TECHNOKids®

Common Core

Mathematics Standards

Correlation of TechnoKids Technology Projects by Grade to Common Core Mathematic Standards

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Code	Common Core Standard: Grade 1 Mathematics	Whiz
Operations & Algebraic Thinking		
CCSS.Math.Content.1.OA.A.1	Use addition and subtraction within 20 to solve problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings and equations with a symbol for the unknown number to represent the problem.	•
CCSS.Math.Content.1.OA.C.5	Relate counting to addition and subtraction.	•

Code	Common Core Standard: Grade 2 Mathematics	Tales
Operations & Algebraic Thinking		
CCSS.Math.Content.2.OA.A.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	•
CCSS.Math.Content.2.OA.B.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	•
Measurement & Data		
CCSS.Math.Content.2.MD.B.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.	•
CCSS.Math.Content.2.MD.B.6	Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram.	•
CCSS.Math.Content.2.MD.D.9	Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.	•

Code	Common Core Standard: Grade 3 Mathematics	Arcade
Operations & Algebraic Thinking		
CCSS.Math.Content.3.OA.A.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.	●
CCSS.Math.Content.3.OA.D.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	●
CCSS.Math.Content.3.OA.D.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.	●

Code	Common Core Standard: Grade 4 Mathematics	Candy	Trivia	Race
Operations & Algebraic Thinking				
CCSS.Math.Content.4.OA.A.2	Multiply or divide to solve word problems involving multiplicative comparison.			•
CCSS.Math.Content.4.OA.C.5	Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself.	•		•
Number & Operations in Base Ten				
CCSS.Math.Content.4.NBT.A.1	Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.			•
CCSS.Math.Content.4.NBT.B.4	Fluently add and subtract multi-digit whole numbers using the standard algorithm.	•		•
Number & Operations - Fractions				
CCSS.Math.Content.4.NF.C.7	Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions.			•
Measurement & Data				
CCSS.Math.Content.4.MD.A.2	Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.	•	•	•
CCSS.Math.Content.4.MD.C.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement.			•

Code	Common Core Standard: Grade 5 Mathematics	Candy	Trivia	Turtle	Sales
Operations & Algebraic Thinking					
CCSS.Math.Content.5.OA.A.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.	•			•
CCSS.Math.Content.5.OA.A.2	Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as 2 × (8 + 7). Recognize that 3 × (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.	•			•
CCSS.Math.Content.5.OA.B.3	Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane.			•	
Number & Operations in Base Ten					
CCSS.Math.Content.5.NBT. A.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.				•
CCSS.Math.Content.5.NBT.A.4	Use place value understanding to round decimals to any place.				•
Number & Operations—Fractions					
CCSS.Math.Content.5.NF.B.5A	Interpret multiplication as scaling (resizing), by comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.			•	•
CCSS.Math.Content.5.NF.B.7.C	Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.			•	•
Geometry					
CCSS.Math.Content.5.G.A.1	Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).	•		•	•
CCSS.Math.Content.5.G.A.2	Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.	•	•	•	•

Code	Common Core Standard: Grade 6 Mathematics	Restaurateur	Code	Trivia
Ratios & Proportional Relationships				
CCSS.Math.Content.6.RP.A.3	Use ratio and rate reasoning to solve real-world and mathematical problems.	●	●	●
The Number System				
CCSS.Math.Content.6.NS.B.3	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation.	●		
CCSS.Math.Content.6.NS.C.5	Understand that positive and negative numbers are used together to describe quantities having opposite directions or values; use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation.		●	
CCSS.Math.Content.6.NS.C.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.	●	●	
CCSS.Math.Content.6.NS.C.7	Understand ordering and absolute value of rational numbers.		●	
CCSS.Math.Content.6.NS.C.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.		●	
Expressions & Equations				
CCSS.Math.Content.6.EE.A.2	Write, read, and evaluate expressions in which letters stand for numbers.	●		
CCSS.Math.Content.6.EE.A.3	Apply the properties of operations to generate equivalent expressions.	●		
CCSS.Math.Content.6.EE.B.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.	●		
CCSS.Math.Content.6.EE.B.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.	●		
CCSS.Math.Content.6.EE.B.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.	●		
CCSS.Math.Content.6.EE.C.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.	●	●	
Statistics & Probability				
CCSS.Math.Content.6.SP.A.1	Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.	●	●	●
CCSS.Math.Content.6.SP.A.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.	●		
CCSS.Math.Content.6.SP.B.4	Display numerical data in plots on a number line, including dot plots, histograms, and box plots.	●	●	●
CCSS.Math.Content.6.SP.B.5	Summarize numerical data sets in relation to their context.	●	●	●

Code	Common Core Standard: Grade 7 Mathematics	Restaurateur	Budget
Ratios & Proportional Relationships			
CCSS.Math.Content.7.RP.A.2	Recognize and represent proportional relationships between quantities.	●	●
CCSS.Math.Content.7.RP.A.3	Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.	●	●
The Number System			
CCSS.Math.Content.7.NS.A.2	Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.		●
CCSS.Math.Content.7.NS.A.3	Solve real-world and mathematical problems involving the four operations with rational numbers.	●	●
Expressions & Equations			
CCSS.Math.Content.7.EE.A.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.	●	
CCSS.Math.Content.7.EE.A.2	Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.	●	●
CCSS.Math.Content.7.EE.B.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.	●	●
CCSS.Math.Content.7.EE.B.4	Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.	●	●
Geometry			
CCSS.Math.Content.7.G.A.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.	●	
Statistics & Probability			
CCSS.Math.Content.7.SP.A.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.	●	●
CCSS.Math.Content.7.SP.A.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. Gauge how far off the estimate or prediction might be.	●	●
CCSS.Math.Content.7.SP.B.4	Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	●	●
CCSS.Math.Content.7.SP.C.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.	●	●
CCSS.Math.Content.7.SP.C.7	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.	●	●
CCSS.Math.Content.7.SP.C.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.	●	●

Code	Common Core Standard: Grade 8 Mathematics	Restaurateur	Earth	Budget	Questionnaire	Investor
Expressions & Equations						
CCSS.Math.Content.8.EE.B.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.	•	•		•	•
Functions						
CCSS.Math.Content.8.F.A.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.	•				•
CCSS.Math.Content.8.F.A.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).	•	•	•	•	•
CCSS.Math.Content.8.F.B.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.	•	•			•
CCSS.Math.Content.8.F.B.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.	•	•	•	•	•
Statistics & Probability						
CCSS.Math.Content.8.SP.A.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.		•		•	