Archdiocese of New York Grade 8 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 8 Mathematics learning standards. Learning standards describe the knowledge and skills that students should master by the end of Grade 8. Each standard has a specific code. For example, 8.NS.1 stands for "Grade 8 The Number System 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 8 Mathematics, there are five main domains of standards. These include The Number System, Expressions & Equations, Functions, 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.

The Number System	Expressions & Equations	Functions	Geometry	Statistics & Probability
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 focus on students' understanding that a function is a mathematical rule that assigns exactly one outcome (number and/or variable) to each input (number and/or variable). For example, if the rule is *+2* and the input is *1*, the outcome would be *3*.	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.

THE NUMBER SYSTEM					
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**
	The Number System Grade 8 Standard 1 (8.NS.1)	Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion, which repeats eventually into a rational number. An irrational number cannot be written as a simple fraction. For example, pi is an irrational number.	Real numbers are either rational or irrational. A rational number is any number that can be expressed as a fraction. Rational numbers include integers and whole numbers. Students should also be aware that the decimal equivalent of a fraction will either terminate or repeat. Fractions that terminate will have denominators containing only prime factors of 2 and/or 5	Ask your child to convert 4/9 to a decimal. Ask your child to tell you the difference between a repeating decimal and a terminal decimal number.	https://www.youtube.com/watch?v=hK263W0c-J0 https://www.youtube.com/watch?v=bDb45WGdvjo https://www.youtube.com/watch?v=f2THDeH08mM

	The Number System Grade 8 Standard 2 (8.NS.2)	Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π 2). For example, by truncating the decimal expansion of √2, show that √2 is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.	Students locate rational and irrational numbers on the number line. Students compare and order rational and irrational numbers.	Ask your child to compare √2 and √3. (Statements could include that: these two numbers are between the whole numbers 1 and 2: √2 is less than √3)	https://www.youtube.com/watch?v=E_tMlc7T4vs https://www.youtube.com/watch?v=dt1bG0OtF4I https://www.youtube.com/watch?v=tulOPmrGFJA
EXPRESSIONS AND EQUATIONS					
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**

	Expressions and Equations Grade 8 Standard 1 (8.EE.1)	Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $32 \times 3^{-5} = 3^{-3} = 1/33 = 1/27$.	In 6th grade, students wrote and evaluated simple numerical expressions with whole number exponents (i.e. $5^3 = 5 \times 5 \times 5 = 125$). Integer (positive and negative) exponents are further developed to generate equivalent numerical expressions when multiplying, dividing or raising a power to a power. Using numerical bases and the laws of exponents, students generate equivalent expressions. Bases must be the same before exponents can be added or subtracted or multiplied. Exponents are subtracted when like bases are being divided. A number raised to the zero power is always 1. Exponents are added when like bases are being multiplied. Exponents are multiplied when they are raised to an exponent	Ask your child to simplify the following $\frac{2^3}{5^2} = \frac{8}{25}$ $6^0 = 1$ $(3^2)(3^4) = 3^6 = 729$	https://www.youtube.com/watch?v=VF21brDo0-4 https://www.youtube.com/watch?v=etuH2w33BFw
	Expressions and Equations Grade 8 Standard 2 (8.EE.2)	Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational.	Students recognize perfect squares and cubes, understanding that non-perfect squares and non-perfect cubes are irrational. Taking the square root of a number and squaring a number are inverse operations.	Ask your child to solve the following $X^2 = 25$ The solution is that x is ± 5. There are two solutions because 5 x 5 is 25 and -5 x -5 is also 25.	https://www.youtube.com/watch?v=-Tgqhhkd-BA https://www.youtube.com/watch?v=lZDAd_YzwfE

	Expressions and Equations Grade 8 Standard 3 (8.EE.3)	Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3 × 10^8 and the population of the world as 7 × 10^9 , and determine that the world population is more than 20 times larger.	Students use scientific notation to express very large or very small numbers. Students compare and interpret scientific notation quantities in the context of the situation, recognizing that if the exponent increases by one, the value increases by 10. Likewise, if the exponent decreases by one, the value decreases 10 times. Students solve problems using scientific notation in addition, subtraction or multiplication.	Ask your child to write 75,000,000,000 in scientific notation. 7.5 x 10^{10} Write 0.0000429 in scientific notation 4.29 x 10^{-5} Express 2.45 x 10^5 in standard form 245,000 Which is the larger value ? 2 x 10^6 or 9 x 10^5 The first number because the exponent is larger	https://www.youtube.com/watch?v=sZy0h9aMTCM https://www.youtube.com/watch?v=nFlvGOs1nh0 https://www.youtube.com/watch?v=T7i9IlBv5Tw
	Expressions and Equations Grade 8 Standard 4 (8.EE.4)	Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology.	Students add or subtract with scientific notation as generated on calculators using E or EE(scientific notation), * (multiplication) and ^(exponent symbols	Ask your child to use the law of exponents to multiply or divide numbers written in scientific notation, writing the product or quotient in proper scientific notation. For example: (6.45 x 10^{11})(3.2 x $10^{4)}$ The answer is 2.064 x 10^{16} (0.0025)(5.2 x $10^{4)}$= 1.3 x 10^3	https://www.youtube.com/watch?v=SbDt-E7q0gI https://www.youtube.com/watch?v=__2ULQZ7DGc https://www.youtube.com/watch?v=JVvB7IhHfG4

	Expressions and Equations Grade 8 Standard 5 (8.EE.5)	Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance time equation to determine which of two moving objects has greater speed.	Students build on their work with unit rates from 6th grade and proportional relationships in 7th grade to compare graphs, tables, and equations of proportional relationships. Students identify the unit rate (slope) in graphs, tables, and equations to compare two proportional relationships represented in two different ways.	Ask your child to tell you another name for the unit rate that is the coefficient of x in the equation of a line (slope) Ask your child to compare two lines and to identify which line has the larger slope (the coefficient of x will be larger)	https://www.youtube.com/watch?v=oO_1uH8H2Vg https://www.youtube.com/watch?v=47BVZyZyF8A https://www.youtube.com/watch?v=QNQfSFRAkbE
	Expressions and Equations Grade 8 Standard 6 (8.EE.6)	Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.	Triangles are similar when there is a constant rate of proportionality between them. Using a graph, students construct triangles between two points on a line and compare the sides to understand that the slope (ratio of rise to run) is the same between any two points on a line.	Ask your child to write an equation for a line and to graph it on a coordinate plane. Ask your child what b stands for in the general equation of a line which is y=mx + b (b is the y intercept; the point where the line crosses the y axis)	https://www.youtube.com/watch?v=Ep1G6Qsqocg https://www.youtube.com/watch?v=Tjb8z3F0Ogw https://www.youtube.com/watch?v=YabvLZo7DGc

	Expressions and Equations Grade 8 Standard 7 (8.EE.7)	Solve linear equations in one variable. a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.	Students solve one variable equations including those with variables on both sides of the equal sign. Students recognize that the solution to the equation is the value(s) of the variable that makes a true equality when substituted back into the equation.	Ask your child to solve the following equations 10X – 23 = 29-3X The answer X =4 (combine like terms)	https://www.youtube.com/watch?v=wXIjonoPS9I https://www.youtube.com/watch?v=QUcYz6dpdXE https://www.youtube.com/watch?v=VWQ9Ioo7yv0

	Expressions and Equations Grade 8 Standard 8 (8.EE.8)	Analyze and solve pairs of simultaneous linear equations. a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6. c. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.	Systems of linear equations can have one solution (answer), many solutions, or no solution. Students discover these cases as they graph systems (more than one) of linear equations and solve them algebraically. When students graph a system of two linear equations, the ordered pair of the point of intersection is the x value that will generate the y value for both equations. A system of two parallel lines (same slope) will have no points of intersection, or no solution.	Ask your child to solve the following Victor is half as old as Maria. The sum of their ages is 54. How old is Victor? v=Victor's age m =Maria's age v + m =54 v = ½ m Substitute ½ m into the top equation and you get ½ m + m =54 1 ½ m = 54 m = 36 Maria is 36 and Victor is ½ the age of Maria, which is 18.	https:// www.youtube.com/ watch?v=t7tbGWJvugU

FUNCTIONS					
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**
	Functions Grade 8 Standard 1 (8.F.1)	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. Function notation is not required in Grade 8.	Students understand rules that take x as input and give y as output is a function. To each input there is only one output. Functions occur when there is exactly one y value associated with any x value. Students can identify functions from equations, graphs, and tables/ ordered pairs. A vertical line tests may be used on a graph of a relationship to see if it is a function. For example, a circle would not be a function.	Ask your child to tell you if y=x is a function (yes it is) Ask your child to tell you if $Y=x^2+3x+4$ is a function (yes it is) Ask your child to tell you if $x^2 + y^2 =25$ is a function (no it is not) Ask your child to explain what a function is using their own words.	https://www.youtube.com/watch?v=bnO1uNVTrUU

	Functions Grade 8 Standard 2 (8.F.2)	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	Students compare two functions from different representations .	Ask your child to compare the following two functions and tell you which has the greater rate of change. Function 1: y =2x + 4 Function 2 X Y -1 -6 0 -3 2 3 Answer: the rate of change for function 1 is 2; the rate of change for function 2 is 3. Function 2 has the greater rate of change.	https:// www.youtube.com/ watch?v=6AjBsO4qsww
	Functions Grade 8 Standard 3 (8.F.3)	Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A = s^2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.	Students understand that linear functions have a constant rate of change between any two points. They use equations, graphs, and tables to categorize functions as linear or non-linear. The graph of a linear equation will be a straight line.	Ask your child to tell you which of these functions are linear: a. $Y = -2x^2 + 3$ b. Y = 0.25 +).5 (X-2) A = π r2 a. Non-linear b. Linear c. Non-linear	https:// www.youtube.com/ watch?v=Sl-W4VaFv78

	Functions Grade 8 Standard 4 (8.F.4)	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.	Students identify the rate of change (the slope) and initial value (y intercept) from tables, graphs, equations, or verbal descriptions to write a function (a linear equation). Students should understand that the equation represents the relationship between the x and the y values. They should be able to find the y value when given the x value of the equation. Using graphs, students identify the y intercept as the point where the line crosses the y-axis and the slope as the rise over the run.	Ask your child to write an equation that models the linear relationship in the table below X Y -2 8 0 2 1 -1 The equation would be: Y= -3x + 2	https://www.youtube.com/watch?v=sR1zVPTAMU0

	Functions Grade 8 Standard 5 (8.F.5)	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.	Given a verbal description of a situation, students can sketch a graph to model the situation. Given a graph of a situation, students can provide a verbal description of the situation.	Ask your child to look at a graph and describe the graphed situation below in his/her own words. x y (The graph is non-linear and decreasing.)	https://www.youtube.com/watch?v=3oVuEAlHKHY

GEOMETRY					
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**
	Geometry Grade 8 Standard 1 (8.G.1)	Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines.	Students use compasses, protractors, and rulers or technology to explore figures created from translations, reflections and rotations. Characteristics of figures such as lengths of line segments, angle measures and parallel lines are explored before the transformation (pre-image) and after the transformation (image). Students understand that these transformations produce images of exactly the same size and shape as the pre-image and are known as rigid transformations.	Ask your child to explain in their own words what a rigid transformation is.	https://www.youtube.com/watch?v=9gwodxblOj4 https://www.youtube.com/watch?v=VTGMprw-zqc https://www.youtube.com/watch?v=04ZIJ5ZhhyQ
	Geometry Grade 8 Standard 2 (8.G.2)	Understand that a two dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.	This standard is the students' introduction to congruency. Congruent figures have the same shape and size. Translations, reflections, and rotations are examples of rigid transformations. A rigid transformation is one in which the pre-image and the image both have exactly the same size and shape since the measures of the corresponding angles and corresponding line segments remain equal (congruent)	Ask your child to explain the term congruency (same size and same shape, equal to). Ask your child to name three rigid transformations (where the shapes remain congruent): translations, reflections, and rotations	https://www.youtube.com/watch?v=r3lN_BADmPQ https://www.youtube.com/watch?v=9TIC3mMVJq8

	Geometry Grade 8 Standard 3 (8.G.3)	Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.	Students identify coordinates from translations, reflections, and rotations and recognize the relationship between the coordinates and the transformation. Translations move an object so that every point moves in the same direction. A reflection is a "flipping" of an object over a line known as the "line of reflection". In the 8th grade, line of reflection is either the x or y-axis. A rotation is a transformation by "spinning" the figure around a fixed point known as the center of rotation	Ask your child to explain what happens during a rotation, reflection, and translation. Ask your child to explain to you what the lines of reflection are (the x and the y axis)	https://www.youtube.com/watch?v=fWjXa7OJ2no https://www.youtube.com/watch?v=mDwQueWLeOY
	Geometry Grade 8 Standard 4 (8.G.4)	Understand that a two dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.	Similar figures and similarity were first introduced in 7th grade. Students should understand similar figures have congruent (equal) angles and sides that are proportional. Similar figures are produced from dilations. Students are able to describe the sequence that would produce similar figures, including the scale factors. Students understand that a scale factor greater than one will produce a figure larger than the original, while a scale factor less than one will produce a figure reduced in its size.	Ask your child to explain what a scale factor is. Ask your child to explain the what makes figures similar	https://www.youtube.com/watch?v=D7Gni58oFgE https://www.youtube.com/watch?v=AUJBSaWlfs0

	Geometry Grade 8 Standard 5 (8.G.5)	Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.	Students use exploration and deductive reasoning to determine relationships that exist between the following: a)Angle sums and exterior angle sums of triangles b)Angles created when parallel lines are cut by a transversal c)The angle-angle criterion for similarity of triangles. Students construct various triangles and find the measure of interior and exterior angles. Students make conjectures about the relationship between the measure of an exterior angle and the other two angles of a triangle(the measure of an exterior angle of a triangle is equal to the sum of the measure of the other two interior angles) and the sum of the exterior angles (360 degrees) Students also construct parallel lines cut by a transversal to examine the relationship between the newly created angles. Building on their understanding from Grade 7, students build on these relationships to find other missing angles.	Ask your child to draw two parallel lines and a transversal. Have them identify vertical and supplementary angles formed by these three lines. Ask your child to identify alternate interior and exterior angles formed by parallel lines and a transversal. What is special about these pairs of angles (they are equal in measure)	https://www.youtube.com/watch?v=gflRScVWePQ https://www.youtube.com/watch?v=E8wlXVAJzPE

	Geometry Grade 8 Standard 6 (8.G.6)	Explain a proof of the Pythagorean Theorem and its converse.	Using models, students can explain the Pythagorean Theorem, understanding that the sum of the squares of the legs is equal to the square of the hypotenuse (the longest side of the right triangle) in a right triangle. Students also understand that given three side lengths with this relationship forms a right angle.	Ask your child to tell if the following scenario creates a right triangle? Why or why not? The distance from Jonestown to Maryville is 180 miles. The distance from Maryville to Elm City is 300 miles, and the distance from Elm City to Jonestown is 240 miles. $180^2 + 240^2 = 300^2$ 32400+57600=90000 9000 =9000 so these three towns from a right triangle.	https://www.youtube.com/watch?v=w0dF1zUU9tE
	Geometry Grade 8 Standard 7 (8.G.7)	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.	Students use the Pythagorean theorem in real world and mathematical problems	Ask your child to solve the following word problem: A club wants to build a tree house. They have a 9-foot ladder that they place diagonally against the tree. If the base of the tree is 5 feet from the bottom of the ladder, how high off the ground will the tree house be? To solve: $a^2 + b^2 = c^2$ $a^2 + 25 = 81$ a= 7.5	https://www.youtube.com/watch?v=95jpCTd5iTc https://www.youtube.com/watch?v=gjlc3BozDwo https://www.youtube.com/watch?v=8B5OofsX3DI

	Geometry Grade 8 Standard 8 (8.G.8)	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.	One application of the Pythagorean Theorem is to find the distance between two points on a coordinate plane. Students build on their work from 6th grade (finding vertical and horizontal distances on the coordinate plane) to determine the lengths of the legs of the right triangle drawn by connecting the points. Students understand that the line segment between the two points is the length of the hypotenuse.	Ask your child to explain how they can find the distance between two points on a coordinate plane using the Pythagorean Theorem by forming a right triangle and solving for the hypotenuse (the longest side of the right triangle).	https://www.youtube.com/watch?v=OZp7ToriFko https://www.youtube.com/watch?v=lm1LBZoRGUs https://www.youtube.com/watch?v=UgQ_YnjWmyY
	Geometry Grade 8 Standard 9 (8.G.9)	Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real world and mathematical problems	Students build on their understanding of circles and volume from 7th grade to find the volumes of cylinders, finding the area of the base (πr^2) and multiplying by the height (h). Students understand the volume of a cylinder is three times the volume of a cone so the formula for a cone's volume is $1/3 (\pi r^2)h$. the volume of a sphere is $4/3 \pi r^3$. Volume is found in cubic units.	Ask your child to find the volume of a cylinder having a height of 100 cm and a radius of 40 cm using the formula: $V= \pi r^2h$ The answer is 502,400 cm^3 Ask your child to find the volume of a cone with a height of 5 cm and a radius of 3 cm using the formula $V= 1/3 (\pi r^2)h$ and leaving the answer in terms of pi. The answer is $15 \pi cm^3$	https://www.youtube.com/watch?v=XlovhNa8xiU https://www.youtube.com/watch?v=WCunEwOd_ic https://www.youtube.com/watch?v=jP4P50lA-SE https://www.youtube.com/watch?v=9JbzaI7pu8M
STATISTICS & PROBABILITY					
Parent Notes	**Standard Code**	**Standard**	**What does this standard mean?**	**What can I do at home?**	**Resources**

	Statistics and Probability Grade 8 Standard 1 (8.SP.1)	Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.	Bivariate data refers to two-variable data, one to be graphed on the x-axis and the other to be graphed on the y-axis. Students represent data on a scatter plot to examine relationships between the two variables. They analyze scatter plots to determine if the relationship is linear or nonlinear.	Ask your child to explain the difference between a positive association, a negative association, or no association)of data For example, describe the association between the following math and science scores: Student 1 2 3 4 Math 64 50 85 34 Science 68 70 83 33 There is a positive association.	https://www.youtube.com/watch?v=2L_EC815Lic https://www.youtube.com/watch?v=pYEhuvyh_AA
	Statistics and Probability Grade 8 Standard 2 (8.SP.2)	Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line	Students understand that a straight line can represent a scatter plot with linear association. The most appropriate linear model is the line that comes closest to the most points. If there is a linear relationship, students draw a linear model. Given a linear model, students can then write an equation for the line.	Ask your child to explain when a scatter plot has a linear or a nonlinear association. What will they notice about the points on the scatter plot if they have a linear association?	https://www.youtube.com/watch?v=r5dR2AqaRcg

	Statistics and Probability Grade 8 Standard 3 (8.SP.3)	Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept	Linear models can be represented with a linear equation (an equation that depicts a straight line). Students can interpret the slope and y intercept in the context of the problems. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.	Ask your child to draw a scatter plot that would result in a linear relationship. Have them write the equation for the line. Let them define the slope of the line and the y intercept.	https://www.youtube.com/watch?v=0sKYkpu3AKY https://www.youtube.com/watch?v=Xt7D76ZMwMs https://www.youtube.com/watch?v=bTAXQWFEIHk

	Statistics and Probability Grade 8 Standard 4 (8.SP.4)	Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?	Students understand that a two way table provides a way to organize data between two categorical variables. Data from both categories needs to be collected from each subject. Students calculate the relative frequencies to describe the association.	Ask your child to determine the percentage of students who do not receive an allowance based on the following data of students who do chores? Receive allowance No allowance Do chores 15 5 Do no chores 3 2 5 of the 20 students who do chores do not receive an allowance. This is 25%.	https://www.youtube.com/watch?v=TFzLXThqVNQ https://www.youtube.com/watch?v=CKWDRYHgbgA https://www.youtube.com/watch?v=Wpai_NUUfW4