

Mathematics Grade 8

4th Nine Weeks Scope and Sequence

Content Standards	Dates Taught	% of Students scoring over 70%	Dates Re-taught (Optional)	Formative and Summative Assessments/ (Any Additional Comments Optional)
Geometry				
16. Verify experimentally the properties of rotations, reflections, and translations: [8-G1] a. Lines are taken to lines, and line segments are taken to line segments of the same length. [8-G1a] b. Angles are taken to angles of the same measure. [8-G1b] c. Parallel lines are taken to parallel lines. [8-G1c]				
18. Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. [8-G3]				
17. Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. [8-G2]				
19. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. [8-G4]				
20. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. [8-G5]				

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<p>20. Example: Arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give argument in terms of transversals why this is so.</p>				
<p>Expressions and Equations</p>				
<p>8. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b. [8-EE6]</p>				
<p>Geometry</p>				
<p>24. Know the formulas for the volumes of cones, cylinders, and spheres, and use them to solve real-world and mathematical problems. [8-G9]</p>				
<p>Statistics and Probability</p>				
<p>25. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. [8-SP1]</p>				
<p>26. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. [8-SP2]</p>				
<p>27. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. [8-SP3]</p> <p>Example: In a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.</p>				

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<p>28. Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. [8-SP4]</p> <p>Example: Collect data from students in your class on whether or not they have a curfew on school nights, and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?</p>				
Statistics and Probability (Algebra I Course of Study)				
42. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. [S-ID2]				
43. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). [S-ID3]				
Algebra (Algebra I Course of Study)				
12. Create equations and inequalities in one variable, and use them to solve problems. <i>Include equations arising from linear and quadratic functions, and simple rational and exponential functions.</i> [A-CED1]				
Algebra (Algebra I Course of Study)				
17. Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. [A-REI3]				