



Topics Covered

Number System

Rational approximations of irrational numbers, compare size of irrational numbers, decimal expansion, converting to rational numbers

Expressions and Equations

Properties of integer exponents, square roots, cube roots, interpret scientific notation, operations with scientific notation, understand connections between proportional relationships/lines/linear equations, graph proportional relationships, similar triangles and slope, linear equations, pairs of simultaneous linear equations, solutions of linear equations, points of intersection, systems of two linear equations, real-world problems leading to two linear equations in two variables

Functions

Define/evaluate/compare functions, input-output, functions and ordered pairs, properties of functions, multiple representations of functions, relationship between two functions, interpret the equation $y=mx+b$, use functions to model relationships, describe qualitatively the functional relationship between two quantities

Geometry

Congruence and similarity, properties of rotations/reflections/translations/dilations, figures using coordinates, informational arguments to establish facts, understand and apply the Pythagorean theorem, volume of cylinders/cones/spheres

Statistics and Probability

Bivariate data, construct and interpret bivariate measurement data, relationships between two quantitative variables, linear association, linear models of data, patterns of association, categorical data, frequencies, relative frequencies, construct/interpret/display data on two categorical variables

Students have mastered Math 8 when they can:

- Explain and apply the mathematical topics and procedures of Math 8 with precision and fluency as they relate to real world contexts
- Gather information and persevere to solve complex and difficult problems
- Provide evidence for or against a given solution
- Construct and use mathematical models to show solutions to complex real-world problems



Sample Problem

Grade 8 Math (before)	Math 8 (now)
<p><u>Problem 1:</u></p> <p>Find the unit rate: 36 gal in 12 min</p>	<p><u>Problem 1:</u></p> <p>Water is leaking from a faucet at a constant rate of $\frac{1}{3}$ gallons per minute. What is the amount of water, w, that is leaked from the faucet after t minutes. How much water is leaked after an hour?</p>
<p><u>Problem 2:</u></p> <p>Simplify $(-2)^5$</p>	<p><u>Problem 2:</u></p> <p>Can -2 be used as a base to rewrite 32? 64? Why or why not?</p>

Resources

Practice Test (Smarter Balanced Assessment)
<http://www.cde.ca.gov/ta/tg/sa/practicetest.asp>

Sample Test Items (Smarter Balanced Assessment)
<http://www.smarterbalanced.org/sample-items-and-performance-tasks/>

Practice Problems
<http://www.ixl.com/standards/california/math/grade-8>

Practice Problems and Instruction
<http://www.illustrativemathematics.org/8>

Orange County Department of Education Common Core Resources
<http://www.ocde.us/commoncoreca>