* ∗ Simplify products, quotients and powers of powers using properties of Powers *N1C-Alg. I, A2B-Alg. I;* ∗ Graph and evaluate Exponential Growth and Decay *N1C-Alg. I, N2B-Alg. I, A1B-Alg. I, A1D-Alg. I, A2B-Alg. I*	∗ Add, Subtract, and Multiply Polynomials *N2B-Alg. I;* ∗ Expand Squares of binomials *N2B-Alg. I, A2B-Alg. I* ; ∗ Solving Linear systems by a) graphing b) Substitution c) Elimination (addition and multiplication) *A2D-Alg. I* ; ∗ Solving Systems of Linear Inequalities N1B-Alg. I, A2D-Alg. I
Writing Activities	PE Assessment Quick Write	PE Assessment Quick Write Foldable	PE Assessment Quick Write Foldable	PE Assessment Quick Write Foldable	PE Assessment Quick Write	PE Assessment Quick Write Foldable	PE Assessment Quick Write Foldable	PE Assessment Quick Write Foldable
Reading Activities	Text Tagging Forecasting Focused Quick write	Text tagging Quick Writes	Quick Writes Anticipatory Guide	Quick Writes Anticipatory Guide Forecasts	Text Tagging Forecasting Focused Quick write	Text tagging Quick Writes	Quick Writes Anticipatory Guide	Quick Writes Anticipatory Guide Forecasts
Other Major Activities	∗Pythagorean Theorem Activity with Geometer Sketchpad ∗ Penny Activity involving pattern identification	∗Paper Clip & Envelope Activity on Solving ax=b ∗ Multiplication Counting Principle Activity	∗ Magic Squares Activity ∗ Paper Clip & Envelop Actity on Solving a + x = b ∗ Distributive Property and Algebra Tiles	∗ Card Trick Activity over Sums/differences ∗ Graphing activity using Pennies ∗ Spreadsheet Activity involving pattern recognition	∗Pythagorean Theorem Activity with Geometer Sketchpad ∗ Penny Activity involving pattern identification	∗Paper Clip & Envelope Activity on Solving ax=b ∗ Multiplication Counting Principle Activity	∗ Magic Squares Activity ∗ Paper Clip & Envelop Activity on Solving a + x = b ∗ Distributive Property and Algebra Tiles	∗ Card Trick Activity over Sums/differences ∗ Graphing activity using Pennies ∗ Spreadsheet Activity involving pattern recognition
Algebra 2 A								
Semester	**August/September**	**October**	**November**	**December**	**January**	**February**	**March**	**April/May**

Content	Students will evaluate algebraic expressions and equations including correct units in answer. *(N1BA2)* Create and evaluate expressions and equations to represent various real-world situations. *(A1NA2)* Solving multi-step equations involving distribution, clearing fractions and decimals.*(N1BA2)* Rewriting formulas or equations in terms of other variables*(A2CA2)*.	Understand the relationship between dependent and independent variables.*(A1BA2)(A1CA2)* Identify when a relation is a function from a situation, table, or graph. *(A1BA2)(A1CA2)* Explicit and recursive sequences, generating these sequences from formulas, developing explicit and recursive formulas when given the sequence. (A1BA2)(A1CA2)	Modeling and predicting with variations.*(A1CA2)* Identify and solve problems involving direct and indirect variation problem and situations(A2AA2)(A3AA2). Connecting the concept of slope with rates of change for real-world situations*(G4BAA2).* Finding rates of change for situation*(A4AA2).* Graphing variations.(N1BA2) Domain and range of direct and inverse variation graphs.	Graphing hyperbolas and inverse square functions, finding asymptotes, domain and range, symmetry. *(G4AA2)(G4BA2)* Identifying the type of variation equation from data and graphs. *(A3AA2)(A1CA2)* Create equations or formulas of combined variation and joint variation equations. *(A3AA2)(A1CA2)(A1EA2)*	Constant increase and constant decrease situations.(A1CA2)(A3AA2) Slope-intercept form of equation and graphing using slope and y-intercept.*(A3AA2)* Standard form of linear equation and graphing using x- and y-intercepts. *(A3AA2)(A1CA2)(N1BA2)(A1EA2)(A2AA2)*	Write the equation of a line when given data ,two points on the line or when given the slope and a point on the line. Write linear equations when given constant increase or decrease situations. *(M2EA2)(D2CA2)*	Create scatter plots from data, linear regression analysis to find the line of best fit for the data. *(D2CA2)(M2EA2)(G4BA2)(A1CA2)* Adding, subtracting, multiplying polynomials. Factoring binomials, trinomials, by grouping. Solving equations by factoring. Recognize or evaluate arithmetic sequences. Find formulas for recursive and explicit arithmetic sequences.*(A1BA2)*	Introduce the greatest integer symbol and evaluate expressions. Evaluate and graph greatest integer functions and describe why they are called step functions. Determine when real situations can be modeled by step functions. Matrices to represent or store data in real-world situations. Adding and subtracting two or more matrices. Scalar multiplication, matrix multiplication.*(N2DA2)(G3BA2)(G4BA2)(A1CA2)* Transformations with matrices: size change, scale change, rotations, translations.*(G4BA2)(G3BA2)(N2DA2)(A1CA2)*
Writing Activities	Write word problems to fit given expressions or equations. Write expressions and equations that translate from phrases, situations, or word problems. Describe the process of solving equations in a way that will work for any equation.	Describe the relationship between dependent and independent variables for a function. Explain the various methods for determining whether a relation is a function. Five minute "Quick Write" activity over topics at beginning of class to evaluate retention and understanding of previous days material. CR and PE questions on unit test	Compare and contrast different types of variations. Describe, illustrate and state characteristics of each type of variation. Quick Write activities when needed. Make and describe predictions about the type of variation that describes a given situation. Be able to explain or defend predictions.	Compare and contrast hyperbolic functions vs. inverse square functions and their domains and ranges. Write situations that involve combined variation or joint variations. CR and PE questions on unit test	Compare and contrast constant increase or constant decrease situations. Write word problems to fit specific graph. Justify the validity of how the word problem satisfies the graph.	Write word problems to fit a specific graph, generate the equation for the graph,. CR and PE questions on unit tests.	Quick write activities to gauge understanding. Make and justify predictions based on linear regression. Compare and contrast recursive and explicit arithmetic sequences.	Writing word problems to fit step function. CR and PE questions on unit tests. Students write about how they think certain matrix operations will transform a polygon prior to lesson, then write about whether or not their anticipations were correct. Explain why the operation has that effect of the polygon.
Reading Activities	Read and answer questions from lesson introduction (questions from book or reading guide) and follow examples using similar information.	Read and answer questions from lesson introduction (questions from book or reading guide) and follow examples using similar information.	Read and answer questions from lesson introduction, reading guides, and follow examples using similar information. Reading word problems or real-world problems from book/magazine then drawing a graph to illustrate the problem	Read and answer questions from lesson introduction and follow examples given using similar information's. Use reading guides to supplement the initial reading of sections.	Read and answer questions from lesson introduction, reading guides, and follow examples using similar information. Read and interpret word problems or situations and draw graphs to illustrate or represent the situation. Sources of reading can be in the text, magazine, newspaper article, etc.	Read and answer questions from lesson introduction, reading guides, and follow examples using similar information. Read and interpret word problems from text or other sources to draw graphs to illustrate the situation.	Read and answer questions from lesson introduction, reading guides, and follow examples using similar information. Reading and interpreting information in scatter plot activity to determine independent and dependent variables, to determine whether linear relationship exists.	Read and answer questions from lesson introduction, reading guides, and follow examples using similar information. Read and answer questions from lesson introduction, reading guides, and follow examples using similar information.

Other Major Activities	Foldable: Steps for solving equations. Equation Test: 70% mastery required	Individual Activity: As a class will develop a recursive formula for Fibonacci sequence, then will individually create their own Fibonacci-type sequence. Trade papers, and the other person will have to create the recursive formula to describe the sequence. Technology: Using calculators to generate recursive sequences.	Technology: Calculator discovery and exploration of graphs, use data to make predictions involving variations.	Foldable: Types of Variations and their graphs: linear, parabola, hyperbola, inverse square functions. Technology: Calculator discovery and exploration of graphs, use data to make predictions involving variations.	Technology: Calculator graphing support, using calculators to verify slope, y-intercept, and equation of lines. Foldable: Types of Linear Equations	Technology: Calculator graphing support, using calculators to verify slope, y-intercept, and equation of lines. Working in pairs: Using graph paper and line segments to create a picture individually. Trade papers, then find equation of each line that would represent the segment. Graphing calculator could be used to check.	Scatter plot, Linear Regression Activity: Spend a day or two in computer lab or library to research topics (i.e.: brand of auto sales over the years, music sales, pollution for populations). Print or copy quoting source, creating scatter plot, linear regression analysis, finding correlation coefficients and explaining meaning as it pertains to data, make predictions. Technology may be used to support product.	Technology: Graphing calculator to perform operations on matrices. Project: Matrix Greeting Card Students create a greeting card using figures that have been transformed through matrix transformations. All transformations are performed on graph paper, transformations applied mathematically to matrices, then transferred to greeting card. Technology: Calculator matrix work to support computations and transformations.
Algebra 2 B								
Semester 1	August/September	October	November	December	January	February	March	April/May
Content	**ACT Prep/Review**: special right triangles; parallel lines/angle relationships; equations and inequalities; irrational computations; Pythagorean theorem and triples; equations of circles; distance formula, midpoint formula, area formulas; factoring	**Equation and Inequality Review; Systems of Linear and Quadratic Equations -** Linear Equations*(A1BA2), (A1CA2); (A2AA2); (A2CA2); (A3AA2)* Strategies for solving systems of linear and quadratic equations *(A2DA2)* Factoring	**Systems of Linear Equations applications with word problems** - Linear Word Problems *(N1BA2); (N2DA2); (A2CA2); (N3DA2); (A2AA2); (G4BA2)* Factoring	**Systems of Linear and Quadratic Inequalities, Linear Programming** - Solving systems with graphs; minimizing and maximizing costs/profits Solving equations by factoring	**Matrices** - Computation review; determinant of 2 x 2 and 3 x 3 matrices; inverses; solving a system of 2 linear equations using matrices; solving a system of more than 2 linear equations with matrices using a calculator Solving equations by factoring	**Quadratics** *(N3DA2); (A1CA2); (A2AA2); (A3AA2)* Expanding squared expressions; solve simple quadratic equations; translating graphs of absolute value and parabolas using vertex forms; graphing standard form of parabola; use quadratic equations to solve area, velocity and acceleration problems	**Quadratics and Complex Numbers -** Completing the square; fitting a quadratic model to data; quadratic formula *(N3DA2); (A1CA2); (A2AA2); (A3AA2)* Simplify and compute imaginary and complex expressions; use discriminate to determine number of real solutions	**Exponents -** Using rules of exponents to simplify expressions and solve equations; compound interest and recursive relationships *(N1CA2)*
Writing Activities	PE Assessment	Writing word problems to fit linear equations PE Assessment for unit test	PE Assessment for unit test Compare/contrast equations and graphs	PE Assessment Writing word problems that symbolically represent a given situation or picture		PE Assessment Writing word problems that symbolically represent a given situation or picture	PE Assessment Writing word problems that symbolically represent a given situation or picture	PE Assessment Writing word problems that symbolically represent a given situation or picture
Reading Activities	Reading for speed and accuracy on practice ACT tests		Use symbolic algebra to represent and solve problems involving linear relationships	Use symbolic algebra to represent and solve problems involving linear relationships	Use symbolic algebra to represent and solve problems involving linear relationships	Use symbolic algebra to represent and solve problems involving quadratic relationships	Use symbolic algebra to represent and solve problems involving quadratic relationships	Use symbolic algebra to represent and solve problems involving quadratic relationships

Other Major Activities	Test-taking strategies; Minimum of 8 practice ACT tests taken including 2 timed tests	Equation Test with required 70% mastery Use graphing calculator to determine intersection coordinates	Use graphing calculator to determine intersection coordinates	Use graphing calculator to determine intersection coordinates		Use algebra tiles to represent factoring, distributive property and completing the square	Quadratic Bulletin Board Project	

Algebra II								
	August/September	October	November	December	January	February	March	April/May
Content	Functions *(A1BA2)(A1CA2)*, Domain/Range, Equations *(N1BA2), (A2CA2)* Factoring	Modeling and Predicting with Variations *(A1CA2), (A1EA2) (A2AA2)(A3AA2)(A4AA2) (G4BA2)*	Linear Equations *(A1BA2) (A1CA2)(A2AA2)(A2CA2) (A3AA2)* Graphs and Applications *(n1ba2)(a1ea2)(a2aa2) (m2ea2)(d2ca2)* Factoring	Matrices-Computations and Transformations *(N2DA2) (A1CA2)(G4BA2)*	Matrices *(N2DA2)(A1CA2) (G3BA2)(G4BA2)* Systems of Linear/Nonlinear Equations, Word Problems *(n3da2)(a2aa2) (a2ca2)(a2ca2)(a2da2) (g4ba2)*	Systems of Linear and Quadratic Equations *(A2DA2)* Linear word Problems *(N1BA2)(N2DA2) (N3DA2)(A2AA2)(G4BA2)*	ACT *(D1CA2)* and MAP Prep *(D2AA2)* Geometry Review, Data and Probability *(D4AA2) (D4BA2)*	Quadratics *(N3DA2)(A1CA2) (A2AA2)(A3AA2)* Exponents *(N1CA2)* Trig Functions *(G1AA2)*
Writing Activities	Write word problems to fit stated equation(s) Write expressions and equations that translate from phrases/word problems, CR and PE questions on unit test	Compare and contrast different types of variations. Describe, illustrate and state characteristics of each type of variations. CR and PE questions on unit test	Write word problems to fit a specific graph, CR and PE questions on unit test.	CR and PE questions on unit test	Write word problems to fit stated systems of equation(s), CR and PE questions on unit test	Write word problems to fir stated systems of equation(s). CR and PE questions on unit test	CR and PE questions on unit test	CR and PE questions on unit test
Reading Activities	Write expressions/equations that translate from phrases/word problems. Read and answer questions from lesson introduction and follow examples given using similar information.	Read and answer questions from lesson introduction and follow examples given using similar information.	Draw a graph that illustrates word problems. Read and answer questions from lesson introduction and follow examples given using similar information.	Read and answer questions from lesson introduction and follow examples given using similar information.	Read and answer questions from lesson introduction and follow examples given using similar information. Write system of equations that translate from word problems.	Read and answer questions from lesson introduction and follow examples given using similar information. Write system of equations that translate from word problems.	Read and answer questions from lesson introduction and follow examples given using similar information.	Read and answer questions from lesson introduction and follow examples given using similar information.
Other Major Activities	Equation test 70% mastery required	Foldable: Types of Variations and their Graphs. Technology: Calculator Discovery and Exploration of Graphs; Use data to make predictions involving variations.	Technology: Calculator graphing support; graphing applications and making interpretations. Foldable: Types of Equation formats and usage.	Project: Matrix Greeting Card Technology: Calculator Matrix Work for computation and transformations Foldable: Matrix Transformations.		Technology: Use linear programming to make decisions and/or predictions. Word Problem Test		

Geometry/9-10								
	August/September	**October**	**November**	**December**	**January**	**February**	**March**	**April**
Content	Distance on a number line Graph points/lines Networks Draw in 3-D & Perspective Properties of discrete/synthetic/plane coordinate geometries/graph theory Segment Addition Convex Sets/regions Conditionals/Converse/Inverse/ contra positive Union/Intersection (sets, figures, inequalities) Polygons Triangle Inequality	Logic Puzzles Angles and Angle Measure Acute/Right/Obtuse/Zero/Straight Angle Bisector Angle Addition Adjacent/Vertical/Linear Pairs Angles Supplementary/Complementary Angles Arcs Rotations	Parallel Lines cut by a Transversal/Corresponding Angles Perpendicular Lines/Bisectors Slope Algebra Properties Proof Arguments	Transformation: Reflections Angle of Reflection/Incidence Miniature Golf/Billiards Translations with Parallel Lines Translations with Ordered Pair vectors Rotations with Intersecting Lines Vector Translations Glide Reflections Isometrics Non-Congruent Transformations: Stretch, Size Change	Congruence Proofs Justify Arguments Alternate Interior/Exterior Angles *M2BG* Sums of Angle Measures of Polygons *A1BG, M2BG* Use Algebra to Solve Problems *A1CG* Reflection/Rotation Symmetry of Polygons *G3CG* *N2DG, N3DG, A3AG, G1AG, G4BG*	Quadrilaterals: Trapezoid, Parallelogram Isosceles Trapezoid, Kite, Rhombus, Rectangle, Square *G2AG* Properties of above listed Quads. Sufficient Conditions for above listed Quads. Schedules *G3CG, M2BG, N2DG, N3DG, A3AG, G1AG, G4BG*	*Triangle Congruence (SSS, ASA, SAS, AAS, HL, SsA)* *Overlapping Triangles* *Exterior Angles* *Perimeters/Areas of 2-D figures: circles, quadrilaterals, triangles* *A1BG, A1CG, A1DG, G2AG, M2EG* *Justify Arguments* *N2DG, N3DG, A3AG, G1AG, G4BG*	Surface Areas/Volumes of 3-D figures: sphere, cone, cylinder, pyramid, rectangular prisms *A1BG, A1CG, A1DG, G3CG, M2CG, M2EG* Similarity *A1DG, G1BAI* Size Change*N3EG* Proportion/Ratios *N3EG* *M2BG, N2DG, N3DG, A3AG, G1AG, G4BG* Triangle Similarity Geometric Means Special Right Triangles *N3EG* Basic Trig Ratios *N3EG* *N2DG, N3DG, A3AG, G1AG, G4BG*
Writing Activities	Create foldable/map to compare the properties of the types of geometries	Compare/Contrast types of Angles	Give One Get One Journal	Compare/Contrast Two-Reflection Theorem for Translations & Rotations	Explain reasoning in real world context. Journals	Compare and contrast the properties of quadrilaterals. Make and Justify Conclusions from given information.	Give One, Get One Compare/Contrast Triangle congruence's and formulas for perimeter and area Explain reasoning	Compare/Contrast formulas for pyramid/cone, cylinder/prism, sphere/cube; Compare/Contrast similarity and congruence
Reading Activities	Find Conditionals in an article and change to If-Then Form, find converse, inverse, contra positive and identify truth value.	Logic/Sudoku Puzzles Text Tagging Forecast	Pulling It All Together	Text Tagging Pulling It All Together	Compare/contrast examples of proofs in reading to new proof arguments	Text Tagging Forecast	Text Tagging Pulling It All Together	Pulling It All Together; Test Tagging Forecast
Other Major Activities	Use multiple lengths of straws to derive the triangle inequality. Journal: Describe the process of graphing the union/intersection of inequalities	Sodoku Puzzles Construct/Draw Perpendicular Bisectors	Create visual of real-world objects and describe how angle relations are important within them	Patty Paper Activity to explore transformations Foldable of Transformations Construct transformations Tessellation	Construct Equilateral Triangles Construct Circle through any three points PowerPoint Presentation where students hold up answers to questions	Paper Folding to explore properties of Quadrilaterals Quadrilateral Foldable Construct Valentine Heart/Poem	Tessellations	Construct ideas/derive formulas for Perimeter, Area, Surface Area, Volume(SMART); Foldable for right triangles and trig ratios

Informal Geometry/ 10 - 12								
	August/September	**October**	**November**	**December**	**January**	**February**	**March**	**April**
Content	Discovering Geometry in nature, world cultures & art. Discover Characteristics of Symmetry. Construct regular hexagons with compass & straightedge, Recognize tessellations, Create designs with compass & straightedge. Use correct terminology and notation with geometric objects. Recognize and work with common geometric objects (types of angles, triangles, quadrilaterals, polygons, etc.). Translate descriptions into diagrams and vice versa. Work with Geometry in real world problems. Work with Algebraic properties in the world of Geometry through formulas.	Logic Puzzles. Use inductive reasoning to complete pattern. Discover relationships between special angle pairs. Explore relationships of the angles formed by a transversal cutting parallel lines. Solve problems involving constructions. Use construction tools to create angle bisectors, midpoints, perpendiculars, copy angles & segments, parallel lines. Construct points of concurrency.	Discover sums of the measures of two and three interior angles of triangle. Discover properties of base angles & vertex angles. Discover inequalities among sides & angles in triangles. Investigate SSS, SAS, ASA, SAA, and AAA as they relate to congruency. Solve linear equations. Discover the sum of interior & exterior angles of polygons. Discover properties of kites, trapezoids, and parallelograms. Define & discover properties of midsegments of triangles & trapezoids. Writing linear equations.	Discover properties of tangents to a circle. Apply properties of tangents. Discover and apply properties of chords. Discover and apply the formula for the circumference of a circle. Discover and apply relationships between intersecting chords, secants, or tangents and their intercepted arcs. Discover and apply a formula for finding the length of an arc of a circle.	Identify & create translation, rotations, and reflections in plane figures. Apply concepts of reflectional, rotational, translational, and glide reflectional symmetry. Create tessellations with regular and nonregular polygons. Find points of concurrency using algebra. Find minimal paths using reflections. Perform transformations on the coordinate plane.	Derive and apply formulas for perimeter, area, and volume for common 2-dimensional and 3-dimensional figures. Figures area of an irregular figure drawn on a grid. Derive and apply formulas for finding surface area. Simplify radical expressions. Solve problems involving the Pythagorean Theorem. Discover and apply properties of 30-60-90 triangles and 45-45-90 triangles. Apply the Pythagorean Theorem Converse to real-life problems. Solve problems using the distance formula on the coordinate plane.	Create mat drawings from isometric and orthographic drawings. Use definition of similar triangles and polygons to solve problems. Discover and use shortcuts to determining similar triangles. Discover and apply the relationship between area and volume of similar figures. Explore ratios of parts by doubling. Use definition of similarity to solve problems. Use proportions to find measures of similar figures.	Define and use the sine, cosine, and tangent rations. Derive and apply the Law of Sines. Apply the Law of Cosines. Use trigonometry to solve problems. Solve problems using indirect measurement methods. Apply properties of algebra and geometry to prove conjectures. Students will state properties of non-Euclidean Geometries
Writing Activities	Journal Writing. Explain how Geometry exists in nature. Students will write their own definitions. Venn Diagrams. Foldable.	Compare/Contrast types of Angles. Explain in words how to create different constructions. Journal writing.	Journal entries. Writing explanations to the exploratory activities. Compare & contrast the various ways of showing congruent triangles. Flowchart proofs.	Journal entries. Foldable. Compare & contrast different segments associated with a circle.	Compare & contrast isometrics. Foldable listing properties of isometrics. Journal entries.	Journal entries. Foldable	Write test items for classmates to work and solve. Journal entries. Compare similarity to congruence.	Journal entries. Compare and contrast the various types of proofs.
Reading Activities	Give one-Get one	Logic Puzzles Text Tagging Forecast	Pulling It All Together Forecast			Forecast	Sherlock Holmes stories to recognize deductive and inductive reasoning.	
Other Major Activities	Students will create their own design based on Op Art or a tile design	Sodoku Puzzles. Create networks that are traversable and nontraversable. Paper folding to explore & discover perpendicular bisectors. Create a stained glass window using basic constructions.	Exploratory activities to discover properties of triangles. Patty-paper activity to recognize which properties can be used to prove congruent triangles.	Exploratory activity: What is PI?	Paper-folding activities to explore properties of reflections, rotations, translations, and glide reflections.	Exploratory activities on Geometer Sketchpad or with Cabri Jr. Create a sculpture using five solids and determine the amount of surface area and plaster needed to form the sculpture.		

PreCalculus 12								
	August/September	October	November	December	January	February	March	April / May
Content	Pre-calculus-ACT rev/trig ACT Prep/Review: special right triangles; parallel lines/angle relationships; trigonometry functions, identities *(G1A12);*	Logarithms and Exponents Log and exponential equations/expressions; developing and solving application problems; growth and decay; compound interest; natural exponential functions; apply the laws of logs; changing bases *(N2C11,12; A4A11)*	Conic Sections Equations of Circles, ellipses, hyperbolas, parabolas; solving systems of linear and nonlinear equations graphically and algebraically; graphing of conic sections and systems *(A1D12; A1E11; A2D12)*	Conic sections and determinants Solving systems of second-degree equations graphically and algebraically; classifying second-degree equations; determinants of 2 x 2 and 3 x 3 matrices; apply determinants to find area/volume *(N2D12)*, solve systems using Cramer's rule	Matrices: Matrix computation; solving linear systems using matrices; apply matrices using communication, transition and transformation matrices (*N2D11; G3A11,12;G3B11)*	Sequence and Series Finite Arithmetic/Geometric series; recursive definitions; arithmetic/geometric series/sums *(A1B12);* limits of infinite sequences; sums of infinite series; sigma notation	Sequence and Series/Limits limits of infinite sequences; sums of infinite series; sigma notation; limits of functions *(A2C12)*; graphs of rational functions (*A1D12; (A1E12); (A4A12);*	Limits of a Function/Intro to Calculus: area under a curve; power series; iterated functions and analyzing orbits; slopes of a curve (derivatives); curve sketching using derivatives / Intro to Calculus Extreme value problems; velocity and acceleration
Writing Activities	PE Assessment	Writing word problems to fit log and exponential equations PE Assessment	PE Assessment Compare/contrast equations and graphs (A1C12)	PE Assessment Writing word problems that symbolically represent a given situation or picture	Interpreting the results of a matrix application and writing the explanation that supports the results; PE question on unit test	Interpreting the results of application problems and writing the explanation that supports the results; compare/contrast explicit and recursive patterns *(A1C12)*	Writing programs of iterated functions; compare and contrast between various limit problems and patterns	
Reading Activities	Reading for speed and accuracy on practice ACT tests	Use symbolic algebra to represent and solve problems involving log and exponential relationships *(A2A11)*	Use symbolic algebra to represent and solve problems involving conic relationships *(A2A11)*	Use symbolic algebra to represent and solve problems involving conic relationships	Word problems translated into a matrix system and applied from various contexts outside the classroom PE question on unit test	PE question on unit test Use symbolic algebra to represent and solve problems that involve explicit and recursive relationships *(A2A12; A3A12)*	Word problems using applications of iterated functions from contexts outside the classroom	PE question on unit test / PE question on unit test
		Discovery learning through calculator activities	Paper folding to discover characteristics of conic sections; String activities for conic constructions	Conic design and calculator project	Using transformation matrices, design a greeting card	Writing calculator programs to generate outcomes from sequence/series application programs *(A2A12)*	Write calculator programs to approximate the area under a curve	Analyze and determine a derivative using approximations and limits of slope from graph paper; find the upper and lower limits of the area under a curve using the rectangular method and graph paper

Math Analysis/11-12								
	August/September	October	November	December				
Content	Students will interpret and apply concepts associated with linear and quadratic functions.	Students will factor, graph, and solve polynomial equations using advanced algebraic methods and technology.	Students will solve and apply linear and non-linear inequalities.	Students will apply functions to solve applied problems appropriate to the course objectives.				
Writing Activities	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.				
Reading Activities	Students will compare/contrast lecture notes with text examples.	Students will compare/contrast lecture notes with text examples.	Students will compare/contrast lecture notes with text examples.	Students will compare/contrast lecture notes with text examples.				
Other Major Activities		Review ACT objectives		Review ACT objectives				

Trigonometry/11-12								
				January	February	March	April	May
Content				Students will clearly and correctly communicate the basic concepts of trigonometry.	Students will solve applied problems involving trigonometric functions. Students will construct and interpret (Cartesian) graphs of the trigonometric functions.	Students will verify trigonometric identities. Students will apply trigonometric techniques to the solution of certain algebraic problems involving the complex number system.	Students will construct and interpret graphs in the polar coordinate system. Students will solve problems involving vectors in a two-dimensional space.	Students will solve applied problems appropriate to the course objectives.
Writing Activities				Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.
Reading Activities				Students will compare/contrast lecture notes with text information.	Students will compare/contrast lecture notes with text information.	Students will compare/contrast lecture notes with text information.	Students will compare/contrast lecture notes with text information.	Students will compare/contrast lecture notes with text information.
Other Major Activities				Students will construct a working model of the unit circle.				

College Algebra/11-12								
	August/September	October	November	December	February	March	April	May
Content	Students will use correct terminology and conventional notation.	Students will solve more advanced problems using basic algebra.	Students will perform basic operations with complex numbers.	Students will perform basic operations with complex numbers.	Students will solve equation, inequalities, and systems of linear and non-linear equations.	Students will solve exponential and logarithmic equations. Students will solve systems of linear equations using graphing, substitution, eliminations, and augmented matrix methods.	Students will recognize and graph equations of the conic sections.	Students will solve applied problems appropriate to the course.
Writing Activities	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.
Reading Activities	Students will compare/contrast text information with lecture notes.	Students will compare/contrast text information with lecture notes.	Students will compare/contrast text information with lecture notes.	Students will compare/contrast text information with lecture notes.	Students will compare/contrast text information with lecture notes.	Students will compare/contrast text information with lecture notes.	Students will compare/contrast text information with lecture notes.	Students will compare/contrast text information with lecture notes.
Other Major Activities		Review ACT concepts		Review ACT concepts				

Transitions to Algebra and Lab /9								
	August/September	October	November	December	January	February	March	April/May
Content	Using whole numbers, students will perform at 70% mastery the order of operations and evaluate expressions. *(N3D7)*	Students will compare and order rational numbers, including finding their approximate locations on the number line (N1A8). Using rational numbers, students will perform at 70% mastery the order of operations and evaluate expressions *(N1BA1, N3C7, N3D7)*.	Students will apply at 70% mastery the properties of algebra (commutative, associative, identity, and distributive) (N2C8, A1CA1, A2B8).	Using rational numbers, students will perform at 70% mastery and solve one-step equations *(A1CA1).*	Using rational numbers, students will perform at 70% mastery and solve two-step equations (A2AA1).	Students will perform at 70% mastery and combine like terms that contain exponents, and will solve multi-step equations. *(A2AA1, A2CA1)*	Students will perform at 70% mastery and graph ordered pairs in the Cartesian coordinate plane. (G4BA1)	Students will compare and order rational and irrational numbers, including finding their approximate locations on a number line *(N1AA1).* Students will perform at 70% mastery and solve equations using the Pythagorean theorem and square roots *(N2D7, A1, G2A8);* Students will perform at 70% mastery and solve one-dimensional inequalities. *(A2CA1)*
Writing Activities	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts.	Students will compare/contrast major concepts; Students will compare/contrast major concepts.
Reading Activities	Students will text-tag major concepts.	Students will text-tag major concepts.	Students will text-tag major concepts.	Students will text-tag major concepts.	Students will text-tag major concepts.	Students will text-tag major concepts.	Students will text-tag major concepts.	Students will text-tag major concepts; Students will text-tag major concepts
Other Major Activities	Foldable, Math Lab	Foldable, Math Lab	Foldable, Math Lab	Foldable, Math Lab	Foldable, Math Lab	Foldable, Math Lab	Foldable, Math Lab	Foldable, Math Lab