Readtopia®

MSAA CCCs for Math

DON·JOHNSTON
Human Learning Tools

MSAA CCCs for Math

● = Aligned with Standard   ◔ = Partially Meets Standard
(and/or can be met with
additional teacher input)

6TH GRADE MATH STANDARDS

NUMBER SENSE

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
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."	6.NO.1f2	Write or select a ratio to match a given statement and representation.	●
	6.NO.1f31	Select or make a statement to interpret a given ratio.	●
	6.PRF.1c1	Describe the ratio relationship between two quantities for a given situation.	●
	6.PRF.2b3	Complete a statement that describes the ratio relationship between two quantities.	●
	6.NO.1f2	Write or select a ratio to match a given statement and representation.	●
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.	7.NO.1h1	Identify an equivalent fraction, decimal and percent when given one of the three numbers.	●
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. For example, create a story context for (2/3) ÷ (3/4), and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb. of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?	6.NO.2c3	Solve one step, addition, subtraction, multiplication, or division problems with fractions or decimals.	●

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6TH GRADE MATH STANDARDS

EXPRESSIONS AND EQUATIONS

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
6.EE.2.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 a particular order (Order of Operations). For example, use the formulas V = s3 and A = 6s2 to find the volume and surface area of a cube with sides of length s = 1/2.			●
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.	6.SE.1b2	Use properties to produce equivalent expressions.	●
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.	6.SE.1b1	Evaluate whether or not both sides of an equation are equal.	●
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.			●
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.			●
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.	6.NO.2a6	Solve problems or word problems using up to three digit numbers and any of the four operations.	
	6.PRF.1d1	Solve real world, single step linear equations.	

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6TH GRADE MATH STANDARDS

MULTIPLICATION

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
6.NS.3. Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.			●

DIVISION

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
6.NS.2. Fluently divide multi-digit numbers using the standard algorithm.	6.NO.2c5	Divide multi-digit whole numbers.	●

GEOMETRY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
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.			●
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 $V = lwh$ and $V = bh$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems.	6.ME.1a2	Identify the appropriate formula (i.e., perimeter, area, volume) to use when measuring for different purposes in a real life context.	●
	6.ME.1c1	Find the area of a 2-dimensional figure and the volume of a 3-dimensional figure.	●

6TH GRADE MATH STANDARDS

STATISTICS AND PROBABILITY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
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.			●
6.SP.2. Understand that a set of data collected to answer a statistical question has a distribution, which can be described by its center, spread, and overall shape.			●
6.SP.4. Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	**6.DPS.1c2**	Collect and graph data: bar graph, line plots, dot plots, histograms.	●
	7.DPS.1g1	Graph continuous data using line graphs, histograms, or dot plots.	●

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7TH GRADE MATH STANDARDS

NUMBER SENSE

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
7.NS.1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.			●
7.NS.1.d. Apply properties of operations as strategies to add and subtract rational numbers.	8.NO.2i3	Solve one step addition, subtraction, multiplication, division problems with fractions, decimals, and positive/negative numbers.	●
7.NS.2.c. Apply properties of operations as strategies to multiply and divide rational numbers.			●
7.NS.2.d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.			●
7.NS.3. Solve real-world and mathematical problems involving the four operations with rational numbers.	8.NO.2i3	Solve one step addition, subtraction, multiplication, division problems with fractions, decimals, and positive/negative numbers.	●
	8.NO.2i4	Solve two step addition, subtraction, multiplication, and division problems with fractions, decimals, or positive/negative numbers.	●

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7TH GRADE MATH STANDARDS

EXPRESSIONS AND EQUATIONS

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
7.EE.3. Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form, convert between forms as appropriate, and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional 1/10 of her salary an hour, or $2.50, for a new salary of $27.50. If you want to place a towel bar 9 3/4 inches long in the center of a door that is 27 1/2 inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation.	**7.PRF.1g1**	Solve real-world multi-step problems using whole numbers.	●

MULTIPLICATION

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
7.NS.2.a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.			●

DIVISION

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
7.NS.2.b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts.			●

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7TH GRADE MATH STANDARDS

GEOMETRY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
7.G.1. Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.			●
7.G.2. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.			●
7.G.3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids.	7.GM.1h5	Describe the two-dimensional figures that result from a decomposed three-dimensional figure.	●
7.G.4. Know the formulas for the area and circumference of a circle, and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.			●
7.G.6. Solve real-world and mathematical problems involving area, volume, and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.			●

STATISTICS AND PROBABILITY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
7.SP.1. Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.			●

7TH GRADE MATH STANDARDS

STATISTICS AND PROBABILITY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
7.SP.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be.			●
7.SP.3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable.			●

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8TH GRADE MATH STANDARDS

NUMBER SENSE

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
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.			●
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., π2). 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.			●
			●

EXPRESSIONS AND EQUATIONS

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
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.			●
8.EE.7. Solve linear equations in one variable.			●
8.EE.7.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).	8.PRF.1g3	Solve linear equations with 1 variable.	●

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8TH GRADE MATH STANDARDS

GEOMETRY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
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; sgiven two congruent figures, describe a sequence that exhibits the congruence between them.	**8.GM.1g1**	Recognize congruent and similar figures.	●
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.			●
8.G.9. Know the formulas for the volumes of cones, cylinders, and spheres, and use them to solve real-world and mathematical problems.			●

STATISTICS AND PROBABILITY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
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?			●

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HIGH SCHOOL

NUMBER SENSE

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
N-Q.1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	H.ME.1a2	Solve real-world problems involving units of measurement.	●

EXPRESSIONS AND EQUATIONS

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
A-CED.1. Create equations and inequalities in one variable, and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.	H.PRF.2b1	Translate a real-world problem into a one variable linear equation.	●
A-CED.2. Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.	H.PRF.2b2	Solve equations with one or two variables using equations or graphs.	
A-REI.1. Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	H.PRF.2b2	Solve equations with one or two variables using equations or graphs.	
A-REI.3. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.	H.PRF.2b2	Solve equations with one or two variables using equations or graphs.	
	H.ME.1b2	Solve a linear equation to find a missing attribute given the area, surface area, or volume and the other attribute.	

HIGH SCHOOL

MULTIPLICATION

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
A-SSE.3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.			●

DIVISION

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
A-SSE.3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.			●

GEOMETRY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
G-CO.4. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.			●
G-CO.6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.			●
G-GPE.7. Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.			●

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HIGH SCHOOL

STATISTICS AND PROBABILITY

Aligned College & Career Readiness Standard	Core Content Connector		Addressed with Readtopia
S-ID.2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.			●