Teacher: CORE Math Grade 5	Year: 2010-11
Course: Math Grade 5	Month: All Months

September

NUMBER SENSE ~ NUMBER SENSE

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Whole Numbers: Read, Write 0 - 999,999,999	Write the standard form of a number given the word form to the millions Write the word form of a number given in standard form to the millions	millions whole numbers periods standard form word form				5.NBT.1- Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.
	Whole Numbers: Compare, Order	Compare numbers to the millions using greater than, less than and equal to symbols Order numbers to the millions	greater than less than equal to compare order millions				4.NBT.2- Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =,

							and < symbols to record the results of comparisons.
	Whole Numbers: Prime Composite	Identify a number as prime or composite	place value				
	Whole Numbers: Rounding	Identify the place value from the hundreths to the ten thousandths Apply rules of rounding to the specified place value	rounding place value hundreth tenth thousandths				5.NBT.4-Use place value understanding to round decimals to any place.

Operations

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Decimal: Estimate Sums	Find the sum of decimals using estimation	estimation sum decimals				5.NBT.7-Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of

								operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
		Decimal: Estimate Differences	Find differences of decimals using estimation	estimation differences decimals				5.NBT.7- Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
Oc	NUMBER SENSE ~ NUMBER SENSE							

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Whole Numbers: Exponents	Write exponents using expontial notation, standar form, and expanded form	Exponent base squared cubed factors				5.NBT.2- Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.
	Divide: 3 digit by 1 and 2 digit	Find the quotient of a 3 digit dividend by 1 and 2 digit divisors.	quotient dividend divisor				5.NBT.6- Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on

								place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 5.N.17 -Use a variety of strategies to divide three-digit numbers by oneand two-digit numbers Note: Division by anything greater than a two-digit divisor should be done using technology.
	Estimation: Justify reasonableness	Justify reasonableness of answers using extimation.	estimation products decimals				5.N.27-Justify the reasonableness of answers using estimation 5.NBT.6-Find whole-number quotients of whole numbers with up to four-

								digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
		Whole Numbers: Prime Composite	Identify a number as prime or composite	prime composite divisible divisor				4.OA.4- Find all factor pairs for a whole number in the range 1â€“100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1â€“100 is a multiple of a given one-digit number. Determine

							whether a given whole number in the range 1â€“100 is prime or composite. 5.N.12 - Recognize that some numbers are only divisible by one and themselves (prime) and others have multiple divisors (composite)

Operations

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Decimal: Estimate Products	Find products of decimals using estimation	estimation products decimals				5.NBT.5- Fluently multiply multi-digit whole numbers using the standard algorithm. 5.N.26 - Estimate sums, differences, products, and quotients of decimals
	Decimal: Estimate Quotients	Find quotientsof decimals using	estimation quotients decimals				5.NBT.6- Find whole-number quotients of

		estimation					whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 5.N.26 - Estimate sums, differences, products, and quotients of decimals
	Multiply: 3 Digit by 3 Digit	Find the product of a 3 digit by 3 digit problems	Multiply Product digit				5.NBT.5-Fluently multiply multi-digit whole numbers using the standard algorithm. 5.N.16-Use a variety of strategies to

								multiply three-digit by three-digit numbers Note: Multiplication by anything greater than a threedigit multiplier/ multiplicand should be done using technology.

November

Operations

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Expressions: Order of Operations	Solve algebraic expressions using order of operations	Algebraic expression order ofoperations multiplication division addition subrtaciton parenthesis				5.OA.1-Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
	Decimals: Divide	Skills find quotient of decimal dividends by decimal divisors	Quotient Divisor Dividend					

ALGEBRA

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Expression: Variable	Apply assigned value into algebraic expression.	variable algebraic expression order of operations				5.OA.2-Write simple expressions that record calculations

			Solve algebraic expression using order of operations, using PEMDAS (Please excuse my dear aunt sally)					with numbers, and interpret numerical expressions without evaluating them. 5.OA.3-Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.
		Equations: Whole Number Facts	Solve for the given variable.	equation whole number solve				5.OA.1-Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.
		Patterns: Variable	Create a pattern of numbers	pattern double create				5.OA.2-Write simple expressions that record

			Explain the pattern of a list of numbers Extend the pattern of a list of numbers					calculations with numbers, and interpret numerical expressions without evaluating them. 5.OA.3- Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.

	Terminology: Algebraic Expressions, Constants, Variables	Apply correct terminology to algebraic expressions.	constant variable algebraic expression				5.OA.2- Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
	Expressions: Verbal, Algebraic	Write algebraic expressions when given verbal expressions.	expression verbal algebra				5.OA.2- Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.
	Equations: Whole Numbers, Inverse Operations	Solve equations using inverse operations.	inverse operation equation solve whole number				5.OA.3- Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from

								the two patterns, and graph the ordered pairs on a coordinate plane.

December

VISUALIZATION AND SPACIAL REASONING

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Triangles:Similar	Classify triangles as similar or not similar Match corresponding sides of similar triangles	similar triangle scalene, isosceles, equilateral corresponding sides right triangle acute obtuse ratio				5.G.2-Identify pairs of similar triangles 5.G.3 - Identify the ratio of corresponding sides of similar triangles
	Quadrilaterals: Classify	Classify quadrilaterals as a rectangle, square, rhombus or parallelogram	quadrilateral square rectangle rhombus parallelogram				5.G.4 - Classify quadrilaterals by properties of their angles and sides
	Triangles: Classify	Classify triangles as equilateral, isosceles, scalene, acute, obtuse and right.	isosceles equilateral scalene acute obtuse right				5.G.6 - Classify triangles by properties of their angles and sides
	Triangles: Interior Measurement	Identify in writing the number of degrees that	interior angles degrees triangle				5.G.7 - Know that the sum of the interior

		are in a triangle Calculate the missing angle of a triangle by adding the 2 given angles and subtract the sum from 180 degrees	sum					angles of a triangle is 180 degrees 5.G.8 -Find a missing angle when given two angles of a triangle
	Triangles:Congruent	Find the congruent triangles from a given set of triangles	congruent triangle identify					5.G.9 - Identify pairs of congruent triangles
	Symmetry: Identify,Draw	Identify the number of lines of symmetry in a given geometric shape Draw lines of symmetry in a given geometric shape	symmetry line of symmetry symmetrical					5.G.11- Identify and draw lines of symmetry of basic geometric shapes
	Quadrilateral:Interior Angles	Calculate the missing angle of a quadrilateral.	quadrilateral angle sum interior					5.G.3- Understand that attributes belonging to a category of two-dimensional

							figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. 5.G.4- Classify two-dimensional figures in a hierarchy based on properties.
	Triangles:Congruent Corresponding Parts	Identify corresponding parts of congruent triangles.	corresponding congruent triangles				5.G.10 - Identify corresponding parts of congruent triangles

Measurement

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Angles: Measure, Draw	Decide to use a ruler or a protractor to measure a given length or degree. Use a protractor to draw and measure angles	degree measure of an angle measure measurement protrctor				4.G.1 - Identify and name polygons, recognizing that their names are related to the number of sides and angles (triangle, quadrilateral,

								pentagon, hexagon, and octagon) 4.G.1-Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. 4.MD.5-Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement 5.M.6-Determine the tool and technique to measure with an appropriate level of precision: lengths and angles
Jan	OPERATIONS							

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Fractions: Equivalent	Create equivalent fractions given a fraction	fraction equivalent				4.NF.1- Explain why a fraction a/b is equivalent to a fraction (n Ã— a)/(n Ã— b) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.
	Fractions: Compare, Order	Compare fractions with like denominators in a given set using the greater than, less than and equal to symbols Order	compare order denominator fraction				4.NF.2- Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or

		fractions with like and unlike denominators from greatest to least and/or least to greatest					numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols >, =, or
	Factors: Identify	Find factors of a given number	factors				4.OA.4- Find all factor pairs for a whole number in the range 1â€“100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1â€“100 is a multiple of a given one-digit number. Determine whether a given whole

							number in the range 1â€“100 is prime or composite.
	Whole Number: Multiples	Calculate multiples of a whole number	multiple whole number				5.NF.1-Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
	Whole Number: Least Common Multiple	Find least common multiple of a whole number	multiple least common whole number				5.NF.1-Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with

							like denominators.
	Fractions: Estimate Sums	Find sums of fractions with like denominators using estimation	sums fraction estimation denominator				5.NF.2-Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
	Fractions:Estimate Differences	Find differences of fractions with like denominators	differences estimation fraction denominators				5.NF.2-Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to

							represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
	Fractions: Add and subtract with unlike denominators	Find sums and differences of fractions with unlike denominators	Sum difference fraction equivalent simplify				5.NF.1-Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. 5.NF.2-Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using

								visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.

February

MEASUREMENT ~ This unit is taught in Science.

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Measure: Nearest Inch	Measure 2D objects to the nearest inch using a ruler.	customary measurement system inch measure measurement ruler metric				5.MD.1-Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
	Measure: Nearest Centimeter	Measure 2D objects to the nearest centimeter with a ruler.	centimeter length measure metric system ruler				5.MD.1-Convert among different-sized standard measurement units within

							a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.

Visualization and Spacial Reasoning

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Perimeter: Polygons	calculate the perimeter of regular and irregular polygons	corresponding sides equilateral triangle formula irregular polygon regular polygon, length octoagon hexagon pentagon perimeter side				4.MD.3- Apply the area and perimeter formulas for rectangles in real world and mathematical problems.
	Geometry: Perimeter	Perimeter of geometric shapes drawn on a coordinate plane.	perimeter coordinate plane geometric shape				4.MD.3- Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Algebra

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards

	Perimeter: Formula	Apply input values to perimeter formula	formula perimeter input				4.MD.3-Apply the area and perimeter formulas for rectangles in real world and mathematical problems.

Operations

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Fractions: Multiply	Find product of 2 fractions or mixed number	product mixed number				5.NF.4-Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. 5.NF.6-Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.
	Fractions: Divide	Find quotient of 2 fractions	Quotient inverse reciprocles				5.NF.7-Apply and extend previous understandings of division to divide unit fractions by

								whole numbers and whole numbers by unit fractions.

March

MEASUREMENT ~ This unit is taught in Science.

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Measurement: Convert, Equvialents	Convert metric units of length using the acronym KHDMDCM (King HenryDrinks Milk During Coucil Meetings)	Convert decimeter equvalent kilometer measurement metric System Millimeter				5.MD.1-Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
	Length: Customary Equivalent Units	Find equivalent customary units of length	length customary units inches feet yards miles equivalent					
	Length: Personal References, Customary Units	Apply appropriate measurement customary units of lenght to personal	length customary units inches feet yards miles					

		references.	length width							
	Length: Personal References, metric units	Apply appropriate metric units of measurement to personal references.	length metric units millimeter centimeter meter kilometer							
	Estimates: Justification, Reasonableness	Justify the reasonableness of estimates.	estimate justify reasonableness				5.M.11-Justify the reasonableness of estimates			

Visualization and Spacial Reasoning

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Measurement: Coordinate Plane	plot and label points in the coordinate plane Label the x and y axis. Write a coordinate as (x,y). Describe the x axis as horizontal and y axis as vertical	quadrant axis coordinate				5.G.1-Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first

								number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate). 5.G.2- Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

	Solids: volume	Find volume of regular and irregular solids	cubic prism base area				5.MD.3- Recognize volume as an attribute of solid figures and understand concepts of volume measurement.
	Measurement: Capacity	Convert customary and metric units of capacity Choose appropriate unit of capacity for a given container	capacity gallon quart pint cup ounce				5.MD.1- Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.
	measurement: weight	convert customary and metric units of weight choose appropriate unit of measure to weigh a given object	Weight mass ounce pound ton milligram gram kilogram				5.MD.1- Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving

								multi-step, real world problems.

April

Statistics

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Graphs: Conclusions, Predictions	Create conclusions based on the trend of a line graph Develop predicions based on the trend of a line graph.	prediction conclusion trend increase decrease				5.MD.2- Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.
	Graphs: Data Colleciton/Records	Tally data based on sources collected	variety record data sources				6.SP.1- Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

June

Number Sense

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards

	Percent: Fraction, Decimal	Write percents as fractions and decimals Find the percent given a base 10 grid Write the percent when given Write the percent when given a decimal									
	Ratio: Concept	Write a ratio in each of thethree formats: 2:3, 2 to 3, 2/3									

PROBABILITY

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Outcomes:Single Event	Find the possible outcomes for a single event experiment	outcome				5.S.5 -List the possible outcomes for a single-event experiment
	Fractions: Record Results	Write fraction/ratios for results of experiment	fraction results ratio experiment				5.S.6 -Record experiment results using fractions/ratios
	Sample	Create a	sample				5.S.7 -

	Space: Single Event	sample space given a simple experiment	space				Create a sample space and determine the probability of a single event, given a simple experiment (e.g., rolling a number cube)

STATISTICS

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Graphs: line	Draw and label the x and y axis. Title the graph x-axis (time), and y-axis (data). Lable the y-axis using an appropriate scale, interval and label the x-axis with the given change of time.	data formulate line graph conclusion predictions x-asis y- axis label interval scale				
	Averages: Mean	Add given set of data. Divide sum by the quantity of data entries.	Mean Set of data				6.SP.3- Recognize that a measure of center for a numerical data set

		Draw conclusions using mean results.					summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.

Visualization and Spacial Reasoning

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Coordinate Geometry: Form Shapes	Plot points to form geometric shapes in the first quadrant. Identify and classify the geometric shape plotted.	geometric shape plot quadrant identify classify				5.G.13 -Plot points to form basic geometric shapes (identify and classify)

Measurement

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Time: Elapsed, hours, minutes	Calculate elapsed time in hours and minutes.	elapsed hours minutes time				5.M.7- Calculate elapsed time in hours and minutes

Algebra

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Patterns:	Create	Algebraic				6.EE.2-

		Algebraic, Geometiric	patterns using concrete objects and visual drawings.	pattern geometric pattern rotate shade geometric shape				Write, read, and evaluate expressions in which letters stand for numbers.