

# Scope and Sequence

Course / Grade Title: Algebra 1A – 9 <sup>th</sup> Grade					
Course / Grade Content: What will students be expected to know and do? Provide the core knowledge and skills (standards) that will be taught and assessed. Organize the essential content standards by unit.			Student Lessons / Activities What will students do to demonstrate their learning? What cross-content integration is there with literacy?	Assessment(s) What assessments (formative and/or summative) will be used to measure student progress and achievement?	Differentiation How will the curriculum, instruction, and assessments be accommodated to meet the needs of each student?
Unit/Weeks	Big Ideas / Topics / Key Concepts	Essential Standards and Standards of Mathematical Practices (SMP)			
<b>Unit 1:</b> <ul style="list-style-type: none"> <li>• Unit Name: <b>Function Relationships</b></li> <li>• 5 Weeks in duration (Weeks 1 to 5)</li> </ul>	<u><b>Big Ideas/Topics:</b></u>  What is a function and how can tables, graphs, algebraic rules, and verbal descriptions be used to study them?  Given two variables, how do you decide which is the independent variable and which is the dependent variable?  How do the shapes of graphs, the patterns in tables, the parts of algebraic rules, or verbal descriptions give clues about the ways the variables are related to one another?	<u><b>Essential Standards:</b></u>  HSN-Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.  HSN-Q.A.3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  HSA-REI.D.10. Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).  HSF-IF.A.1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If $f$ is a function and $x$ is an element of its domain, then $f(x)$ denotes the output of $f$ corresponding to the input $x$ . The graph of $f$ is the graph of the equation $y = f(x)$ .	Lesson 1: Patterns, Equations and Graphs <b>Lesson (Literacy Integration: CCSS.ELA-LITERACY.RST.6-8.3 - Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks)</b>  Lesson 2: Ratios, Rules, and Conversions  Lesson 3: Percents  Lesson 4: Change Expressed as a Percent  Lesson 5: Solving Inequalities Using Multiplication or Division	Common Unit Online Pretest  Common Daily Formative Assessments (exit tickets, mini quizzes, Marzano Scale, and etc.)  Common Mid-Unit Formative Assessment  Common End-of-Unit Online Summative Assessment  Retest(s) of Standards Not mastered on the Common End-of-Unit Online Summative Assessment (Mastery = 75% or	Accommodations consistent with students' IEPs and 504 plans will be provided regarding the curriculum, instruction, and assessments  Modifications to the curriculum will be provided to special education students with a Personal Curriculum for Algebra  The Online Common Pretest results will be analyzed during the weekly PLC and students showing mastery of the standards will be provided with enrichment activities during lessons that cover those standards mastered  Common Formative and Summative Assessment results will be discussed at each weekly PLC meeting to determine what will be done for students who aren't learning, and what will be

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	<p>What are the advantages and disadvantages of using graphs, tables, verbal descriptions, and algebraic rules to demonstrate the relationship between two variables?</p> <p><b><u>Key Concepts:</u></b></p> <ul style="list-style-type: none"> <li>• Function</li> <li>• Families of Functions</li> <li>• Domain and Range</li> <li>• Function Notation</li> <li>• Patterns of Change / Recursion</li> <li>• Relationship between Variables</li> <li>• Independent / Dependent Variable</li> </ul>	<p>HSF-IF.A.2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.</p> <p>HSF-IF.B.4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship.</p> <p>HSF-IF.B.5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes.</p> <p>HSF-IF.C.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.</p> <p><b><u>Standards of Mathematical Practices:</u></b></p> <p>Construct viable arguments and critique the reasoning of others when using contexts to make connections between multiple representations of functions and including function notation;</p> <p>Make sense of problems and persevere in solving them developing routines for representing, examining, and</p>	<p>Lesson 6: Using Graphs to Relate Two Quantities (<b>Literacy Integration: CCSS.ELA - LITERACY.RST.6-8.7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table)</b>)</p> <p>Lesson 7: Patterns and Linear Equations</p> <p>Lesson 8: Patterns and Nonlinear Functions</p> <p>Lesson 9: Graphing a Function Rule (<b>Literacy Integration: CCSS.ELA-LITERACY.RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks)</b>)</p> <p>Lesson 10: Writing a Function Rule (<b>Literacy Integration: CCSS.ELA-LITERACY.RST.6-8.4 Determine the meaning of symbols, key terms,</b></p>	<p>more of the points possible are earned for an assessed standard)</p>	<p>done for students who already know the standards</p> <p>During cooperative learning lessons students will be grouped by readiness to ensure an adequate balance of both high and low readiness learners in the groupings</p> <p>Students not mastering standards on the Common End-of-Unit Online Summative Assessment will be given opportunities for re-dos and possibly re-teaching over a 2-week period following the assessment. At the end of the 2-week period, students will be given an opportunity to retest on those standards not mastered originally. (Mastery = 75% or more of the points possible are earned for an assessed standard)</p>
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		<p>interpreting functions with multiple representations; and</p> <p>Model with mathematics by attending to contexts and making connections between different representations of functions.</p>	<p><b>and other domain-specific words and phrases as they are used in a specific scientific or technical context)</b></p> <p>Lesson 11: Formalizing Relations and Functions</p> <p>Lesson 12: Arithmetic Sequences</p> <p>Lesson 13: Rate of Change and Slope</p> <p>Lesson 14: Slope-Intercept Form</p> <p>Lesson 15: Point Slope Form</p> <p>Lesson 16: Standard Form</p> <p>Lesson 17: Applications of Linear Systems</p> <p>Lesson 18: Exponential Functions</p> <p>Lesson 19: Exponential Growth and Decay</p> <p>Lesson 20: Geometric Sequences</p>		
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