NUMBER SENSE (NS)	Standard	Core Concepts	Key Terms	Examples
MA.4.NS.1	Read and write whole numbers up to 1,000,000.	• A place value system is one in which the position of a digit in a number determines its value. • In the standard system, called Base Ten, each place represents ten times the value of the place to its right.	• whole numbers • counting numbers • Cardinal numbers • digit • least • greatest	
MA.4.NS.2	Write numbers to a million in standard form, expanded form and word form.	• Numbers can be read and written using base ten numerals (321), expanded form (300 + 20 + 1 or 3 x 100 + 2 x 10 + 1 x 1), and word form (three hundred twenty-one)	• standard form • expanded form • word form	Write the number that has 2 hundred thousands, 7 ten thousands, 4 thousands, 8 hundreds, 6 tens, and 2 ones: **274,862**
MA.4.NS.3	Identify and write whole numbers up to 1,000,000, given a place-value model.	• A place value system is one in which the position of a digit in a number determines its value. • In the standard system, called Base Ten, each place represents ten times the value of the place to its right. • In a multi-digit whole number, a digit in one place represents ten times what it would represent in the place immediately to its right.	• place value	Place value models may include base 10 blocks, pictures, flip books, place value charts, etc. Resources: http://www.abcya.com/base_ten_fun.htm

NUMBER SENSE (NS)	Standard	Core Concepts	Key Terms	Examples
MA.4.NS.4	Round whole numbers up to 10,000 to the nearest ten, hundred, and thousand.	• Rounding is one way to estimate answers. • It is a process for finding the multiple of 10, 100, 1000, and so on. • Rounding is used to make mental computation easier.	• rounding • place value • number line	Ask: Is 7,683 closer to 7,600 or 7,700? Explain your answer.
MA.4.NS.5	Order and compare whole numbers using symbols for "less than" (<), "equal to" (=), and "greater than" (>).	• Place value can be used to compare and order whole numbers. • Certain symbols have been agreed upon to represent words and record comparisons in expressions.	• order • compare • less than • equal to • greater than	Put the correct symbol in 328 __ 142; read the comparison problem accurately.
MA.4.NS.6	Identify positive and negative integers on a number line.	• An integer (Latin word meaning "whole") is a number that can be written without a fractional component. • Integers can be positive or negative and include "0".	• integer • positive integer • negative integer	
NUMBER	**Standard**	**Core Concepts**	**Key Terms**	**Examples**

SENSE (NS)				
MA.4.NS.7	Rename and rewrite whole numbers as fractions.	• Fractions are parts of a whole. • Fractions are equivalent if they represent the same amount of space or distance. • When naming a fraction, we name the numerator first; then we name the denominator using its ordinal number. • Whole numbers can be represented as fractions. • When the numerator and denominator are equal, the fraction equals 1. • The same fractional amount can be represented by an infinite set of different but equivalent fractions. • Equivalent fractions are found by multiplying or dividing the numerator and denominator by the same nonzero number.	• whole number • fraction • numerator • denominator • division	3 = 6/2 = 9/3 = ?/4 = ?/5 Resource: https://learnzillion.com/lesson_plans/8304-express-whole-numbers-as-fractions

NUMBER SENSE (NS)	Standard	Core Concepts	Key Terms	Examples
MA.4.NS.8	Name and write mixed numbers, using objects or pictures.	• A mixed number represents a whole amount and a part of a whole amount. • Fractional amounts greater than 1 can be represented using a whole number and a fraction.	• whole number • fraction • numerator • denominator • mixed number • mixed fraction	Use objects or draw a picture to represent that you have 5 whole straws and half a straw. Write the number that represents these objects (5 1/2 straws).
MA.4.NS.9	Name and write mixed numbers as improper fractions, using objects or pictures.	• There are three types of fractions: • Proper fractions have a numerator that is less than the denominator; • Improper fractions have a numerator that is greater than or equal to the denominator; • Mixed fractions or Mixed numbers have a whole number and proper fraction together.	• whole number • fraction • numerator • denominator • mixed number • mixed fraction • improper fraction	Use a picture of 3 rectangles, each divided into 5 equal pieces, to write 2 3/5 as an improper fraction. Resource: https://learnzillion.com/lesson_plans/5544-write-fractions-greater-than-one-as-mixed-numbers?card=65139#lesson
MA.4.NS.10	Write tenths and hundredths in decimal and fraction notations.	• Fractions and decimals have a relationship. • Tenths and hundredths have a relationship to the base ten system and parts of a dollar	• place value • decimal • decimal point • tenths • hundredths • Base-ten system	Write two tenths as both 2/10 and 0.2 *know the proper way to read a decimal; the word "and" denotes a fraction of a whole number (not the word "point").

NUMBER SENSE (NS)	Standard	Core Concepts	Key Terms	Examples
MA.4.NS.11	Round two-place decimals to tenths or to the nearest whole number.	• Place value can be used to compare and order decimals.	• round • decimal • place value	Ask: Is 0.29closer to 0.2 or 0.3? Is 0.75 closer to 0 or 1? Explain your answer.
MA.4.NS.12	Arrange in numerical order and compare fractions with common and different denominator, using the symbols for "less than" (<), "equal to" (=), and "greater than" (>).	• The denominator of a fraction tells how many equal parts there are in the whole. • The numerator tells how many of the parts are being counted. • The parts get smaller as the denominator increases. • Fractions with like and unlike denominators can be compared and ordered. • Benchmark fractions such as 1/2 are useful when comparing two fractions to each other. • Fraction models such as fraction bars and number lines are useful when determining fraction equivalence.	• fractions • numerator • denominator • less than • equal to • greater than • number line	1/10, 1/4, 1/3, 1/2, 2/3, 5/6, etc. 1/4 < 1/3 2/3 > 1/10 4/8 = 1/2

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.1	Understand and use standard algorithms for addition and subtraction.	• Standard addition and subtraction algorithms for multi-digit numbers break the calculation into simpler calculations using place value starting with the ones place, then the tens, and so on. • Addition and subtraction have an inverse relationship. • Addition is the inverse of subtraction; subtraction is the inverse of addition.	• computation • algorithm • addend • sum • minuend • subtrahend • difference	45,329 + 6,984 36,296 – 12,075
MA.4.C.2	Represent as multiplication any situation involving repeated addition.	• Statements of comparison (“times as many”) are other ways to think about multiplication	• multiplication • repeated addition • equal groups • represent • factor • product • addend • sum	Each of the 20 students in your PE class has 3 tennis balls. Find the total number of tennis balls in the class.

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.3	Represent as division any situation involving the sharing of objects or the number of groups of shared objects.	• Division is separating into equal parts or groups; fair sharing.	• division • equal groups • equal sharing • represent • dividend • divisor • quotient	Divide 12 cookies equally among 4 students. Divide 12 cookies equally to find out how many people can get 4 cookies. Compare your answers and methods
MA.4.C.4	Demonstrate mastery of the multiplication tables for numbers between 1 and 12 .	• A product is a result of multiplying numbers that are called factors.	• multiplication facts • Identity Property • Commutative Property • division facts • inverse • fact families • factor • product • multiplication sign • multiplication dot • dividend • divisor • quotient • division box • division sign • division bar	Know the answer to 9 x 4. Know the answer to 35 ÷ 7.

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.5	Use a standard algorithm to multiply numbers up to 100 by numbers up to 10, using relevant properties of the number system.	• Some quantities have a relationship; the value of one quantity can be found if you know the value of another quantity. • For a given set of numbers, there are relationships that are always true called properties. • Properties are rules that govern mathematics. • Three properties applicable to multiplication are the Commutative Property, the Associative Property, and the Distributive Property of Multiplication. • Basic facts and place value patterns can be used to find products when one factor is 10 or 100. • There is an expanded algorithm for multiplying where numbers are broken apart (decomposed) using place value and the parts are used to find partial products. • The partial products are then added together to find the product.	• multiply • algorithm • factor • product • sum • place value • regrouping • Commutative Property of Multiplication • Associative Property of Multiplication • Distributive Property of Multiplication • decompose • partial products	67 x 3 = ? 3 x 67 = ? 3 x 10 = 30 3 x 100 = 300 30 x 10 = 300 46 40 + 6 x 8 x 8 x8 368 = 320 + 48

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.6	Use a standard algorithm to divide numbers up to 100 by numbers up to 10, without remainders, using relevant properties of the number system.	• Every counting number is divisible by 1 and itself, and some counting numbers are also divisible by other numbers. • Divisibility rules are helpful.	• division • algorithm • dividend • divisor • quotient • multiple • factor	69 ÷ 3 = ?
MA.4.C.7	Understand the special properties of 0 and 1 in multiplication and division.	• The product of any nonzero number and any other nonzero number is divisible by each number and called a multiple of each number.	• Zero Property of Multiplication • Identity Property of Multiplication • Division One Factor Property	Know that 73 x 0 = 0 Know that 73 x 1 = 73 Know that 42 ÷ 1 = 42
MA.4.C.8	Add and subtract simple fractions with like denominators, using objects or pictures.	• A model can be used to add or subtract two or more fractions. • When adding or subtracting fractions with like denominators, you are adding or subtracting portions of the same size. • You can add or subtract the numerators without changing the denominators.	• fraction bar • numerator • denominator • like fractions • common denominators • addition • subtraction • sum	Use a picture of a circle divided into 6 equal pieces to find 5/6 – 1/6

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.9	Add and subtract decimals (to hundredths), using objects or pictures.	• Decimals are added and subtracted similar to that of whole numbers. • The decimal point separates the whole number from the portion that is part of a whole.	• decimals • addition • subtraction • dimes • pennies • tenths • hundredths	Use coins to help find $0.43 - $0.29
MA.4.C.10	Use a standard algorithm to add and subtract decimals (to hundredths).	• The decimal point is aligned when adding or subtracting decimals.	• decimals • addition • addend • sum • subtraction • minuend • subtrahend • difference • whole numbers • tenths • hundredths • place value	0.74 + 0.80 1.54

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.11	Know and use strategies for estimating results of any whole-number computations.	• To estimate means to find an approximate value that is usable for some purpose. • Estimation is useful when input data is uncertain or incomplete. • Rounding is one way to estimate answers. It involves replacing numbers with the closest multiple of 10, 100, 1000, etc.	• estimate	Your friend says that 45,329 + 6,984 = 5,213. Without solving, explain why you think the answer is wrong.
MA.4.C.12	Use mental arithmetic to add or subtract numbers rounded to hundreds or thousands.			Add 3,000 to 8,000 without using pencil and paper. Estimate the sum of 420 and 480.
MA.4.C.13	Divide two-digit whole numbers by a one-digit divisor producing a remainder.	• When dividing, the remainder must be less than the divisor.	• divide • dividend • divisor • quotient • multiple • factor • remainder	83 ÷ 9 = ?

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.14	Use a standard algorithm to multiply two-digit numbers with and without regrouping	• Standard multiplication algorithms for multi-digit numbers break the calculation into simpler calculations using place value starting with the ones place, then the tens, and so on. • Our base ten place value system means only one digit may be listed in any place value. • Regrouping a number means the "ten portion" is added to the next group of ten place value to the left of the place value being multiplied. • There are many algorithms for multiplication.	• digit • ones place • tens place • hundreds place • factor • product • zero as a placeholder • partial products	Write and solve 24 x 2 as 24 x 2 48 Write and solve 24 x 14 as ' 24 x 14 96 + 240 336 Resource: http://www.homeschoolmath.net/teaching/md/multiplication_algorithm.php 63 x 4 12 +240 252

COMPUTATION (C)	Standard	Core Concepts	Key terms	Examples
MA.4.C.15	Represent the area of a square as an exponential expression, read an exponent to its power, and evaluate an exponential expression up to the power of 3.	• Exponents are shorthand for repeated multiplication of the same number (the base) by itself. • The value of the exponent tells you how many times to multiply the base times itself. • The process of using exponents is called "raising to a power", the "power" being the exponent. • The expression 5^3 is pronounced as "five, raised to the third power" or "five to the third". • There are two specially-named powers: "to the second power", generally pronounced as "squared", and "to the third power", generally pronounced as "cubed". So, 5^2 is commonly pronounced as "five squared" and 5^3 is commonly pronounced as "fived cubed"	• exponent • base • power • area • square root • cubed	Rewrite the expression 3×3 as 3^2 Rewrite the expression $3 \times 3 \times 3$ as 3^3 Evaluate 5^3 as $5 \times 5 \times 5 = 125$

ALGEBRA AND FUNCTIONS (AF)	Standard	Core Concepts	Key terms	Examples
MA.4.AF.1	Use letters, boxes, or other symbols to represent any number in simple expressions, equations, or inequalities (i.e., demonstrate an understanding and the use of the concept of a variable).	• Mathematical situations can be represented with equations using letters, boxes, or symbols for the unknown quantity which may appear in any position.	• variable • expression • equation • inequality • missing numbers • missing factors • multiplication sign • multiplication dot	You read the expression "three times some number added to 5" and you write "3x + 5". What does x represent?
MA.4.AF.2	Use and interpret formulas to answer questions about quantities and their relationships.	• A formula is a special type of equation that shows the relationship between different variables (numbers we don't know yet).	• formula • missing numbers • variable • some/some more • perimeter (P = L + W) • area (A = L x W)	Write the formula for the area of a rectangle in words. Now, let "L" stand for the length, "W" for the width, and "A" for the area. Write the formula using these symbols.

ALGEBRA AND FUNCTIONS (AF)	Standard	Core Concepts	Key terms	Examples
MA.4.AF.3	Understand that multiplication and division are performed before addition and subtraction in expressions without parentheses.	• There are four mathematical operations. • They are addition, subtraction, multiplication, and division. • There is an order to performing mathematical operations in a complex expression. • The Order of Operations is a collection of rules that define which mathematical *operations* to perform first *in order* to evaluate a given mathematical expression. • This mnemonic device helps to remember the Order of Operations: **PEMDAS** or • **P**lease **E**xcuse **M**y **D**ear **A**unt **S**ally means to do: o **P**=parentheses first o **E**=exponents o **M** and **D**= multiply and divide, left to right o **A** and **S**= add and subtract, left to right	• expression • order of operations	You go to the store with 90¢ and buy 3 pencils that cost 20¢ each. Write an expression for the amount of money you have left and find its value.

ALGEBRA AND FUNCTIONS (AF)	Standard	Core Concepts	Key terms	Examples
MA.4.AF.4	Understand that an equation such as y = 3x + 5 is a rule to find a second number when a first number is given.	• Patterns can sometimes be used to identify a relationship between two quantities. • Some real world quantities have a mathematical relationship: the value of a quantity can be found if you know the value of the other quantity.	• equation • formula • variable • rule	Use the formula "y = 3x + 5" to find the value of "y" when "x=6"
MA.4.AF.5	Continue number patterns using multiplication and division.	• Relationships can be described and generalizations made for mathematical situations that have numbers or objects that repeat in predictable ways. • Some patterns consist of shapes or numbers arranged in a unit that repeats. • Some numerical sequences have rules that tell how to generate more numbers in a sequence.	• number pattern • rule • input/output • function table • "Magic Machine" • sequence	What is the next number: 160, 80, 40, 20, __? Explain your answer.

ALGEBRA AND FUNCTIONS (AF)	Standard	Core Concepts	Key terms	Examples
MA.4.AF.6	Recognize and apply the relationships between addition and multiplication, between subtraction and division, and the inverse relationship between multiplication and division to solve problems.	• Any number, measure, numerical expression, algebraic expression, or equation can be represented in an infinite number of ways that have the same value. • Some mathematical operations are more efficient than others. • Inverse means the *opposite in effect*; *the reverse of*.	• inverse • fact family	Find another way of writing 13 + 13 + 13 + 13 + 13
MA.4.AF.7	Relate problem situations to number sentences involving multiplication and division.	• Some real-world problems involving joining, separating equal groups, or comparison can be solved using multiplication; • Others can be solved using division.	• problem situation • number sentence • multiplication • product • division • equal sharing • equal groups • dividend • divisor • quotient	You have 150 jellybeans to share among the 30 members of your class. Write a number sentence for this problem and use it to find the number of jellybeans each person will get.

ALGEBRA AND FUNCTIONS (AF)	Standard	Core Concepts	Key terms	Examples
MA.4.AF.8	Plot and label whole numbers on a line up to 100. Estimate positions on the number line.	• In mathematics, a number line is a picture of a straight line that serves as abstraction for real numbers. Every point on a number line corresponds to a real number and every real number to a point. • A number line is useful for addition and subtraction, and for showing relationships between numbers.	• line segment • line • number line • scale • tick mark • plot • label	Draw a number line and label it with 0, 10, 20, 30, …, 90, 100. Estimate the position of 77 on this line.

GEOMETRY (G)	Standard	Core Concepts	Key terms	Examples
MA4.G.1	Identify, describe, and draw rays, right angles, acute angles, obtuse angles and straight angles using appropriate mathematical tools and technology.	• Line segments and rays are points that describe parts of lines, shapes, and solids. • Angles are formed by two intersecting lines or by rays with a common endpoint and are classified by size. • Point, line, and place are the core attributes of space objects, and real-world situations can be used to think about these attributes. • The measure of an angle depends on the fraction of the circle cut off by its rays. • The unit for measuring the size of the opening of an angle is 1 degree. • Angle measure can be added or subtracted.	• line • segment • endpoint • ray • parallel • intersecting lines • perpendicular • angles • vertex • right angle • acute angle • obtuse angle • ruler • protractor	Draw two rays that meet in an obtuse angle.

GEOMETRY (G)	Standard	Core Concepts	Key terms	Examples
MA4.G.2	Identify, describe and draw parallel, perpendicular, and oblique lines using appropriate mathematical tools and technology.	• Line segments and rays are sets of points that describe parts of lines, shapes and solids. • Angles are formed by two intersecting lines or by rays with a common endpoint and are classified by size.	• line • parallel • perpendicular • oblique • ruler • protractor • compass	Use the markings on the gymnasium floor to identify two lines that are parallel. Place a jump rope across the parallel lines and identify any obtuse angles created by the jump rope and the lines.
MA.4.G.3	Identify, describe and draw polygons including: parallelograms, rhombuses, trapezoids, and triangles using appropriate mathematical tools and technology.	• Two-dimensional or plane shapes have many properties that make them different from one another. • Polygons can be described and classified by their sides and angles.	• Polygon • Parallelogram • Rectangle • Square • Rhombus • Trapezoid • Triangle • plane • faces • edges • vertices • two-dimensional	Use a geoboard to make a parallelogram. How do you know it is a parallelogram?

GEOMETRY (G)	Standard	Core Concepts	Key terms	Examples
MA.4.G.4	Identify, describe and draw various triangles: equilateral, isosceles and scalene.	• Two-dimensional or plane shapes have many properties that make them different from one another. • Triangles are 3-sided polygons.	• Triangle • Equilateral triangle • Isosceles triangle • Scalene triangle	Use a geoboard to make an equilateral triangle. How do you know it is an equilateral triangle?
MA.4.G.5	Identify congruent quadrilaterals and give reasons for congruence using sides, angles, parallels and perpendiculars.	• Two-dimensional or plane shapes have many properties that make them different from one another. • Quadrilaterals are 4-sided polygons. • Congruent means same shape and same size; similar means same shape and different size.	• congruent • similar • quadrilateral • side • angle • parallel • perpendicular	In a collection of parallelograms, rhombuses, and trapezoids, pick out those that are the same shape and size and explain your decision.
MA.4.G.6	Identify and draw lines of symmetry in polygons.	• Some shapes can be reflected across one or more lines passing through the shape so the shape folds into itself. • This is called the line of symmetry.	• Line of symmetry • Polygon	Draw a rectangle and then draw all its lines of symmetry.

GEOMETRY (G)	Standard	Core Concepts	Key terms	Examples
MA.4.G.7	Construct cubes and prisms and describe their attributes, using appropriate mathematical tools and technology.	• Three-dimensional shapes, or solids, have 3-dimensions (width, depth, and height). • Solids have properties that plane (2-dimensional) shapes do not have, such as volume and surface area.	• cube • prism • 3-dimensional • attribute • volume • surface area	Make a 6-sided prism from construction paper.

MEASUREMENT (M)	Standard	Core Concepts	Key terms	Examples
MA.4.M.1	Measure length to the nearest quarter-inch, eighth-inch, and millimeter.	• Some attributes of objects are measurable and can be quantified using unit amounts. • Length can be estimated and measured in different systems (U.S. Customary and Metric) and using different units in each system that are related to one another.	• scale • fraction • inch • half-inch • quarter-inch • eighth-inch	Measure the width of a sheet of paper to the nearest millimeter.
MA.4.M.2	Subtract units of length that may require renaming of feet to inches or meters to centimeters.	• Relationships between customary measurement units can be expressed as a function (12 inches to 1 foot). • Relationships between metric measurement units can be expressed as a function (100 centimeters to 1 meter).	• convert • feet • inch • meter • centimeter	The shelf was 2 feet long. Jane shortened it by 8 inches. How long is the shelf now?

MEASUREMENT (M)	Standard	Core Concepts	Key terms	Examples
MA.4.M.3	Know and use formulas for finding the perimeters of rectangles and squares in U.S. standard and metric units	• Some problems can be solved by applying the formula for the perimeter of a rectangle. • The perimeter is the length of the outline of a shape. • To find the perimeter of a rectangle or square add the lengths of all the four sides • Making an array with place-value blocks or area model provide ways to visualize and find sums and products.	• formula • perimeter • length • width • rectangle • square • U.S. Standard measure • Metric measure	The length of a rectangle is 4 cm and its perimeter is 20 cm. What is the width of the rectangle?
MA.4.M.4	Know and use formulas for finding the areas of rectangles and squares in U.S. standard and metric units.	• Some problems can be solved by applying the formula for the area of a rectangle. • The perimeter is the length of the outline of a shape. • To find the perimeter of a rectangle or square add the lengths of all the four sides	• formula • area • length • width • array • rectangle • square	Draw a rectangle 5 inches by 3 inches. Divide it into one-inch squares and count the squares to find its area. Can you see another way to find the area? Do this with other rectangles.

MEASUREMENT (M)	Standard	Core Concepts	Key terms	Examples
MA.4.M.5	Estimate and calculate the area of rectangular shapes by using appropriate units, such as square centimeter (cm^2) square meter (m^2), square inch (in^2), or square yard (yd^2).	• Some problems can be solved by applying the formula for the area of a rectangle. The perimeter is the length of the outline of a shape. • To find the perimeter of a rectangle or square add the lengths of all the four sides	• area • length • width • squared	Measure the length and width of a basketball court and find its area in suitable units.
MA.4.M.6	Understand that rectangles with the same area can have different perimeters and that rectangles with the same perimeter can have different area	• Area is the 2-dimensional space or region occupied by a closed figure (the space inside the lines). • Perimeter is the distance around a closed figure (the length of the boundary). • Two shapes may have the same perimeter but different areas, or may have the same area, but different perimeters	• area • perimeter • length • width • array	Make a rectangle of area 12 units on a geoboard and find its perimeter. Can you make other rectangles with the same area? What are their perimeters?

MEASUREMENT (M)	Standard	Core Concepts	Key terms	Examples
MA.4.M.7	Find areas of shapes by dividing them into basic shapes such as rectangles and triangles.	• Some shapes are made up of more than a single shape. • To calculate the area of such shapes, we divide them into single, basic shapes to find the area of each basic shape. • We can then add the areas of each of the single shapes together.	• area • rectangle • square • length • width	Find the area of your school building.
MA.4.M.8	Use volume and capacity as different ways of measuring the space inside a shape in U.S. standard and metric units	• Capacity is a measure of the amount of liquid a container can hold. • Capacity can be measured in different systems (U.S. Customary or Metric), and using different units that are related to each other.	• volume • capacity • ounce • cup • pint • quart • gallon • milliliter • liter	Use cubes to find the volume of a fish tank and a pint jug to find its capacity.
MA.4.M.9	Add time intervals involving hours and minutes.	• Time can be expressed using different units that are related to each other.	• hours • minutes • clock-wise • counter clock-wise • elapsed time	During the school week, you have 5 recess periods of 15 minutes each. Find how long that is in hours and minutes.

MEASUREMENT (M)	Standard	Core Concepts	Key terms	Examples
MA.4.M.10	Determine the amount of change from a purchase.	• Recognizing coin denomination and value, and calculating money accurately is a life skill. • Dollar amounts are based on whole number representation and are listed to the left of the decimal point. • Amounts to the right of the decimal represent a part of a whole dollar. • Efficiently making change means using the fewest possible coins and bills.	• dollar sign • cent sign • change • decimal	You buy a chocolate bar priced at $1.75. How much change do you get if you pay for it with a five-dollar bill? Resource: http://www.mathplayground.com/making_change.html

MEASUREMENT (M)	Standard	Core Concepts	Key terms	Examples
MA.4.M.11	Determine the start time, elapsed time, and end times using hours and half hours.	• Add or subtract the hours and minutes separately. • There are 60 minutes in one hour; and 24 hours in one day. • Time from midnight to noon is a.m. (Latin meaning "before noon") • Time from noon to midnight is p.m. (Latin meaning "after noon")	• scale • hours • minutes • clock-wise • counter clock-wise • elapsed time • a.m. • p.m. • noon • midnight • hour hand • minute hand • half hour • quarter hour • digital clock • analog clock	Your class starts at 9:00 a.m. and ends at 9:30 a.m. How long is your class?
MA.4.M.12	Measure and compare temperatures in Celsius and Fahrenheit	• Temperature is a measure of heat of a given area. • A thermometer is a tool used to measure the degree of temperature. • Temperature can be measured in different systems (U.S. Customary and Metric).	• temperature • thermometer • scale • tick marks • degrees • Celsius • Fahrenheit • compare	Use a thermometer to measure and record the temperature in both Celsius and Fahrenheit.

DATA ANALYSIS AND PROBABILITY (DP)	Standard	Core Concepts	Key terms	Examples
MA.4.DP.1	Represent data on a number line and in tables, including frequency tables.	• Data is information. • Data can be displayed and interpreted through a variety of pictorial representations, known as graphs. • Different types of graphs are used to display information.	• represent • data • number line • table • frequency table • line plot	The students in your class are growing plants in various parts of the classroom. Plan a survey to measure the height of each plant in centimeters on a certain day. Record your survey results on a line plot.
MA.4.DP.2	Interpret data graphs to answer questions about a situation.	• Some data can be represented using a line plot and the line plot can be used to answer certain questions about the data.		

DATA ANALYSIS AND PROBABILITY (DP)	Standard	Core Concepts	Key terms	Examples
MA.4.DP.3	Summarize and display the results of probability experiments in a clear and organized way.	• Probability means how likely something is to happen. • Many events cannot be predicted with total certainty. The best we can say is how likely they are to happen, using the idea of probability. • Probability of something happening = Number of ways it can Happen/ Total number of outcomes • Results of probability outcomes can be displayed using graphs.	• probability • results • summarize • data • tally • graph • trial • sample space • sample point • event	Roll a number cube 36 times and keep a tally of the number of times that 1, 2,3,4,5, and 6 appear. Draw a bar graph to show your results.