**Liberal Arts 1**

**Instructional Plan 2014-2015**

**Mathematics Instructional Plan Writing Committee**

|  |  |  |  |  |  |  |  |
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| |  |  |  |  | | --- | --- | --- | --- | | **School Board Members:**  Karen Almond  Tina Calderone, Ed.D.  Amy Lockhart  Dede Schaffner  **Superintendent:**  Dr. Walt Griffin  **Deputy Superintendent:**  Dr. Anna-Marie Cote  **Secondary Executive Directors:**  Dr. Michael Blasewitz  Dr. Robin Dehlinger  **Department of Teaching and Learning**  Dr. Corbet Wilson  Diana Barnett | **Middle School Contributors:**  Sandy Baldorossi – TWMS  Jennifer Bennett – MKMS  Patty Bouington – SMS  Allison Child – SMS  Diane Firios – SSMS  Mary Ellen Freeman – MMMS  Sara Gibbs – MWMS  Kelly Goodearl – ITMS  Kim Hamilton – ITMS  LeeAnn Heldmyer – TWMS  Joni Hudson – SMS  Stephanie Johnson – MMMS  Beth Karnes – ITMS  Adam Kiefer – SSMS  Elena Lugo – RLMS  Jennifer Manwaring – TWMS  Stuart Milchman – MMMS  Lisa Morris – MMMS  Michelle Mouton – JHMS  Misty Naran – LCMS | Triscia Panarello – SMS  Sabrina Robinson – MWMS  Robyn Smith – MKMS  Erica Sowpel – SMS  Kristen Springfield – MKMS  Jennifer Stickle – MMMS  Deborah Velez – LCMS  Dennis Whalen – ITMS  Barbie Wigen – MMMS  Agnes Wong – SMS | **High School Contributors:**  Ryan Beasley – LMHS  Susan Brown – LHS  Brittany Campbell – HHS  Aglaia Christodoulides - HHS  Katie Donoghue - LMHS  Lauren Fedi - OHS  Matt Guglielmello – OHS  David Hiller – LMHS  Saida Hussien – OHS  Amy Jones – LBHS  Mia Keyeser – LMHS  Angela-Mia Kilmer – OHS  Jeffrey Miller – LBHS  Karen Neukamm – LBHS  Laura Pollard – LHS  Jonathan Rodriguez – HHS  Kristina Rudich – LMHS  Lesley Schmidt – WSHS  Erica Segrest – OHS  Sharon Shyrock – LHS  Lynn Webb – LHHS  Betty Westhelle – OHS | |  |  |  |

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 Mathematics Formal Standards (MAFS) standards. 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.
* Learning goals and scales can be accessed through the hyperlinks within the Instructional Plan.
* Each learning scale will include links for formative assessment tasks that teachers are encouraged to use while students are progressing through the learning scale.
* Teachers are encouraged to use appropriate questioning strategies to fully address the instructional standards and expectations, by paying attention to the recommended caveats included throughout the IP to include discussion that may not be included as part of the textbook.
* Please look ahead and plan accordingly for time and copy needs that may arise throughout this year so that all MAFS standards are thoroughly addressed.
* Due to the fact that we do not have Test Item Specifications at this time the targeted Mathematical Practices for each unit are a projection.
* **Common Assessments need to be readdressed by PLCs to fit the new units and fully address the standards.**
* **Each unit will include at least one learning goal listed under the unit heading. The learning goals and scales 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.

1. **(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: Linear Equations and Inequalities |  | 18 |
| Unit 2: Graphing Linear Equations |  | 12 |
| Unit 3: Functions |  | 9 |
| District Assessment (1 day), 9 Weeks Exams (2 days) |  | 3 |
|  | | |
| **SECOND QUARTER (October 13 – December 18)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Topic/Assessment** |
| Unit 4: Systems of Equations and Inequalities |  | 13 |
| Unit 5: Simplifying Polynomial Expressions |  | 12 |
| Unit 6: Exponential Functions |  | 7 |
| Unit 7: Rational and Radical Equations |  | 9 |
| PSAT (1 day); District Assessment (1 day); 9 Weeks Exams (3 days) |  | 5 |
|  | | |
| **THIRD QUARTER (January 6 – March 12)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Topic/Assessment** |
| Unit 8: Basics of Geometry |  | 12 |
| Unit 9: Triangle Congruence |  | 7 |
| Unit 10: Triangle Similarity |  | 13 |
| Unit 11: Transformations |  | 10 |
| District Assessment (1 day); FSA ELA/Writing (1 day); 9 Weeks Exams (2 days) |  | 4 |
|  | | |
| **FOURTH QUARTER (March 23 – May 27)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Topic/Assessment** |
| Unit 12: Volume |  | 13 |
| Unit 13: Statistics |  | 13 |
| Unit 14: Constructions |  | 10 |
| District Assessment (1 day); FSA Tests (6 days) 9 Weeks Exams (3 days) |  | 10 |

*\*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:Linear Equations and Inequalities** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543) | Interpret expressions that represent a quantity in terms of its context.   1. Interpret parts of an expression, such as terms, factors, and coefficients. 2. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret http://www.cpalms.org/Uploads/Benchmark/5543/img/Capture1.PNG as the product of P and a factor not depending on P. | | | | | | 2, 7 |
| [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554) | 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](http://www.cpalms.org/Public/PreviewStandard/Preview/5557) | Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm’s law V = IR to highlight resistance R. | | | | | | 1 |
| [A-REI.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5558) | 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. | | | | | | 2, 7 |
| [A-REI.2.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5560) | Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. | | | | | | 1, 7 |
| [N-Q.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5519) | 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. | | | | | | 1, 5 |
| [N-Q.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5520) | Define appropriate quantities for the purpose of descriptive modeling. | | | | | | 4 |
| [N-Q.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5521) | Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. | | | | | | 2, 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx)  [**L103:** Solve rational and radical equations and inequalities in one variable and justify reasoning.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l103.docx)  [**L105:** Understand the concept of a function and use function notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l105.docx) | | | | A strategy is to have students begin with one step equations and have them write out a justification for each step used to solve the equation.  A misconception that some students may have is that they forget the coefficient of 1 when combining like terms.  Students may also think that rewriting equations into various forms are isolated techniques. Teachers should help students see the value of these skills in the context of solving higher degree equations. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will use previous knowledge of equations and order of operations in their study of multi-step equations and inequalities. Students will find much of this unit will lend itself to their subsequent studies when solving systems of equations and inequalities. | | Algebra Tiles |  | |
| 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: Linear Equations and Inequalities** | | | | | | |
| **Learning Goal** | [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx)  [**L103:** Solve rational and radical equations and inequalities in one variable and justify reasoning.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l103.docx)  [**L105:** Understand the concept of a function and use function notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l105.docx) | | | | **Suggested # of Days** | **18** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543) | 1.2: Order of Operations and Evaluating Expressions |  |  | | |
| 1 | [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543) | 1.7: The Distributive Property |  |  | | |
| 2 | [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [A-REI.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5558)  [A-REI.2.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5560)  [N-Q.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5519)  [N-Q.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5520) | 2.3: Solving Multi-Step Equations |  |  | | |
| 2 | [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [A-REI.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5558)  [A-REI.2.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5560) | 2.4: Solving Equations with Variables on Both Sides |  |  | | |
| 2 | [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [A-CED.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5557)  [A-REI.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5558)  [A-REI.2.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5560) | 2.5: Literal Equations and Formulas |  |  | | |
| 1 | [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [N-Q.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5521) | 2.6: Ratios, Rates, and Proportions |  |  | | |
| 2 | [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [A-REI.2.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5560)  [N-Q.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5521) | 2.7: Solving Proportions |  |  | | |
| 2 | [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [A-REI.2.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5560) | 3.4: Solving Multi-Step Inequalities |  |  | | |
| 2 | [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [A-REI.2.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5560) | 3.6: Compound Inequalities |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 2: Graphing Linear Equations** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543) | Interpret expressions that represent a quantity in terms of its context.   1. Interpret parts of an expression, such as terms, factors, and coefficients. 2. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret http://www.cpalms.org/Uploads/Benchmark/5543/img/Capture1.PNG as the product of P and a factor not depending on P. | | | | | | 2, 7 |
| [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555) | Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | | | | | | 2, 3, 7 |
| [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573) | 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. | | | | | | 2, 4 |
| [F-IF.2.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5575) | 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. | | | | | | 2, 3, 7 |
| [N-Q.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5519) | 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. | | | | | | 1, 5 |
| [N-Q.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5520) | Define appropriate quantities for the purpose of descriptive modeling. | | | | | | 4 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx)  [**L105:** Understand the concept of a function and use function notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l105.docx)  [**L106:** Interpret functions that arise in applications in terms of the context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l106.docx) | | | | If the relationship is illustrated as a linear graph, a strategy could involve having students select points on the graph and use them to estimate the growth rate over a given interval.  A misconception may be that students believe that the slope of a linear function is merely a number used to sketch the graph of the line even though slopes have real-world meaning and the idea of a rate of change is fundamental to understanding major concepts in mathematics. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will use previous knowledge of equations in two variables in their study of graphing lines. They will expand this knowledge to graph lines from the various forms of equations and to estimate the rate of change of a graph. Student will subsequently use this information when graphing a function rule. | |  |  | |
| 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: Graphing Linear Equations** | | | | | | |
| **Learning Goal** | [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx)  [**L105:** Understand the concept of a function and use function notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l105.docx)  [**L106:** Interpret functions that arise in applications in terms of the context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l106.docx) | | | | **Suggested # of Days** | **12** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | [F-IF.2.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5575) | 5.1: Rate of Change and Slope |  |  | | |
| 1 | [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543)  [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555)  [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573)  [N-Q.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5519)  [N-Q.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5520) | 5.3 Part 1: Slope-Intercept Form |  |  | | |
| 2 | [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543)  [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555)  [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573)  [N-Q.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5519)  [N-Q.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5520) | 5.3 Part 2: Slope-Intercept Form |  |  | | |
| 2 | [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543)  [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555)  [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573)  [N-Q.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5519)  [N-Q.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5520) | 5.4 Part 1: Point-Slope Form |  |  | | |
| 1 | [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543)  [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555)  [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573)  [N-Q.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5519)  [N-Q.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5520) | 5.4 Part 2: Point Slope Form |  |  | | |
| 2 | [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555)  [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573) | 5.5: Standard Form |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 3: Functions** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543) | Interpret expressions that represent a quantity in terms of its context.   1. Interpret parts of an expression, such as terms, factors, and coefficients. 2. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret http://www.cpalms.org/Uploads/Benchmark/5543/img/Capture1.PNG as the product of P and a factor not depending on P. | | | | | | 2, 7 |
| [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555) | Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. | | | | | | 4 |
| [A-REI.4.10](http://www.cpalms.org/Public/PreviewStandard/Preview/5567) | 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). | | | | | | 2 |
| [F-IF.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5570) | 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). | | | | | | 2 |
| [F-IF.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5571) | Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. | | | | | | 2 |
| [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573) | 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. | | | | | | 2, 5 |
| [F-IF.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5574) | Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function. | | | | | | 2 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L105:** Understand the concept of a function and use function notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l105.docx)  [**L106:** Interpret functions that arise in applications in terms of the context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l106.docx) | | | | Use diagrams to help students visualize the idea of a “function machine”. Students can examine several pairs of input and output values and try to determine a simple rule for the function.  A misconception may be that students believe that the notation f(x) means to multiply some value f times another value x. The notation alone can be confusing and needs careful development. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will use what they have previously learned about graphing linear equations to understand and graph a function in terms of domain and range. Students will find much of this unit will lend itself to their later studies in Algebra. | |  |  | |
| 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: Functions** | | | | | | |
| **Learning Goal** | [**L105:** Understand the concept of a function and use function notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l105.docx)  [**L106:** Interpret functions that arise in applications in terms of the context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l106.docx) | | | | **Suggested # of Days** | **9**  **(3)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573) | 4.1: Using Graphs to Relate Two Quantities |  |  | | |
| 2 | [A-REI.4.10](http://www.cpalms.org/Public/PreviewStandard/Preview/5567)  [F-IF.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5574) | 4.4: Graphing a Function Rule |  |  | | |
| 2 | [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543)  [A-CED.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5555) | 4.5: Writing a Function Rule |  |  | | |
| 2 | [F-IF.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5570)  [F-IF.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5571) | 4.6: Formalizing Relations and Functions |  |  | | |
| 2 |  | Review and Assessment |  |  | | |
| **3** |  | **District Assessment (1 day), 9 Weeks Exams (2 days)** |  |  | | |

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| **Unit 4: Solving Systems of Equations and Inequalities** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [A-CED.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5556) | 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. | | | | | | 2, 4 |
| [A-REI.3.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5562) | 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. | | | | | | 2, 3 |
| [A-REI.3.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5563) | Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. | | | | | | 1, 5 |
| [A-REI.4.11](http://www.cpalms.org/Public/PreviewStandard/Preview/5568) | 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. | | | | | | 3 |
| [A-REI.4.12](http://www.cpalms.org/Public/PreviewStandard/Preview/5569) | 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. | | | | | | 7 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L104:** Solve systems of linear equations and inequalities, algebraically and graphically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l104.docx) | | | | Systems of equations are classified into two groups, consistent or inconsistent, depending on whether or not solutions exist. The solution set of a system of equations is the intersection of the solution sets for the individual equations. Stress the benefit of making the appropriate selection of a method for solving systems (graphing vs. addition vs. substitution). This depends on the type of equations and combination of coefficients for corresponding variables, without giving a preference to either method.  Many of the mistakes that students make are simple mathematical errors rather than conceptual. Teachers should ensure that students substitute their answers back into the equations in the system in order to verify that their answers are correct. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will use previous knowledge of equations in two or more variables and graphing to solve systems of equations and inequalities. Students will find much of this unit will lend itself to their later studies in Algebra. | |  |  | |
| 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 4: Solving Systems of Equations and Inequalities** | | | | | | |
| **Learning Goal** | [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L104:** Solve systems of linear equations and inequalities, algebraically and graphically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l104.docx) | | | | **Suggested # of Days** | **13** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | [A-REI.3.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5563)  [A-REI.4.11](http://www.cpalms.org/Public/PreviewStandard/Preview/5568) | 6.1: Solving Systems by Graphing |  |  | | |
| 4 | [A-REI.3.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5562)  [A-REI.3.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5563)  [A-REI.4.11](http://www.cpalms.org/Public/PreviewStandard/Preview/5568) | 6.2, 6.3: Solving Systems Using Substitution and Elimination |  |  | | |
| 2 | [A-CED.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5556)  [A-REI.3.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5563)  [A-REI.4.11](http://www.cpalms.org/Public/PreviewStandard/Preview/5568) | 6.4: Applications of Linear Systems |  |  | | |
| 2 | [A-CED.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5556)  [A-REI.4.12](http://www.cpalms.org/Public/PreviewStandard/Preview/5569) | 6.5: Linear Inequalities |  |  | | |
| 2 | [A-CED.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5556)  [A-REI.4.11](http://www.cpalms.org/Public/PreviewStandard/Preview/5568)  [A-REI.4.12](http://www.cpalms.org/Public/PreviewStandard/Preview/5569) | 6.6: Systems of Linear Inequalities |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 5: Simplifying Polynomial Expressions** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 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. | | | | | | 2 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx) | | | | For power rules, very often it is easier to write out what the power means as multiplication instead of just rules to be memorized.  A misconception that some students may have is that they forget the coefficient of 1 when combining like terms. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will use their knowledge of order of operations and solving equations to simplifying polynomial expressions. In the process of simplifying polynomial expressions, student will expand the knowledge of exponents (including zero and negative exponents) and adding, subtracting and multiplying polynomials. Students will find much of this unit will lend itself to their later studies in exponential functions. | | Algebra Tiles |  | |
| 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: Simplifying Polynomial Expressions** | | | | | | |
| **Learning Goal** | [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx) | | | | **Suggested # of Days** | **12** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 7.1: Zero and Negative Exponents |  |  | | |
| 1 | [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 7.3: Multiplying Powers with the Same Base |  |  | | |
| 1 | [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 7.4: More Multiplying Properties of Exponents |  |  | | |
| 2 | [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 7.5: Division Properties of Exponents |  |  | | |
| 1 | [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 8.1: Adding and Subtracting Polynomials |  |  | | |
| 2 | [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 8.2: Multiplying and Factoring (Focus on Multiplying) |  |  | | |
| 2 | [A-APR.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5547) | 8.3: Multiplying Binomials (Extend to Polynomials) |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 6: Exponential Functions** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573) | 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. | | | | | | 2, 3, 4, 5, |
| [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543) | Interpret expressions that represent a quantity in terms of its context.   1. Interpret parts of an expression, such as terms, factors, and coefficients. 2. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret http://www.cpalms.org/Uploads/Benchmark/5543/img/Capture1.PNG as the product of P and a factor not depending on P. | | | | | | 2, 7 |
| [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554) | 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. | | | | | | 1 |
| [F-IF.2.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5575) | 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. | | | | | | 2, 5 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx)  [**L106:** Interpret functions that arise in applications in terms of the context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l106.docx) | | | | Provide applied contexts in which to explore functions. For example, examine the amount of money earned when given the number of hours worked on a job, and contrast this with a situation in which a single fee is paid by the “carload” of people, regardless of whether 1, 2, or more people are in the car.  Use diagrams to help students visualize the idea of a function machine. Students can examine several pairs of input and output values and try to determine a simple rule for the function.  A misconception that some students may have is to confuse the properties of exponents, specifically define the product of powers property with the power of a power property. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will use their knowledge of solving equations, exponents (including zero and negative exponents) and graphing to solve problems involving exponential functions. Students will find much of this unit will lend itself to their later studies in radical equations. | |  |  | |
| 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: Exponential Functions** | | | | | | |
| **Learning Goal** | [**L101:** Create equations that describe numbers or relationships.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l101.docx)  [**L102:** Understand parts of an expression and perform arithmetic operations on polynomials.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l102.docx)  [**L106:** Interpret functions that arise in applications in terms of the context.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l106.docx) | | | | **Suggested # of Days** | **7** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573) [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543)  [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [F-IF.2.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5575) | 7.6: Exponential Functions |  |  | | |
| 3 | [F-IF.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5573)  [A-SSE.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5543)  [A-CED.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5554)  [F-IF.2.6](http://www.cpalms.org/Public/PreviewStandard/Preview/5575) | 7.7: Exponential Growth and Decay |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 7: Rational and Radical Equations** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| [A-REI.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5559) | Solving simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise. | | | | | 1 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**L103:** Solve rational and radical equations and inequalities in one variable and justify reasoning.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l103.docx) | | | | A strategy to use for solving an equation is to have them justify each step in the process.  A misconception may be that students believe that all solutions to radical equations are viable, without recognizing that there are times when extraneous solutions are generated and have to be eliminated. | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will use their knowledge of solving equations, polynomials and exponents to solve rational and radical equations. In the process of solving rational equations, students will expand their abilities related to polynomials. Student understanding of exponential functions will increase during their study of radical equations. Students will find much of this unit will lend itself to their later studies in Algebra. | | Pearson Online Teacher Resources Under Algebra 1 Honors Book | |
| 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: Rational and Radical Equations** | | | | | | |
| **Learning Goal** | [**L103:** Solve rational and radical equations and inequalities in one variable and justify reasoning.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l103.docx) | | | | **Suggested # of Days** | **9**  **(5)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 3 | [A-REI.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5559) | 10.4: Solving Radical Equations (Honors Textbook) |  | 10-4 Worksheet [TE](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/10-4_te_.pdf) and [SE](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/10-4_se.doc) | | |
| 4 | [A-REI.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5559) | 11.5: Solving Rational Equations (Honors Textbook) |  | 11-5 Worksheet [TE](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/11-5_te.pdf) and [SE](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/11-5_se.doc) | | |
| 2 |  | Review and Assessment |  |  | | |
| **5** |  | **PSAT (1 day); District Assessment (1 day);**  **9 Weeks Exams (3 days)** |  |  | | |

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| **Unit 8 Basics of Geometry** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| [G-CO.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5598) | Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. | | | | | 6 |
| [G-MG.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5640) | Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios) | | | | | 1, 4 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**L108:** Know definitions of basic geometric terms and transformations. Describe transformations](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l108.docx).  [**L110:** Apply geometric concepts in modeling situations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l110.docx) | | | | A useful strategy is to use foldable/graphic organizers to create and define various geometric terms.  Have students write their own understanding of a given term and give students formal and informal definitions of each term and compare them.  When students ask to see “useful” mathematics, what they often mean is, “Show me how to use this mathematical concept or skill to solve the homework problems.” Mathematical modeling, on the other hand, involves solving problems in which the path to the solution is not obvious. Geometry may be one of several tools that can be used. | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | This unit will build the basic skills that will be necessary to solve problems related to shape, size, relative position of figures, and the properties of space. Nets will be used to evaluate 3-dimensional shapes or solids using 2-dimensional shapes and are helpful when we need to find the surface area of the solids. Material dealing with angles will subsequently be extended into theorems in terms of polygons and will build the foundations for many studies later in geometry. Area, perimeter and circumference will reappear later to calculate volume, as well as, have important extensions of their own. | | Pearson Online Teacher Resources Under Geometry Book | |
| 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 8: Basics of Geometry** | | | | | | |
| **Learning Goal** | [**L108:** Know definitions of basic geometric terms and transformations. Describe transformations](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l108.docx)**.**  [**L110:** Apply geometric concepts in modeling situations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l110.docx) | | | | **Suggested # of Days** | **12** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | [G-CO.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5598) | 1.1: Nets and Drawings for Visualizing Geometry |  |  | | |
| 1 | [G-CO.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5598) | 1.2: Points, Lines and Planes |  |  | | |
| 1 | [G-CO.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5598) | 1.3: Measuring Segments |  |  | | |
| 1 | [G-CO.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5598) | 1.4: Measuring Angles |  |  | | |
| 1 | [G-CO.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5598) | 1.5: Exploring Angle Pairs |  |  | | |
| 1 | [G-MG.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5640) | 1.8: Perimeter, Area and Circumference |  |  | | |
| 1 | [G-CO.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5598) | 3.1: Lines and Angles |  |  | | |
| 1 | [G-MG.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5640) | 3.3: Properties of Parallel Lines |  |  | | |
| 2 | [G-MG.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5640) | 3.4: Parallel and Perpendicular Lines |  | [CC-9](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc9.pdf) | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 9: Congruency in Triangles** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. | | | | | | 1, 6, 7 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L111:** Prove theorems involving similarity.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l111.docx) | | | | Allow adequate time and hands-on activities for students to explore dilations visually and physically.  Some students often do not recognize that congruence is a special case of similarity. Similarity with a scale factor equal to 1 becomes a congruency. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | This unit will build upon the skills that the student has developed for solving problems related to geometric figure shape and size. The student will be introduced to a set of postulates that prove triangle congruency and will use this knowledge to solve problems and prove relationships in geometric figures. Students will use the knowledge learned in this unit during their study of triangle similarity. | |  |  | |
| 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: Congruency in Triangles** | | | | | | |
| **Learning Goal** | [**L111:** Prove theorems involving similarity.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l111.docx) | | | | **Suggested # of Days** | **7** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 4.1: Congruent Figures |  |  | | |
| 1 | [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 4.2:Triangle Congruence by SSS and SAS |  |  | | |
| 1 | [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 4.3: Triangle Congruence by AAS and ASA |  |  | | |
| 1 | [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 4.6: Congruence in Right Triangles |  |  | | |
| 1 | [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 4.7: Congruence in Overlapping Triangles |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 10: Similarity in Triangles** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| [G-SRT.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5612) | Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. | | | | | 1, 3, 6 |
| [G-SRT.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5613) | Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar. | | | | | 6, 7 |
| [G-SRT.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5614) | Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity. | | | | | 6, 7 |
| [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. | | | | | 1, 6, 7 |
| [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). | | | | | 2, 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**L110:** Apply geometric concepts in modeling situations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l110.docx)  [**L111:** Prove theorems involving similarity.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l111.docx)  [**L113:** Understand similarity in terms of similarity transformations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l113.docx) | | | | Allow adequate time and hands-on activities for students to explore dilations visually and physically.  Measure the corresponding angles and sides of the original figure and its image to verify that the corresponding angles are congruent and the corresponding sides are proportional (i.e. stretched or shrunk by the same scale factor). Investigate the SAS and SSS criteria for similar triangles.  Students may not realize that similarities preserve shape, but not size. Angle measures stay the same, but side lengths change by a constant scale factor.  Some students often do not list the vertices of similar triangles in order. However, the order in which vertices are listed is preferred and especially important for similar triangles so that proportional sides can be correctly identified. | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will find much of this unit will lend itself to their later studies in Geometry. Triangle congruence and similarity will later be useful while studying polygons, especially Polygon-Angle Sum theorem. | | Pearson Online Teacher Resources Under Geometry Book | |
| 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: Similarity in Triangles** | | | | | | |
| **Learning Goal** | [**L110:** Apply geometric concepts in modeling situations**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l110.docx)  [**L111:** Prove theorems involving similarity**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l111.docx)  [**L113:** Understand similarity in terms of similarity transformations**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l113.docx) | | | | **Suggested # of Days** | **13** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 5.1: Midsegments in Triangles |  |  | | |
| 2 | [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 5.2: Perpendicular and Angle Bisectors in Triangles |  |  | | |
| 1 | [G-SRT.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5612)  [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 7.2: Similar Polygons |  | [CC-14](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc14.pdf) | | |
| 2 | [G-SRT.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5613)  [G-SRT.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5614)  [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 7.3: Proving Triangles Similar |  |  | | |
| 2 | [G-SRT.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5614)  [G-SRT.2.5](http://www.cpalms.org/Public/PreviewStandard/Preview/5615) | 7.5: Proportions in Triangles |  |  | | |
| 1 | [G-SRT.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5614) | 8.1: Pythagorean Theorem |  |  | | |
| 1 | [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | 8.3: Trigonometry |  | [CC-2](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc2.pdf) | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 11: Transformations** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | **SMP** |
| [G-CO.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5600) | Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself. | | | | | 2, 8 |
| [G-CO.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5601) | Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments. | | | | | 1, 6, 8 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | |
| [**L108:** Know definitions of basic geometric terms and transformations. Describe transformations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l108.docx) | | | | Review vocabulary associated with transformations (e.g. rotations, reflections and translations).  Provide both individual and small-group activities, allowing adequate time for students to explore and verify conjectures about transformations and develop precise definitions of rotations, reflections and translations.  Students should know that not every transformation is a translation. Students sometimes confuse the terms “transformation” and “translation.” | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | This unit will build on skills and knowledge that has been developed in terms of the shape, size, and relative position of geometric figures. Students will use this knowledge to perform a variety of transformations on geometric figures. Students will use the knowledge learned in this unit during their future study of geometric concepts. | | Pearson Online Teacher Resources Under Geometry Book | |
| 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: Transformations** | | | | | | |
| **Learning Goal** | [**L108:** Know definitions of basic geometric terms and transformations. Describe transformations**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l108.docx) | | | | **Suggested # of Days** | **10**  **(4)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | [G-CO.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5600)  [G-CO.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5601) | 9.1: Translations |  | [CC-4](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc4.pdf) | | |
| 2 | [G-CO.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5600)  [G-CO.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5601) | 9.2: Reflections |  | [CC-6](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc6.pdf) | | |
| 2 | [G-CO.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5600)  [G-CO.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5601) | 9.3: Rotations |  | [CC-7](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc7.pdf) | | |
| 1 | [G-CO.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5600)  [G-CO.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5601) | Generating Three-Dimensional Figures |  | [CC-16](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc16.pdf) | | |
| 1 | [G-CO.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5600)  [G-CO.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5601) | 9.4: Symmetry |  | [CC-8](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc8.pdf) | | |
| 2 |  | Review and Assessment |  |  | | |
| **4** |  | **District Assessment (1 day);**  **FSA ELA/Writing (1 day); 9 Weeks Exams (2 days)** |  |  | | |

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| **Unit 12: Volume** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder). | | | | | | 1, 4, 6 |
| [G-MG.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5639) | Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot). | | | | | | 2, 4, 6 |
| [G-GMD.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5636) | Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems. | | | | | | 2, 8 |
| [G-GMD.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5637) | Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects. | | | | | | 1 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L110:** Apply geometric concepts in modeling situations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l110.docx)  [**L112:** Explain volume formulas and use them to solve problems. Visualize relationships between 2D and 3D objects.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l112.docx) | | | | Revisit formulas C = πd and C = 2πr. Observe that the circumference is a little more than three times the diameter of the circle. Briefly discuss the history of this number and attempts to compute its value.  The inclusion of the coefficient 1/3 in the formulas for the volume of a pyramid or cone and 4/3 in the formula for the volume of a sphere remains a mystery for many students. In high school, students should attain a conceptual understanding of where these coefficients come from. Concrete demonstrations, such as pouring water from one shape into another should be followed by more formal reasoning. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students can encompass their previous knowledge of two-dimensional figures when studying cross-sections. Students will find much of this unit will lend itself to their later studies in Geometry. | | Geometric Manipulatives |  | |
| 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 12: Volume** | | | | | | |
| **Learning Goal** | [**L110:** Apply geometric concepts in modeling situations**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l110.docx)  [**L112:** Explain volume formulas and use them to solve problems. Visualize relationships between 2D and 3D objects**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l112.docx) | | | | **Suggested # of Days** | **13** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | [G-GMD.2.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5637)  [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | 11.1: Space Figures and Cross Sections |  | [CC-16](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/cc16.pdf) | | |
| 2 | [G-GMD.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5636)  [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | 11.4: Volume of Prisms and Cylinders |  |  | | |
| 2 | [G-GMD.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5636)  [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | 11.5: Volume of Pyramids and Cones |  |  | | |
| 2 | [G-GMD.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5636)  [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | 11.6: Volume of Spheres ONLY  (No Surface Area) |  |  | | |
| 2 | [G-MG.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5639)  [G-MG.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5638) | 11.7: Volume of Similar Solids |  |  | | |
| 3 |  | Review and Assessment |  |  | | |

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| **Unit 13: Statistics** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [S-ID.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5641) | Represent data with plots on the real number line (dot plots, histograms, and box plots).  **Remarks/Examples:** In grades 6 – 8, students describe center and spread in a data distribution. Here they choose a summary statistic appropriate to the characteristics of the data distribution, such as the shape of the distribution or the existence of extreme data points. | | | | | | 2, 5 |
| [S-ID.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5642) | Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.  **Remarks/Examples:** In grades 6 – 8, students describe center and spread in a data distribution. Here they choose a summary statistic appropriate to the characteristics of the data distribution, such as the shape of the distribution or the existence of extreme data points. | | | | | | 2, 5 |
| [S-ID.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5643) | Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).  **Remarks/Examples:** In grades 6 – 8, students describe center and spread in a data distribution. Here they choose a summary statistic appropriate to the characteristics of the data distribution, such as the shape of the distribution or the existence of extreme data points. | | | | | | 2 |
| [S-ID.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5644) | Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. | | | | | | 2, 5, 7 |
| [N-Q.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5521) | Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. | | | | | | 2, 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L107:** Summarize, represent, and interpret data on a single count or measurement variable. Use mean and standard deviation to fit a normal distribution.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l107.docx) | | | | Review vocabulary associated with statistics (e.g. mean, median, mode, population, quartile, sample size, etc.).  A misconception may be that students confuse the definitions of mean, median and mode. Another misconception may be that students do not understand that a quartile is a number and not a range of values. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students will expand their existing knowledge of mathematics to include plotting, interpreting and analyzing data. During this lesson, students will learn how to represent and analyze data using a variety of plots. Students will find much of this unit will lend itself to their future studies in mathematics. | |  |  | |
| 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 13: Statistics** | | | | | | |
| **Learning Goal** | [**L107:** Summarize, represent, and interpret data on a single count or measurement variable. Use mean and standard deviation to fit a normal distribution**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l107.docx) | | | | **Suggested # of Days** | **13** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | [S-ID.1.1](http://www.cpalms.org/Public/PreviewStandard/Preview/5641) | CC-21: Frequency and Histograms |  |  | | |
| 2 | [S-ID.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5642)  [N-Q.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5521) | CC-22: Measures of Central Tendency and Dispersion |  |  | | |
| 2 | [S-ID.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5642) | CC-23: Standard Deviation |  |  | | |
| 2 | [S-ID.1.2](http://www.cpalms.org/Public/PreviewStandard/Preview/5642)  [N-Q.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5521) | CC-24: Box-and-Whisker Plots |  |  | | |
| 2 | [S-ID.1.3](http://www.cpalms.org/Public/PreviewStandard/Preview/5643) | CC-25: Analyzing the Shape of Data |  |  | | |
| 2 | [S-ID.1.4](http://www.cpalms.org/Public/PreviewStandard/Preview/5644) | CC-38: Normal Distributions  (This lesson is under the algebra 1 honors additional common core lessons). |  |  | | |
| 2 |  | Review and Assessment |  |  | | |

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| **Unit 14: Constructions** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| [G-CO.4.12](http://www.cpalms.org/Public/PreviewStandard/Preview/5609) | Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. | | | | | | 1, 5 |
| [G-CO.4.13](http://www.cpalms.org/Public/PreviewStandard/Preview/5610) | Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). | | | | | | 1, 5, 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**L109:** Make geometric constructions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l109.docx) | | | | Students should analyze each listed construction in terms of what simpler constructions are involved (e.g., constructing parallel lines can be done with two different constructions of perpendicular lines).  Using congruence theorems, ask students to prove that the constructions are correct.  Some students may believe that a construction is the same as a sketch or drawing. Emphasize the need for precision and accuracy when doing constructions. Stress the idea that a compass and straightedge are identical to a protractor and ruler. Explain the difference between measurement and construction. | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | Students have already learned about the different lines and angles in Unit 6 of this course. Students will find much of this unit will lend itself to their later studies in Geometry. | |  |  | |
| 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: Constructions** | | | | | | |
| **Learning Goal** | [**L109:** Make geometric constructions**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/l109.docx) | | | | **Suggested # of Days** | **10**  **(10)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 4 | [G-CO.4.12](http://www.cpalms.org/Public/PreviewStandard/Preview/5609)  [G-CO.4.13](http://www.cpalms.org/Public/PreviewStandard/Preview/5610) | 1.6: Basic Constructions |  |  | | |
| 4 | [G-CO.4.12](http://www.cpalms.org/Public/PreviewStandard/Preview/5609)  [G-CO.4.13](http://www.cpalms.org/Public/PreviewStandard/Preview/5610) | 3.6: Constructing Parallel and Perpendicular Lines |  |  | | |
| 2 |  | Review and Assessment |  |  | | |
| **10** |  | **District Assessment (1 day); FSA Tests (6 days) 9 Weeks Exams (3 days)** |  |  | | |