Archdiocese of New York Grade 6 Mathematics Parent Matrix

This parent matrix is intended to be a tool for you as a parent to help support your child's learning. The table below contains all of the Grade 6 Mathematics learning standards. Learning standards describe the knowledge and skills that students should master by the end of Grade 6. Each standard has a specific code. For example, 6.RP.1 stands for "Grade 6 Ratios and Proportional Relationships Standard 1." You will often see these standards referenced on your child's quizzes, worksheets, tests, etc.

You should access the recommended resources in the right hand "Resources" column electronically by clicking on the hyperlinks provided. *However, we suggest that you also download and print this matrix*. You will notice that the column all the way to the left is marked "Parent Notes." You can use this column to take notes on your child's progress. You may wish to check off each standard after you have worked on it with your child.

In Grade 6 Mathematics, there are five main domains of standards. These include Ratios & Proportional Relationships, The Number System, Expressions & Equations, Geometry, and Statistics & Probability. Each category is highlighted in a different color. *Your child's teacher will be able to tell you which standards you should focus on with your child throughout the year*.

We hope that this parent matrix is a valuable resource for you. If you find that you would like additional practice materials to work on you can use the standard codes provided below to search for additional resources.

Ratios & Proportional Relationships	The Number System	Expressions & Equations	Geometry	Statistics & Probability
These standards focus on students' understanding that a ratio represents a relationship between two quantities. They will learn to recognize, produce, and compare ratios.	These standards prompt students to understand the number line – compare numbers, perform the four basic mathematical operations (addition, subtraction, multiplication, division) and recognize and distinguish between rational and irrational numbers.	These standards pertain to students' ability to proficiently solve mathematical expressions (problems) – including ones in which variables such as x, y, and z represent numbers.	These standards require students to examine, describe, produce, and manipulate both 2-D geometric shapes (e.g. triangles, trapezoids, rectangles) and 3-D geometric shapes (e.g. pyramids, cubes). They will learn how to find perimeter, area, and volume of different shapes.	These standards pertain to students' ability to use data (e.g. a list of the ages of the students, tallies of everyone's favorite foods) to answer mathematical questions and find the probability of particular occurrences.

Parent Notes	Standard Code	Standard	What does this standard mean?	What can I do at home?	Resources
	RATIOS & PROPORTIONAL RELATIONSHIPS				
	Ratios and proportional Relationships Grade 6 Standard 1 (6.RP.1)	Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."	A ratio is the comparison of two quantities or measures. The comparison can be part-to-whole (ratio of guppies to all fish in an aquarium) or part-to-part (ratio of guppies to goldfish). Example 1: A comparison of 6 guppies and 9 goldfish could be expressed in any of the following forms: 6/9 , 6 to 9 or 6:9. Students should be able to identify and describe any ratio using "For every _____ ,there are _____" In the example above, the ratio could be expressed saying, "For every 2 goldfish, there are 3 guppies".	Ask your child to express the ratio of kitchen table to chairs: 1 to 4 , ¼ or 1:4. Ask your child to explain the ratio of the kitchen table to chairs using : For every _____ , there are _____."	https://learnzillion.com/lessons/307-translate-words-into-ratios https://www.youtube.com/watch?v=evfNoVHUb9s http://www.commoncoresheets.com/SortedByGrade.php?Sorted=6rp1
	Ratios and proportional Relationships Grade 6 Standard 2 (6.RP.2)	Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is ¾ cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.	A unit rate expresses a ratio as part to one, comparing a quantity in terms of one unit of another quantity. Common unit rates are cost per item or distance per time.	Ask your child to go through a supermarket flyer and pick out the unit rates of various grocery items. For example, "onions are 45 cents per pound," "bananas are 33 cents per pound"	https://www.youtube.com/watch?v=blt87I--z48&list=PLnIkFmW0ticN6e7HXn0uj5dMb4oy58kIg http://www.commoncoresheets.com/SortedByGrade.php?Sorted=6rp2

	Ratios and proportional Relationships Grade 6 Standard 3 (6.RP.3)	Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations. a. Make tables of equivalent ratios relating quantities with whole-number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. b. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent. d. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.	a. Ratios and rates can be used in ratio tables and graphs to solve problems. To begin the shift to proportional reasoning the students need to begin to use multiplicative reasoning. b. Students recognize the use of ratios, unit rate and multiplication in solving problems, which could allow for the use of fractions and decimals. c. This is the students' first introduction to percents. Percentages are a rate per 100. d. A ratio can be used to compare measures of two different types, such as inches per foot, milliliters per liter and centimeters per inch. Students recognize that a conversion factor is a fraction equal to 1, since the numerator and denominator describe the same quantity. For example 12inches/1 foot is a conversion factor since the numerator and denominator describe the same quantity.	Ask your child to explain… how percentages are a rate per 100. For example, if they achieve 90% on a test, that is 90 points out of 100. what a conversion factor does (a fraction that is actually equal to one).	https://www.youtube.com/watch?v=eTRDw2UaQo4 https://www.youtube.com/watch?v=c6Pa34wRVEk

THE NUMBER SYSTEM

Parent Notes	Standard Code	Standard	What does this standard mean?	What can I do at home?	Resources
	The Number System Grade 6 Standard 1 (6.NS.1)	Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.	In 5th grade students divided whole numbers by unit fractions and divided unit fractions by whole numbers. Students continue to develop these concepts by using visual models and equations to divide whole numbers by fractions and fractions by fractions to solve word problems.	Ask your child what the answer is called in division (quotient). Ask your child to solve a word problem that requires them to divide two fractions. For example, there is ½ of a pizza remaining. What will be the size of the piece if it is divided by 4 people (dividing fraction by a whole number)? The answer is 1/8.	https://learnzillion.com/lessonsets/13-divide-fractions-by-fractions
	The Number System Grade 6 Standard 2 (6.NS.2)	Fluently divide multi-digit numbers using the standard algorithm	In this grade students become fluent in the use of the standard division algorithm and continue to use their understanding of place value to describe what they are doing. This standard is the end of the progression to address students' understanding of place value.	Ask your child to divide a four-digit number by a two-digit number. Be sure that they keep their numbers neatly aligned during the subtraction part of the process. If they do not carefully place their numbers this can contribute to mistakes.	https://www.youtube.com/watch?v=GhBrgpFyGSc https://learnzillion.com/lessonsets/368-divide-multi-digit-numbers-using-the-standard-algorithm

	The Number System Grade 6 Standard 3 (6.NS.3)	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	Procedural fluency is defined as "skill in carrying out procedures flexibly, accurately, efficiently, and appropriately". At the elementary level these operations were based on concrete models or drawings and strategies based on place value, properties of operations, and or the relationship between addition and subtraction. In the 6th grade, students become fluent in the use of the standard algorithms of each of these operations.	Ask your child to add, subtract, multiply, and divide decimals. Ensure your child is mindful of the position of the numbers while performing the operation. For example. The decimal points should be aligned under one another when doing addition and subtraction.	https://learnzillion.com/lessonsets/403-perform-operations-with-decimals-using-the-standard-algorithm https://www.youtube.com/watch?v=93dbsqs7ICc
	The Number System Grade 6 Standard 4 (6.NS.4)	Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express 36 + 8 as 4 (9 + 2).	Students find the greatest common factor of two whole numbers less than or equal to 100. For example, the greatest common factor of 40 and 16 can be found by listing the factors of 40 (1,2,4,5,8,10,20,40) and 16 (1,2,4,8,16) then taking the greatest factor shared by both which is 8.	Ask your child to explain to you what the Greatest Common Factor is (GCF). It is the greatest factor that is common to both numbers or more than two numbers. Ask your child to explain to you how this is different from the least common multiple (LCM)	https://learnzillion.com/lessons/2721-find-the-gcf-of-two-numbers-using-the-distributive-property

	The Number System Grade 6 Standard 5 (6.NS.5)	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.	Students use rational numbers (fractions, decimals, and integers) to represent real world contexts and understand the meaning of 0 in each situation.	Ask your child to tell you if they would wear a coat or shorts when the temperature is currently at 70 degrees and drops 40 degrees. (It would be 30 degrees, so a coat would be needed.)	https://www.youtube.com/watch?v=BfAStLWOR-I https://www.youtube.com/watch?v=rhj98Fppyzc

| | The Number System Grade 6 Standard 6 (6.NS.6) | Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates. a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite. b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes. c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other | In elementary schools, students worked with positive fractions, decimals and whole numbers on the number line and in quadrant 1 of the coordinate plane. In 6th grade, students extend the number line to represent all rational numbers and recognize that number lines may be horizontal or vertical (i.e. Thermometers) which facilitates the movement from number lines to coordinate grids. Students recognize that a number and its opposite are the same distance from 0. The opposite sign (-) shifts the number to the opposite side of 0. For example, -4 could be read as "the opposite of 4" which would be negative 4. Zero is its own opposite. | Ask your child to tell you the coordinates of various points that you position onto a coordinate plane. The use of coordinates is very similar to the game "Battleship" where you use two coordinates to identify the location of a ship on a grid. The first point in a coordinate is along the x (horizontal) axis and the second number is along the y(vertical) axis. The location where these two axes cross is at zero, which is referred to as the origin. It has coordinates of (0,0) | https://www.youtube.com/watch?v=OpI3Dr9x-ko&list=PLnIkFmW0ticOJA5kH6oRmKDHEJ8Xfxgti

https://www.youtube.com/watch?v=I5aYlHrpfV8&list=PLnIkFmW0ticPPe6F0yU94lsi4cr_GmOTI |

| | The Number System Grade 6 Standard 7 (6.NS.7) | Understand ordering and absolute value of rational numbers.
 a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret –3 > –7 as a statement that –3 is located to the right of –7 on a number line oriented from left to right.
 b. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write –3 o C > –7 o C to express the fact that –3 o C is warmer than –7 o C. c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of –30 dollars, write \|–30\| = 30 to describe the size of the debt in dollars.
 d. Distinguish comparisons of | a. Students use inequalities to express the relationship between two rational numbers, understanding that the value of numbers is smaller moving to the left on a number line. Students should know larger numbers are to the right(horizontal) or top (vertical) of the number line and smaller numbers to the left (horizontal) or bottom(vertical) of the number line.
b. Students can write statements using > or < to compare rational numbers in context.
c. Students understand absolute value as the distance from 0 and recognize the symbols that represent absolute value (double straight bars around the number)
d. When working with positive numbers, the number and the absolute value (the distance from zero) are the same. As the size of a negative number increases (moves; to the left of the number line), the value of the number decreases. | Ask your child to explain what the symbols greater than (>) and less than (<) mean in a numeric sentences .

For example, -2 is less than -1 can be written as
 -2 <-1.

Ask your child to explain what absolute value is in their own words (the "distance " a number is from 0, regardless of whether it is a positive or negative number. For example, the absolute value of -2 is 2 because it is 2 units from zero. The absolute value of 2 is 2 because it is also 2 units from 0. | https://learnzillion.com/lessonsets/191-understand-and-interpret-absolute-value-and-distinguishing-comparisons-of-absolute-value-from-statements-about-order |

	The Number System Grade 6 Standard 8 (6.NS.8)	Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.	Students find the difference between two points when ordered pairs have the same vertical (x coordinate) or the same horizontal(y coordinate)	Ask your child to plot several points, one in each of the four quadrants of the coordinate plane. Have them read the coordinates of these points to you.	https://www.youtube.com/watch?v=OYnzYgoQOIg&list=PLnIkFmW0ticNk5GPHEWd-rh5jfepVBUTL

EXPRESSIONS & EQUATIONS

Parent Notes	Standard Code	Standard	What does this standard mean?	What can I do at home?	Resources
	Expressions and Equations Grade 6 Standard 1 (6.EE.1)	Write and evaluate numerical expressions involving whole-number exponents.	Students demonstrate the meaning of exponents to write and evaluate numerical expressions with whole number exponents.	Ask your child to identify the exponents in the following expression: $5^2 + 3x^4 + 8^3$ (The exponents are 2, 4, and 3).	https://learnzillion.com/lessons/461-evaluate-numerical-expressions-by-using-whole-number-exponents https://www.youtube.com/watch?v=FNY2TyIzXQ

Expressions and Equations Grade 6 Standard 2 (6.EE.2)	Write, read, and evaluate expressions in which letters stand for numbers. a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation "Subtract y from 5" as 5 – y. b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression 2 (8 + 7) as a product of two factors; view (8 + 7) as both a single entity and a sum of two terms. c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify	Students write expressions from verbal descriptions using letters and numbers, understanding that order is important in writing subtraction and division problems. The expression " 5 times any number, n" could be represented with 5n and a number and a letter together means to multiply. The variable, n, could represent any number. b. Students can describe expressions such as 3(2+6) as the product of two factors: 3 and (2+6).the quantity (2+6) is viewed as one factor consisting of two terms. Terms are the parts of a sum. When the term is a number, it is called a constant. When the term is a product of a number and a variable, the number is called the coefficient of the variable. c. Students evaluate algebraic expressions using order of operations using exponents as needed. For example, evaluate the expression 3x + 2y when x is equal to 4 and y is equal to 2.4 The answer is 16.8	Ask your child to write an expression for… 8 less than n (n-8) 5 more than y (5+y) 4 times n (4n)	https://www.youtube.com/watch?v=UPAhKwO9FPs https://www.youtube.com/watch?v=cNsVILErh0M&list=PLnIkFmW0ticPCGu-khUNJ5OI4OHx-Y696 https://www.youtube.com/watch?v=iSzub1jX2Sk

	Expressions and Equations Grade 6 Standard 3 (6.EE.3)	Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression 3 (2 + x) to produce the equivalent expression 6 + 3x; apply the distributive property to the expression 24x + 18y to produce the equivalent expression 6 (4x + 3y); apply properties of operations to y + y + y to produce the equivalent expression 3y.	Students use the distributive property to write equivalent expressions. Properties were introduced in the earlier grades but in this grade must now know the names of the properties that are being used such as associative, distributive, commutative.	Ask your child to apply the distributive property to the following expression 5(3n +7). They distribute the 5 to the 3n by multiplication which is 15n and then they distribute the 5 to the 7 by multiplying which is 35. So the answer is 15n+35.	https:// www.youtube.com/ watch?v=yrsvFRb3Pao https:// www.youtube.com/ watch?v=II6WYbj2uzI
	Expressions and Equations Grade 6 Standard 4 (6.EE.4)	Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions y + y + y and 3y are equivalent because they name the same number regardless of which number y stands for.	Students understand that quantities that are like terms can be added or subtracted with the same variables and exponents. For example, 3x+4x are like terms and can be combined as 7x.; however, $3x + 4x^2$ are unlike terms that cannot be combined because the exponents with the x are not the same.	Ask your child to explain what it means to combine like terms (adding constants, adding terms with like variables raised to the same exponents)	https:// www.youtube.com/ watch? v=epfijSwVROQ&list= PLnIkFmW0ticNMii0pS OMh3UXOxjwYWeZ9

	Expressions and Equations Grade 6 Standard 5 (6.EE.5)	Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true.	Students are exploring equations as expressions being set equal to a specific value. The solution is the value of the variable that will make the equation true. For example, Joey had 26 on his desk. His teacher gave him some more and now he has 100. How many papers did his teacher give him? This situation can be represented by the equation 26+n=100 where n is the number of papers the teacher gives to Joey. This equation can be stated as "some number was added to 26 and the result was 100". Students ask themselves "What number was added to 26 to get 100?" to help them determine the value of the variable that makes the equation true. Different strategies can be used to find a solution to the problem.	Ask your child to explain to you what an inequality is and how it is different from an equation. (An equation has one solution whereas an inequality may have more than one solution)	https://www.youtube.com/watch?v=l2VNCnXve-U
	Expressions and Equations Grade 6 Standard 6 (6.EE.6)	Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.	Students write expressions to represent various real world settings. For example, write an expression to represent Sara's age in 3 years when a represents her age (a +3).	Ask your child to write an expression to represent the number of wheels, w, on any number of bikes. For example, 4 bikes. The answer is 2n where 2 stands for the number of wheels on a bike and n stands for the number of bikes.	https://learnzillion.com/lessonsets/556

	Expressions and Equations Grade 6 Standard 7 (6.EE.7)	Solve real-world and mathematical problems by writing and solving equations of the form x + p = q and px = q for cases in which p, q and x are all nonnegative rational numbers.	Students are now being asked to find the value of a variable when the outcome is known. For example, Meghan spent $56.58 on three pairs of jeans. If each jean costs the same, how many pairs of jeans did she purchase? The answer is 56.58 divided by 3 which is $18.86	Ask your child to solve the following equations for x
				   5x = 25
				   X =5
				(both sides get divided by 5)
				
				   7x=49
				   X=7
				(both sides get divided by 7)
					https://learnzillion.com/lessonsets/269

	Expressions and Equations Grade 6 Standard 8 (6.EE.8)	Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.	Students use a number line to represent real world and mathematical solutions, especially inequalities to represent real and mathematical solutions. For example, a class must raise at least $100 to go on a field trip. They have $20 already. Write an inequality to represent the money, m, the class still needs to raise for the trip.	Ask your child to write the following statement as an inequality: All the children in the room are older than 7 years old where x stands for the number of children x>7	https://learnzillion.com/lessonsets/310

| Expressions and Equations Grade 6 Standard 9 (6.EE.9) | Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation d = 65t to represent the relationship between distance and time. | The purpose of this standard is for students to understand the relationship between two variables. This begins with knowing the difference between a dependent and an independent variable. The independent variable is the one that can be changed. The dependent variable is the variable affected by the change in the independent variable. The independent variable is graphed on the x axis, whereas the dependent variable is graphed on the y axis | Ask your child to find the relationship between two variables in the chart below:

X   1   2   3   4
Y   2.5   5   7.5   10

Solution is
  Y= 2.5 X | https://www.youtube.com/watch?v=Kpb_FrHYokE |

GEOMETRY

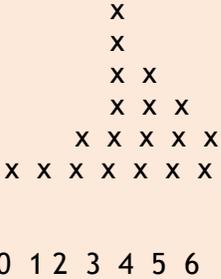| Parent Notes	Standard Code	Standard	What does this standard mean?	What can I do at home?	Resources
	Geometry Grade 6 Standard 1 (6.G.1)	Find the area of right triangles, other triangles, special quadrilaterals, and polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.	Students still continue to understand area as the number of squares needed to cover a plane figure. They should know the formulas for quadrilaterals and triangles so that they can decompose more complex shapes composed of these figures to calculate area. Students should also recognize that slashed lines through the side of a triangle indicate sides with the same length.	Ask your child to find the area of a right triangle with a base of 3 units, a height of four units and a hypotenuse (the longest side opposite the right angle) of 5. Height Hypotenuse Base A=1/2bh A=1/2 (3)(4) A=1/2 (12) A= 6 units	https://www.youtube.com/watch?v=nR919imEGxo

	Geometry Grade 6 Standard 2 (6.G.2)	Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas V = l w h and V = b h to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	Previously students calculated volume using whole numbers. Now, they use fractional edge lengths to do the same calculations. This requires that students be comfortable with multiplying and dividing fractions learned in prior years.	Ask your child to find the volume of a rectangular prism having sides with the length of 1 ¼ in, 1 in., and 1 ½ in. the answer is 120/64 = 1 56/64	https://www.youtube.com/watch?v=LXVEEouCVg4&list=PLnIkFmW0ticMeDHCHOzQ8VbnJwFwzEETV http://illuminations.nctm.org/ActivityDetail.aspx?ID=6
	Geometry Grade 6 Standard 3 (6.G.3)	Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems.	Students are given the coordinates of a polygon (a multi sided figure) to draw in the coordinate plane. When both x coordinates are the same, a vertical line is created and the distance between these coordinates is the difference between the two "x" numbers. For example, Given the coordinates (-5,4) and (2,4) the distance between the two points is the distance between -5 and 2, which is 7.	Ask your child to plot the coordinates for a square using all four quadrants of the coordinate plane. Then challenge them to tell you the length of a side. Once determined, have them calculate the perimeter (distance around all four sides) and the area (square units)	https://www.youtube.com/watch?v=4bFowyMCGqo

Parent Notes	Standard Code	Standard	What does this standard mean?	What can I do at home?	Resources
	Geometry Grade 6 Standard 4 (6.G.4)	Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.	A net is a two dimensional representation of a three dimensional object. Students represent three-dimensional figures whose nets are composed of rectangles and triangles. Students should recognize that parallel lines on a net are congruent (equal) Using the dimensions of the net, students can calculate the area of each rectangle and/or triangle and add these sums together to arrive at the surface area of the figure.	Ask your child to describe the faces needed to construct a rectangular pyramid. Allow them to cut out the shapes and create a model. Did the faces work? Why or why not? Ask your child to create the net for a pyramid with a square base of 6 meters and a height of 4 meters. Use the net to calculate the volume . The net is shown below. 4 meters 6 meters	https://www.youtube.com/watch?v=QPy6HvaSIxU&list=PLnIkFmW0ticPuWYGxtBqszq8Q22P0MG02&index=1 https://www.youtube.com/watch?v=JTNt8kbePA4&index=2&list=PLnIkFmW0ticPuWYGxtBqszq8Q22P0MG02 http://illuminations.nctm.org/ActivityDetail.aspx?ID=205

STATISTICS & PROBABILITY

Parent Notes	Standard Code	Standard	What does this standard mean?	What can I do at home?	Resources

	Statistics and Probability Grade 6 Standard 1 (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. For example, "How old am I?" is not a statistical question, but "How old are the students in my school?" is a statistical question because one anticipates variability in students' ages.	Statistics are numerical data relating to a group of individuals; statistics is also the name of the science of collecting, analyzing and interpreting such data. A statistical question anticipates an answer that varies from one individual to the next and is written to account for the variability in the data. Data are the numbers produced in response to a statistical question. Data are collected from surveys or other sources (documents)	Ask your child to explain, in their own words, what statistics are. Ask your child if the question "how tall am I?" is a statistical question. It is not because there is only one response; however, the question "How tall are the students in your class?" is a statistical question since the response anticipates variability by providing a range of answers	https://www.youtube.com/watch?v=DvOBAr7wk-U https://www.youtube.com/watch?v=7T6alC3Pkb8

	Statistics and Probability Grade 6 Standard 2 (6.SP.2)	Understand that a set of data collected to answer a statistical question has a distribution that can be described by its center, spread, and overall shape.	The distribution of data is the arrangement of the values of a data set. Distribution can be described using center (median or mean), and spread. Data can be collected on graphs, which will show the shape of the distribution of the data.	Ask your child to describe a set of data that is collected about the scores of children in their classroom. Describe the data.
				The values range from 0 to 6. There is a peak at 3 and the median is 3. That means half the scores are greater than 3 and half are greater than 3
				
				         x
				         x
				        x x
				       x x x
				     x x x x x
				   x x x x x x x
				
				  0 1 2 3 4 5 6
					https://www.youtube.com/watch?v=tPmJzrzlEHw&list=PLnIkFmW0ticMG9urjT2exiZNpUsROrZws&index=1
					
					https://www.youtube.com/watch?v=2iNWBpjw3ec&index=2&list=PLnIkFmW0ticMG9urjT2exiZNpUsROrZws

Statistics and Probability Grade 6 Standard 3 (6.SP.3)	Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.	Data sets contain many numerical values that can be summarized by one number such as a measure of center. The measure of center gives a numerical value to represent the center of the data (midpoint of an ordered list or the balancing point) another characteristic is the variability (spread) of the values.	x x x x x x x x x x x x x x x x x x x 0 1 2 3 4 5 6 18 students are displayed on this dot plot. The median is 3 (50% above this score and 50% below this score). The range is 6 (distance between highest and lowest score)	https://www.youtube.com/watch?v=--CXywpkUBs

| | Statistics and Probability Grade 6 Standard 4 (6.SP.4) | Display numerical data in plots on a number line, including dot plots, histograms, and box plots. | Students display data graphically using a number line. Dot plots, histograms, and box plots are three graphs to be used. Students are expected to determine which graph is appropriate as well as to read graphs created by others. Dot plots are simple plots on a number line where each dot represents a piece of data in the data set. Dot plots are suitable for small to moderate sized data sets and are useful for highlighting the distribution of data including clusters, gaps, and outliers. A histogram shows the distribution of continuous data using intervals on the number line. The height of each bar represents the number of data values in that interval. A box plot shows the distribution of values in a data set by dividing the set into quartiles. It can be graphed either vertically or horizontally. The box plot is constructed from the five number summary (minimum, lower quartile, median, upper quartile, and maximum) | Ask your child to describe the three different types of graphs in their own words. Ask your child to show you an example of each graph type. | https://www.youtube.com/watch?v=0CjaU4Dm-CE http://illuminations.nctm.org/ActivityDetail.aspx?ID=77 http://illuminations.nctm.org/ActvitiyDetail.aspx?ID=78 |

| | Statistics and Probability Grade 6 Standard 5 (6.SP.5) | Summarize numerical data sets in relation to their context, such as by: a. Reporting the number of observations. b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. | Students summarize numerical data by providing background information about attributes being measured, methods , and units of measurement, the context of data collection activities, the number of observations, and summary statistics. Summary statistics include quantitative measures of center (median and mean) and variability (inter quartile range and mean absolute deviation) including extreme values (minimum and maximum), mean, median, mode, range, and quartiles. Students also use the concept of mean to solve problems. They are given a set of data and asked to calculate the mean and are also asked to find a missing data point that produces a specific average. | Ask your child to find the average of the following numbers:

5, 10, 15, 20,25, 30
(The average is 21. Add them up and divide by the number in the group, which is 5. So 105 is divided by 5 giving you a mean of 21)

Ask your child to find the missing score on Project 4 if the average of the scores is 17 and the other 3 scores are: 18,15, and 16.(The missing score is 19). The reason is that the average score of 17 was derived from 4 scores or 4 x 17 or 68. There are already 49 points on the first three projects so another 19 are needed to equal 68. To check the answer, divide 68 by 4 and you arrive at 17. | https://www.youtube.com/watch?v=o_OjtxvMMmA |