ALGEBRA I CURRICULUM

Course 17005

This course will deepen student understanding of mathematical concepts such as functions and real numbers, will teach students how to solve a variety of different types of equations, and will enable students to read and interpret graphs. Special emphasis will be placed on connecting algebra to the real world and in preparing students for Algebra II.

ALGEBRA I OUTLINE:

Goals	Skills	Summative Assessments	Time Frame	Main Resources
 Use estimation strategies in problem-solving situations. Simplify expressions involving polynomials. Analyze and/or use patterns or relations. Interpret and/or use linear functions and their equations, graphs, or tables. Describe, compute, and/or use the rate of change (slope) of a line. Analyze and/or interpret data on a scatter plot. Use measures of dispersion to describe a set of data. Use data displays in problem-solving settings and/or to make predictions. Apply probability to practical situations. 	 Represent and/or use numbers in equivalent forms (e.g., integers, fractions, decimals, percents, square roots, and exponents). Apply number theory concepts to show relationships between real numbers in problem-solving settings. Write, solve, and/or graph linear equations using various methods. Write, solve, and/or graph systems of linear equations using various methods. Write, solve, and/or graph linear inequalities using various methods. Write, solve, and/or graph systems of linear inequalities using various methods. Write, solve, and/or graph systems of linear inequalities using various methods. Use exponents, roots, and/or absolute values to solve problems. 	Mid-year and End of Year Benchmark Assessments, PSSA (if in 7 th or 8 th)	1-year	Glencoe Algebra I ©2014

ALGEBRA I MAP:

TIME	BIG IDEAS	CONCEPTS	ESSENTIAL	STANDARDS	OBJECTIVES	DIFFERENTIATION	ASSESSMENT
FRAME			QUESTIONS				
Chapter 1: Foundations for Algebra (Weeks 1-6)	 Algebra is the connection between the small pool of arithmetic mathematics which students work with from kindergarten on and the lake of generalized upper level math which students use everywhere in high school. Having a firm foundation with the arithmetic operations and properties is a key component to success in algebra. 	 Writing an evaluating expressions with numbers and variables Identifying and using properties of numbers Identifying and functions Identifying and interpreting graphs of functions 	• What are we going to need to be able to do to succeed the rest of the year?	 A1.1.2.1.1 Write, solve and/or apply a linear equation (including problem situations). A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation solving process (linear equations only). A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation (linear equations only). A1.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically. A1.2.1.1.2 Determine if a relation is a function given a set of points or a graph. A1.2.1.1.3 Identify the domain or range of a relation (may be presented as ordered pairs, a graph, or a table). A1.2.1.2.1 Create, interpret and/or use the equation, graph or table of a linear function. A1.2.2.1.4 Determine the slope and/or y-intercept represented by a linear equation or graph. 	 Students should be able to identify and use vocabulary words that apply to algebraic expressions. Students should be able to write algebraic expressions as verbal expressions and vice versa. Students should be able to use the order of operations. Students should be able to identify and use properties of numbers. Students should be able to solve functions. Students should be able to identify and use properties of numbers. Students should be able to identify and use properties of numbers. Students should be able to identify and use parts of a relation. Students should be able to identify and use parts of a relation. Students should be able to use and identify functions. Students should be able to use and identify different types of functions. Students should be able to use function notation. Students should be able to use function notation. 	Additional time Additional practice Partner/group work	Homework Classwork and Activities Quizzes Mid-Chapter Check Vocabulary Test Test

					functions		
				CC.2.2.8.C.2 Use concepts of functions to model relationships between quantities.			
				M08.B-F.2.1.2 Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch or determine a graph that exhibits the qualitative features of a function that has been described verbally. M08.B-F.2.1.2a Describe the relationship between two variables with a linear relationship			
				displayed in graph form			
Chapter 2: Equations (Weeks 7- 11)	 After learning what a variable is and how our numeric operations apply to them we can start working with variables in equations and using them to find an unknown value in problems. 	 Writing equations Solving equations Solving ratios and proportions Using ratios and proportions to solve percents and weighted averages 	How can we determine what an unknown in a problem is or determine what variables we would need to be given to find another unknown?	A1.1.1.4.1 Use estimation to solve problems. A1.1.2.1.1 Write, solve and/or apply a linear equation (including problem situations). A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation solving process (linear equations only). A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation (linear equations only). A1.2.1.2.1 Create, interpret and/or use the equation, graph or	 Students should be able to write verbal equations as algebraic equations and vice versa. Students should be able to solve equations for an unknown by using opposite operations to get all numbers to the opposite side of the equals sign from the variable. Students should be able to solve equations for an unknown where we have an unknown where we have an unknown on both side of the equals sign. Students should be able to solve equations for an unknown where we have an unknown on both side of the equals sign. Students should be able to solve an unknown on both side of the equals sign. 	Additional time Additional practice Partner/group work	Homework Classwork and Activities Quizzes Mid-Chapter Check Vocabulary Test Test

		AD 1 2 1 4	ine unknown.	
		Az. I.J. I.4	Students should be	
		Vinte, solve and/or apply	able to identify	
		inear or exponential	proportions using	
		growth or decay (including	multiple methods	
		problem situations).	including but not	
		101001	limited to cross	
		A2.1.3.2.1	multiplication.	
		Determine how a change	 Students should be 	
		in one variable relates to	able to write ratios	
		a change in a second	as unit rates and	
		variable (e.g., y=4/x, if x	then use them to	
		doubles, what happens to	solve a bigger	
		y?).	problem.	
			Students should be	
		A2.1.3.2.2	able to read and	
		Use algebraic processes	use scales to	
		to solve a formula for a	determine either the	
		given variable (e.g., solve	length of a scale	
		d = rt for r).	model give the	
		-	length of the actual	
		CC.2.1.HS.F.3	or vice versa	
		Apply quantitative	Students should be	
		reasoning to choose and	Students should be able to find a	
		Interpret units and scales	able to liftu a	
		in formulas graphs and	percent of change	
		data displays	and identify it as a	
			percent increase or	
		Use reasoning to solve	a percent decrease.	
		equations and justify the	Students should be	
		solution method	able to find	
		Solution method	discounts, sales	
			tax, and other mark-	
			ups and mark-	
			downs.	
			 Students should be 	
			able to solve	
			equations with	
			multiple variables	
			for a specific	
			variable.	
			Students should be	
			able to identify and	
			solve for a needed	
			variable in a literal	
			equation.	
			 Students should be 	
			able to convert	
			between units of	
			measure using	
			dimensional	
			analysis	
			anaiysis.	

					 Students should be able to write and solve problems that involve determining how much of a certain object or liquid would be needed to create a certain mixture. Students should be able to write and solve equations for a uniform motion problem. 		
Chapter 3: Inequalities (Weeks 12- 18)	• Equations are such a vast field with multiple different uses that we need to focus on each branch individually. Linear functions is the first step down the branch of equations that deals with very unique equations called functions.	 Graphing linear equations and using that to solve linear equations Finding rates of change of a function and finding the slope of a linear equation Finding and using equations for direct variation Identifying arithmetic sequences and determining an equation to represent the sequence. Identifying proportional and nonproportional relationships 	• How can we use equations to model problems that can be represented by a line?	 A1.1.1.4.1 Use estimation to solve problems. A1.1.2.1.1 Write, solve and/or apply a linear equation (including problem situations). A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation solving process (linear equations only). A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation (linear equations only). A1.1.2.2.1 Write and/or solve a system of linear equations (including problem situations) using graphing, substitution and/or elimination (limit systems to 2 linear equations to problems in the context of the problem situation (systems of 2 linear 	 Students should be able to identify and write a linear equation in standard form. Students should be able to find the "x" and "y" intercepts given an equation, table, or graph with out having to convert to another form. Students should understand that the zero, root, solution, and x-intercept are all the same thing. Students should be able to identify when an equation does not have a solution or when it has an infinite number of solutions. Students should be able to identify solutions on a graph of a linear function. Students should be able to find rates of change given a table or a graph. Students should be able to find rates of change given a table or a graph. 	Additional time Additional practice Partner/group work	Homework Classwork and Activities Quizzes Mid-Chapter Check Vocabulary Test Test

	equations only).A1.1.3.1.3Interpret solutions to problems in the context of the problem situation (limit to linear inequalities).A1.2.1.1Analyze a set of data for the existence of a pattern and represent the pattern algebraically and/or graphically.A1.2.1.1.3 Identify the domain or range of a relation (may be presented as ordered pairs, a graph, or a table).A1.2.1.2.1 Create, interpret and/or use the equation, graph or table of a linear function.A1.2.1.2.2 Translate from one representation of a linear function to another (graph, table and equation).	 slope of a line given two points on the line. Students should be able to interpret what the slope of the line tells us about the graph of the line. Students should be able to identify a direct variation and then write an equation to describe the direct variation. Students should be able to use an equation to estimate a value at a given point. Students should be able to identify arithmetic sequences and then write an equation to model the sequence. Students should be able to use an equation to model the sequence. 	
	 (graph, table and equation). A1.2.2.1.1 Identify, describe and/or use constant rates of change. A1.2.2.1.2 Apply the concept of linear rate of change (slope) to solve problems. A1.2.2.1.3 Write or identify a linear equation when given the graph of the line 2 points on the line, or the slope and a point on a line, (Linear equation may be in point-slope, standard 	 equations for arithmetic sequence to determine any term in an arithmetic sequence. Students should be able to identify proportional and nonproportional relationships. 	

		and/or slope-intercent		
		form)		
		ionny.		
		A1 2 2 1 4		
		AI.2.2.1.4		
		Determine the slope		
		and/or y-intercept		
		represented by a linear		
		equation or graph.		
		A2.1.3.2.1		
		Determine how a change		
		in one variable relates to		
		a change in a second		
		variable (e.g., y=4/x, if x		
		doubles, what happens to		
		v?).		
		<i>,</i>		
		A2.1.3.2.2		
		Use algebraic processes		
		to solve a formula for a		
		given variable (e.g. solve		
		d - rt for r		
		$\mathbf{u} = \mathbf{u}(\mathbf{u}(\mathbf{r}))$		
		AD D 1 1 1		
		Az.Z.I.I.I Applyze a pat of data for		
		Analyze a set of data for		
		the existence of a pattern		
		and represent the pattern		
		with a rule algebraically		
		and/or graphically.		
		_		
		A2.2.1.1.2		
		Identify and/or extend a		
		pattern as either an		
		arithmetic or geometric		
		sequence (e.g., given a		
		geometric sequence, find		
		the 20th term).		
		A2.2.1.1.3		
		Determine the domain,		
		range or inverse of a		
		relation.		
		CC.2.2.HS.C.3		
		Write functions or		
		sequences that model		
		relationships between two		
		quantities		
		quantition.		
		Use reasoning to solve		
		ose reasoning to solve		
		equations and justify the		

				solution method.			
Chapter 4: Functions (Weeks 19- 24)	 Once a students has an understanding of what a function is and how functions relate to linear equations we can start to dive into the different ways we can represent linear functions and make working with them easier. We can also use linear functions to represent different things because of our new ways of modeling linear functions 	 Using and graphing different forms of linear equations Dealing with parallel and perpendicular lines Using scatter plots to make inferences about data Finding the inverse of linear functions 	How can we use a graph to represent and problem we come across in the real world?	 A1.1.2.1.1 Write, solve and/or apply a linear equation (including problem situations). A1.1.2.1.2 Use and/or identify an algebraic property to justify any step in an equation solving process (linear equations only). A1.1.2.1.3 Interpret solutions to problems in the context of the problem situation (linear equations only). A1.1.2.2.1 Write and/or solve a system of linear equations (including problem situations) using graphing, substitution and/or elimination (limit systems to 2 linear equations). A1.2.1.2.1 Create, interpret and/or use the equation, graph or table of a linear function. A1.2.1.2.2 Translate from one representation of a linear function to another (graph, table and equation). A1.2.2.1.1 Identify, describe and/or use constant rates of change. A1.2.2.1.2 Apply the concept of linear rate of change (slope) to solve problems. 	 Students should be able to identify, write, and graph equations in slope intercept form. Students should be able to use an equation to determine a "y" value outside of the given graph from a given "x" value. Students should be able to identify, write, and graph equations in point-slope form. Students should be able to rewrite an equations given in point slope form into slope intercept and standard form. Students should be able to write the equation of a line that is parallel or perpendicular to another line given only and equation and a point that it needs to go through. Students should be able to identify a positive, or negative correlation on a scatter plot. Students should be able to identify a line of fit for a scatter plot. Students should be able to identify a line of fit for a scatter plot. 	Additional time Additional practice Partner/group work	Homework Classwork and Activities Quizzes Mid-Chapter Check Vocabulary Test Test

Write or identity almaar equation when gives orgap of the line 2 points on the line, or the sope and a point on a line, (Linear equation main, (Linear equation, main, (Linear, equation, main, (Linear equation, main,			A12213	 Students should be 	
 A table is the store in the given i			Write or identify a linear	Students should be ship to find on	
eduation Wind given the graph of the line 2 Students about 0 be on a point on a line, (Unear equation more line) in point-slope, standard and/or slope-intercept and/or Students about 0 be in point-slope, standard and/or slope-intercept A1.2.2.14 Determine the slope and/or y slope-intercept bit works of an investo of a slope-intercept A1.2.2.14 Determine the slope and/or y-intercept bit works of an investo of a slope-intercept A1.2.2.1.1 A1.2.2.1.4 bit works of an equation for a line of best fif for a scatter plot. A2.2.1.1 A2.2.1.1 A2.2.1.1 bit of best fif for a scatter plot. A2.2.1.1 bit of best fif grage as of data for more geometric slopuence, slopuence, lind the 20th term. A2.2.1.1 bit of a slope- and or y-inscribut by and/or graphically. A2.2.1.1 bit of a slope- mine the domain, range or inverse of a relation. Determine the domain, range or inverse of a relation = y = y = y = y and y = x2 + 3, or y = y2 and y = x2 + 3, or y = y2 and y = x2 + 3, or y = y2 and y = x2 + 3, or y = y2				able to find an	
graph of the line 2 points • relation. no fie line, or the slope and a point on a line, (Linear equation may be in point-slope, standard and/or signet-standard form). • Students should be able to find an inverse of a function. A1.2.2.14 Determine the slope and/or vintercept represented by a linear equation or graph. A1.2.2.1 Data Ind an/or vinte an equation or graph. • A1.2.2.1 Draw, lind an/or vinte an equation or graph. • A1.2.2.1 Draw, lind an/or vinte an equation or graphically. • A1.2.2.1 Draw, lind an/or vinte an equation or graphically. • A1.2.2.1.1 Analyze a sait of data for the existence of a pattern and represent the pattern and represent the pattern and graphicma as or geam • A2.2.1.1 A2.2.1.1 • • A2.2.2.1.1 • • • A2.2.1.1 • • • A2.2.1.1 • • • A2.2.2.1.1 • • •			equation when given the	inverse of a	
on the line, or the slope and a point on line, (Linear equation may be form). Students should be ain more stope-intercept form). Students should be ain more stope-intercept form). A12.21.4 Determine the slope and/or y-intercept represented by a linear equation or graph. A12.2.1 A12.2.2.1 A1.2.2.1 Draw, find and/or write an equation for a line of best fif or a scatter plot. A12.2.2.1 A12.2.2.1 A2.2.1.1 Analyze a set of data for the existence of a pattern and represented by given a geometric sequence, find the 20th term). A2.2.1.1.3 Determine the domain, range or inverse of a relation. A2.2.1.1 Identify and/or sortend a relation. A2.2.2.2 Identify or describe the off there of a pattern and the 20th term). A2.2.2.2 Identify or describe the and the 20th term). A2.2.2.1.3 Determine the domain, range or inverse of a relation. A2.2.2.1 Identify or describe the and y = 3/2. A2.2.3.1.1 A2.2.3.1.1			graph of the line 2 points	relation.	
and a point on a line. (Linear equation may be in point-stope, standad and/or signe-intercept form). A1.2.2.1.4 Determine the slope and/or y-intercept represented by a linear equation or graph. A1.2.2.1.1 Aray, find ar all or of beat th for a scatter plot. A.2.2.1.1.1 Analyze a set of data for the astatem plot. A.2.2.1.1.2 Identify and/or extend a arithmetic or geometric sequence (a, g), given a geometric sequence, find the 20th term or arge inverse of a relation. A.2.2.2.1.1 Identify or describe the eleftor of the constremt the domain, range inverse of a relation. A.2.2.2.1 Identify or describe the eleftor of samping parameters within a family and y = 3/2, y, y = x2 and y = x2 + 3, or y = x2 and y = x2 + 3, or y = x2 and y = x2, y.			on the line, or the slope	 Students should be 	
Image or equation may be inverse of a more standard and/or signe-intercept form). inverse of a more standard and/or signe-intercept form). A1.2.2.1.4 Determine the slope and/or y-intercept represented by a linear equation or graph. A1.2.2.1 Data (find and/or with an equation for a line of best fit for a scatter plot. A1.2.2.1 A2.2.1.1 Analyze a set of data for the existence of a pattern and represent the pattern as either an arithmatic or geometric sequence, find the 20th term). A2.2.1.1.3 Determine the domain, range or inverse of a relation ar relation. A2.2.2.2.1 A2.2.2.1.3 Determine the domain, range or inverse of a relation and relation of a line if best in sequence (a, y, was and y = x3/2), was and y = x3/2, was and y = x3/2.			and a point on a line	able to find an	
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in point-stope, standardfunction.and/or stope, standardfunction.A12.2.14Determine the stope and/or yrite respi represented by a linear equation or graph.A12.2.11A12.2.1.11Analyze a set of data for the science of a pattern and or yrite linear equation to generative and/or write an equation to a science of a pattern and/or science of a pattern and/or graphically.A2.2.1.12Identify and/or extend a generic sequence, find the 20th term.A2.2.1.13A2.2.1.12Identify and/or extend a generic sequence, find the 20th term.A2.2.1.13Determine the domain, range or inverse of a relation.A2.2.2.1A2.2.2.1Identify or describe the effect of changing parameters within a family of functions (6.9, y = x2 and y = x3 + 3, or y = x3				Inverse of a	
and/or slope-intercept form). A1.2.2.1.4 Determine the slope and/or v-intercept represented by a linear equation or graph. A1.2.2.2.1 Draw, find and/or write an equation for a line of best fit for a scatter plot. A2.2.1.1 Ane system the pattern with a rule algebraically and/or graphically. A2.2.1.12 Identify and/or extend a pattern as either an either an either an either an either an either and either an either an either			in point-slope, standard	function.	
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A1.2.2.1.4Determine the slope and/or y-intercept represented by a linear equation or graph.A1.2.2.2Draw, find and/or write an equation for a line of best fit for a scatter plot.A2.2.1.1Analyze a set of data for the existence of a pattern and represent the pattern with a rule algebraically and/or graphically.A2.2.1.1Analyze a set of data for the existence of a pattern and represent the domain, range or inverse of a relation.A2.2.2.2.1Identify or describe the effect of changing parameters within a rule y alphanity and y = x2 + 3, or y = x2 and y = x32).A2.2.3.1.1			form).		
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and/of y-intercept represented by a linear equation or graph. A1.2.2.2.1 Draw, find and/or write an equation for a line of best fif for a scatter plot. A2.2.1.1.1 Analyze a set of data for the existence of a pattern and represent the pattern with a rule algebraically and/or graphically. A2.2.1.1.2 Identify and/or extend a pattern as either an arithmetic or geometric sequences, find the 20th term). A2.2.1.1.3 Determine the domain, range or inverse of a relation. A2.2.2.1 Identify or describe the effect of changing parameters within a family of functions (e.g., y = x2 and y = x2 + 3, or y = x2 and y = x2 + 3, or y = x2 and y = x2 + 3, or y = x2 and y = x2 + 3, or y = x2					
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and $y = x^2 + 3$, or $y = x^2$ and $y = 3x^2$). A2.2.3.1.1			of functions (e.g. $v = x^2$		
and $y = x^2 + 3$, or $y = x^2$ and $y = 3x^2$). A2.2.3.1.1			and $y = x^2 \pm 3$ or $y = x^2$		
and y = 3x2). A2.2.3.1.1			and $y = xz + 3$, or $y = xz$		
A2.2.3.1.1			and $y = 3x^2$.		
A2.2.3.1.1					
			A2.2.3.1.1		
Draw, identify, find and/or			Draw, identify, find and/or		

r							
				write an equation for a regression model (lines			
				and curves of best fit) for			
				a scatter plot.			
				A2.2.3.1.2			
				Make predictions using			
				the equations or graphs of			
				regression models (lines			
				and curves or best fit) of			
				scaller plots.			
				CC.2.1.HS.F.3			
				Apply quantitative			
				reasoning to choose and			
				Interpret units and scales			
				in formulas, graphs and			
				data displays.			
				CC.2.1.HS.F.4			
				Use units as a way to			
				understand problems and			
				to guide the solution of			
				multi-step problems.			
				CC 2 1 HS E 5			
				Choose a level of			
				accuracy appropriate to			
				limitations on			
				measurement when			
				reporting quantities.			
				CC.2.2.HS.C.6			
				Interpret functions in			
				terms of the situation they			
				model.			
Chapter 5:	Equations are a	1. Solving	How is coloring	A1.1.1.4.1	Students should be	Additional time	Homework
Linear	very exact way of	Inequalities	and equations	Use estimation to solve	able to apply		Classwork and
Mooks 25-	modeling problems_lt	z. Graphing	related?	problems.	of solving oquation	Additional practice	
26)	requires exact	inequalities		A11211	to solving equation		Activities
	measures and a			Write, solve and/or apply	inequalities.		Quizzes
	limit to having			a linear equation	 Students should be 	Partner/group work	
	equality between			(including problem	able to graph		Mid-Chapter
	sides.			situations).	inequalities.		Check
	Inequalities are a			A11212			Vocabulary
	to represent			Use and/or identify an			Test
	problems where			algebraic property to			
	we do not have			justify any step in an			Test
	exact numbers.			equation solving process			
				(linear equations only).			

Being able to use an inequalities	A1.1.2.1.3		
allows us to be	Interpret solutions to		
unsure of an exact measure	the problems in the context of		
but to be able to	(linear equations only).		
have a general idea of a value of	A1 1 2 2 2		
unknowns.	Interpret solutions to		
	problems in the context of		
	(systems of 2 linear		
	equations only).		
	A1.1.3.1.1		
	Write or solve compound inequalities and/or graph		
	their solution sets on a		
	number line (may include absolute value		
	inequalities).		
	A1.1.3.1.2		
	Identify or graph the		
	inequality on a number		
	line.		
	A1.1.3.1.3		
	Interpret solutions to		
	the problem situation (limit		
	to linear inequalities).		
	CC.2.2.HS.D.10		
	Represent, solve and interpret		
	equations/inequalities and		
	equations/inequalities		
	algebraically and		
	CC.2.2.HS.D.7		
	equations or inequalities		
	to describe numbers or relationships		
	Use reasoning to solve		
	equations and justify the		

				solution method.			
Chapter 6:	 In the real world 	1. Solving systems	How can I use	A1.1.1.4.1	 Students should be 	Additional time	Homework
Systems of	there are multiple	of equations	two different	Use estimation to solve	able to solve a		
Equations	constraints go	using different	situations to	problems.	system of equations		Classwork and
and	into a situation.	methods	solve for a set of		by graphing both	Additional practice	Activities
Inequalities	To model this	including	variables in both?	A1.1.2.1.1	equations and using		
(Weeks 27-	with mathematics	substitution,		Write, solve and/or apply	the intersection of		Quizzes
28)	we need to use	graphing, and		a linear equation	the two lines to	Partner/group work	
	multiple	elimination.		(including problem	identify the solution		Mid-Chapter
	equations or	2. Applying systems		situations).	to the system.		Check
	inequalities to	of linear			 Students should be 		.,
	help narrow the	equations to real		A1.1.2.1.2	able to solve a		Vocabulary
	answers down.	world problems		Use and/or identify an	system of equations		Test
		3. Solving systems		algebraic property to	by solving for one		- ·
		of Inequalities		justify any step in an	variable and		Test
				(linear equations only)	substituting in to the		
				(intear equations only).	other equation by		
				A11213	for the solved for		
				Interpret solutions to	Variable.		
				problems in the context of	Students should be		
				the problem situation	able to add of		
				(linear equations only)			
				(inteal equations entry).	equations to		
				A1.1.2.2.1	variable to solve the		
				Write and/or solve a	system of		
				system of linear equations	equations		
				(including problem	Students should be		
				situations) using graphing,	able to multiply one		
				substitution and/or	or both of the		
				elimination (limit systems	equations to get the		
				to 2 linear equations).	system so they can		
					solve by using		
				A1.1.2.2.2	elimination through		
				Interpret solutions to	addition or		
				problems in the context of	subtraction.		
				the problem situation	 Students should be 		
				(systems of 2 linear	able to apply their		
				equations only).	understanding of		
				A11311	systems of		
				Write or solve compound	equations to real		
				inequalities and/or graph	world problems.		
				their solution sets on a	Students should be		
				number line (may include	able to solve a		
				absolute value	system of		
				inequalities).	arephing coch		
				1,	inequality and		
				A1.1.3.1.2	finding the double		
				Identify or graph the	shaded area		
				solution set to a linear			
				inequality on a number			

		line		
		line.		
		A1.1.3.1.3 Interpret solutions to problems in the context of the problem situation (limit		
		to linear inequalities).		
		A1.1.3.2.1 Write and/or solve a system of linear inequalities using graphing (limit systems to 2 linear inequalities).		
		A1.1.3.2.2 Interpret solutions to problems in the context of the problem situation (systems of 2 linear inequalities only).		
		A2.1.3.1.1 Write and/or solve quadratic equations (including factoring and using the Quadratic Formula).		
		A2.1.3.1.2 Solve equations involving rational and/or radical expressions (e.g., $10/(x + 3) + 12/(x - 2) = 1$ or $\sqrt{(x + 2)} = 1$ or $\sqrt{(x + 2)} = 14$).		
		A2.1.3.1.3 Write and/or solve a simple exponential or logarithmic equation (including common and natural logarithms).		
		A2.1.3.1.4 Write, solve and/or apply linear or exponential growth or decay (including problem situations).		
		A2.1.3.2.1 Determine how a change in one variable relates to		

		a change in a second variable (e.g., y=4/x, if x doubles, what happens to y?).		
		A2.1.3.2.2 Use algebraic processes to solve a formula for a given variable (e.g., solve d = rt for r).		
		A2.2.2.1.1 Create, interpret and/or use the equation, graph or table of a polynomial function (including quadratics).		
		A2.2.2.1.2 Create, interpret and/or use the equation, graph or table of an exponential or logarithmic function (including common and natural logarithms).		
		A2.2.2.1.3 Determine, use and/or interpret minimum and maximum values over a specified interval of a graph of a polynomial, exponential or logarithmic function.		
		A2.2.2.1.4 Translate a polynomial, exponential or logarithmic function from one representation to another (graph, table and equation).		
		A2.2.3.1.1 Draw, identify, find and/or write an equation for a regression model (lines and curves of best fit) for a scatter plot.		
		A2.2.3.1.2 Make predictions using		

				the equations or graphs of regression models (lines and curves of best fit) of scatter plots.			
				CC.2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.			
				CC.2.2.HS.D.10 Represent, solve and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.			
				CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.			
				CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.			
Chapter 7: Exponents and Polynomials (Weeks 29-	Before having the ability to deal with functions that have a higher exponent than 1	 Properties of exponents Functions dealing with exponents on the variable 	How do we work with equations that have exponents on our variables and	A1.1.1.1.1 Compare and/or order any real numbers (rational and irrational may be mixed).	• Students should be able to multiply and divide monomials that include exponents.	Additional time Additional practice	Homework Classwork and Activities
31)	on the variable students need to be able to work with exponents. Since exponents are just a short	3. Geometric sequences4. Recursive formulas	nave variables in the denominator of a fraction?	A1.1.1.1.2 Simplify square roots (e.g., $\sqrt{24} = 2\sqrt{6}$). A1.1.1.2.1	 Students should be able simplify expressions with rational exponents. Students should be able to write large 	Partner/group work	Mid-Chapter Check Vocabulary
	way to deal with multiplication most of our rules and constraints can be shown through			Find the Greatest Common Factor (GCF) and/or the Least Common Multiple (LCM) for sets of monomials.	numbers in scientific notation. • Students should be able to identify and graph exponential functions		Test Test
	multiplication.			A1.1.1.3.1 Simplify/evaluate expressions involving properties/laws of	 Students should be able to identify a growth or a decay. 		

		exponents roots and/or	 Students should be 		
		absolute value to solve	able to find the		
		problems (exponents			
		should be integers from	Compound Interest.		
			Students should be		
		10 (0 10).	able to identify		
			geometric		
		A1.2.1.1.1	sequences and		
		Analyze a set of data for	write an equation to		
		the existence of a pattern	find the nth term.		
		and represent the pattern	 Students should be 		
		algebraically and/or	able to write a		
		graphically.	recursive formula.		
			•		
		A1.2.1.1.2			
		Determine if a relation is a			
		function given a set of			
		points or a graph.			
		F 9			
		A1.2.1.1.3			
		Identify the domain or			
		range of a relation (may			
		be presented as ordered			
		pairs a graph or a table)			
		pairs, a graph, or a table).			
		A1 2 1 2 1			
		AI.2.1.2.1			
		Create, interpret and/or			
		use the equation, graph or			
		table of a linear function.			
		A1.2.2.1.1			
		Identify, describe and/or			
		use constant rates of			
		change.			
		A2.1.2.1.1			
		Use exponential			
		expressions to represent			
		rational numbers.			
		A2.1.2.1.2			
		Simplify/evaluate			
		expressions involving			
		positive and negative			
		exponents and/or roots			
		(may contain all types of			
		real numbers - exponents			
		should not exceed power			
		of 10).			
		A2.1.2.1.3			
		Simplify/evaluate			
		expressions involving			
	I		l	I	

		multiplying with exponents (e.g. $x6 * x7 = x13$), powers of powers (e.g., ($x6$)7= $x42$) and powers of products ($2x2$) $3=8x6$ (limit		
		to rational exponents).		
		A2.1.2.1.4 Simplify or evaluate expressions involving logarithms and exponents (e.g. $\log 28 = 3$ or $\log 42 = \frac{1}{2}$).		
		A2.1.3.1.2 Solve equations involving rational and/or radical expressions (e.g., $10/(x + 3) + 12/(x - 2) = 1$ or $\sqrt{(x + 21x)} = 14$).		
		A2.1.3.1.3 Write and/or solve a simple exponential or logarithmic equation (including common and natural logarithms).		
		A2.1.3.1.4 Write, solve and/or apply linear or exponential growth or decay (including problem situations).		
		A2.1.3.2.1 Determine how a change in one variable relates to a change in a second variable (e.g., $y=4/x$, if x doubles, what happens to y?).		
		A2.1.3.2.2 Use algebraic processes to solve a formula for a given variable (e.g., solve d = rt for r).		
		A2.2.1.1.1 Analyze a set of data for the existence of a pattern		

1						
				and represent the pattern		
				with a rule algebraically		
				and/or graphically.		
				A22112		
				Identify and/or extend a		
				identity and/or extend a		
				pattern as either an		
				arithmetic or geometric		
				sequence (e.g., given a		
				geometric sequence find		
				the 20th term)		
				A2.2.1.1.4		
				Identify and/or determine		
				the characteristics of an		
				exponential quadratic or		
				polynomial function (o.g.		
				intervals of		
				increasing/decreasing,		
				intercepts, zeros, and		
				asymptotes).		
				A D D D 1 1		
				AZ.Z.Z.I.I		
				Create, interpret and/or		
				use the equation, graph or		
				table of a polynomial		
				function (including		
				quadratics)		
				quadratics).		
				100010		
				A2.2.2.1.2		
				Create, interpret and/or		
				use the equation, graph or		
				table of an exponential or		
				logarithmic function		
				(including common and		
				natural logarithms).		
				A2.2.2.1.4		
				Translate a polynomial.		
				exponential or logarithmic		
				function from one		
				representation to another		
				(graph, table and		
				equation).		
				CC.2.1.HS.F.1		
				Apply and extend the		
				proportion of avagants to		
				properties of exponents to		
				solve problems with		
				rational exponents		
				CC.2.1.HS.F.2		
L	1	1	1		1	

				Apply properties of rational and irrational numbers to solve real world or mathematical problems. CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities. CC.2.2.HS.C.5 Construct and compare linear, quadratic and exponential models to solve problems.			
Chapter 8: Factoring Polynomials (Weeks 32- 36)	 In an average conversation between 2 people the word "probably" is a common occurrence. The statement in and of itself then brings in probability and statistics. When someone say, "I'll probably win something" does that mean that one out of seven people will win something or does that mean that one out of three hundred people will win something. Probability and statistics helps to quantify and separate how likely one thing is to the next. It helps us to prioritize what we need to do in a day and what to 	 Sampling and making inferences about a sample Distribution of data and comparing sets of data. Simulations Permutations and combinations Probability of compound events 	How can we use statistics to make money?	A1.2.2.1.1Identify, describe and/oruse constant rates ofchange.A1.2.2.1.2Apply the concept oflinear rate of change(slope) to solve problems.A1.2.2.1.3Write or identify a linearequation when given thegraph of the line 2 pointson the line, or the slopeand a point on a line,(Linear equation may bein point-slope, standardand/or slope-interceptform).A1.2.2.1.4Determine the slopeand/or y-interceptrepresented by a linearequation or graph.A1.2.2.2.1Draw, find and/or write anequation for a line of bestfit for a scatter plot.A1.2.3.1.1Calculate and/or interpretthe range, quartiles and	 Students should be able explain the difference between population s and samples. Students should be determine whether a sample is biased or not and then name the type of example. Students should be able to find the variance in statistics and understand what that form of variance is showing us. Students should be able to compare two data sets. Students should be able to create and use a simulation is and to create and use a simulation to help make inferences about and event. Students should be able to determine the best model for a set of data. Students should be able to about be able to about and to create and use a simulation to help make inferences about and event. 	Additional time Additional practice Partner/group work	Homework Classwork and Activities Quizzes Mid-Chapter Check Vocabulary Test Test

do first data data data data data data data da	
ao mar. able to use	
Probability and permutations and	
statistics is such A1.2.3.2.1 combinations to find	
an integral part of Estimate or calculate to the probability of a	
out every day make predictions based event.	
thought process on a circle, line, bar • Students should be	
that the students graph, measures of able to find the	
have to get central tendency, or other probability of a	
practice and representations. compound event	
know how to use	
it when they need A12322 able to find the	
it Analyze data make probability	
nredictions and/or distribution of a set	
answer questions based of data	
on displayed data (boy-	
and whisker plots, stem-	
and winsket plots, stern-	
tendency, of other	
representations).	
A1.2.3.2.3	
Make predictions using	
the equations or graphs of	
best-fit lines of scatter	
plots.	
A1.2.3.3.1	
Find probabilities for	
compound events (e.g.,	
find probability of red and	
blue, find probability of	
red or blue) and represent	
as a fraction, decimal or	
percent).	
A2.2.3.1.1	
Draw, identify, find and/or	
write an equation for a	
regression model (lines	
and curves of best fit) for	
a scatter plot.	
A2.2.3.1.2	
Make predictions using	
the equations or graphs of	
regression models (lines	
and curves of best fit) of	
scatter plots.	
A2.2.3.2.1	
Use combinations,	

		permutations and the		
		fundamental accusting		
		fundamental counting		
		principle to solve		
		problems.		
		A22322		
		NZ.Z.J.Z.Z		
		probability and/or use		
		probability to find odds.		
		A22323		
		Lico probability for		
		independent, dependent		
		or compound events to		
		predict outcomes.		
		CC 2 4 HS B 1		
		Summariza raprocost		
		Summanze, represent,		
		and interpret data on a		
		single count or		
		measurement variable.		
		Analyza linear models to		
		Analyze linear models to		
		make interpretations		
		based on the data.		
		CC.2.4.HS.B.4		
		Recognize and evaluate		
		random processes		
		underlying statistical		
		experiments.		
		CC.2.4.HS.B.5		
		Make inferences and		
		institu eenslusione basad		
		Justify conclusions based		
		on sample surveys,		
		experiments, and		
		observational studies.		
		CC 2 4 HS B 7		
		Apply the rules of		
		Apply the fulles of		
		probability to compute		
		probabilities of compound		
		events in a uniform		
		probability model		