CONNEAUT AREA SCHOOL DISTRICT MATHEMATICS—Module 4		
UNIT OF STUDY: Linear Equations	**COURSE/GRADE:** Grade 8	**# WEEKS:** 35 days

Focus (emphasis) Standards/EC	**Technology/manipulatives**
CC.2.2.8.B.2 Understand the connections between proportional relationships, lines, and linear equations. **M08.B-E.2.1** Analyze and describe linear relationships between two variables, using slope. **M08.B-E.2.1.1** Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. Example: Compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. **M08.B-E.2.1.2** Use similar right triangles to show and explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane. **M08.B-E.2.1.3** 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. **CC.2.2.8.B.3** Analyze and solve linear equations and pairs of simultaneous linear equations. M08.B-E.3.1 Write, solve, graph, and interpret linear equations in one or two variables, using various methods. **M08.B-E.3.1.1** Write and identify linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers). **M08.B-E.3.1.2** Solve linear equations that have rational number coefficients, including equations	Calculators, Smartboard, Study Island, rulers, white boards, highlighters, graph paper

whose solutions require expanding expressions using the distributive property and collecting like terms. **M08.B-E.3.1.3** Interpret solutions to a system of two linear equations in two variables as points of intersection of their graphs because points of intersection satisfy both equations simultaneously. **M08.B-E.3.1.4** Solve systems of two linear equations in two variables algebraically and estimate solutions by graphing the equations. Solve simple cases by inspection. Example: 3x + 2y = 5 and 3x + 2y = 6 have no solution because 3x + 2y cannot simultaneously be 5 and 6. **M08.B-E.3.1.5** Solve real-world and mathematical problems leading to two linear equations in two variables. Example: Given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.	
Important (reinforced) Standards/EC	**Reading, writing, speaking strategies** Journaling, read aloud, persuasive/informational/expository writing, graphic organizers, Frayer model, lecture, cooperative learning, board work, demonstration, Think-Pair-Share, note-taking, crossword puzzles
Vocabulary Coefficient, identity, multiplicative inverse, null set (empty set, no solution), identity (infinite solutions), properties, multistep equations, slope, rate of change, linear equation, simultaneous linear equations, constant of proportionality, constant of variation =, constant rate of change, direct variation, linear relationships, point-slope form, rise, run, slope, slope-intercept from, standard form, substitution, systems of	**Questioning and discussion techniques** Bellringers, Exit tickets, discovery, small/large groups, peer tutoring, games, homework review, dry erase boards

equations, x-intercept, y-intercept	
Real life application Business, engineering,	**Performance assessment** Test, Quiz, Performance Task, Homework, Projects, Notebooks, Study Island
Computation Operations involving real numbers, graphing	**Accommodations/adaptations** Differentiation strategies, small group instruction, cooperative learning, guided practice, peer tutoring, limited problems/choices, manipulatives and models, clarity checks, diagrams and graphs
SAS Module Resources www.pdesas.org: *Grade 8 Mathematics Assessment Anchors and Eligible Content *Mathematics Glossary *PA Core Mathematics, Grades PreK-12 *PA Standards Instructional Frameworks: Math (Go to Teacher Tools then Curriculum Mapping) *Math Cluster Matrix – Tri-folds 6-7-8	