

# CORE@TCA SIDE BY SIDE STANDARDS

## 6<sup>th</sup> / 7<sup>th</sup> / 8<sup>th</sup> Grade

### Essential Standards

#### Mathematics

Based on State Key Content Standards compiled by the Pulliam Group

Strand	Standard 6 <sup>th</sup> Grade	Standard 7 <sup>th</sup> Grade	Standard 8 <sup>th</sup> Grade
Number Sense	<p>1.0 Compare and order positive and negative fractions, decimals and mixed numbers; solve problems involving fractions, ratios, proportions, and percentages Compare and order positive and negative fractions, decimals, and mixed numbers, and place them on a number line</p> <p>1.1 Compare and order positive and negative fractions, decimals, and mixed numbers, and place them on a number line</p> <p>1.2 Interpret and use ratios in different contexts (e.g., batting averages) to show the relative sizes of two quantities, using appropriate notations (<b><i>a/b</i></b>, <b><i>a to b</i></b>, <b><i>a:b</i></b>)</p> <p>1.3 Use proportions to solve problems; use cross-multiplication to solve such problems</p> <p>1.4 Calculate given percentages of quantities, and solve problems involving discounts</p> <p>2.3 Solve addition, subtraction, multiplication, and division problems with positive and negative numbers</p> <p>2.1 Determine least common multiple, and greatest common divisor of whole numbers</p>	<p>1.1 <i>Read, write and compare rational numbers in scientific notation (1)</i></p> <p>1.2 <i>Add, subtract, multiply, and divide rational numbers, and take to whole number powers (3)</i></p> <p>1.3 <i>Convert fractions to decimals/percents; use in estimating, computing, and applications (2)</i></p> <p>1.4 Differentiate between rational and irrational numbers</p> <p>1.5 Know that every rational number is either a terminating or repeating decimal</p> <p>1.6 <i>Calculate the percentage of increases and decreases of a quantity (1)</i></p> <p>1.7 <i>Solve problems that involve discounts, mark-ups, commissions, and interest (operations with fractions and mixed numbers in context) (2)</i></p> <p>2.1 <i>Understand negative whole number exponents; multiply &amp; divide exponents with a common base (1)</i></p> <p>2.2 <i>Add and subtract fractions by factoring to find common denominators (1)</i></p> <p>2.3 <i>Multiply, divide, and simplify rational numbers by using exponent rules (1)</i></p> <p>2.4 <i>Understand absolute value; determine the absolute value of real numbers (1)</i></p>	
Algebra and functions	<p>1.1 Understand, solve, and write simple one-variable linear equations</p> <p>1.2 Understand that rate is a measure of one quantity per unit value of another quantity</p>	<p>1.1 <i>Use variables and operations to write an expression, an equation, an inequality, or a system of equations or inequalities (2)</i></p> <p>1.2 <i>Use the order of operation to evaluate algebraic expressions such as <math>3(2x+5)</math> (1)</i></p> <p>1.3 Simplify numerical expressions by applying properties of rational numbers</p> <p>1.5 <i>Represent quantitative relationships graphically, and interpret the meaning of a specific part of a graph in the situation represented by the graph (3)</i></p> <p>2.1 <i>Interpret positive whole-number powers as repeated multiplication and negative powers as repeated division. Simplify and evaluate expressions that include exponents (1)</i></p> <p>2.2 <i>Multiply and divide monomials (1)</i></p> <p>3.1 <i>Graph functions of the form <math>y=nx^2</math> and <math>y=nx^3</math> and use in solving problems (1)</i></p> <p>3.3 <i>Graph linear functions and know that the ratios is called the slope of the graph (2)</i></p> <p>3.4 <i>Plot the values of quantities whose ratios are always the same, and fit a line to the plot, and understand that the slope of the line equals the quantities (1)</i></p>	<p>1.1 Use properties of numbers to demonstrate if assertions are true or false STAR</p> <p>1.2 <i>Use operations like taking the opposite, finding the reciprocal, and taking a root. They understand and use the rules of exponents (1) + STAR</i></p> <p>1.3 <i>Solve equations and inequalities involving absolute values (1)</i></p> <p>1.4 <i>Simplify expressions before solving equations and inequalities in one variable (2) STAR</i></p> <p>1.5 <i>Solve multi-step equations and inequalities with one variable; justify each step (1) STAR</i></p> <p>1.6 <i>Graph a linear equation and compute the x- and y-intercepts (2) STAR</i></p> <p>1.7 <i>Verify that a point lies on a line; derive linear equations (1) STAR</i></p> <p>1.8 <i>Understand the concepts of parallel lines and how their slopes are related (1) STAR</i></p> <p>1.9 <i>Solve a system of two linear equations in two variables and interpret them graphically (1) STAR</i></p> <p>1.10 <i>Add, subtract, multiply, and divide monomials and polynomials (multi-step) (1) STAR</i></p> <p>1.15 <i>Apply algebraic techniques to solve rate, work, percent mixture problems (1)</i></p>

		<p>4.1 <i>Solve two-step linear equations and inequalities in one variable over the rational number; interpret the solution, and verify the reasonableness of the solution (3)</i></p> <p>4.2 <i>Solve multi-step problems of rate, average speed, distance, and time or a variation (2)</i></p>	
Measurement and Geometry	<p>1.1 Understand the concept of a constant such as <math>\pi</math></p> <p>2.1 Use the properties of complementary and supplementary angles and the sum of the angles of a triangle to solve problems involving an unknown angle</p>	<p>1.1 <i>Compare weights, capacities, measures, time, temperatures between measurement systems (2)</i></p> <p>1.2 <i>Construct and read drawings and models made to scale (1)</i></p> <p>1.3 <i>Use measures expressed as rates and products to solve problems; check answers (2)</i></p> <p>2.1 <i>Use formulas for perimeters and area of basic two-dimensional figures and surface area and volume of three-dimensional figures (3)</i></p> <p>2.2 <i>Estimate and compute the area of more complex figures by breaking them down. (2)</i></p> <p>2.3 <i>Compute the length of the perimeters, surface areas, and volume of a 3-dimensional object (1)</i></p> <p>2.4 <i>Relate changes in measurement with change of scale (1)</i></p> <p>3.2 <i>Understand and use coordinate graphs to plot simple figures (2)</i></p> <p>3.3 <i>Understand Pythagorean theorem and converse; use to find length of a side of a right triangle (2)</i></p> <p>3.4 <i>Understand conditions that indicate two figures are congruent (1)</i></p> <p>3.5 Identify elements of 3-dimensional objects, and describe how they are related in space</p>	1.4
Statistics, Data Analysis, and Probability	<p>1.1 <i>Compute the mean, median, and mode of data sets (1)</i></p> <p>2.2 Identify different ways of selecting a sample and which method is preferred</p> <p>2.1 Analyze data displays and explain how the question may have influenced the results</p> <p>2.2 Identify data that represent sampling errors, and explain why they might be biased</p> <p>2.3 <i>Evaluate the validity of a statistical claim (1)</i></p> <p>3.1 <i>Represent all possible outcomes for compound events in an organized way (1)</i></p> <p>3.3 <i>Represent probabilities as ratios, proportions, decimals, and percents (2)</i></p> <p>3.4 <i>Understand the difference between dependent and independent events (1)</i></p>	<p>1.1 <i>Know various forms of display for data sets, and use to display a set of data (3)</i></p> <p>1.2 <i>Represent two numerical variables on a scatterplot (2)</i></p> <p>1.3 <i>Compute the minimum, lower quartile, median, upper quartile, and maximum of a data set (2)</i></p>	1.4
Mathematical Reasoning	<p>1.0 <i>Make decisions about how to solve problems (3)</i></p> <p>1.0 <i>Use strategies, skills, and concepts in finding solutions (3)</i></p>	<p>2.0 <i>Make decisions about how to solve problems (3)</i></p> <p>3.0 <i>Use strategies, skills, and concepts in finding solutions (3)</i></p> <p>4.0 <i>Students determine a solution is complete and generalize it to other situations (2)</i></p>	5.0

*Italicized items represent standards on the High School Exit Exam with the number of items represented on the exam in parentheses.*