# Pacing & Curriculum Guide Algebra 1A –1200370

### Content:

Part I

- <sup>™</sup> Algebra 1A Course Description
- <sup>TM</sup> Mathematical Thinking & Reasoning Standards
- <sup>™</sup> 9-12 ELA & ELD Standards
- <sup>™</sup> Proficiency Scale Units Pacing Chart
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Part II

Teacher & Student Critical Concept Univith B.E.S.T. standards embedded

REVISED ~ July 202

### Algebra 1A – Course Code: 1200370 B.E.S.T. Course Description

In Algebra1 A, instructional time will emphasize our areas: (1) extending understanding functions to linearA

## Mathematical Thinking & Reasoning Standards

MTRBecause Math Matters

Mathematical Thinking & Reasoning Standards				
MA.K12.MTR.4.1	MA.K12.MTR.5.1	MA.K12.MTR.6.1	MA.K12.MTR.7.1	

Engage in discussions that reflect on the mathelth131 (atica)

ELA& ELDGuide

#### Algebra 1A - Course Code: 120370

### Pacing Chart



Approx Ti	kimate me	Critical Concept Unit s	Benchmarks	Critical Concept Unit Overview – Level 3.0
1st Quarter	34 days	1 Solving Equations and Inequalities	<u>MA.912.AR.1.2</u> <u>MA.912.AR.2.1</u> <u>MA.912.AR.2.6</u> <u>MA.912.AR.4.1</u>	<ul> <li>Students will:</li> <li>f 1.1: Understand that linear equations can be used to solve mathematical and real -worl d problems. Solve linear equations by using the properties of equality.</li> <li>f 1.2: Understand that the properties of equality are used to solve equations that have variables on each side. If an equation is true for all values of x, then it has infinitely many solutions; if it is not true for any value of x, then it has no solutions.</li> <li>f 1.3: Understand that literal equations are equations with two or more variables. They are solved by rewriting the equation to highlight the variable of interest.</li> <li>f 1.4: Understand th at the solution to an inequality in one variable is solved by using the properties of inequalities.</li> <li>f 1.5: Understand that a compound inequality is a combination of two or more inequalities used to describe multiple constraints.</li> <li>f 1.6: Understand that the solu tion to an absolute value equation either has two solutions, one positive</li> </ul>

Algebra 1A - Course Code: 120370



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- 9 1.2: Identify whether linear equations have one solution, infinitely many solutions, or no solution.
- 9 1.3: Rewrite literal equations .
- 9 1.4: Solve inequalities and graph the solutions in one variable.
- 9





**Optional Enrichment** 

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Algebra 1

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2.5 | I can: I have mastered 2.0 content and with help I am successful at 3.0 content.

Explain that each step in solving a linear equation follows from the equality in the previous step.

S olve linear equations with one variable using the properties of equality.

Use the properties of equality to solve linear equations with variables on both sides.

Identify whether linear equations have one solution, infinitely many solutions, or no solution.

Identify the property of equality to use to isolate a given variable.

2.0 Solve inequalities and graph the solutions in one variable.

Interpret solutions to inequalities within the context of the word problem.

Solve inequalities with infinitely many or no solutions.

Write compound inequalities from a graph

Solve and graph compound inequalities.

Interpret the solution to a compound inequality within a word problem given .

Solve absolute value equations.

Use absolute value equations to solve problems.

Teacher Critical Concept
Linear Equations

Algebra 1

Topic 2

- *f* Clarification 1: Key features are limited to domain, range, intercepts and rate of change.
- *f* Clarification 2: Instruction includes the use of standard form, slope -intercept form and point-slope form.
- *f* Clarification 3: Instruction includes cases where one variable has a coefficient of zero.
- *f* Clarification 4: Instruction includes representing the domain and range with inequality notation, interval notation or set -builder notation.
- *f* Clarification 5: Within the Algebra 1 course, notations for domain and range are limited to inequality and set-builder notations.
- 9 2.2: Understand that the point -slope form of a linear equation is used to write the equation of a line using the slope and any point on the line.
  - o MA.912.AR. 1.2: Rearrange equations or formulas to isolate a quantity of interest.
    - *f* Clarification 1: Instruction includes using formulas for temperature, perimeter, area and volume; using equations for linear (standard, slope -intercept and point-slope forms) and quadratic (standard, factored and vertex forms) functions.
  - o MA.912.AR.2.2: Write a linear two -variable equation to represent relationships between quantities from a graph, a written description or a table of values within a mathematical or real -w orld context.
  - o MA.912.AR.2.4: Given a table, equation or written description of a linear function, graph that function, and determine and interpret its key features.
  - o MA.912.AR.2.5:

- o MA.912.AR.2.4: Given a table, equation or written description of a linear function, graph that function, and determine and interpret its key features.
- o MA.912.AR.2.5: Solve and graph mathematical and real -world problems that are modeled with linear functions. Interpret key features and determine constraints in terms of the context .
- 9 2.4: Understand that the equations of lines can be used to help identify

	9 2.4: Graph lines to of parallel and per	show an understanding of the relationship between the slopes pendicular lines.	2-4 Parallel and Perpendicular Lines
	9 2.4: Solve real -v	vorld problems with parallel or perpendicular lines.	
	1.5	Partial success at score 2.0 content, and major errors or omissions regarding score 3.0 content.	
1.0	With help, partial succe	ess at score 2.0, content and score 3.0 content.	
	0.5	With help, partial success at score 2.0 content but not at score 3.0 content.	
0	Even with help, no succe	255.	

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		Teacher Critical Concept	Topic 3
Algebra 1	Linear	and Absolute Value Functions	MA. 912.AR.2. 5, MA.912.AR.2.4, MA.912.F .1.2, MA.912. F.1.5, MA.912.FL.3.2, MA.912.FL.3.4, MA.912.F.2.1,

9 3.2: Understand that linear functions can be represented in multiple ways, using words, tables, graphs, and rules. Function notation is a way to write the rule for a function f. The output of the function f(x), reads "f of x" means that f is a function of the input variable x.

- o MA.912.AR.2.4: Given a table, equation or written description of a linear function, graph that function, and determine and interpret its key features.
  - *f* Clarification 1: Key features are limited to domain, range, intercepts and rate of change.
  - *f* Clarification 2: Instruction includes the use of standard form, slope -intercept form and point-slope form.
  - *f* Clarification 3: Instruction includes cases where one variable has a coefficient of zero.
  - *f* Clarification 4: Instruction includes representing the domain and range with inequality notation, interval notation or set -builder notation.
- MA.912.AR.2.5: Solve and graph mathema tical and real -world problems that are modeled with linear functions. Interpret key features and determine constraints in terms of the context .
- o MA.912.F.1.2: Given a function represented in function notation, evaluate the function for an input in its domai n. For a real -world context, interpret the output.
  - *f* Clarification 1: Instruction includes using formulas for temperature, perimeter, area and volume; using equations for linear (standard, slope -intercept and point-slope forms) and quadratic (standard, facto red and vertex forms) functions.
- o MA.912.F.1.5: Compare key features of linear functions each represented algebraically, graphically, in tables or written descriptions.
  - *f* Clarification 1: Key features are limited to domain; range; intercepts; slope and end behavior.
- o MA.912.FL.3.2: Solve real -world problems involving simple, compound and continuously compounded interest.
  - *f* Clarification 1: Within the Algebra 1 course, interest is limited to simple and compound.
- o MA.912.FL.3.4: Explain the relationship between simple interest and linear growth. Explain the relationship between compound interest and exponential growth and the relationship between continuously compounded interest and exponential growth.
  - *f* Clarification 1: Within the Algebra 1 course, exponential growth is limited to compound interest.

No major error or omissions regarding	score 2.0 content, and partial success at
	score 3.0 content.

2.0

2.5



Student Name:



Student Critical Concept Linear and Absolute Value Functions

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Algebra 1	Teacher Critical Concept	Topic 4
	Systems of Linear Equations and Inequalities	MA.912.AR.9.1, MA.912.AR.9.6.
	M.C. Formative Assessment Name: DFA Algebra 1 Topic 4 Systems of Linear Equations and Inequalities	MA.912.AR.2.7, MA.912.AR.2.8, MA.912.AR.9.4

The student will:

1. 2.

4.0

**9** 4.3 : Understand that elimination is an alternate method for solving systems of equations when it is not easy to use substitution. Multiply one or both equations by a constant to get like coefficients that are opposite to use elimination.

- o MA.912.AR. 9.1: Given a mathematical or real -world context, write and solve a system of two- variable linear equations algebraically or graphically.
- MA.912.AR. 9.6: Given a real -world context, represent constraints as systems of linear equations or inequalities. Interpret solutions to problems as viable or non viable options.
  - *f* Clarification 1: Instruction focuses on analyzing a given function that models a real- world situation and writing constraints that are represented as linear equations or linear inequalities.

9 4.4 : Understan d that the graph of a linear inequality in two variables shows the solutions of the inequality as a half -plane above or below the boundary line. The boundary line is included in the solution when the inequality symbol is " or • and excluded when the inequality symbol is < or >.

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**Optional Enrichment** 





Graph systems of line8 em2 (9t7234.24 m )4Tfe8w34.24 (em1 (e8 6l cav)-2.2 (e8)--3.5 (abusa65l--3.5t7es )4Tft2.2 9 (s )0.9e8 )4Tf s

CHAR'LOTTE CO PUBLIC SCHOO	Algebra 1	Teacher Critical Concept Analyzing Data M.C. Formative Assessment Name: DFA Algebra 1 Topic 10 Analyzing Data	Topic         10           MA.912. DP.1.1, MA.912.DP.1.2,           MA.912. DP.1.4, MA.912.DP.3.1,           MA.912.DP.1.3, MA.912.DP.2.4,           MA.912.DP.2.6
The	e student will:		Resources & Assignments
4.0	The results of public op shows the opinion of vo high school should be b 1. Determine the joint fr percent. Round to the n 2. Based on the margi building of a new high s 3. In Central City, 75% of a. What percent of p school? b. Why might the inf	nion polls are used for all sorts of reasons. The table ters in Central City regarding whether or not a new uit. The Against No Opinion Total The Against	
3.5		n addition to score 3.0 performance, partial success at score 4.0 content.	
The	e student will: 9 10.1: Understand different information show frequency of	that line plots, histograms, and box plots provide about the data sets they represent. Line plots data, clusters, gaps, and outliers. Histograms show	

distribution of values and shape of the data. Box plots show the center and spread of a distribution.

- o MA.912.DP .1.1: Given a set of data, select an appropriate method to represent the data, depending on whether it is numerical or categorical data and on whether it is univariate or bivariate.
  - *f* Clarification 1: Instruction includes discussions regarding the strengths and weaknesses of each data display.
  - f Clarification 2: Numerical univariate includes histograms, stem-and-leaf plots, box plots and line plots; numerical bivariate includes scatter plots and line graphs; categorical univariate includes bar charts, circle graphs, line plots, frequency tables and relative frequency tables; and categorical bivariate includes segmented bar charts, joint frequency tables and joint relative frequency tables.
  - *f* Clarification 3: Instruction includes the use of appropriate units and labels and, where appropriate, using technology to create data displays.
- MA.912.DP.1.2: Interpret data distributions represented in various ways. State whether the data is numerical or categorical, whether it is univariate or bivariate and interpret the different components and quantities in the display.
- o MA.912.DP.1.4: Estimate a population total, mean or percentage using data from a sample survey; develop a margin of error through the use of simulation.
  - *f* Clarification 1: Within the Algebra 1 course, the margin of error will be given.
- 9 10.2 : Understand that to graph univariate categorical data, organize the data in a frequency table and plot the summary of the tables as a line plot, circle graph, or bar graph.
  - o MA.912.DP.1.1: Given a set of data, select an appropriate method to represent the data, depending on whether it is numerical or categorical data and on whether it is univariate or bivariate.
  - MA.912.DP.1.2: Interpret data distributions represented in various ways. State whether the data is numerical or categorical, whether it is univariate or bivariate and interpret the different components and quantities in the dissiS0.6 (d)-1.7 (i)t degorii9f-1.168 Td 7dteii9f-1.168 Td 8oto-•MA12.4 (.)9.iS0.6-7.2 (2.06-7.2 (1510 Td174 T2 /TT(1098 0.6 (n)-15.8(t))

 MA.912. DP.1.2: Interpret data distributions represented in various ways. State whether the data is numerical or categorical, whether it is univariate or bivariate and interpret the different components and quantities in the display. dieroiMA.9123 (6.1[(D)0.5 (415.6.(i)9.5 E(e))3576x(p)]TIBi/4ET2h9-35f70(2 (i)a.61(d)-9.9i)70(T))9.59 (92:6)-32 (4)18e3 (e)6.1 (r)-2.2 (n)-3.7c))-5.9 (e)0.6b (

#### The student will:

2.0

- 9 10.1: Represent data using line plots, box plots, and histograms.
- 9 10.1: Interpret the data displayed in line plots, box plots, and histograms within the context of the data that it represents.
- 9 10.2: Select an appropriate method to represent categorical data using tables, line plots, circle graphs, or bar graphs.
- 9 10.2: Interpret categorical data distributions represented in various graphical formats.
- 9 10.3: Identify and represent bivariate data.
- 9 10.3: Interpret bivariate data as numerical or categorical based on the specific data display.
  - 9 10.3: Create a Two -Way Frequency Table
  - 9 10.4: Compute and interpret the correlation coefficient for linear data.
  - 9 10.4: Distinguish between correlation and causation.
  - 9 10.5: Construct and Interpret a Two- Way Frequency Table
  - 9 10.5: Calculate and interpret joint and marginal frequencies, marginal relative frequencies, and conditional relative frequencies, and use them to make inferences.

Profinitency scales		CHARLOTTE
Student Name:	Student Critical Concept	Topic 10
	Analyzing Data	





By the end of the unit, I will be able to:

Understand that line plots, histograms, and box plots provide different information about the data sets they represent.





Represent data using line plots.

Represent data using box plots.

Represent data using histograms.

Interpret the data displayed in line plots, box plots, and histograms within the context of

the data that it represents.

Select an appropriate method to represent categorical data using tables, line plots, circle graphs, or bar graphs.

Interpre t categorical data distributions represented in various graphical formats.

2.0