

Mathematics Grade 8 Year-Long Curriculum Map

11" x 17"

Sequential

Inquiry Modules	Critical Focus Areas	Student Focal Points	Sense-Making CONCEPTS Standards	Sense-Making STRATEGIES Standards	Sense-Making APPLICATION/ MODELING Standards
<b>A. Rational and Irrational Numbers</b>	<ul style="list-style-type: none"> <li>Expressions, Equations, Bivariate Data</li> <li>Analyzing Two and Three Dimensional Space and Shape</li> </ul>	<ol style="list-style-type: none"> <li>The similarities and differences between rational and irrational numbers</li> <li>Approximations of irrational numbers with rational numbers</li> <li>Know the formulas for the volumes of cones, cylinders, and spheres</li> <li>Understanding inverse operations with squares and cubes</li> </ol>	8.NS.1, 8.NS.2	8.EE.2	8.G.9
<b>B. Pythagorean Theorem</b>	<ul style="list-style-type: none"> <li>Analyzing 2D and 3D Space and Figures</li> </ul>	<ol style="list-style-type: none"> <li>Moving from justification to proof of a generalization</li> <li>Building an understanding of the Pythagorean Theorem, including proof(s)</li> <li>Applying the Pythagorean Theorem</li> <li>Building an understanding of converse of the Pythagorean Theorem, including proof(s)</li> </ol>	8.G.6	8.G.8	8.G.7
<b>C. Exponents and Scientific Notation</b>	<ul style="list-style-type: none"> <li>Expressions, Equations, Bivariate Data</li> </ul>	<ol style="list-style-type: none"> <li>Understand integer exponents (starting with positive integers)</li> <li>Develop and know the rules for integer exponents to justify equivalence</li> <li>Develop and understand the system of scientific notation</li> <li>Perform operations on quantities written in scientific notation in context</li> </ol>	8.EE.3	8.EE.1, 8.EE.4	
<b>D. Slope</b>	<ul style="list-style-type: none"> <li>Expressions, Equations, Bivariate Data</li> <li>Functions</li> </ul>	<ol style="list-style-type: none"> <li>Finding a unit rate, known as slope, from a proportional relationship</li> <li>Develop and justify the concept of linear relationships</li> <li>Use and compare various representations of linear relationships</li> <li>Use and compare various representations to determine if relationships are linear</li> <li>Construct an equation modeling a linear relationship</li> </ol>	8.EE.5, 8.EE.6, 8.F.3	8.F.4	
<b>E. Functional Relationships</b>	<ul style="list-style-type: none"> <li>Functions</li> </ul>	<ol style="list-style-type: none"> <li>1.) Understanding functional relationships and their distinguishing characteristics</li> <li>2.) Communicating the similarities and differences of different functions represented in different ways</li> <li>3.) Connecting contextual situations to graphs of functions, and vice versa</li> </ol>	8.F.1, 8.F.2		8.F.5
<b>F. Solving Linear Equations</b>	<ul style="list-style-type: none"> <li>Expressions, Equations, Bivariate Data</li> </ul>	<ol style="list-style-type: none"> <li>Solve linear equations involving all rational numbers and justify the solution paths</li> <li>Investigating the nature of the solutions of linear equations</li> <li>Solve systems of linear equations in context</li> <li>Investigating the nature of the solutions of systems of linear equations</li> </ol>		8.EE.7, 8.EE.8	
<b>G. Congruence and Similarity</b>	<ul style="list-style-type: none"> <li>Analyzing 2D &amp; 3D Space and Figures</li> </ul>	<ol style="list-style-type: none"> <li>Investigating congruence through transformations</li> <li>Describing mappings of multiple transformations</li> <li>Investigating similarities through transformations</li> <li>Describing the effects of transformations in the coordinate plane</li> <li>Establishing facts about angle sum and exterior angle of triangles; parallel lines, transversals, and related angles</li> <li>Understanding the angle-angle criteria for proving triangles similar</li> </ol>	8.G.1, 8.G.2, 8.G.3, 8.G.4, 8.G.5		
<b>H. Statistics</b>	<ul style="list-style-type: none"> <li>Expressions, Equations, Bivariate Data</li> <li>Functions</li> </ul>	<ol style="list-style-type: none"> <li>Constructing and interpreting scatter plots in context</li> <li>Creating and understanding linear models that fit bivariate data in scatter plots</li> <li>Planning and creating a statistical analysis that involves bivariate categorical data</li> <li>Constructing and interpreting a two-way table</li> </ol>	8.SP.2, 8.SP.4		8.SP.1, 8.SP.3