**Math for College Readiness**

**Instructional Plan 2014-2015**

**Mathematics Instructional Plan Writing Committee**

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We would like to express our appreciation for the time, effort and expertise contributed to the writing of the secondary Mathematics Instructional Plans by our team of Seminole County math teachers.

**Purpose:**

The purpose of the Seminole County Public Schools Instructional Plan is to present an organized, responsible strategy of Benchmark presentation that incorporates Math Florida Standards (MAFS) while using the College Prep Algebra Textbook. This document will serve as a guide for teachers of mathematics. Latitude in the execution of this document shall be determined by a school rather than by an individual teacher.

**Goals:**

* To establish a classroom environment that values mathematical student discourse
* To engage students in cognitively challenging mathematical tasks
* To promote discussions that focus on student thinking, reasoning, problem solving and student presentation
* To build on student thinking while ensuring the discussion remains focused on the mathematical ideas of the lesson
* Employ questioning techniques that require students to justify, defend and support their ideas

**Instructional Plan Caveats:**

* Suggested practice corresponds to the associated lesson and left at the discretion of the instructor to be used as additional practice or assignment. Problems within the suggested pages may be exhausted or selected for targeted skills.
* Descriptions of the Mathematical Practices can be found on pages 3 – 4. Teachers are encouraged to embed the Questions to Develop Mathematical Thinking on pages 5 – 6 in their daily lessons.
* MASF Benchmarks are 912 unless otherwise noted.
* Cengage Student Workbook for Algebra Activities is abbreviated as WB Suggested Assignments/Assessments and Ancillary Materials
* Instructional videos can be accessed through the Cengage website <https://login.cengage.com/cb/login.htm>
* This Instructional Plan is written based on students’ use of scientific calculators. Graphing calculators may be used for exploration and extension of concepts.
* College projects should be used as a guideline to meet the needs of the student population of each school. Project dates, duration and pacing should be determined by the school.
* **Each unit will include at least one learning goal listed under the unit heading. These are suggested learning goals and scales that teachers can use when implementing learning scales in their classes. The learning goals correspond to the grade/level specific clusters as defined by the MAFS.**
* **The learning goals and scales are a work in progress and may be modified as needed. They are meant to be a starting point for PLCs to use as they customize the learning goals and scales to best demonstrate student learning.**

**STANDARDS FOR MATHEMATICAL PRACTICE**

**1. (MAFS.K12.MP.1.1) Make sense of problems and persevere in solving them.**

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, “Does this make sense?” They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

**2. (MAFS.K12.MP.2.1) Reason abstractly and quantitatively.**

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to *decontextualize*—to abstract a given situation and represent it symbolically and manipulate the representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to *contextualize*, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

**3. (MAFS.K12.MP.3.1) Construct viable arguments and critique the reasoning of others.**

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

**4. (MAFS.K12.MP.4.1) Model with mathematics.**

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

**5. (MAFS.K12.MP.5.1) Use appropriate tools strategically.**

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

**6. (MAFS.K12.MP.6.1) Attend to precision.**

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, student’s give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

**7. (MAFS.K12.MP.7.1) Look for and make use of structure.**

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a collection of shapes according to how many sides the shapes have. Later, students will see 7 × 8 equals the well-remembered 7 × 5 + 7 × 3, in preparation for learning about the distributive property. In the expression *x*2 + 9*x* + 14, older students can see the 14 as 2 × 7 and the 9 as 2 + 7. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see 5 – 3(*x* – *y*) 2 as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers *x* and *y*.

**8. (MAFS.K12.MP.8.1) Look for and express regularity in repeated reasoning.**

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation (*y* – 2)/(*x* – 1) = 3. Noticing the regularity in the way terms cancel when expanding (*x* – 1)(*x* + 1), (*x* – 1)(*x*2 + *x* + 1), and (*x* – 1)(*x*3 + *x*2 + *x* + 1) might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

| **Summary of Standards for Mathematical Practice** | **Questions to Develop Mathematical Thinking** |
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| **1. Make sense of problems and persevere in solving them.** | |
| * Interpret and make meaning of the problem to find a starting point. Analyze what is given in order to explain to them the meaning of the problem. * Plan a solution pathway instead of jumping to a solution. * Monitor their progress and change the approach if necessary. * See relationships between various representations. * Relate current situations to concepts or skills previously learned and connect mathematical ideas to one another. * Continually ask them, “Does this make sense?” Can understand various approaches to solutions. | * How would you describe the problem in your own words? * How would you describe what you are trying to find? * What do you notice about...? * What information is given in the problem? * Describe the relationship between the quantities. * Describe what you have already tried. What might you change? * Talk me through the steps you’ve used to this point. * What steps in the process are you most confident about? * What are some other strategies you might try? * What are some other problems that are similar to this one? * How might you use one of your previous problems to help you begin? * How else might you organize...represent... show...? |
| **2. Reason abstractly and quantitatively.** | |
| * Make sense of quantities and their relationships. * Decontextualize (represent a situation symbolically and manipulate the symbols) and contextualize (make meaning of the symbols in a problem) quantitative relationships. * Understand the meaning of quantities and are flexible in the use of operations and their properties. * Create a logical representation of the problem. * Attends to the meaning of quantities, not just how to compute them. | * What do the numbers used in the problem represent? * What is the relationship of the quantities? * How is \_\_\_\_\_\_\_ related to \_\_\_\_\_\_\_\_? * What is the relationship between \_\_\_\_\_\_and \_\_\_\_\_\_? * What does\_\_\_\_\_\_\_mean to you? (e.g. symbol, quantity, diagram) * What properties might we use to find a solution? * How did you decide in this task that you needed to use...? * Could we have used another operation or property to solve this task? Why or why not? |
| **3. Construct viable arguments and critique the reasoning of others.** | |
| * Analyze problems and use stated mathematical assumptions, definitions, and established results in constructing arguments. * Justify conclusions with mathematical ideas. * Listen to the arguments of others and ask useful questions to determine if an argument makes sense. * Ask clarifying questions or suggest ideas to improve/revise the argument. * Compare two arguments and determine correct or flawed logic. | * What mathematical evidence would support your solution? * How can we be sure that...? / How could you prove that...? * Will it still work if...? * What were you considering when...? * How did you decide to try that strategy? * How did you test whether your approach worked? * How did you decide what the problem was asking you to find? (What was unknown?) * Did you try a method that did not work? Why didn’t it work? Would it ever work? Why or why not? * What is the same and what is different about...? * How could you demonstrate a counter-example? |
| **4. Model with mathematics.** | |
| * Understand this is a way to reason quantitatively and abstractly (able to decontextualize and contextualize). * Apply the mathematics they know to solve everyday problems. * Are able to simplify a complex problem and identify important quantities to look at relationships. * Represent mathematics to describe a situation either with an equation or a diagram and interpret the results of a mathematical situation. * Reflect on whether the results make sense, possibly improving/revising the model. * Ask them, “How can I represent this mathematically?” | * What number model could you construct to represent the problem? * What are some ways to represent the quantities? * What is an equation or expression that matches the diagram, number line..., chart..., table..? * Where did you see one of the quantities in the task in your equation or expression? * How would it help to create a diagram, graph, and table...? * What are some ways to visually represent...? * What formula might apply in this situation? |

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| **5. Use appropriate tools strategically.** | |
| * Use available tools recognizing the strengths and limitations of each Unit * Use estimation and other mathematical knowledge to detect possible errors. * Identify relevant external mathematical resources to pose and solve problems. * Use technological tools to deepen their understanding of mathematics. | * What mathematical tools could we use to visualize and represent the situation? * What information do you have? * What do you know that is not stated in the problem? * What approach are you considering trying first? * What estimate did you make for the solution? * In this situation would it be helpful to use...a graph..., number line..., ruler..., diagram..., calculator..., manipulative? * Why was it helpful to use...? * What can using a \_\_\_\_\_\_ show us that \_\_\_\_\_may not? * In what situations might it be more informative or helpful to use...? |
| **6. Attend to precision.** | |
| * Communicate precisely with others and try to use clear mathematical language when discussing their reasoning. * Understand the meanings of symbols used in mathematics and can label quantities appropriately. * Express numerical answers with a degree of precision appropriate for the problem context. * Calculate efficiently and accurately. | * What mathematical terms apply in this situation? * How did you know your solution was reasonable? * Explain how you might show that your solution answers the problem. * What would be a more efficient strategy? * How are you showing the meaning of the quantities? * What symbols or mathematical notations are important in this problem? * What mathematical language...,definitions..., properties can you use to explain...? * How could you test your solution to see if it answers the problem? |
| **7. Look for and make use of structure.** | |
| * Apply general mathematical rules to specific situations. * Look for the overall structure and patterns in mathematics. * See complicated things as single objects or as being composed of several objects. | * What observations do you make about...? * What do you notice when...? * What parts of the problem might you eliminate.., simplify..? * What patterns do you find in...? * How do you know if something is a pattern? * What ideas that we have learned before were useful in solving this problem? * What are some other problems that are similar to this one? * How does this relate to...? * In what ways does this problem connect to other mathematical concepts? |
| **8. Look for and express regularity in repeated reasoning.** | |
| * See repeated calculations and look for generalizations and shortcuts. * See the overall process of the problem and still attend to the details. * Understand the broader application of patterns and see the structure in similar situations. * Continually evaluate the reasonableness of their intermediate results | * Explain how this strategy works in other situations? * Is this always true, sometimes true or never true? * How would we prove that...? * What do you notice about...? * What is happening in this situation? * What would happen if...? * Is there a mathematical rule for...? * What predictions or generalizations can this pattern support? * What mathematical consistencies do you notice? |

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| **FIRST QUARTER (August 11 – October 9)** | | **42 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Topic/Assessment** |
| Unit 1: The Real Number System |  | 8 |
| Unit 2: Fundamentals of Algebra |  | 11 |
| Unit 3: Equations, Inequalities and Problem Solving |  | 19 |
| Unit 4: College & Career Research and Application |  | 2 |
| 9 Weeks Exams (2 days) |  | 2 |
|  | | |
| **SECOND QUARTER (October 13 – December 18)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Topic/Assessment** |
| Unit 5: Graphs and Functions |  | 18 |
| Unit 6: Exponents and Polynomials |  | 11 |
| Unit 7: Factoring Trinomials |  | 10 |
| Unit 8: Personal Statement & Scholarship Search |  | 4 |
| 9 Weeks Exams (3 days) |  | 3 |
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| **THIRD QUARTER (January 6 – March 12)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Topic/Assessment** |
| Unit 9: Factoring and Solving Polynomials |  | 7 |
| Unit 10: Rational Expressions, Equations and Functions |  | 14 |
| Unit 11: Systems of Equations and Inequalities |  | 8 |
| Unit 12: Radicals and Complex Numbers |  | 13 |
| Unit 13: 2 Year College Plan |  | 2 |
| 9 Weeks Exams (2 days) |  | 2 |
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| **FOURTH QUARTER (March 23 – May 27)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Topic/Assessment** |
| Unit 14: Quadratic Equations, Functions and Inequalities |  | 19 |
| Unit 15: Functions and Their Translated Graphs |  | 14 |
| Unit 16: Statistics |  | 7 |
| Unit 17: College Scheduling and Book Pricing |  | 2 |
| EOC Test (1 day) 9 Weeks Exams (3 days) |  | 4 |

*\*Please note that the suggested number of instructional days per unit and quarter are designed to be a guide. Teachers are encouraged to work within their schools and their PLCs to make the most appropriate timing decisions for their students.*

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| **Unit 1: The Real Number System** | | | | | |  | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 7.NS.1.1 | Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.  a. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.  b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.  c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.  d. Apply properties of operations as strategies to add and subtract rational numbers. | | | | | | 2, 8 |
| 7.NS.1.2 | Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.  a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.  b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts.  c. Apply properties of operations as strategies to multiply and divide rational numbers.  d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. | | | | | | 2, 8 |
| 8.EE.1.1 | Know and apply the properties of integer exponents to generate equivalent numerical expressions. | | | | | | 2, 8 |
| 8.NS.1.1 | Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. | | | | | | 2 |
| 8.NS.1.2 | Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π²). | | | | | | 2, 8 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**MCR01:** Add, subtract, multiply and divide rational numbers and use numerical and algebraic expressions and equations to solve mathematical problems in context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr01.docx)  [**MCR02:** Use rational approximates to compare and estimate expressions with irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr02.docx) | | | | Students need to keep in mind that an exponent applies only to the factor directly preceding it. (-5)2 =25 and -52 = -25  The students sometimes confuse absolute value with “opposite.” Point out that opposite of a positive number is not the same as its absolute value | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Prerequisite skills for all MCR content | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities | | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **FIRST QUARTER** | | | | | | |
| **Unit 1: The Real Number System** | | | | | | |
| **Learning Goal** | [**MCR01:** Add, subtract, multiply and divide rational numbers and use numerical and algebraic expressions and equations to solve mathematical problems in context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr01.docx)  [**MCR02:** Use rational approximates to compare and estimate expressions with irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr02.docx) | | | | **Suggested # of Days** | **8** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | 7.NS.1.1 8.NS.1.1 8.NS.1.2 | * 1. Real Numbers   Topic 17 Approximating Square Roots (A 71) |  | WB p. 7 | | |
| 1 | 7.NS.1.1 7.NS.1.2 | 1.2 Adding and Subtracting Integers |  |  | | |
| 1 | 7.NS.1.1 7.NS.1.2 | 1.3 Multiplying and Dividing Integers |  | WB p. 21 | | |
| 2 | 7.NS.1.1 7.NS.1.2 | 1.4 Operations with Rational Numbers |  | WB p. 23 | | |
| 1 | 7.NS.1.2 8.EE.1.1 | 1.5 Exponents and Properties of Real Numbers |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 2: Fundamentals of Algebra** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| 7.EE.2.4 | Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.  a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and rare specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?  b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and rare specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions. | | | | | 1, 4 |
| A-REI.1.1 | Explain each step in solving a simple 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. | | | | | 1, 4 |
| A-SSE.1.1 | Interpret expressions that represent a quantity in terms of its context.  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. | | | | | 1, 2 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR01:** Add, subtract, multiply and divide rational numbers and use numerical and algebraic expressions and equations to solve mathematical problems in context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr01.docx)  [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | | | **\*When a parenthetical expression is preceded by a plus sign, you can remove the parentheses without changing the signs of the terms inside. \*When a parenthetical expression is preceded by a minus sign, however, you must change the sign of each term to remove the parentheses. \*Remember that –(2y – 7) is equal to (-1)(2y - 7)** | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | evaluating expressions  identify the property of real numbers | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **FIRST QUARTER** | | | | | | |
| **Unit 2: Fundamentals of Algebra** | | | | | | |
| **Learning Goal** | [**MCR01:** Add, subtract, multiply and divide rational numbers and use numerical and algebraic expressions and equations to solve mathematical problems in context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr01.docx)  [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | | | **Suggested # of Days** | **11** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | A-SSE.1.1 | 2.1 Writing and Evaluating Algebraic Expressions |  | WB p. 38, WB p. 39 | | |
| 2 | A-SSE.1.1 | 2.2 Simplifying Algebraic Expressions |  |  | | |
| 2 | A-SSE.1.1 | 2.3 Algebra and Problem Solving |  |  | | |
| 2 | 7.EE.2.4  A-REI.1.1 | 2.4 Introduction to Equations  Cover example 1 p. 86 |  | WB p. 48 | | |
| 3 |  | Review and Assessment |  |  | | |

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| **Unit 3: Equations, Inequalities and Problem Solving** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| 7.EE.2.4 | Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.  a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and rare specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.  b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and rare specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. | | | | | 3, 4 |
| A-CED.1.1 | Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational, absolute, and exponential functions. | | | | | 4 |
| A-CED.1.4 | Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. | | | | | 3, 4, 5 |
| A-REI.1.1 | Explain each step in solving a simple 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. | | | | | 3, 4 |
| A-REI.2.3 | Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. | | | | | 3, 4, 5 |
| N-Q.1.1 | 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. | | | | | 3, 4 |
| N-Q.1.2 | Define appropriate quantities for the purpose of descriptive modeling. | | | | | 3, 4, 7 |
| N-Q.1.3 | Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. | | | | | 3, 4 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR01:** Add, subtract, multiply and divide rational numbers and use numerical and algebraic expressions and equations to solve mathematical problems in context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr01.docx)  [**MCR07:** Use properties of rational exponents and apply properties of numbers to rational and irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr07.docx)  [**MCR10:** Create equations that represent real-world mathematical relationships, including constraints and literal equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr10.docx) | | | | To convert from percent form to decimal form, move the decimal point two places to the left.  To convert from decimal form to percent form, move the decimal point two places to the right. | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. |  | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities  Engage NY Website | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **FIRST QUARTER** | | | | | | |
| **Unit 3: Equations, Inequalities and Problem Solving** | | | | | | |
| **Learning Goal** | [**MCR01:** Add, subtract, multiply and divide rational numbers and use numerical and algebraic expressions and equations to solve mathematical problems in context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr01.docx)  [**MCR07:** Use properties of rational exponents and apply properties of numbers to rational and irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr07.docx)  [**MCR10:** Create equations that represent real-world mathematical relationships, including constraints and literal equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr10.docx) | | | | **Suggested # of Days** | **19**  **(2)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | 7.EE.2.4  A-CED.1.1  A-REI.1.1  A-REI.2.3  N-Q.1.2 | 3.1 Solving Linear Equations | Include p. 107 60 | WB p. 60-62  \*Engage NY Algebra I Module 1  Topic C Lesson 12—TV and SV | | |
| 2 | 7.EE.2.4  A-CED.1.1  A-REI.2.3 | 3.2 Equations that Reduce to Linear Form |  |  | | |
| 2 | N-Q.1.2 | 3.3 Problem Solving with Percents |  | WB p. 53-55 | | |
| 2 | N-Q.1.1  N-Q.1.2 | 3.4 Ratios and Proportions |  | WB p. 258-259 | | |
| 3 |  | Review and Assessment | WB p. 59 |  | | |
| 2 | A-CED.1.4  A-REI.2.3  N-Q.1.1  N-Q.1.2  N-Q.1.3 | 3.5 Geometric and Scientific Applications  Include Literal Equations | WB p. 69 | WB p. 71  Engage NY Algebra I Module 1  Topic C Lesson 19—TV and SV | | |
| 1 | 7.EE.2.4  A-CED.1.1  A-REI.2.3  N-Q.1.2  N-Q.1.3 | 3.6 Linear Inequalities |  | WB p. 82-83  Engage NY Algebra I Module 1  Topic C Lesson 14—TV and SV | | |
| 2 | 7.EE.2.4 | 3.7 Absolute Value Equations and Inequalities |  |  | | |
| 3 |  | Review and Assessment |  |  | | |
| **2** |  | 9 Weeks Exams (2 days) |  |  | | |

\* TV is Teacher View SV is Student View \* Engage NY Algebra I Module 1 <https://www.engageny.org/resource/algebra-i-module-1>

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| **FIRST QUARTER** | | | | |
| **Unit 4: College & Career Application** | | | **Suggested # of Days** | **2** |
| **Approx. # of Day(s)** | **Lesson Objective (Instructional Resources)** | **Ancillary Materials** | | |
| **This is a long-term project, which will extend into the second quarter. If pacing allows, fill in available days with project components.** | | | | |
|  |  | Unit 4  College & Career Application Overview  Military Project Overview | | |
| 1 | Students will investigate colleges and majors of their choice, determine entrance requirements, tuition, and complete applications **OR** complete an investigation of a branch of the military. | Unit 4  College Investigation (pre-research) Worksheet  Computer Lab Worksheet  Military Investigation (pre-research) Worksheet  Computer Lab Worksheet—Air Force  Computer Lab Worksheet—Army  Computer Lab Worksheet—Coast Guard  Computer Lab Worksheet—Marines  Computer Lab Worksheet—Navy | | |
|  | Students will complete a senior information sheet that can be used when requesting letters of recommendation. | Unit 4  Senior Information Worksheet | | |
| 1 | Students will participate in a presentation by a Seminole State representative. |  | | |
|  | Students will write a thank you note to the Seminole State representative. | Unit 4  Thank You Note Template | | |
|  | Students will reflect on the components of this project. | Unit 4  College Portfolio Reflection  Military Investigation Reflection | | |

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| **Unit 5: Graphs and Functions** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| 8.EE.2.5 | Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. | | | | | 5, 7 |
| 8.F.2.4 | Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. | | | | | 7 |
| A-CED.1.2 | Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | | | | | 3 |
| A-CED.1.3 | Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. | | | | | 4 |
| F-BF.1.1 | Write a function that describes a relationship between two quantities.  a. Determine an explicit expression, a recursive process, or steps for calculation from a context.  ~~b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.~~  ~~c. Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.~~ | | | | | 7 |
| F-IF.1.1 | 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). | | | | | 6 |
| F-IF.2.5 | Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. | | | | | 4, 6 |
| F-IF.2.6 | Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. | | | | | 6 |
| G-GPE.2.5 | Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point). | | | | | 3, 6 |
| N-Q.1.1 | 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. | | | | | 5 |
| S-ID.3.7 | Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. | | | | | 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR04:** Understand the concept of a function and use them to model relationships between quantities, combining standard functions using arithmetic operations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr04.docx)  [**MCR13:** Interpret functions that arise in real-world context, including restricting domain/range, and interpreting average rate of change.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr13.docx) | | | | Students may have difficulty distinguishing between the zero slope of a horizontal line and the undefined slope of a vertical line. | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | evaluating expressions  solving equations and inequalities | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities  Engage NY Website | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **SECOND QUARTER** | | | | | | |
| **Unit 5: Graphs and Functions** | | | | | | |
| **Learning Goal** | [**MCR04:** Understand the concept of a function and use them to model relationships between quantities, combining standard functions using arithmetic operations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr04.docx)  [**MCR13:** Interpret functions that arise in real-world context, including restricting domain/range, and interpreting average rate of change.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr13.docx) | | | | **Suggested # of Days** | **18** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | A-CED.1.2  N-Q.1.1 | 4.1 Ordered Pairs and Graphs |  | WB p. 91-94 | | |
| 2 | F-IF.1.1  F-IF.2.5 | 4.3 Relations, Functions and Graphs | Include p. 191 43-46 | Engage NY Algebra I Module 1  Topic A Lesson 1—TV and SV  Engage NY Algebra I Module 1  Topic A Lesson 2—TV and SV | | |
| 2 | F-IF.2.5  F-IF.2.6  G-GPE.2.5 | 4.4.1 Finding Slope and Graphing in Slope-Intercept Form  Cover examples 1-3  4.2 Graphing Using Tables | Include p. 201 63-66 & 72 | WB p. 95, WB p. 100, WB p. 103  Engage NY Algebra I Module 1  Topic B Overview | | |
| 3 |  | Review and assessment |  |  | | |
| 2 | F-IF.2.5  F-IF.2.6  G-GPE.2.5 | 4.4.2 Parallel and Perpendicular Lines  Cover examples 4-5  4.2 Graphing Using Intercepts  Cover examples 4-5 | WB p. 98 | WB p. 111 | | |
| 3 | 8.EE.2.5  8.F.2.4  F-BF.1.1  F-IF.2.6  S-ID.3.7 | 4.5 Equations of Lines  Cover example 6  Topic 12 Writing Linear Functions (A 61)  Topic 16 Graphing Proportional Relationships (A 69) | p. 209 49-51 & 56 | WB p. 106-107, WB p. 109-110  Engage NY Algebra I Module 1  Topic C Lesson 22—TV and SV | | |
| 2 | A-CED.1.3 | 4.6 Graphs of Linear Inequalities |  | WB p. 117-118 | | |
| 3 |  | Review and assessment |  |  | | |

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| **Unit 6: Exponents and Polynomials** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| 8.EE.1.1 | Know and apply the properties of integer exponents to generate equivalent numerical expressions. | | | | | 8 |
| 8.EE.1.4 | Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. | | | | | 6 |
| A-APR.1.1 | 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. | | | | | 6 |
| A-APR.4.6 | Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system. | | | | | 2, 6, 8 |
| A-SSE.2.3 | Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.  ~~a. Factor a quadratic expression to reveal the zeros of the function it defines.~~  ~~b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.~~  c. Use the properties of exponents to transform expressions for exponential functions. | | | | | 8 |
| F-BF.1.1 | Write a function that describes a relationship between two quantities.  ~~a. Determine an explicit expression, a recursive process, or steps for calculation from a context.~~  b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.  ~~c. Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.~~ | | | | | 2, 8 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR03:** Students will be able to work with radical and integer exponents and scientific notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr03.docx)  [**MCR09:** Understand the relationship between zeros and factors of polynomials and use and prove polynomial identities to rewrite expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr09.docx) | | | | Students struggle with moving a factor from the numerator to the denominator or vice versa, change the sign of its exponent. Remember, you can move only factors in this manner, not terms**.** | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. |  | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities  Engage NY Website | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **SECOND QUARTER** | | | | | | |
| **Unit 6: Exponents and Polynomials** | | | | | | |
| **Learning Goal** | [**MCR03:** Students will be able to work with radical and integer exponents and scientific notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr03.docx)  [**MCR09:** Understand the relationship between zeros and factors of polynomials and use and prove polynomial identities to rewrite expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr09.docx) | | | | **Suggested # of Days** | **11** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | 8.EE.1.1  8.EE.1.4  A-SSE.2.3C | 5.1 Integer Exponents and Scientific Notation  Topic 13 Using Scientific Notation (A 63) |  | WB p. 153, WB p. 156-157, WB p. 161 | | |
| 1 | A-APR.1.1  F-BF.1.1B | 5.2 Adding and Subtracting Polynomials  Omit example 9 |  | WB p. 169-170  Engage NY Algebra I Module 1  Topic B Lesson 8—TV and SV | | |
| 3 | A-APR.1.1 | 5.3 Multiplying Polynomials  5.2 example 9 |  | WB p. 174, WB p. 176-179  Engage NY Algebra I Module 1  Topic B Lesson 9—TV and SV | | |
| 2 | A-APR.4.6 | 5.4 Dividing Polynomials  Long Division only |  | WB p. 182-185 | | |
| 3 |  | Review and assessment |  |  | | |

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| **Unit 7: Factoring Trinomials** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| A-SSE.1.1 | Interpret expressions that represent a quantity in terms of its context.  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.~~ | | | | | 2, 7, 8 |
| A-SSE.1.2 | Use the structure of an expression to identify ways to rewrite it. | | | | | 2, 7, 8 |
| **Learning Goal and Scale** | | | **Instructional Strategies & Misconceptions** | | | |
| [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | |  | | | |
| **Math Practices for Unit** | | | | **Unit Connections** | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | | Multiplying Polynomials | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. | |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. | |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. | |

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| **SECOND QUARTER** | | | | | | |
| **Unit 7: Factoring Trinomials** | | | | | | |
| **Learning Goal** | [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | | | **Suggested # of Days** | **10**  **(3)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | A-SSE.1.1  A-SSE.1.2 | 6.1 Factoring Polynomials with Common Factors |  | WB p. 193 | | |
| 2 | A-SSE.1.1  A-SSE.1.2 | 6.2 Factoring Trinomials  Cover 6.2 example 3 & 6.3 examples 2-3  Cover 6.2 examples 5-7 |  | WB p. 197-199 | | |
| 3 | A-SSE.1.1  A-SSE.1.2 | 6.3 Factoring Trinomials with Common Factors |  |  | | |
| 3 |  | Review and Assessment |  | WB p. 218-219 (good review, but #4 is not addressed until next unit) | | |
| **3** |  | 9 Weeks Exams (3 days) |  |  | | |

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| **SECOND QUARTER** | | | | |
| **Unit 8: Personal Statement & Scholarship Search** | | | **Suggested # of Days** | **4** |
| **Approx. # of Day(s)** | **Lesson Objective (Instructional Resources)** | **Ancillary Materials** | | |
| 2 | Students will complete their college applications and begin writing their personal statement. | Unit 4/8  College and Career Application Project/  Personal Statement and Scholarship Search | | |
|  |  | Unit 8  Personal Statement and Scholarship Search Overview | | |
| 1 | Students will write and edit a personal statement that can be used for college and scholarship applications. | Unit 8  Personal Statement Guideline | | |
| 1 | Students will explore scholarship opportunities available through their community and the internet. | Unit 8  Scholarship Search | | |
|  | Students will reflect on the components of this project. | Unit 8  Personal Statement and Scholarship Search Reflection | | |

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| **Unit 9: Factoring and Solving Polynomials** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| A-APR.3.4 | Prove polynomial identities and use them to describe numerical relationships. | | | | | 3, 8 |
| A-CED.1.1 | Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. | | | | | 3, 5 |
| A-REI.2.4 | Solve quadratic equations in one variable.  a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – p)² = q that has the same solutions. Derive the quadratic formula from this form.  b. Solve quadratic equations by inspection (e.g., for x² = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a ± bi for real numbers a and b. | | | | | 5, 7 |
| A-SSE.1.1 | Interpret expressions that represent a quantity in terms of its context.  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. | | | | | 7 |
| A-SSE.1.2 | Use the structure of an expression to identify ways to rewrite it. For example, see x4- y4 as (x²)² – (y²)², thus recognizing it as a difference of squares that can be factored as  (x² – y²)(x² + y²). | | | | | 7 |
| A-SSE.2.3 | Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.  a. Factor a quadratic expression to reveal the zeros of the function it defines.  b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.  c. Use the properties of exponents to transform expressions for exponential functions. | | | | | 3, 5 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR09:** Understand the relationship between zeros and factors of polynomials and use and prove polynomial identities to rewrite expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr09.docx)  [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | | |  | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. |  | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **THIRD QUARTER** | | | | | | |
| **Unit 9: Factoring and Solving Polynomials** | | | | | | |
| **Learning Goal** | [**MCR09:** Understand the relationship between zeros and factors of polynomials and use and prove polynomial identities to rewrite expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr09.docx)  [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | | | **Suggested # of Days** | **7** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | A-SSE.1.1  A-SSE.1.2 | 6.1-6.3 Factoring Trinomial Review |  |  | | |
| 1 | A-APR.3.4  A-SSE.1.2 | 6.4 Factoring Polynomials with Special Forms |  | WB p. 202-205 | | |
| 2 | A-CED.1.1  A-REI.2.4  A-SSE.2.3 | 6.5 Solving Polynomial Equations by Factoring |  | WB p. 216 | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 10: Rational Expressions, Equations and Functions** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| A-APR.4.6 | Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system. | | | | | 1, 7 |
| A-APR.4.7 | Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions. | | | | | 1, 6 |
| A-REI.1.2 | Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. | | | | | 2, 6 |
| A-REI.2.3 | Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. | | | | | 2, 7 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | | | Students need to be reminded of restrictions. | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. |  | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **THIRD QUARTER** | | | | | | |
| **Unit 10: Rational Expressions, Equations and Functions** | | | | | | |
| **Learning Goal** | [**MCR11:** Find patterns and structure in polynomial and rational expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr11.docx) | | | | **Suggested # of Days** | **14** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | A-APR.4.6 | 7.1 Rational Expressions and Functions |  | WB p. 231-233 | | |
| 2 | A-APR.4.7 | 7.2 Multiplying and Dividing Rational Expressions |  | WB p. 235 | | |
| 2 | A-APR.4.7 | 7.3 Adding and Subtracting Rational Expressions  Cover examples 1 & 2 only |  |  | | |
| 3 | A-REI.1.2 | 7.5 Solving Rational Equations |  | WB p. 248, WB p. 251 | | |
| 2 | A-REI.2.3 | 7.6 Applications and Variation |  | WB p. 253-254, WB p. 260-262 | | |
| 3 |  | Review and Assessment |  |  | | |

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| **Unit 11: Systems of Equations and Inequalities** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| A-CED.1.3 | Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. | | | | | 1, 2, 5 |
| A-REI.3.5 | Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions. | | | | | 1, 2 |
| A-REI.3.6 | Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. | | | | | 1, 2 |
| A-REI.4.11 | Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. | | | | | 1, 5 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR06:** Solve systems of linear equations and inequalities, algebraically and graphically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr06.docx)  [**MCR10:** Create equations that represent real-world mathematical relationships, including constraints and literal equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr10.docx) | | | | **Reminders of no solution and infinitely many solutions.** | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Solving equations and inequalities. | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities  Graphing Calculators  Engage NY Website | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **THIRD QUARTER** | | | | | | |
| **Unit 11: Systems of Equations and Inequalities** | | | | | | |
| **Learning Goal** | [**MCR06:** Solve systems of linear equations and inequalities, algebraically and graphically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr06.docx)  [**MCR10:** Create equations that represent real-world mathematical relationships, including constraints and literal equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr10.docx) | | | | **Suggested # of Days** | **8** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | A-CED.1.3  A-REI.3.5  A-REI.3.6  A-REI.4.11 | 8.1 Solving Systems of Equations by Graphing and Substitution with and without technology |  | WB p. 270-271, WB p. 276-277  Engage NY Algebra I Module 1  Topic C Lesson 23—TV and SV | | |
| 2 | A-CED.1.3  A-REI.3.6 | 8.2 Solving Systems of Equations by Elimination |  | WB p. 278-281 | | |
| 2 | A-CED.1.3 | 8.6 Systems of Linear Inequalities  Cover examples 1, 2, & 6 only |  | WB p. 292-293 | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 12: Radical Expressions and Rational Exponents** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| A-REI.4.11 | Explain why the x-coordinates of the points where the graphs of the equations y = f(x) and y = g(x) intersect are the solutions of the equation f(x) = g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. | | | | | 2, 3 |
| A-SSE.1.2 | Use the structure of an expression to identify ways to rewrite it. | | | | | 7 |
| A-SSE.2.3 | Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.  ~~a. Factor a quadratic expression to reveal the zeros of the function it defines.~~  ~~b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.~~  c. Use the properties of exponents to transform expressions for for exponential functions. | | | | | 7 |
| F-BF.1.1 | Write a function that describes a relationship between two quantities.  ~~a. Determine an explicit expression, a recursive process, or steps for calculation from a context.~~  b. Combine standard function types using arithmetic operations. For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.  ~~c. Compose functions. For example, if T(y) is the temperature in the atmosphere as a function of height, and h(t) is the height of a weather balloon as a function of time, then T(h(t)) is the temperature at the location of the weather balloon as a function of time.~~ | | | | | 3 |
| N-RN.1.1 | Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. | | | | | 2, 3 |
| N-RN.1.2 | Rewrite expressions involving radicals and rational exponents using the properties of exponents. | | | | | 2, 3 |
| N-RN.2.3 | Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational. | | | | | 3, 7 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR07:** Use properties of rational exponents and apply properties of numbers to rational and irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr07.docx) | | | | **Do NOT** assume the variables are nonnegative! Students should be taught to use absolute values when simplifying even index radicals and the reduced variables have odd exponents | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Solving linear equations * Solving absolute value inequalities | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **THIRD QUARTER** | | | | | | |
| **Unit 12: Radical Expressions and Rational Exponents** | | | | | | |
| **Learning Goal** | [**MCR07:** Use properties of rational exponents and apply properties of numbers to rational and irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr07.docx) | | | | **Suggested # of Days** | **13**  **(2)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | A-SSE.2.3C  N-RN.1.1  N-RN.1.2 | 9.1 Radicals and Rational Exponents |  | WB p. 329 | | |
| 2 | A-SSE.1.2 | 9.2 Simplifying Radical Expressions  \* Students should be taught to use absolute values when simplifying even index radicals and the reduced variables have odd exponents |  | WB p. 335-336, WB p. 345-346 | | |
| 1 | A-SSE.1.2  F-BF.1.1B  N-RN.2.3 | 9.3 Adding and Subtracting Radical Expressions |  | WB p. 339 | | |
| 2 | A-SSE.1.2  N-RN.2.3 | 9.4 Multiplying and Dividing Radical Expressions |  |  | | |
| 2 | A-REI.4.11 | 9.5 Radical Equations and Applications |  | WB p. 352, WB p. 358-9 | | |
| 1 | A-SSE.1.2 | 9.6 Complex Numbers  Cover examples 1 & 6 and a ± bi form |  |  | | |
| 3 |  | Review and Assessment |  |  | | |
| **2** |  | 9 Weeks Exams (2 days) |  |  | | |

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| **THIRD QUARTER** | | | | |
| **Unit 13: 2 Year College Plan** | | | **Suggested # of Days** | **2** |
| **Approx. # of Day(s)** | **Lesson Objective (Instructional Resources)** | **Ancillary Materials** | | |
|  |  | Unit 13  2 Year College Plan Overview | | |
| 2 | Students will create a tentative 2 Year College Plan using SSC website and catalog. | Unit 13  2 Year College Plan for AA degree  2 Year College Plan for AS degree | | |
|  | Students will reflect on the components of this project. | Unit 13  2 Year College Plan Reflection | | |

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| **Unit 14: Quadratic Equations and Functions** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| A-APR.2.3 | Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial. | | | | | 4 |
| A-REI.2.4 | Solve quadratic equations in one variable.  a. Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x – p)² = q that has the same solutions. Derive the quadratic formula from this form.  b. Solve quadratic equations by inspection (e.g., for x² = 49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a ± bi for real numbers a and b. | | | | | 2, 4 |
| A-REI.4.10 | 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). | | | | | 5 |
| A-SSE.2.3 | Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.  a. Factor a quadratic expression to reveal the zeros of the function it defines.  b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.  ~~c. Use the properties of exponents to transform expressions for exponential functions.~~ | | | | | 4, 8 |
| F-BF.2.3 | Identify the effect on the graph of replacing f(x) by f(x) + k, k f(x), f(kx), and f(x + k) for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. | | | | | 2, 5 |
| F-IF.2.4 | 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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. | | | | | 4, 5 |
| F-IF.3.7 | Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.  a. Graph linear and quadratic functions and show intercepts, maxima, and minima. ~~b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.~~ c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.  ~~d. Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.~~  ~~e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing~~ | | | | | 4, 5, 6 |
| F-IF.3.8 | Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.  a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. ~~b. Use the properties of exponents to interpret expressions for exponential functions.~~ | | | | | 4, 5 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR05:** Solve and graph equations and inequalities in one or two variables, and justify reasoning.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr05.docx)  [**MCR09:** Understand the relationship between zeros and factors of polynomials and use and prove polynomial identities to rewrite expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr09.docx)  [**MCR14:** Graph and write equivalent forms of functions by hand and using technology, and compare functions in different representations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr14.docx) | | | |  | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Solving linear equations * Solving absolute value inequalities | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities  Engage NY Website | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **FOURTH QUARTER** | | | | | | |
| **Unit 14: Quadratic Equations and Functions** | | | | | | |
| **Learning Goal** | [**MCR05:** Solve and graph equations and inequalities in one or two variables, and justify reasoning.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr05.docx)  [**MCR09:** Understand the relationship between zeros and factors of polynomials and use and prove polynomial identities to rewrite expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr09.docx)  [**MCR14:** Graph and write equivalent forms of functions by hand and using technology, and compare functions in different representations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr14.docx) | | | | **Suggested # of Days** | **19** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | A-APR.2.3  A-REI.2.4 | 10.1 Solving Quadratic Equations  Cover examples 1-4 only |  | WB p. 374-376  Engage NY Algebra I Topic A Module 4  Overview | | |
| 2 | A-REI.2.4  A-SSE.2.3 | 10.2 Completing the Square with a Leading Coefficient of 1  Cover examples 1-3 & 6 only |  | WB p. 379-382 | | |
| 3 | A-REI.2.4 | 10.3 The Quadratic Formula  Cover examples 1-4 only |  | WB p. 385-386  Engage NY Algebra I Module 4  Topic B Lesson 15—TV and SV | | |
| 5 | A-REI.4.10  A-SSE.2.3  F-BF.2.3  F-IF.2.4  F-IF.3.7A&C  F-IF.3.8 | 10.4 Graphs of Quadratic Functions  Include increasing, decreasing, maximum, minimum, axis of symmetry, and x- & y- intercepts | pp. 534-535 55-60 & 62-64 | WB p. 395 (use vertex = (  WB p. 390-392 | | |
| 3 | A-REI.2.4 | 10.5 Applications of Quadratic Equations |  |  | | |
| 4 |  | Review and Assessment |  |  | | |

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| **Unit 15: Functions and Their Translated Graphs** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| F-BF.1.1 | Write a function that describes a relationship between two quantities.  ~~a. Determine an explicit expression, a recursive process, or steps for calculation from a context.~~  ~~b. Combine standard function types using arithmetic operations.~~  c. Compose functions. | | | | | 1, 4 |
| F-IF.1.1 | 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). | | | | | 7 |
| F-IF.2.4 | 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. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. | | | | | 4, 5, 8 |
| F-IF.3.7 | Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.  ~~a. Graph linear and quadratic functions and show intercepts, maxima, and minima.~~  b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.  ~~c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.~~  d. Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.  e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude, and using phase shift. | | | | | 5, 6 |
| F-IF.3.8 | Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.  ~~a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context~~.  b. Use the properties of exponents to interpret expressions for exponential functions. | | | | | 2, 3 |
| G-GPE.2.6 | Find the point on a directed line segment between two given points that partitions the segment in a given ratio. | | | | | 1, 2 |
| G-GPE.2.7 | Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula. | | | | | 4, 5, 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR12:** Apply transformation rules to polynomial, exponential, and logarithmic functions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr12.docx)  [**MCR13:** Interpret functions that arise in real-world context, including restricting domain/range, and interpreting average rate of change.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr13.docx)  [**MCR14:** Graph and write equivalent forms of functions by hand and using technology, and compare functions in different representations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr14.docx)  [**MCR15:** Use coordinates to prove simple geometric theorems algebraically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr15.docx) | | | |  | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. |  | | College Prep Algebra textbook  Cengage Student Workbook for Algebra Activities  Engage NY Website | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **FOURTH QUARTER** | | | | | | |
| **Unit 15: Functions and Their Translated Graphs** | | | | | | |
| **Learning Goal** | [**MCR12:** Apply transformation rules to polynomial, exponential, and logarithmic functions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr12.docx)  [**MCR13:** Interpret functions that arise in real-world context, including restricting domain/range, and interpreting average rate of change.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr13.docx)  [**MCR14:** Graph and write equivalent forms of functions by hand and using technology, and compare functions in different representations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr14.docx)  [**MCR15:** Use coordinates to prove simple geometric theorems algebraically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr15.docx) | | | | **Suggested # of Days** | **14** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | F-IF.3.7E  F-IF.3.8B | 11.1 Exponential Functions |  | WB p. 408-409, WB p. 412, WB p.416  Engage NY Algebra I Module 1  Topic A Lesson 3—TV and SV | | |
| 2 | F-BF1.1C | 11.2 Composite Functions  Cover example 1 only |  |  | | |
| 1 | F-IF.2.4 | Topic 8 The Symmetry and End Behavior of Graphs (A 49) |  |  | | |
| 1 | F-IF.3.7B | Topic 9  Step and Piecewise –Defined Functions (A 52) |  |  | | |
| 1 | G-GPE.2.6 | Topic 10  Partitioning Segments (A 54) |  | WB p. 105 | | |
| 1 | F-IF.3.7D | Topic 15 Graphing Rational Functions (A 66) |  |  | | |
| 1 | F-IF.1.1  F-IF.3.7B | Topic 18 Graphing Square and Cube Root Functions (A 73) |  | WB p. 326-327  Engage NY Algebra I Module 4  Topic C Overview | | |
| 1 | G-GPE.2.7 | Topic 19 The Distance Formula (A 75) |  | WB p. 357 | | |
| 4 |  | Review and Assessment |  |  | | |

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| **Unit 16: Statistics** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| S-ID.2.5 | Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. | | | | | 4, 5 |
| S-ID.2.6 | Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.  a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, and exponential models.  b. Informally assess the fit of a function by plotting and analyzing residuals.  c. Fit a linear function for a scatter plot that suggests a linear association. | | | | | 4, 8 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**MCR08:** Summarize, represent and interpret data on two categorical and quantitative variables](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr08.docx). | | | |  | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Evaluating expressions containing fractions and percentages * Simplify polynomial expressions | | College Prep Algebra textbook  Engage NY Website | |
| 2. Reason abstractly and quantitatively. | | 6. Attend to precision. |
| 3. Construct viable arguments & critique reasoning of others. | | 7. Look for and make use of structure. |
| 4. Model with mathematics. | | 8. Look for and express regularity in repeated reasoning. |

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| **FOURTH QUARTER** | | | | | | |
| **Unit 16: Statistics** | | | | | | |
| **Learning Goal** | [**MCR08:** Summarize, represent and interpret data on two categorical and quantitative variables](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/mcr08.docx). | | | | **Suggested # of Days** | **7**  **(4)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | S-ID.2.5 | Topic 21 Two-Way Tables (A 78) |  |  | | |
| 2 | S-ID.2.6 | Scatter Plot and Linear Regression |  | Engage NY Algebra I Module 2  Topic D Overview | | |
| 2 | S-ID.2.6 | Topic 11 Scatter Plots and Lines of Fit (A 55) |  |  | | |
| 2 |  | Review and Assessment |  |  | | |
| 4 |  | EOC Test (1 day) 9 Weeks Exams (3 days) |  |  | | |

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| **FOURTH QUARTER** | | | | |
| **Unit 17: College Scheduling and Book Pricing** | | | **Suggested # of Days** | **2** |
| **Approx. # of Day(s)** | **Lesson Objective (Instructional Resources)** | **Ancillary Materials** | | |
|  |  | Unit 17  Mock Schedule & Book Pricing Overview | | |
| 1 | Students will use their 2 year plan to create a mock schedule for their first semester of college. | Unit 17  Mock Schedule | | |
| 1 | Students will compare prices of college textbooks using SSC Bookstore and internet sites. | Unit 17  Book Pricing | | |
|  | Students will reflect on the components of this project. | Unit 17  Mock Schedule & Book Pricing Reflection | | |