



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

Mathematics Algebra I: Year at a Glance 2019 - 2020

| Q1 | | Q2 | | Q3 | | Q4 | |
|--|----------------|--|---------------|---|---------------|--|----------------|
| Module 1 Aug. 12 – Oct. 11 | | Module 3 Oct. 21 - Dec. 20 | | Module 4 Jan. 6 – Mar. 13 | | Modules 2 and 5 Mar. 23 – May 22 TN Ready Testing Apr 13 – May 8 | |
| Module 1 Relationships Between Quantities and Reasoning with Equations and Their Graphs | | Module 3 Linear and Exponential Functions | | Module 4 Polynomials and Quadratic Expressions, Equations, and Functions | | Module 2 Descriptive Statistics Module 5 A Synthesis of Modeling with Equations and Functions | |
| A1. N.Q.A.1 | A1.A.REI. C.4* | A1. A. SSE. B.3 | A1. F.IF.C.8* | A1. A. SSE. A.1 | A1. F.IF.C.6* | A1. N.Q.A.2 | A1. S.ID.A.1 |
| A1. N.Q.A.2 | A1.A.REI. D.5* | A1. A. SSE. B.3c* | A1. F.BF.A.1 | A1. A. SSE. A.2 | A1. F.IF.C.7* | A1. N.Q.A.3 | A1. S.ID.A.2 |
| A1. N.Q.A.3 | A1.A.REI. D.7* | A1. A. CED.A.1 | A1. F.BF.A.1a | A1. A. SSE. B.3 | A1. F.IF.C.8* | A1. A. CED.A.1 | A1. S.ID.A.3 |
| A1. A. APR.A.1 | | A1.A.REI. D.6* | A1. F.BF.B.2* | A1. A. APR.A.1 | A1. F.BF.B.2* | A1. A. CED.A.2 | A1. S.ID.B.4* |
| A1. A. CED.A.1 | | A1. F.IF.A.1 | A1. F.LE.A.1a | A1. A. APR.B.2* | | A1. F.IF.B.3* | A1. S.ID.B.4a* |
| A1. A. CED.A.2 | | A1. F.IF.A.2 | A1. F.LE.A.2 | A1. A. REI.B.3* | | A1. F.IF.B.4* | A1. S.ID.B.4b* |
| A1. A. CED.A.3 | | A1. F.IF.B.3* | A1. F.LE.A.3 | A1. A. CED.A.1 | | A1. F.IF.B.5* | A1. S.ID.C.5* |
| A1. A. CED.A.4 | | A1. F.IF.B.4* | A1. F.LE.B.4* | A1. A. CED.A.2 | | A1. F.BF.A.1 | A1. S.ID.C.6* |
| A1. A. SSE. A.1 | | A1. F.IF.B.5* | | A1.A.REI. D.6* | | A1. F.LE.A.1 | A1. S.ID.C.7* |
| A1. A. SSE. A.2 | | A1. F.IF.C.6* | | A1. F.IF.B.3* | | A1. F.LE.A.1b | |
| A1. A. REI.A.1 | | A1. F.IF.C.6a* | | A1. F.IF.B.4* | | A1. F.LE.A.1c | |
| A1.A.REI.B. 2* | | A1. F.IF.C.6b* | | A1. F.IF.B.5* | | A1. F.LE.A.2 | |

Key:

| | |
|---------------|----------------------|
| Major Content | ➤ Supporting Content |
|---------------|----------------------|

*** (asterisk) Indicates a standard with differences between the TN State Standards' numbering and/or verbiage and the standards in Eureka**

Note: Please use this suggested pacing as a guide. It is understood that teachers may be up to 1 week ahead or 1 week behind depending on the needs of their students.

Use the instructional map and Digital Suite resources as you prepare to teach a module for additional guidance in planning, pacing, and suggestions for omissions.



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

Introduction

Destination 2025, Shelby County Schools’ 10-year strategic plan, is designed not only to improve the quality of public education, but also to create a more knowledgeable, productive workforce and ultimately benefit our entire community.

What will success look like?



In order to achieve these ambitious goals, we must collectively work to provide our students with high quality, college and career ready aligned instruction. The Tennessee State Standards provide a common set of expectations for what students will know and be able to do at the end of a grade. The State of Tennessee provides two sets of standards, which include the Standards for Mathematical Content and The Standards for Mathematical Practice. The Content Standards set high expectations for all students to ensure that Tennessee graduates are prepared to meet the rigorous demands of mathematical understanding for college and career. The eight Standards for Mathematical Practice describe the varieties of expertise, habits of mind, and productive dispositions that educators seek to develop in all students. The Tennessee State Standards also represent three fundamental shifts in mathematics instruction: **focus, coherence and rigor**.

Instructional Shifts for Mathematics



Throughout this curriculum map, you will see resources as well as links to tasks that will support you in ensuring that students are able to reach the demands of the standards in your classroom. In addition to the resources embedded in the map, there are some high-leverage resources around the content standards and mathematical practice standards that teachers should consistently access. For a full description of each, click on the links below.





How to Use the Maps

Overview

An overview is provided for each quarter and includes the topics, focus standards, intended rigor of the standards and foundational skills needed for success of those standards.

Your curriculum map contains four columns that each highlight specific instructional components. Use the details below as a guide for information included in each column.

Tennessee State Standards

TN State Standards are located in the left column. Each content standard is identified as Major Content or Supporting Content. A key can be found at the bottom of the map.

Content

This section contains learning objectives based upon the TN State Standards. Best practices tell us that clearly communicating measurable objectives lead to greater student understanding. Additionally, essential questions are provided to guide student exploration and inquiry.

Instructional Support

District and web-based resources have been provided in the Instructional Support column. You will find a variety of instructional resources that align with the content standards. The additional resources provided should be used as needed for content support and scaffolding.

Vocabulary and Fluency

The inclusion of vocabulary serves as a resource for teacher planning and for building a common language across K-12 mathematics. One of the goals for Tennessee State Standards is to create a common language, and the expectation is that teachers will embed this language throughout their daily lessons. In order to aid your planning, we have also included a list of fluency activities for each lesson. It is expected that fluency practice will be a part of your daily instruction. (Note: Fluency practice is not intended to be speed drills, but rather an intentional sequence to support student automaticity. Conceptual understanding must underpin the work of fluency.)

Instructional Calendar

As a support to teachers and leaders, an instructional calendar is provided **as a guide**. Teachers should use this calendar for effective planning and pacing, and leaders should use this calendar to provide *support* for teachers. Due to variances in class schedules and differentiated support that may be needed for students' adjustment to the calendar may be required.



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

Topics Addressed in Quarter

Topic B: The Structure of Expressions




Topic C: Solving Equations and Inequalities

Topic D: Creating Equations to Solve Problems

Time Frame: August 12 – October 11, 2019

Overview

During this quarter, students complete **Module 1** where they explore the main functions that they will work with in Algebra I: linear, quadratic, and exponential functions, and analyze and explain precisely the process of solving an equation. Through repeated reasoning, students develop fluency in writing, interpreting, and translating between various forms of linear equations and inequalities and make conjectures about the form that a linear equation might take in a solution to a problem. They reason abstractly and quantitatively by choosing and interpreting units in the context of creating equations in two variables to represent relationships between quantities. They master the solution of linear equations and apply related solution techniques and the properties of exponents to the creation and solution of simple exponential equations. They learn the terminology specific to polynomials and understand that polynomials form a system analogous to the integers.

| Grade Level Standard | Type of Rigor | Foundational Standards |
|---|--|----------------------------|
| A1.N.Q.A.1 | Conceptual Understanding | 6.RP.A.3 |
| A1.N.Q.A.2 | Conceptual Understanding | Introductory |
| A1.N.Q.A.3 | Conceptual Understanding | 8.EE.A.4 |
|  A1.A.APR.A.1 | Conceptual Understanding & Procedural Fluency | 8.EE.A.1, 7.EE.A.1 |
| A1.A.SSE.A.1 | Conceptual Understanding | 7.EE.A.2, 6.EE.A.2 |
| A1.A.SSE.A.2 | Conceptual Understanding & Procedural Fluency | 7.EE.A.1, 6.EE.A.3 |
| A1.A.CED.A.1 | Conceptual Understanding, Procedural Fluency & Application | 8.EE.C.7, 7.EE.B.4 |
| A1.A.CED.A.2 | Conceptual Understanding & Procedural Fluency | 8.EE.C.8, 8.F.A.3, 8.F.B.4 |
| A1.A.CED.A.3 | Conceptual Understanding & Application | Introductory |
| A1.A.CED.A.4 | Procedural Fluency | Introductory |
| A1.A.REI.A.1 | Conceptual Understanding | 8.EE.C.7, 7.EE.B.4 |
| A1.A.REI.B.2* | Procedural Fluency | 8.EE.C.7, 7.EE.B.4 |
|  A1.A.REI.C.4* | Procedural Fluency | 8.EE.C.8 |
| A1.A.REI.D.5* | Conceptual Understanding | 8.EE.B.5 |
| A1.A.REI.D.7* | Procedural Fluency | 8.EE.C.7, 8.EE.C.8 |
|  Indicates 2017-2018 Power Standard | | |
| Instructional Focus Documents-Algebra I | | |



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

| TN STATE STANDARDS | CONTENT | INSTRUCTIONAL SUPPORT | VOCABULARY |
|---|---|---|--|
| <p>Module 1 Relationships Between Quantities and Reasoning with Equations and Their Graphs</p> <p><u>Algebra I Pacing and Preparation Guide</u></p> <p><i>Allow approximately 2 weeks for instruction, review and assessment of Topic B</i> Mid-Module 1 Assessment Window – August 29-30 (do not use problems from omitted lesson)</p> <p><i>Allow approximately 4.5 weeks for instruction, review and assessment of Topic C</i> <i>Allow approximately 1 week for instruction, review and assessment of Topic D</i> End-of-Module 1 Assessment Window – October 7-10 (do not use problems from omitted lesson)</p> | | | |
| <p>Domain: Seeing Structure in Expressions</p> <p>Cluster: Interpret the structure of expressions</p> <p>■ A1.A.SSE.A.2 Use the structure of an expression to identify ways to rewrite it</p> <p>Domain: Arithmetic with Polynomials and Rational Expressions (A-APR)</p> <p>Cluster: Perform arithmetic operations on polynomials</p> <p>■ A1.A.APR.A.1 Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.</p> | <p>Topic B Objectives:</p> <p>Lesson 6: A1.A.SSE.A.2</p> <ul style="list-style-type: none"> Students use the structure of an expression to identify ways to rewrite it. Students use the distributive property to prove equivalency of expressions. <p>Lesson 7: A1.A.SSE.A.2</p> <ul style="list-style-type: none"> Students use the commutative and associative properties to recognize structure within expressions and to prove equivalency of expressions. <p>Lesson 8: A1.A.APR.A.1</p> <ul style="list-style-type: none"> Students understand that the sum or difference of two polynomials produces another polynomial and relate polynomials to the system of integers; students add and subtract polynomials. <p>Lesson 9: A1.A.APR.A.1</p> <ul style="list-style-type: none"> Students understand that the sum or difference of two polynomials produces another polynomial and relate polynomials to the system of integers; students add and subtract polynomials. | <p>For Topic B, you may choose to use resources from Teacher Toolbox for review, remediation and/or assessment to meet the needs of your students. Suggested lessons are as follows:</p> <ul style="list-style-type: none"> 6th grade, Lesson 15: Numerical Expressions with Exponents 8th grade, Lesson 1: Properties of Integer Exponents 8th grade, Lesson 13: Solve Linear Equations with Rational Coefficients <p>Topic B: The Structure of Expressions Special Note: <i>It is recommended that teachers access the additional resources below to meet the needs of your students.</i></p> <p>Lesson 6: (eMath U1:L4 Distributive Property) Lesson 7: (eMath U1:L3 Commutative & Associative Properties) / (eMath U1:L5 Equivalent Expressions) Lesson 8: Introductory (Arlington Algebra Project: Combining Like Terms pg.203) Lesson 9: (Arlington Algebra Project: Multiplying Polynomials pg.207)</p> <p>Mid-Module 1 Assessment (Complete by 8/30/19; do not use problems from omitted lesson)</p> <p>Special Note: <i>It is recommended that teachers assess student gaps and scaffold accordingly using the Additional Resources/Tasks below.</i></p> <p>Additional Resources/Tasks: MVP Module 1 Task 1 Checkerboard Borders (N.Q.2, A.SSE.1) MVP Module 1 Task 2 Building More Checkerboard Borders (N.Q.2, A.SSE.1) MVP Module 1 Task 3 Serving Up Symbol (A.SSE.1, N.Q.1) MVP Module 1 Task 4 Examining Units (N.Q.1)</p> | <p>Vocabulary for Module 1:</p> <p>Algebraic Expression Constant Term of a Polynomial in Standard Form Degree of a Monomial Degree of a Polynomial in Standard Form Equivalent Algebraic Expressions Equivalent Numerical Expressions Graph of an Equation in Two Variables Leading Term and Leading Coefficient of a Polynomial in Standard Form Monomial Numerical Expression Numerical Symbol Piecewise Linear Function Polynomial Expression Solution Solution Set Standard Form of a Polynomial Expression in One Variable Variable Symbol Zero Product Property</p> <p>Familiar Terms and Symbols for Module 1:</p> <p>Equation, Formula, Identity, Inequality, Linear Function, Properties of Equality, Properties of Inequality, Solve, System of Equations, Term</p> |



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

| TN STATE STANDARDS | CONTENT | INSTRUCTIONAL SUPPORT | VOCABULARY |
|--|--|--|--|
| <p>Domain: Creating Equations Cluster Create equations that describe numbers or relationships.</p> <ul style="list-style-type: none"> A1.A.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales. A1.A.CED.A.3 Represent constraints by equations or inequalities and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context. A1.A.CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. <p>Domain: Reasoning with Equations and Inequalities Cluster: Understand solving equations as a process of reasoning and explain the reasoning</p> <ul style="list-style-type: none"> A1.A.REI.A.1 Explain each step in solving an equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. <p>Domain: Reasoning with Equations and Inequalities Cluster: Solve equations and inequalities in one variable</p> <ul style="list-style-type: none"> A1.A.REI.B.2 (formerly A.REI.B.3) Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. | <p>Topic C Objectives:</p> <p>Lesson 10: A1.A.REI.B.2</p> <ul style="list-style-type: none"> Students understand that an equation is a statement of equality between two expressions. When values are substituted for the variables in an equation, the equation is either true or false. Students find values to assign to the variables in equations that make the equations true statements. <p>Lesson 11: A1.A.REI.B.2</p> <ul style="list-style-type: none"> Students understand that an equation with variables is often viewed as a question asking for the set of values one can assign to the variables of the equation to make the equation a true statement. They see the equation as a “filter” that sifts through all numbers in the domain of the variables, sorting those numbers into two disjoint sets: the Solution Set and the set of numbers for which the equation is false. Students understand the commutative, associate, and distributive properties as identities, e.g., equations whose solution sets are the set of all values in the domain of the variables. <p>Lesson 12: A1.A.REI.A.1, A1.A.REI.B.2</p> <ul style="list-style-type: none"> Students are introduced to the formal process of solving an equation: starting from the assumption that the original equation has a solution. Students explain each step as following from the properties of equality. Students identify equations that have the same solution set. | <p>For Topic C, you may choose to use resources from Teacher Toolbox for review, remediation and/or assessment to meet the needs of your students. Suggested lessons are as follows:</p> <ul style="list-style-type: none"> 6th grade, Lesson 16: Algebraic Expressions <p>Topic C: The Structure of Expressions Special Note: <i>It is recommended that teachers access the additional resources below to meet the needs of your students.</i></p> <p>Lesson 10: (eMath U2:L1 Equations and Their Solutions) Lesson 11: (Arlington Algebra Project: Solving Simple Linear Equations pg.97) Lesson 12 (2 days): eMath U2:L3 Linear Equation Solving Review / (Arlington Algebra Project: Solving Linear Equations w/ Variables on Both Sides pg.105) Lesson 13: (eMath U2:L4 Justifying the Steps in Solving an Equation) Lesson 14 (2 days): eMath U2:L9 Solving Linear Inequalities / (Arlington Algebra Project: Linear Inequalities pgs.127-135) Lesson 15 (omit) Lesson 16 (omit) Lesson 17 Lesson 18 (omit) Lesson 19 (2 days) Arlington Algebra Project: Rearranging Formulas pg.123 Lesson 20 Lesson 21: (Arlington Algebra Project: Linear Inequalities in Two Variables pg.93) Optional: Before Lesson 22, Review material covered in Module 1, Lesson 5: Two Graphing Stories (A1.N.Q.A.1, A1.N.Q.A.2, A1.N.Q.A.3) Lesson 22: (Arlington Algebra Project: Linear Systems pgs.77, 143, 147, 163) Lesson 23 omit) Lesson 24</p> | <p>Vocabulary for Module 1:</p> <p>Algebraic Expression Constant Term of a Polynomial in Standard Form Degree of a Monomial Degree of a Polynomial in Standard Form Equivalent Algebraic Expressions Equivalent Numerical Expressions Graph of an Equation in Two Variables Leading Term and Leading Coefficient of a Polynomial in Standard Form Monomial Numerical Expression Numerical Symbol Piecewise Linear Function Polynomial Expression Solution Solution Set Standard Form of a Polynomial Expression in One Variable Variable Symbol Zero Product Property</p> <p>Familiar Terms and Symbols for Module 1: Equation, Formula, Identity, Inequality, Linear Function, Properties of Equality, Properties of Inequality, Solve, System of Equations, Term</p> |



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

| TN STATE STANDARDS | CONTENT | INSTRUCTIONAL SUPPORT | VOCABULARY |
|---|--|--|---|
| <p>Domain: Reasoning with Equations and Inequalities</p> <p>Cluster: Solve systems of equations.</p> <p>➤ A1.A.REI.C.4 (formerly A.REI.C.6) Write and solve a system of linear equations in context.</p> <p>Domain: Reasoning with Equations and Inequalities</p> <p>Cluster: Represent and solve equations and inequalities graphically.</p> <p>■ A1.A.REI.D.5 (formerly A.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).</p> <p>■ A1.A.REI.D.7 (formerly A.REI.D.12) Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.</p> | <p>Lesson 13: A1.A.REI.A.1, A1.A.REI.B.2</p> <ul style="list-style-type: none"> Students learn “if-then” moves using the properties of equality to solve equations. Students also explore moves that may result in an equation having more solutions than the original equation. <p>Lesson 14: A1.A.REI.B.2</p> <ul style="list-style-type: none"> Students learn <i>if-then</i> moves using the addition and multiplication properties of inequality to solve inequalities and graph the solution sets on the number line. <p>Lesson 17: A1.A.REI.A.1, A1.A.REI.B.2, A1.A.SSE.A.2</p> <ul style="list-style-type: none"> Students learn that equations of the form $(x - a)(x - b) = 0$ have the same solution set as two equations joined by “or.” $x - a = 0$ or $x - b = 0$. Students solve factored or easily factorable equations. <p>Lesson 19: A1.A.CED.A.4, A1.A.REI.B.2</p> <ul style="list-style-type: none"> Students learn to think of some of the letters in a formula as constants in order to define a relationship between two or more quantities, where one is in terms of another, for example holding V in $V = IR$ as constant, and finding R in terms of I. <p>Lesson 20: A1.A.CED.A.2, A1.A.CED.A.3, A1.A.REI.D.5</p> <ul style="list-style-type: none"> Students recognize and identify solutions to two-variable equations. They represent the solution set graphically. They create two variable equations to represent a situation. They understand that the graph of the line $ax + by = c$ is a visual representation of the solution set to the equation $ax + by = c$. | <p>Topic C: The Structure of Expressions</p> <p>Special Note: <i>It is recommended that teachers access the additional resources below to meet the needs of your students.</i></p> <p>Lesson 10: (eMath U2:L1 Equations and Their Solutions)</p> <p>Lesson 11: (Arlington Algebra Project: Solving Simple Linear Equations pg.97)</p> <p>Lesson 12 (2 days): eMath U2:L3 Linear Equation Solving Review / (Arlington Algebra Project: Solving Linear Equations w/ Variables on Both Sides pg.105)</p> <p>Lesson 13: (eMath U2:L4 Justifying the Steps in Solving an Equation)</p> <p>Lesson 14 (2 days): eMath U2:L9 Solving Linear Inequalities / (Arlington Algebra Project: Linear Inequalities pgs.127-135)</p> <p>Lesson 15 (omit)</p> <p>Lesson 16 (omit)</p> <p>Lesson 17</p> <p>Lesson 18 (omit)</p> <p>Lesson 19 (2 days) Arlington Algebra Project: Rearranging Formulas pg.123</p> <p>Lesson 20</p> <p>Lesson 21: (Arlington Algebra Project: Linear Inequalities in Two Variables pg.93)</p> <p>Optional: Before Lesson 22, Review material covered in Module 1, Lesson 5: Two Graphing Stories</p> <p>(A1.N.Q.A.1, A1.N.Q.A.2, A1.N.Q.A.3)</p> <p>Lesson 22: (Arlington Algebra Project: Linear Systems pgs.77, 143, 147, 163)</p> <p>Lesson 23 omit)</p> <p>Lesson 24</p> | <p>Vocabulary for Module 1:</p> <p>Algebraic Expression Constant Term of a Polynomial in Standard Form Degree of a Monomial Degree of a Polynomial in Standard Form Equivalent Algebraic Expressions Equivalent Numerical Expressions Graph of an Equation in Two Variables Leading Term and Leading Coefficient of a Polynomial in Standard Form Monomial Numerical Expression Numerical Symbol Piecewise Linear Function Polynomial Expression Solution Solution Set Standard Form of a Polynomial Expression in One Variable Variable Symbol Zero Product Property</p> <p>Familiar Terms and Symbols for Module 1:</p> <p>Equation, Formula, Identity, Inequality, Linear Function, Properties of Equality, Properties of Inequality, Solve, System of Equations, Term</p> |



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

| TN STATE STANDARDS | CONTENT | INSTRUCTIONAL SUPPORT | VOCABULARY |
|--------------------|--|---|--|
| | <p>Lesson 21: A1.A.REI.D.7</p> <ul style="list-style-type: none"> Students recognize and identify solutions to two-variable inequalities. They represent the solution set graphically. They create two variable inequalities to represent a situation. Students understand that a half-plane bounded by the line $ax + by = c$ is a visual representation of the solution set to a linear inequality such as $ax + by < c$. They interpret the inequality symbol correctly to determine which portion of the coordinate plane is shaded to represent the solution. <p>Lesson 22: A1.A.REI.C.4, A1.A.REI.D.7</p> <ul style="list-style-type: none"> Students identify solutions to simultaneous equations or inequalities; they solve systems of linear equations and inequalities either algebraically or graphically. <p>Lesson 23: A1.A.CED.A.2, A1.A.REI.C.4</p> <ul style="list-style-type: none"> Students create systems of equations that have the same solution set as a given system. Students understand that adding a multiple of one equation to another creates a new system of two linear equations with the same solution set as the original system. This property provides a justification for a method to solve a system of two linear equations algebraically. <p>Lesson 24: A1.A.CED.A.2, A1.A.CED.A.3, A1.A.REI.C.4, A1.A.REI.D.7</p> <ul style="list-style-type: none"> Students use systems of equations or inequalities to solve contextual problems and interpret solutions within a particular context. | <p>Topic C: The Structure of Expressions Special Note: <i>It is recommended that teachers access the additional resources below to meet the needs of your students.</i></p> <p>Lesson 10: (eMath U2:L1 Equations and Their Solutions) Lesson 11: (Arlington Algebra Project: Solving Simple Linear Equations pg.97) Lesson 12 (2 days): eMath U2:L3 Linear Equation Solving Review / (Arlington Algebra Project: Linear Equations w/ Variables on Both Sides pg.105) Lesson 13: (eMath U2:L4 Justifying the Steps in Solving an Equation) Lesson 14 (2 days): eMath U2:L9 Solving Linear Inequalities / (Arlington Algebra Project: Linear Inequalities pgs.127-135) Lesson 15 (omit) Lesson 16 (omit) Lesson 17 Lesson 18 (omit) Lesson 19 (2 days) Arlington Algebra Project: Rearranging Formulas pg.123 Lesson 20 Lesson 21: (Arlington Algebra Project: Linear Inequalities in Two Variables pg.93) Optional: Before Lesson 22, Review material covered in Module 1, Lesson 5: Two Graphing Stories (A1. N.Q.A.1, A1. N.Q.A.2, A1. N.Q.A.3) Lesson 22: (Arlington Algebra Project: Linear Systems pgs.77, 143, 147, 163) Lesson 23 (omit) Lesson 24 Special Note: <i>It is recommended that teachers assess student gaps and scaffold accordingly using the Additional Resources/Tasks below.</i> Additional Resource(s): Teacher Guide to Algebra I Standards: Linear Equations MVP Module 1 Task 5 Cafeteria Actions and Reactions (A.REI.1) MVP Module 1 Task 6 Elvira's Equations (A.REI.2, A.CED.4) MVP Module 1 Task 7 Solving Equations, Literally (A.REI.1, A.REI.2, A.CED.4) MathBits Algebra I Notebook</p> | <p>Vocabulary for Module 1:</p> <p>Algebraic Expression Constant Term of a Polynomial in Standard Form Degree of a Monomial Degree of a Polynomial in Standard Form Equivalent Algebraic Expressions Equivalent Numerical Expressions Graph of an Equation in Two Variables Leading Term and Leading Coefficient of a Polynomial in Standard Form Monomial Numerical Expression Numerical Symbol Piecewise Linear Function Polynomial Expression Solution Solution Set Standard Form of a Polynomial Expression in One Variable Variable Symbol Zero Product Property</p> <p>Familiar Terms and Symbols for Module 1:</p> <p>Equation, Formula, Identity, Inequality, Linear Function, Properties of Equality, Properties of Inequality, Solve, System of Equations, Term</p> |



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Algebra I

| TN STATE STANDARDS | CONTENT | INSTRUCTIONAL SUPPORT | VOCABULARY |
|---|---|--|--|
| <p>Domain: Quantities Cluster: Reason quantitatively and use units to solve problems.</p> <p>■ A1.N.Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.</p> <p>Domain: Seeing Structure in Expressions Cluster: Interpret the structure of expressions</p> <p>■ A1.A.SSE.A.1 Interpret expressions that represent a quantity in terms of its context.</p> <p>a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.</p> <p>Domain: Create equations Cluster: Create equations that describe numbers or relationships.</p> <p>■ A1.A.CED.A.1 Create equations and inequalities in one variable and use them to solve problems.</p> <p>■ A1.A.CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations with two variables on coordinate axes with labels and scales.</p> <p>Domain: Reasoning with Equations and Inequalities Cluster: Solve equations and inequalities in one variable</p> <p>■ A1.A.REI.B.2 (formerly A.REI.B.3) Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.</p> | <p>Topic D Objectives:</p> <p>Lesson 25: A1.A.CED.A.1, A1.A.REI.B.2, A1.N.Q.A.1</p> <ul style="list-style-type: none"> Students investigate a problem that can be solved by reasoning quantitatively and by creating equations in one variable. Students compare the numerical approach to the algebraic approach. <p>Lesson 28: A1.N.Q.A.1, A1.A.CED.A.2</p> <ul style="list-style-type: none"> Students create equations and inequalities in one variable and use them to solve problems. Students create equations in two or more variables to represent relationships between quantities and graph equations on coordinate axes with labels and scales. Students represent constraints by inequalities and interpret solutions as viable or non-viable options in a modeling context. | <p>Topic D: Creating Equations to Solve Problems</p> <p>Lesson 25 Lesson 26 (omit) Lesson 27 (omit) Lesson 28 (optional)</p> <p>Special Note: <i>It is recommended that teachers assess student gaps and scaffold accordingly using the Additional Resources/Tasks below.</i></p> <p>Additional Resources: Choose from the following suggested Tasks: Speeding Ticket (A.CED) Delivery Trucks (A.SSE.A.1) Kitchen Floor Tiles (A.SSE.A.1) Rabbit Food (A.CED; N.Q; A.REI) Cash Box (A.CED; A.REI) Algebra I – Paulie’s Pen (A.CED)</p> <p>MathBits Algebra I Notebook</p> <p>End-of-Module 1 Assessment (Complete by 10/10/19; do not use problems from omitted lessons)</p> <p><i>Assessments other than Mid-Module and End-of-Module assessments should be given based upon the lessons taught and the needs of the students.</i></p> <p>Special Note: <i>It is recommended that teachers should begin preparing for next quarter with by attending the Module Study for Module 3 that will be held towards the end of the quarter.</i></p> | <p>Vocabulary for Module 1:</p> <p>Algebraic Expression Constant Term of a Polynomial in Standard Form Degree of a Monomial Degree of a Polynomial in Standard Form Equivalent Algebraic Expressions Equivalent Numerical Expressions Graph of an Equation in Two Variables Leading Term and Leading Coefficient of a Polynomial in Standard Form Monomial Numerical Expression Numerical Symbol Piecewise Linear Function Polynomial Expression Solution Solution Set Standard Form of a Polynomial Expression in One Variable Variable Symbol Zero Product Property</p> <p>Familiar Terms and Symbols for Module 1:</p> <p>Equation, Formula, Identity, Inequality, Linear Function, Properties of Equality, Properties of Inequality, Solve, System of Equations, Term</p> |



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

RESOURCE TOOLKIT

Standards

[Teacher Guide to Algebra I Standards: Linear Equations](#)
[HS Flip Book with Examples of Each Standard](#)
 CCSS
<http://www.ccsstoolbox.org/>
<http://parcconline.org/>
 Achieve
[Tennessee Academic Standards for Mathematics](#)
[Tennessee Assessment LiveBinder](#)
[Achieve the Core Coherence Map](#)

Videos

[Khan Academy](#)
[Illuminations \(NCTM\)](#)
[Discovery Education](#)
[The Futures Channel](#)
[The Teaching Channel](#)
[Teachertube.com](#)
[Get The Math](#)
[eMathInstruction](#)

Calculator

[Texas Instruments Education](#)
 TI-Nspire
http://www.atomiclearning.com/ti_84
 TICommonCore.com
<http://www.casioeducation.com/educators>

Manipulatives/Other Resources

[MathBits Algebra I Notebook](#)
[Problem Attic](#)
[OpenEd](#)
[National Library of Virtual Manipulatives](#)
<http://www.shodor.org/interactivate/activities/>
[Edugoodies](#)
[Graphic Organizers \(9-12\)](#)

SEL Resources

[SEL Connections with Math Practices](#)
[SEL Core Competencies](#)
[The Collaborative for Academic, Social, and Emotional Learning \(CASEL\)](#)

Tasks/Lessons

[Edutoolbox \(formerly Tncore.org\)](#)
[Mathematics Assessment Project \(MARS Tasks, Lessons & PD Modules\)](#)
[Dan Meyer's Three-Act Math Tasks](#)
[Illustrative Math Tasks](#)
[UT Dana Center](#)
[Inside Math Tasks](#)
[LearnZillion](#)
[eMathInstruction](#)
[Arlington Algebra Project](#)

ACT/SAT Testing

ACT & SAT
[TN ACT Information & Resources](#)
[ACT College & Career Readiness Mathematics Standards](#)
[SAT Connections](#)
[SAT Practice from Khan Academy](#)



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

August 2019

| Suggested Lessons for the Week | Monday | Tuesday | Wednesday | Thursday | Friday | Notes: |
|---|--|------------------------|------------------------|--|--|--|
| | | | | 1 | 2 | <p><i>Please use this suggested pacing as a guide. It is understood that teachers may be up to 1 week ahead or 1 week behind depending on their individual class needs.</i></p> <p>Flex Day Options Include:</p> |
| | 5 | 6 | 7 | 8 | 9 | |
| Prepare to Launch Module 1 including Foundational Skills | 12 <i>1st Quarter Begins</i> | 13 | 14 | 15 | 16 | <p>Standard- Suggested standard(s) to review for the day (*-denotes a Power Standard)</p> <p>Pacing – Use this time to adjust instruction to stay on pace.</p> <p>Other- This includes assessments, review, re-teaching, etc.</p> |
| <p><i>Use this time to establish routines, procedures, and build positive classroom culture. Additional SEL resources: SEL Connections and SEL Competencies</i></p> | | | | | | |
| Module 1, Topic B (Lessons 6 & 7) | 19 Topic B Lesson 6 | 20 Topic B Lesson 6 | 21 Topic B Lesson 7 | 22 Topic B Lesson 7 | 23 Flex Day Options A1.A.SSE.A.2 A1.A.APR.A.1* Pacing Other | |
| Module 1, Topic B (Lessons 8 & 9) | 26 Topic B Lesson 8 | 27 Topic B Lesson 9 | 28 Topic B Lesson 9 | 29 Mid Module Assessment (do not use problems from omitted lessons) | 30 Flex Day Options A1.A.SSE.A.2 A1.A.APR.A.1* Pacing Other | |



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

September 2019

| Suggested Lessons for the Week | Monday | Tuesday | Wednesday | Thursday | Friday | Notes: |
|---|------------------------------------|--------------------------------|--------------------------------|---|---|--|
| Module 1, Topic C (Lessons 10-12) | 2 <i>Labor Day (Out)</i> | 3 Topic C Lesson 10 | 4 Topic C Lesson 11 | 5 Topic C Lesson 12 | 6 Topic C Lesson 12 | <p>Please use this suggested pacing as a guide. It is understood that teachers may be up to 1 week ahead or 1 week behind depending on their individual class needs.</p> <p>Flex Day Options Include:</p> <p>Standard- Suggested standard(s) to review for the day (*-denotes a Power Standard)</p> <p>Pacing – Use this time to adjust instruction to stay on pace.</p> <p>Other- This includes assessments, review, re-teaching, etc.</p> |
| Module 1, Topic C (Lessons 13 & 14; omit Lessons 15 & 16) | 9 Topic C Lesson 13 | 10 Topic C Lesson 13 | 11 Topic C Lesson 14 | 12 Topic C Lesson 14 | 13 Flex Day Options A1.A.REI.A.1 A1.A.REI.B.2 Pacing Other | |
| Module 1, Topic C (Lessons 17-19; omit Lesson 18) | 16 Topic C Lesson 17 | 17 Topic C Lesson 17 | 18 Topic C Lesson 19 | 19 Parent Teacher Conferences Assessment, Remediation, and/or Further Application | 20 <i>½ day students</i> Flex Day Options A1.A.CED.A.4 A1.A.REI.B.2 Pacing Other | |
| Module 1, Topic C (Lessons 20-24; omit Lesson 23) | 23 Topic C Lesson 20 | 24 Topic C Lesson 20 | 25 Topic C Lesson 22 | 26 Topic C Lesson 22 | 27 Flex Day Options A1.A.CED.A.2 A1.A.REI.C.4* Pacing Other | |
| Module 1, Topic C (Lesson 24) | 30 Topic C Lesson 24 | 1 | 2 | 3 | 4 | |



Curriculum and Instruction – Mathematics

Quarter 1

Algebra I

October 2019

| Suggested Lessons for the Week | Monday | Tuesday | Wednesday | Thursday | Friday | Notes: |
|---|--|----------------------------|----------------------------|---|---|--|
| Module 1, Topic C (Lesson 24) Module 1, Topic D (Lessons 25-28; omit Lessons 26 and 27; Lesson 28 is optional) | 30 | 1 Topic C Lesson 24 | 2 Topic D Lesson 25 | 3 Topic D Lesson 25 | 4 Flex Day Options A1.A.CED.A.1 A1.A.REI.D.7 Pacing Other | <p>Please use this suggested pacing as a guide. It is understood that teachers may be up to 1 week ahead or 1 week behind depending on their individual class needs.</p> <p>Flex Day Options Include:</p> <p>Standard- Suggested standard(s) to review for the day (*-denotes a Power Standard)</p> <p>Pacing – Use this time to adjust instruction to stay on pace.</p> <p>Other- This includes assessments, review, re-teaching, etc.</p> |
| Assessment, Remediation, and/or Further Application | 7 | 8 | 9 | 10 End of Module Assessment (do not use problems from omitted lessons) | 11 ½ day students End of 1 st Quarter Flex Day Options A1.N.Q.A.1 Pacing Other | |
| | 14 | 15 | 16 | 17 | 18 | |
| Fall Break | | | | | | |
| | 21 2 nd Quarter Begins | 22 | 23 | 24 | 25 | |
| | 28 | 29 | 30 | 31 Halloween | 1 | |