congruent math

8th Grade Curriculum

Make 8th grade math engaging with Congruent Math. Help your class master linear equations, functions, and geometry through fun, real-life lessons. Try our free lesson plans today!

Overview

In 8th grade math, students dive deeper into algebraic concepts, working extensively with linear equations and functions. They explore more advanced geometry, including transformations and the Pythagorean theorem. Students also delve into systems of equations, scientific notation, and exponents. Statistical analysis becomes more sophisticated, introducing bivariate data and patterns of association.

Make math exciting with our curriculum, unit & lesson plans covering nearly every 8th grade CCSS standard. (Data and statistics unit coming soon!)

In each lesson, students master these topics through interactive guided notes and engaging activities like graphing challenges and function-based puzzles. Practice is reinforced with creative worksheets, including real-world modeling exercises. Every lesson concludes with a practical application, demonstrating how 8th grade math concepts are used in various careers and everyday situations.

If you're looking to make 8th grade math more engaging — while fully preparing students for high school mathematics — this Common Core-aligned curriculum plan is designed for you.

Year at a Glance

Unit	Title	Summary	Key Standards*
1	Real Numbers	Students learn to convert repeating decimals to fractions, convert between fractions, decimals, and percents, understand perfect squares and square roots, work with cube roots, classify rational and irrational numbers, and approximate square roots and locate irrational numbers on the number line.	8.EE.A.2 8.NS.A.1 8.NS.A.2
2	Scientific Notation & Laws of Exponents	Students learn how to convert numbers between scientific notation and standard form, perform operations with numbers in scientific notation, and apply laws of exponents including negative exponents, zero exponents, and exponent rules for products and quotients.	8.EE.A.1 8.EE.A.3 8.EE.A.4
3	Linear Equations & Systems of Equations	Students will learn to simplify expressions, solve equations with rational numbers, and solve systems of linear equations using various methods.	8.EE.C.7 8.EE.C.8 8.F.B.4

4	Functions	Students will learn to identify, evaluate, and compare functions using various representations, calculate slope from coordinate planes, interpret proportional relationships through graphs and equations, and distinguish between linear and nonlinear functions.	8.EE.B.5 8.EE.B.6 8.F.A.1 8.F.A.2 8.F.A.3 8.F.B.4 8.F.B.5
5	Transformations	Students learn about transformations including translations, reflections, rotations, and dilations with a focus on graphing figures, writing rules, and applying these transformations on coordinate planes.	8.G.A.3
6	Pythagorean Theorem, Angles & Volume	Students explore the Pythagorean Theorem, angles within triangles, exterior angles, parallel lines and transversals, and the volumes of cylinders, cones, and spheres, using coordinate systems and geometric formulas.	8.G.A.5 8.G.B.7 8.G.B.8 8.G.C.9
7	Statistics	Students explore the construction and interpretation of two-way tables to analyze categorical data and calculate probabilities. They also learn to create scatter plots, identify associations, recognize outliers and clusters, and determine the line of best fit to make predictions based on bivariate data.	8.SP.A.1 8.SP.A.2 8.SP.A.3 8.SP.A.4

** Abbreviated list. Visit congruentmath.com/curriculum/8th-grade/ for full standards alignment & resources.*

Materials You May Need

Supporting resources that pair with this pacing guide.

- Guided Notes Bundle: structured printable & digital notes for every unit – open resource
- Free Curriculum Library: unit maps & lesson plans – browse online
- Practice & Extension Activities: printable + interactive options – open catalog