UNIT OF STUDY
#7

Title: writing linear equations of two variables **Subject/Course**: 10th Res. Math **Length: 2 weeks** **Topic:** writing equations of lines *given the slope and y intercept *given point and the slope or two points **Grade:** 10th **Designer: K. Henderson**	
UNIT GOALS AND EXPECTATIONS	
IMPORTANT CONCEPTS/UNDERSTANDINGS: • 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	**ESSENTIAL QUESTIONS:** • What is the slope intercept method (y=mx+b)? • what is slope? • what is the x intercept and the 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? • **Given that the slope of a line is 2/3, what is the slope of a line perpendicular to this line?**
STUDENT LEARNING EXPECTATIONS: LF.3.AI.5 - Interpret the rate of change/*slope* and intercepts within the context of everyday life (Ex. telephone charges based on base rate (*y-intercept*) plus rate per minute (slope)) LF.3.AI.6 - Calculate the slope given • two points • the graph of a line • the equation of a line LF.3.AI.9 - Describe the effects of parameter changes, slope and/or y-intercept, on graphs of linear functions and vice versa	LF.3.AI.7 - Determine by using slope whether a pair of lines are parallel, perpendicular, or neither LF.3.AI.8 - *Write an equation in *slope-intercept, point-slope, and standard* forms given • two points • a point and y-intercept • *x-intercept* and y-intercept • a point and slope • a table of data • the graph of a line SEI.2.AI.6 - Solve problems involving *direct variation* and indirect *(inverse) variation* to model rates of change
SPECIFIC DECLARATIVE KNOWLEDGE – What I know Vocabulary words –x axis, y axis, origin, x intercept, y intercept, slope, boundary line, intercept method,	**SPECIFIC PROCEDURAL KNOWLEDGE – What I need to do** • write an equation in slope intercept form • use the slope formula to determine the

slope intercept method, slope formula, slope of horizontal and vertical line, parallel and perpendicular lines, reciprocal, point slope formula	slope of a line • recognize parallel lines have equal slopes but perpendicular lines use the reciprocal **the negative reciprocal. For instance y = (2/3)x + 1 has slope 2/3. A line perpendicular to it has slope -3/2.** • use the point slope formula to determine the slope intercept of a line

UNIT ASSESSMENTS
(Include tasks related to Dimensions 3 and 4 and Bloom's Taxonomy)

open response question
- requiring the student to find the slope of a direct variation model (application)

Traditional Assessments:	**Other Evidence of Learning:**
independent practice worksheets Test warm-up quizzes or homework quizzes	notes guided practice observation marker board review

ACTIVITIES AND LEARNING EXPERIENCES	**Resources**
1. 4 step vocabulary to introduce key words from the unit.	4 step worksheet
2. Lesson 8.2 write the equation – of a line using slope intercept form when given a graph - of a line using slope intercept form when given the slope and y intercept - of vertical and horizontal lines -of lines parallel and perpendicular to given lines	Algebra's Cool DVD program Unit C
3. Lesson 8.3 write the equation of a line in slope intercept form when given - the slope of the line and a point on the line. - two points on the line	Algebra's Cool DVD program Unit
4. marker board review – group review	marker board & eraser

Career Connections

Zoologist, astronaut, amusement ride designer