

Oklahoma PASS Mathematics Content Standards, Grade 8,
Correlated to *Glencoe Mathematics: Applications and Concepts*, Course 3

Oklahoma PASS Mathematics Content Standards, Grade 8	Student Edition Lesson
Standard 1: Algebraic Reasoning—The student will graph and solve linear equations and inequalities in problem-solving situations.	
1. Equations	
a. Model, write, and solve 2-step linear equations using a variety of methods.	10-2, 10-3, 10-4a, 10-4
b. Graph and interpret the solution to linear equations on a number line with one variable and on a coordinate plane with two variables.	11-3a, 11-3, 11-5a, 11-5, 11-7
c. Predict the effect on the graph of a linear equation when the slope changes (e.g., make predictions from graphs, identify the slope in the equation $y = mx + b$ and relate to a graph).	11-3a, 11-3, 11-5a, 11-5, 11-6, 11-7
2. Inequalities	
a. Model, write, and solve 1-step and 2-step linear inequalities with one variable.	10-5, 10-6, 10-7
b. Graph the solution to linear inequalities with one variable on a number line.	10-5, 10-6, 10-7
Standard 2: Number Sense—The student will use numbers and number relationships to solve problems.	
1. Rational Numbers and Proportional Reasoning	
a. Compare and order rational numbers (positive and negative integers, fractions, decimals) in real-life situations.	1-3, 2-2, 3-3, 5-2
b. Use the basic operations on rational numbers to solve problems in real-life situations (e.g., describe the effect of multiplying whole numbers by a fraction or a decimal less than 1).	1-1, 1-2, 1-4, 1-5, 1-6, 1-7, 2-3, 2-4, 2-5, 2-6, 2-8a, 3-3a, 4-5a, 5-5a, 6-4b, 7-3a, 8-2a, 9-1a, 10-4b, 11-6a, 12-7a
c. Apply ratios and proportions to solve problems.	4-1, 4-2, 4-2b, 4-3, 4-4, 4-5, 4-5b, 4-6, 4-7, 4-7b, 4-8, 5-1, 5-2, 5-3, 8-1, 8-6
2. Exponents	
a. Use the rules of exponents, including integer exponents, to solve problems (e.g., $7^2 \cdot 7^3 = 7^5$).	12-6
b. Represent and interpret large numbers and numbers less than one in exponential and scientific notation.	2-8, 2-9
c. Use estimation strategies (e.g., rounding) to describe the magnitude of large numbers and numbers less than one.	4-1, 5-5, 5-6, 5-7, 12-6
Standard 3: Geometry—The student will use geometric properties to solve problems in a variety of contexts.	
1. Construct models, sketch (from different perspectives), and classify solid figures such as rectangular solids, prisms, cones, cylinders, pyramids, and combined forms (e.g., draw a figure that could result from making 1, 2, or 3 cuts in a given solid).	7-4a, 7-4, 7-7a, 7-7, 7-8
2. Develop the Pythagorean Theorem and apply the formula to find the length of missing sides of a right triangle and the length of other line segments.	3-4, 3-5, 3-5b, 3-6, 6-3

Standard 4: Measurement—The student will use measurement to solve problems in a variety of contexts.	
1. Estimate and find the surface area and volume in real world settings (e.g., unwrap a box to explore surface area; use rice, 1-inch cubes, centimeter cubes, cups...to estimate the volume of boxes, irregular shaped objects, containers).	7-5, 7-6, 7-7a, 7-7, 7-8, 7-8b
2. Apply knowledge of ratio and proportion to solve relationships between similar geometric figures.	4-5, 4-5b, 4-6, 4-7, 4-8, 7-8b
3. Formulas	
a. Select and apply appropriate formulas for the given situations. I. an equation (e.g., $d = rt$, $I = prt$)	2-3, 2-7, 5-6, 5-8, 5-8b
II. measurement problems (e.g., $p = 2l + 2w$, $V = lwh$).	3-1, 3-2, 6-2, 6-4, 7-1, 7-2, 7-3, 7-5, 7-6, 7-7, 7-8, 7-8b
b. Find the area of a “region of a region” for simple composite figures (e.g., area of a rectangular picture frame).	7-3
Standard 5: Data Analysis and Statistics—The student will use data analysis and statistics to interpret data in a variety of contexts.	
1. Select and apply appropriate formats (e.g., line plots, bar graphs, stem-and-leaf plots, scatter plots, histograms, circle graphs) to display collected data.	9-1a, 9-1, 9-1b, 9-2, 9-3, 9-3b, 9-6, 11-6, 11-6b
2. Measures of Central Tendency	
a. Find the measures of central tendency (mean, median and mode) of a set of data and understand why a specific measure provides the most useful information in a given context.	9-4, 9-4b, 9-5, 9-6, 9-7
b. Compute the mean, median, and mode for data sets and understand how additional data in a set may affect the measures of central tendency.	9-4, 9-4b, 9-5, 9-6, 9-7
3. Determine how samples are chosen (random, limited, biased) to draw and support conclusions about generalizing a sample to a population (e.g., is the average height of a men’s college basketball team a good representative sample for height predictions?).	8-7