

Oklahoma Curriculum Matrix for Mathematics

Oklahoma Mathematics Priority Academic Student Skills Process Standards/Objectives Grade 7	Common Core Mathematics Domains/Standards Grade 7	National Essential Skills Study (NESS) National Rankings Rank		NESS	OCCT	Priority
1. Identify, describe, and analyze functional relationships (linear and nonlinear) between two variables (e.g., as the value of x increases on a table, do the values of y increase or decrease, identify a positive rate of change on a graph and compare it to a negative rate of change).	<u>Ratios and Proportional Relationships</u> Analyze proportional relationships and use them to solve real-world and mathematical problems. 2. Recognize and represent proportional relationships between quantities. a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. c. Represent proportional relationships by equations. <i>For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</i> d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.	M37	Define and apply the properties of relations and functions (domain, range, function composition, and inverses) and use algebraic and graphic methods to determine if a relation is a function.	M	H	H
		M53	Express, graph, and interpret polynomial functions (linear, quadratic, cubic, etc.).			
		M56	Express a linear function ($f(x) = mx + b$) with the appropriate notation and determine the ordered pairs.			
1. Develop and apply the formulas for perimeter and area of triangles and quadrilaterals to solve problems.	<u>Geometry</u> Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. 6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	M9	Compute the perimeter and area of common two-dimensional figures.	H	M	H
2. Find the area and perimeter of composite figures to solve application problems.	<u>Geometry</u> Solve real-life and mathematical problems involving angle measure, area, surface area, and volume. 6. Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	M9	Compute the perimeter and area of common two-dimensional figures.	H	L	M
		M18	Understand the properties of circles (radius, arc, diameter, chord, secant, and tangent) and apply circle quantities (lengths of line segments, angle measure within a circle, circumference, and area) in problem-solving situations.			