

College and Career Readiness Standards (CCRS) for Math

CCRS Domain 1: Numbers and Operations (Number System)		
<p style="text-align: center;">Sub-Skills: BEGINNING:</p> <ul style="list-style-type: none"> • Understand and use place value (0 to 10,000) • Use properties of operations • Know addition, subtraction, multiplication, and division facts • Understand and use whole number operations (+, -, x, ÷) • Develop understanding of fractions as numbers 	<p style="text-align: center;">Sub-Skills: INTERMEDIATE:</p> <ul style="list-style-type: none"> • Extend and refine beginning level skills • Solve problems with <i>fractions</i> • Solve problems with <i>decimals</i> • Understand and use relationships between fractions, decimals, and percents • Solve problems using <i>ratios, rates, proportions, and percents</i> • Solve problems with <i>integers</i> • Develop understanding of <i>irrational numbers</i> 	<p style="text-align: center;">Sub-Skills: SECONDARY:</p> <ul style="list-style-type: none"> • Extend and refine beginning and intermediate level skills • Extend properties of exponents to rational exponents • Use properties of rational and irrational numbers to solve problems • Understand and use units to solve problems (dimensional analysis)

Standards for Mathematical Practice
<ol style="list-style-type: none"> 1. Make sense of problems and persist in solving them. 2. Think about different aspects of a problem as separate and related parts. 3. Understand a concept well enough to explain and defend an answer. 4. Apply understanding of a concept to real-life situations. 5. Choose the right resources/tools to help solve problems. 6. Pay attention to details; know math vocabulary; calculate efficiently and accurately. 7. Find and use patterns in problems. 8. Look for and use repeated reasoning; repetitive steps/procedures save time; look for shortcuts. <p style="text-align: right; margin-top: 10px;">Source: Common Core Standards for Parents for Dummies by Jared Myracle</p>

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CCRS Domain 2: Algebraic Concepts and Functions

Sub-Skills: BEGINNING:	Sub-Skills: INTERMEDIATE:	Sub-Skills: SECONDARY:
<ul style="list-style-type: none"> • Analyze, extend, and create patterns (one operation only) • Use correct symbols to compare numbers • Represent and solve problems involving the four operations • Use a symbol to represent an unknown number in problem 	<ul style="list-style-type: none"> • Extend and refine beginning level skills • Write and evaluate <i>numerical and algebraic expressions</i> • <i>Factor and expand</i> expressions • Write and solve <i>multi-step equations</i> with one variable (collect like terms, distributive property, variable on both sides of equation) • Solve and graph one-variable <i>inequalities</i> • Use <i>properties of exponents</i> to rewrite numerical expressions • Use <i>square roots and cube roots</i> • Use <i>scientific notation</i> to solve problems • Graph linear equations with two variables on coordinate plane • Find <i>slope and intercept</i> of a line • Solve pairs of <i>simultaneous linear equations</i> • Define, evaluate, and compare <i>functions</i> • Use a function to model relationship between two quantities 	<ul style="list-style-type: none"> • Extend and refine beginning and intermediate level skills • Interpret parts of an expression (terms, factors, coefficients) • Write expressions in equivalent forms to solve problems • Perform operations on <i>polynomials</i> • Rewrite <i>rational expressions</i> • Write equations and inequalities to solve problems • Write equations with two variables that show their relationship • Rearrange formulas to highlight quantity of interest • Explain and justify steps in solving an equation • Solve and graph quadratic equations with one variable • Solve systems of equations • Graph linear inequalities with two variables on coordinate plane • Understand function concepts and use function notation • Write a function to describe relationship between two quantities • Analyze/compare functions using different representations (graphs, equations, tables, or words) • Distinguish between situations that model linear or exponential functions

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CCRS Domain 3: Geometry		
<p style="text-align: center;">Sub-Skills: BEGINNING:</p> <ul style="list-style-type: none"> • Identify and describe 2-D figures • Identify points, lines, segments, and rays • Identify and describe 3-D figures • Divide shapes into equal parts; write area of each part as a fraction 	<p style="text-align: center;">Sub-Skills: INTERMEDIATE:</p> <ul style="list-style-type: none"> • Extend and refine beginning level skills • Describe relationships between geometric figures • Solve problems involving <i>perimeter, circumference, and area</i> • Solve problems involving <i>surface area</i> • Solve problems involving <i>volume</i> • Solve problems involving <i>angle measure</i> • Solve problems involving <i>scale drawings</i> • Solve problems using the <i>Pythagorean Theorem</i> • Develop understanding of <i>congruence</i> (rotations, reflections, translations) • Develop understanding of <i>similarity</i> (dilations, reflections, translations) • Graph points on coordinate plane to solve problems 	<p style="text-align: center;">Sub-Skills: SECONDARY:</p> <ul style="list-style-type: none"> • Extend and refine beginning and intermediate level skills • Experiment with transformations in the coordinate plane • Use congruence and similarity of triangles to solve problems • Use trigonometry to solve problems involving right triangles • Explain and use volume formulas to solve problems • Use geometric concepts to solve real-life problems

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CCRS Domain 4: Measurement, Data, and Probability

Sub-Skills: BEGINNING:	Sub-Skills: INTERMEDIATE:	Sub-Skills: SECONDARY:
<ul style="list-style-type: none"> • Solve problems involving measurement and estimation of <i>temperature, time intervals, liquid volume, weight, and length</i> (same units of measure) • Measure length to nearest 1/4” or cm on a ruler • Tell and write time to nearest minute • Solve money problems; make change using combination of coins and bills • Find perimeter of polygons • Find area of rectangles and squares • Distinguish between linear and area measures • Draw and interpret data using <i>tally charts, tables, pictographs, line plots, and bar graphs</i> 	<ul style="list-style-type: none"> • Extend and refine beginning level skills • Solve problems using conversions within the same measurement system (Ex. - cm. to m.) • Measure angles with protractor • Draw and interpret data using <i>line graphs, circle graphs, histograms, and box plots</i> • Draw and interpret data using <i>scatterplots</i> • Analyze data using <i>mean, median, and mode</i> • Interpret <i>range, quartiles, and interquartile range</i> of data • Know how to conduct surveys and collect data • Use <i>random sampling</i> to draw conclusions about a population • Make comparisons between two populations • Find <i>theoretical or experimental</i> probability of an event • Find probability of a <i>compound</i> event 	<ul style="list-style-type: none"> • Extend and refine beginning and intermediate level skills • Explain effects of <i>outliers</i> on data • Recognize <i>trends</i> in data • Write equations and make predictions of <i>best-fit lines</i> of scatterplots • Distinguish between <i>correlation and causation</i> • Find probabilities of <i>independent or dependent</i> events • Find the number of <i>permutations or combinations</i> of an event

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