

UNIT OF STUDY
#8

Title: writing linear equations of two variables / using functions Length: 2 weeks Topic: solve linear equations in two variables when parameters change defining relations and functions	Subject/Course: 10 th Res. Math Grade: 10th Designer: K. Henderson
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UNIT GOALS AND EXPECTATIONS

<p>IMPORTANT CONCEPTS/UNDERSTANDINGS:</p> <ul style="list-style-type: none"> • graph an equation using a slope intercept method • use the slope formula • remember the slope of a horizontal and vertical line • identify parallel and perpendicular lines • understand when to use the reciprocal of a given slope • determine when to use the point slope formula • convert slope intercept form to the standard form (vice versa) • realize that a set of ordered pairs is a relation • determine the domain and range in a mapping diagram or set of ordered pairs • use the vertical line test to determine if a graph is a function <p>Great job on this unit!!</p>	<p>ESSENTIAL QUESTIONS:</p> <ul style="list-style-type: none"> • What is the slope intercept method ($y=mx+b$)? • what is slope? • what is the x intercept and the y intercept? • How do I find the x-intercept? y-intercept? • What is the slope formula? • What is the slope of a horizontal and vertical line? • What is the slope of parallel lines? • What does it mean to use the reciprocal of a slope on a perpendicular line? • What is the point slope formula? • What is the standard form of a linear equation? • What are a relation, domain, and range? • How do you use the vertical line test to determine a function?
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<p>STUDENT LEARNING EXPECTATIONS:</p> <p>LF.3.A1.1 - Distinguish between <i>functions</i> and non-functions/<i>relations</i> by inspecting graphs, ordered pairs, <i>mapping diagrams</i> and/or <i>tables</i> of data</p> <p>LF.3.A1.2 - Determine <i>domain</i> and <i>range</i> of a relation from an algebraic expression, graphs, set of ordered pairs, or table of data</p> <p>LF.3.A1.5 - Interpret the rate of change/<i>slope</i> and intercepts within the context of everyday life (Ex. telephone charges based on base rate (<i>y-intercept</i>) plus rate per minute (slope))</p> <p>LF.3.A1.6 - Calculate the slope given</p>	<p>LF.3.A1.8 - *Write an equation in <i>slope-intercept</i>, <i>point-slope</i>, and <i>standard</i> forms given</p> <ul style="list-style-type: none"> • two points • a point and y-intercept • <i>x-intercept</i> and y-intercept • a point and slope • a table of data • the graph of a line <p>LF.3.A1.9 - Describe the effects of parameter changes, slope and/or y-intercept, on graphs of linear functions and vice versa</p> <p>SEI.2.A1.6 - Solve problems involving <i>direct variation</i> and indirect (<i>inverse</i>) variation to</p>
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<ul style="list-style-type: none"> • two points • the graph of a line • the equation of a line <p>LF.3.AI.7 - Determine by using slope whether a pair of lines are parallel, perpendicular, or neither</p>	<p>model rates of change</p>
<p>SPECIFIC DECLARATIVE KNOWLEDGE – What I know</p> <p>Vocabulary words – x intercept, y intercept, slope, slope intercept method, slope formula, slope of horizontal and vertical line, parallel and perpendicular lines, reciprocal, point slope formula, standard form, relation, domain, range, vertical line test</p>	<p>SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do</p> <ul style="list-style-type: none"> • write an equation in slope intercept form • use the slope formula to determine the slope of a line • recognize parallel lines have equal slopes but perpendicular lines use the reciprocal • use the point slope formula to determine the slope intercept of a line • rewrite equation when parameters change • determine domain and range when a graph or mapping diagram • use the vertical line test to determine if the graph is a function
<p>UNIT ASSESSMENTS (Include tasks related to Dimensions 3 and 4 and Bloom’s Taxonomy)</p>	
<p>open response question</p> <ul style="list-style-type: none"> • requiring the student to transform an equation into slope intercept form when parameters change (application) 	
<p>Traditional Assessments: independent practice worksheets Test warm-up quizzes or homework quizzes</p>	<p>Other Evidence of Learning: notes guided practice observation marker board review</p>

ACTIVITIES AND LEARNING EXPERIENCES	Resources
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<p>1. 4 step vocabulary to introduce key words from the unit.</p> <p>2. Lesson 8.4 solve linear equations in two variable when parameters change - transform an equation into slope intercept form when it is given in standard form</p> <p>3. Lesson 9.1 define relations and functions -represent a relation in set notation, table, mapping diagram, coordinate graph, equation, and relation rule. - determine domain and range of a relation - determine whether a relation is a function</p> <p>4. marker board review – group review</p>	<p>4 step worksheet</p> <p>Algebra's Cool DVD program Unit C</p> <p>Algebra's Cool DVD program Unit C</p> <p>marker board & eraser</p>
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Career Connections

Hot air balloonist, scuba diving instructor, farmer