

Connecticut Mathematics Model Curricula Alignment

Resource: EdGems Math LLC. Grade 8

Alignment Grade 8				
Model Unit Name	Model Unit Standards	Resource Unit(s) Number	Resources Lessons	Pacing
<i>This is the title of the unit in the model curricula</i>	<i>These are the standards addressed in the unit</i>	<i>This is the unit(s) that aligns with the model unit from the resource</i>	<i>These are the lessons from the identified units that align to the standards within the model unit</i>	<i>This is the expected number of days for instruction</i>
Real Numbers	8.NS.A.1, 8.NS.A.2, 8.EE.A.1, 8.EE.A.2, 8.EE.A.3, 8.EE.A.4	Unit 1 – Equations Unit 5 – Systems of Equations Unit 8 – Exponent Properties	8.NS.A.1 – 1.4, 5.6 8.NS.A.2 – 1.4 8.EE.A.1 – 8.1, 8.2 8.EE.A.2 – 1.4, 1.5, 1.6 8.EE.A.3 – 8.3, 8.4 8.EE.A.4 – 8.4	23 Days
Pythagorean Theorem	8.EE.A.2, 8.G.B.6, 8.G.B.7, 8.G.B.8	Unit 1 – Equations Unit 2 – The Pythagorean Theorem	8.EE.A.2 – 1.4, 1.5, 1.6 8.G.B.6 – 2.1 8.G.B.7 – 2.1, 2.2 8.G.B.8 – 2.3	19 Days
Congruence and Similarity	8.G.A.1, 8.G.A.2, 8.G.A.3, 8.G.A.4, 8.G.A.5	Unit 6 – Angle Relationships Unit 7 – Transformations	8.G.A.1 – 7.1, 7.2, 7.3, 7.4 8.G.A.2 – 7.1, 7.2, 7.3, 7.5 8.G.A.3 – 7.1, 7.2, 7.3, 7.4 8.G.A.4 – 7.4, 7.5 8.G.A.5 – 6.1, 6.2, 6.3, 6.4, 6.5	24 Days
Linear Relationships	8.EE.B.5, 8.EE.B.6, 8.EE.C.7, 8.F.A.1, 8.F.A.2, 8.F.A.3, 8.F.B.4, 8.F.B.5	Unit 1 – Equations Unit 3 – Proportional Relationships and Slope Unit 4 - Functions Unit 6 – Angle Relationships	8.EE.B.5 – 3.2, 3.3, 3.4 8.EE.B.6 – 3.3, 3.4, 4.3, 6.4 8.EE.C.7 – 1.1, 1.2, 1.3 8.F.A.1 – 3.1 8.F.A.2 – 4.1, 4.2, 4.3, 4.4, 4.5 8.F.A.3 – 4.1, 4.2, 4.3, 4.4, 4.5 8.F.B.4 – 4.1, 4.2, 4.3, 4.5 8.F.B.5 – 4.1, 4.2, 4.3, 4.5, 4.6	35 Days
Systems of Linear Relationships	8.EE.C.7, 8.EE.C.8, 8.F.A.2, 8.F.B.4	Unit 1 – Equations Unit 4 - Functions	8.EE.C.7 – 1.1, 1.2, 1.3	34 Days

		Unit 5 – Systems of Equations	8.EE.C.8 – 5.1, 5.2, 5.3, 5.4, 5.5 8.F.A.2 – 4.1, 4.2, 4.3, 4.4, 4.5 8.F.B.4 – 4.1, 4.2, 4.3, 4.5	
Volume	8.G.C.9	Unit 9 - Volume	8.G.C.9 – 9.1, 9.2, 9.3	6 Days
Patterns in Data	8.SP.A.1, 8.SP.A.2, 8.SP.A.3, 8.SP.A.4	Unit 10 – Bivariate Data	8.SP.A.1 – 10.1, 10.2, 10.3 8.SP.A.2 – 10.2, 10.3 8.SP.A.3 – 10.2, 10.3 8.SP.A.4 – 10.4	9 Days

Scope and Sequence

If a district uses this resource to implement the state model curriculum for grade 6, the following scope and sequence should be followed to ensure alignment and attention to the progressions of mathematics.

Order	Unit Number/Title and Lessons	Lesson Objectives	# of days (assume 1 hour of instruction)	Number of weeks
1	1.1 Solving One- and Two-Step Equations	Solving one- and two-step equations.	2	
2	1.2 Solving Multi-Step Equations	Simplifying and solving multi-step equations.	3	
3	1.3 Solutions to Linear Equations	Determining how many solutions a one variable linear equation has.	3	
4	1.4 Square Roots and Cube Roots	Recognizing perfect squares and cubes and finding their roots.	3	
5	1.5 Solving Equations with Exponents	Using roots to solve equations with exponents.	3	
6	1.6 Simplifying Roots	Simplifying square and cube roots.	3	
7	2.1 The Pythagorean Theorem	Finding missing side lengths using the Pythagorean Theorem.	3	
8	2.2 Applying the Pythagorean Theorem	Applying the Pythagorean Theorem to solve 2D and 3D problems.	4	
9	2.3 Distance on the Coordinate Plane	Finding the distance between points on a coordinate plane using the Pythagorean Theorem.	3	
10	3.1 Understanding Functions	Determining if a given set of data is a function.	3	
11	3.2 Proportional Relationships	Recognizing and representing proportional relationships.	2	

12	3.3 Calculating Slope from Graphs	Using slope triangles to find the slope of a line.	2	
13	3.4 The Slope Formula	Finding the slope of a line using the slope formula.	2	
14	4.1 Graphing Using Slope-Intercept Form	Graphing linear equations in slope-intercept form.	2	
15	4.2 Writing Linear Equations for Graphs	Writing a linear equation for a given graph.	2	
16	4.3 Writing Linear Equations from Key Information	Writing a linear equation in slope-intercept form.	4	
17	4.4 Linear Equations in Other Forms	Converting different forms of linear equations to slope-intercept form.	2	
18	4.5 Introduction to Non-Linear Functions	Determining if a function is linear or non-linear.	3	
19	4.6 Interpreting Graphs of Functions	Interpreting graphs representing real-world situations.	3	
20	5.1 Parallel, Intersecting or the Same Line	Algebraically determining the type of system of two lines.	2	
21	5.2 Solving Systems by Graphing	Determining the solution to a system of equations by graphing.	2	
22	5.3 Solving Systems by Substitution	Determining the solution to a system of equations using substitution.	3	
23	5.4 Solving Systems by Elimination	Determining the solution to a system of equations using elimination.	3	
24	5.5 Applications of Systems of Equations	Setting up and solving systems of equations for real-world situations.	3	
25	5.6 Converting Repeating Decimals to Fractions	Converting repeating decimals to fractions.	2	
26	6.1 Alternate Exterior and Interior Angles	Applying properties of special angle pairs.	2	
27	6.2 Corresponding and Same-Side Interior Angles	Applying properties of transversal special angle pairs.	2	
28	6.3 Angle Sum of a Triangle	Classifying triangles and finding angle measures.	3	
29	6.4 Congruent and Similar Triangles	Determining if triangles are similar and congruent and finding missing measures.	2	

30	6.5 Angle Relationships	Using special angle relationships to find angle measures.	3	
31	7.1 Reflections	Reflecting an image on the coordinate plane.	2	
32	7.2 Translations	Translating an image on the coordinate plane.	2	
33	7.3 Rotations	Rotating an image on the coordinate plane.	3	
34	7.4 Dilations	Dilating an image on the coordinate plane.	2	
35	7.5 Composition of Transformations	Performing multiple transformations on a figure and proving figure relationships through transformations.	3	
36	8.1 Multiplication Properties of Exponents	Using properties of exponents to simplify expressions involving multiplication.	3	
37	8.2 Division Properties of Exponents	Using properties of exponents to simplify expressions involving division.	3	
38	8.3 Scientific Notation	Expressing numbers in scientific and standard notation.	2	
39	8.4 Applications of Scientific Notation	Computing with numbers in scientific notation.	4	
40	9.1 Volume of Cylinders	Finding and solving volume of cylinder problems.	2	
41	9.2 Volume of Cones	Finding and solving volume of cone problems.	2	
42	9.3 Volume of Spheres	Finding and solving volume of sphere problems.	2	
43	10.1 Scatter Plots and Association	Reading, creating, and describing scatter plot associations.	2	
44	10.2 Lines of Best Fit	Drawing a line of best fit and using it to make predictions.	2	
45	10.3 Writing Equations for Lines of Best Fit	Writing an equation for a line of best fit and using it to make predictions.	3	
46	10.4 Bivariate Data and Frequency Tables	Describing associations between two sets of data using relative and conditional frequencies.	2	

Grade 8 Scope and Sequencing document

Supports of Diversity, Equity and Inclusion

Please provide any information relative to supporting culturally responsive instruction, multi-language learners, and students with disabilities

EdGems Math is built on principles of equity and has been designed to meet the needs of all learners. The program follows an intentional sequence with scaffolding instruction so that all students gain a deeper understanding of mathematics. Each unit includes rich tasks, grouped activities, and "Big Idea" content connections that engage students through their cultural experiences and leverage their diverse backgrounds to promote collaboration and discussion.

Teachers are provided with the tools and instructional strategies that meet students' varying needs through strong differentiation supports. An ELL Support Guide provides resource-specific strategies for helping English Language Learners at all levels engage in skill-building exercises, such as using sentence prompts and graphic organizers. Linked PD videos demonstrate these strategies in a real teaching environment.

In the latest edition of our program, we will have instructional supports and practices (mathematical language routines, or "MLRs") in every lesson to help teachers recognize and support students' language development in the context of mathematical sense-making when planning and delivering lessons. While these instructional supports can be used to support all students in the demands of reading, writing, listening, conversing, and representing in math, they are particularly well-suited to meet the needs of linguistically and culturally diverse students. When students are using language in ways that are purposeful and meaningful for themselves, in their efforts to understand—and be understood by—each other, they are motivated to attend to ways in which language can be both clarified and clarifying (Mondada & Doehler, 2004). The MLRs help teachers "amplify, assess, and develop students' language in math class" (Zwiers et al, 2017: "Principals for the Design of Mathematics Curricula").

Lesson Videos are narrated in English with closed captioning provided. In the latest edition of our program, we will have narration and closed captioning available in Spanish as well. Teachers can access editable Spanish-language resources from every Teacher Unit page, and Spanish edition textbooks are available. An online ten-language middle school math glossary is easily accessible.

EdGems Math supports and complies with the Individuals with Disabilities Act (IDEA) and the terms and conditions of the National Instructional Materials Access Center, NIMAC. In accordance with IDEA, EdGems Math provides braille-formatted materials.

Students can choose instructional material display options through the digital student edition (via HTML5 format) and each lesson's eBook, located by clicking the eBook icon. The eBook contains the following functionality:

- Teacher narrated text and images, via the "speaker" icon at the lower left side of the page. The textbook can be read on a sentence-by-sentence basis with each selected sentence highlighted in yellow. This tool also reads alt text for images.
- Text highlighting
- Key word searching
- Comment functionality for one-to-one devices

Additional functionality found in the digital program includes:

- Closed-caption Lesson videos for every lesson.
- Text-based instructional materials, provided in PDF format, can be enlarged or reduced using “+” and “-” functionality located on the right side of the PDF when opened.
- Alt text exists for instruction-related images and can be read with Adobe Acrobat Pro.
- Adjustments to color and brightness can be done using the device's built-in manufacturer’s settings or built-in browser settings (dimming of screens, color of fonts, color of backgrounds, etc.)