**8th Grade Intensive**

**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 Huessien – 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  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 the Florida Standards (MAFS) while using the Connected Mathematics Project 3 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.

In Units 3 and 4, there are references made to the 6th and 7th grade CMP2 texts. Students will either need access to the student texts or electronic/printed copies of the text (which can be found on Blackboard).

**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**
* **Employ questioning techniques that require students to justify, defend and support their ideas**
* **For all students to be able to reason and communicate proficiently in mathematics**

In pursuit of the stated goals, teachers are encouraged to develop a classroom atmosphere that **promotes inquiry, discussion of mathematics, justification of thinking and a joy for exploring.** Concurrently, teachers should strive to develop:

* **respect** in the classroom
* **academic excellence and rigor**
* student **success**
* student **confidence**
* a **“safe place”** to share/collaborate/question

**Instructional Plan Caveats:**

* The **purpose of Week 1** in each Instructional Plan is to establish “social norms”: establish procedures and expectations that will lead to daily classroom success (how to work in partners and groups, how to explain/justify, focus on academic rigor, etc.); all grades will use the problem solving exercises posted on SCPS Blackboard. **During Week 2,** continue to establish social norms while beginning to use math content.
* Suggested ACE problems can be used after each individual lesson or after an entire investigation based on teacher preference.
* Limited or no homework should be prescribed in the intensive classes.
* Descriptions of the Mathematical Practices can be found on pages 3 – 4. Teachers are encouraged to embed the Questions to Develop Mathematical Thinking (located on pages 5 – 6) in their daily lessons.
* **No assessment or assignment will receive a score of less than 50%**
* **Tests and quizzes will count for no more than 20%** of the entire nine-week grade
* The **remaining 80%** of the nine-week grade should be a collaborative decision within the PLC and may include classwork, participation, notebook/journal, projects, etc.
* Common Unit Assessments are available on SCPS Blackboard; in addition, there is a Unit Test Item Bank available for “chunking” the assessments throughout each unit or authentic tasks such as the Amplify Projects can be used. PLC’s should determine the school decision.
* It is essential that teachers do the Required TE Reading in preparation for successful presentation of each problem
* Learning goals and scales can be accessed through the hyperlinks within the Instructional Plan.
* Extended time has been allocated for authentic assessment tasks. Recommendations are made within the instructional plan to include summative assessments and review, authentic assessments, as well as culminating tasks (Amplify projects). District training will be provided on successful implementation of the Amplify projects throughout the year.

**Test Items Specifications:** [fsassessments.org](http://fsassessments.org/)

**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** | **Approximate # of Days** |
| Unit 1: Social Norms/Patterns |  | 5 |
| Unit 2: Growing, Growing, Growing (Inv. 1 and 5) |  | 27 |
| Unit 3: Moving Straight Ahead |  | 10 |
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| **SECOND QUARTER (October 13 – December 18)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** |
| Unit 3: Moving Straight Ahead (cont.) |  | 33 |
| Unit 4: Shapes and Designs (Inv. 2 and 3) |  | 13 |
|  | | |
| **THIRD QUARTER (January 6 – March 12)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** |
| Unit 5: Statistics |  | 14 |
| Unit 6: The Shapes of Algebra Pt. I (Inv. 4) |  | 10 |
| Unit 7: Looking for Pythagoras |  | 21 |
| FSA Writing (1 day) |  | 1 |
|  | | |
| **FOURTH QUARTER (March 23 – May 27)** | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** |
| Unit 7: Looking for Pythagoras (cont.) |  | 3 |
| Unit 8: Kaleidoscopes, Hubcaps, and Mirrors (Inv. 5) |  | 14 |
| Test Taking Strategies and Review During FSA Testing Schedule |  | 15 |
| Unit 9: The Shapes of Algebra Pt. II (Inv. 5) |  | 14 |

*\*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: Patterns** | | | | | | | |
| **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 relational represented in different ways. | | | | | | 2, 7, 8 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**804:** Understand the connections between proportional relationships, lines, and linear equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/804.docx) | | | | * Misconception- students will be tempted to use addition and no other operation * Misconception- students will confuse the figure number and how it fits into the expression describing the pattern * Strategy – model the connection between the given pattern and algebraic expression | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Recognize relationships between pictorial representations and expressions. (Variables and Patterns) * This activity will lead in to the Expressions and Equations unit. | | 1. See Blackboard: MS Course materials/first week of school/linear patterns (copies will be needed)  2. Whiteboards |  | |
| 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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| **Unit 2: Growing, Growing, Growing** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 8.EE.1.1 | Know and apply the properties of integer exponents to generate equivalent numerical expressions. | | | | | | 7 |
| 8.EE.1.3 | Use numbers expressed in the form of a single digit times an integer power of ten to estimate very large or very small quantities, and to express how many times as much one is than the other. | | | | | | 4 |
| 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. Interpret scientific notation that has been generated by technology. | | | | | | 6, 7, 8 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**802:** Work with radicals and integer exponents.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/802.docx)  [**803:** Apply integer exponents to perform operations involving scientific notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/803.docx) | | | | * Strategy- understanding negative exponents and place value * Misconception – negative exponent makes the number smaller * Misconception- exponent indicates number of zeros * Misconception- failure to identify repeated addition as multiplication | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Identify and recognize patterns (Variables and Patterns) * Identify and recognize relationships between variables (Variables and Patterns) * Create data tables (Variables and Patterns) * This unit supports the Rational and Integer Exponent unit in standard Pre-Algebra | | 1. Text- CMP2 Growing, Growing, Growing (green book)  2. Supplemental resources needed for scientific notation  3. Amplify: Driving Innovation  4. Counters |  | |
| 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 and 2: Patterns and Growing, Growing, Growing** | | | | | | |
| **Learning Goal** | [**802:** Work with radicals and integer exponents.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/802.docx)  [**803:** Apply integer exponents to perform operations involving scientific notation.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/803.docx)  [**804:** Understand the connections between proportional relationships, lines, and linear equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/804.docx) | | | | **Suggested # of Days** | Unit 1: **5**  Unit 2: **27** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 5 | 8.EE.2.5 | Social Norms through Pattern lessons |  | [**Linear Patterns**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/linear_patterns.doc) **(On Blackboard)** | | |
| 2 | 8.EE.1.1 | GGG 1.1 Making Ballots | 2-7, 8, 9 | TE p. 19-24  Paper to tear for ballots | | |
| 2 | GGG 1.2 Requesting a Reward | 10, 11, 15-21, 40-42 | TE p. 25-30 | | |
| 2 | GGG 1.3 Making a New Offer | 23, 47 | TE p. 31-34 | | |
| 2 | GGG 1.4 Getting Costs in Line | 25-30 | TE p. 35-38 | | |
| 3 | Ace Questions and/or Assess GGG Investigation 1 | 1, 24, 31 | TE p. 39-43 | | |
| 2 | GGG 5.1 Predicting the Ones Digit | 1-5, 8, 9 | TE p. 99-104 | | |
| 2 | GGG 5.2 Operating with Exponents | 10-12, 15-28, 32-41 | TE p.105-108 | | |
| 1 | 8.EE.1.3 | Scientific Notation |  | [Scientific Notation Worksheets](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/scientific-notation-worksheets.pdf) **(on BB)**  **Videos:**  [Scientific Notation](https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-scientific-notation/v/scientific-notation)  [Multiplying with Scientific Notation](https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-scientific-notation-compu/v/multiplying-in-scientific-notation)  [Dividing with Scientific Notation](https://www.khanacademy.org/math/cc-eighth-grade-math/cc-8th-numbers-operations/cc-8th-scientific-notation-compu/v/multiplying-and-dividing-in-scientific-notation) | | |
| 1 | 8.EE.1.4 | Add/Subtract numbers written in Scientific Notation |  |
| 1 | Multiply/Divide numbers in Scientific Notation |  |
| 2 | 8.EE.1.3  8.EE.1.4 | Mixed Scientific Notation practice |  | CPALMS Problem Solving Task:  [Giantburgers](http://www.cpalms.org/Public/PreviewResource/Preview/42388) | | |
| 7 | Amplify: *So Just How Far Is It To Other Planets* AND/OR  Ace Questions  GGG Assessment | 44, 45, 47, 48, 51, 55, 56 | **Resources found on Amplify Website** | | |

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| **Unit 3: Moving Straight Ahead** | | | | | | | |
| **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 relational represented in different ways. | | | | | | 1, 5 |
| 8.EE.2.6 | Use similar triangles to explain why the slope, *m*, is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equations y=mx for a line through the origin and the equation y=mx+b for a line intercepting the vertical axis at *b*. | | | | | | 2, 7 |
| 8.EE.3.7 | Solve linear equations in one variable.   1. Give examples of linear equations in one variable with one solution, infinitely many solutions, or not solutions. Show which of these possibilities is the case by successively transforming the given equations into simpler forms, until and equivalent equation of the form x=a, a=a, or a=b results.(where a and b are different numbers.) 2. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. | | | | | | 6,7 |
| 8.EE.3.8 | Analyze and solve pairs of simultaneous linear equations.   1. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. | | | | | | 4 |
| 8.F.1.2 | Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions.) | | | | | | 2, 5 |
| 8.F.1.3 | Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. | | | | | | 2, 7 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**804:** Understand the connections between proportional relationships, lines, and linear equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/804.docx)  [**805:** Solve linear equations with rational coefficients where there is one solution, infinitely many solutions, and no solution.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/805.docx)  [**807:** Define, evaluate, and compare functions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/807.docx) | | | | * Strategy- make graphs ahead of time emphasizing intervals and labels. * Strategy – use all applicable vocabulary: input/output, domain/range, x/y, dependent/independent * Strategy – emphasize connection between table, graph and equation. * Misconception – students have trouble plotting points on the coordinate grid | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Graphing data in the coordinate plane ( Variables and Patterns and Accentuate the Negative) * Expressing relationships between variable in words, symbols, graphs, and tables. ( Variables and Patterns and Comparing and Scaling) * Understanding Integer Operations ( Accentuate the Negative) * This Unit supports the Expressions and Equations unit as well as the Functions Unit in Pre-Algebra. | | 1. Text- CMP2 Moving Straight Ahead (blue book)  2. meter sticks  3. stop watch  4. chart paper  5. graph paper |  | |
| 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/SECOND QUARTER** | | | | | | |
| **Unit 3: Moving Straight Ahead (CMP2 7th Grade Text)** | | | | | | |
| **Learning Goal** | [**804:** Understand the connections between proportional relationships, lines, and linear equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/804.docx)  [**805:** Solve linear equations with rational coefficients where there is one solution, infinitely many solutions, and no solution.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/805.docx)  [**807:** Define, evaluate, and compare functions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/807.docx) | | | | **Suggested # of Days** | **Q1: 10**  **Q2: 33** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 |  | Set up graphs to be used for problems 1.2-1.4. *Students should not see the text, but information should be discussed.* |  | TE p. 3-8 | | |
| 1 | 8.EE.2.5 | MSA 1.1 Walking Marathons | 1, 2 | TE p. 15-18 | | |
| 1 | MSA 1.2 Walking Rates and Linear Relationships  \*\*C is important | 3, 5 (excluding Mike) | TE p. 19-24  graph paper or pre-made graph | | |
| 1 | MSA 1.3 Raising Money | 6, 8, 9, 24 | TE p. 25-30  graph paper or pre-made graph | | |
| 1 | MSA 1.4 Using the Walkathon Money | 10, 12 | TE p. 30-34  graph paper or pre-made graph | | |
| 3 | ACE Questions and/or Assessment | 13, 25, 26, 27-29 (focus: choosing all that apply) |  | | |
| 1 | 8.F.1.3 | MSA 2.1 Walking to Win | 1, 3, 4, 29, 35 | TE p. 41-46, 47-50 | | |
| **END 1ST QUARTER** | | | | | | |
| 1 | 8.F.1.3 | MSA 2.2 Crossing the Line | 1, 3, 4, 29, 35 | TE p. 41-46, 47-50 | | |
| 2 | 8.F.1.2 | MSA 2.3 Comparing Costs | 7, 9, 10, 11-14(a-c), 38 | TE p. 51-54 | | |
| 2 | MSA 2.4 Connecting tables, graphs, and equations  D optional | 16, 24-28 | TE p. 55-60 | | |
| 3 | 8.F.1.2  8.F.1.3 | ACE questions and/or Assessment | 5, 6, 29 (must do for x-int), 30, 39, 42, 44  Properties 31, 32, 37 |  | | |
| 1 | 8.EE.3.7 | MSA 3.1 Solving Equations Using Tables and graphs | 2, 3, 4, 29 | TE p. 66-70 | | |
| 3 | MSA 3.2 Exploring Equality | 5-8, 9 | TE p. 71-76  [**Labsheet 3.2**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/labsheet_3.2.pdf) **(on Blackboard)** | | |
| MSA 3.3 From Pouches to Variables | 10, 14, 15 | TE p. 77-80  [**Labsheet 3.3**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/labsheet_3.3.pdf) **(on Blackboard)** | | |
| 2 | MSA 3.4 Solving Linear Equations  Properties of equality = inverse operations | 16-19 | TE p. 81-84 | | |
| 2 | 8.EE.3.8a | MSA 3.5 Finding the Point of Intersection | 26, 27 | TE p. 85-88 | | |
| 3 | 8.EE.3.7  8.EE.3.8a | ACE Questions and/or Assessment  MUST DO ACE # 39 | 21, 22, 24, 31, 38, 44, 45 | TE p. 89-94 | | |
| 2 | 8.EE.2.6  8.F.1.3 | MSA 4.1 Climbing Stairs | 1, 2 | TE p. 95-100 | | |
| 2 | MSA 4.2 Finding the Slope of a Line | 3-12 | TE p. 101-106 | | |
| 2 | MSA 4.3 Exploring Patterns with Lines | 20-23, 30 | TE p. 107-110 | | |
| 1 | MSA 4.4 Pulling it All Together  PART A Only | 31, 33, 35 | TE p. 111-114 | | |
| 4 | Graphic Organizer for y=mx+b and ACE | 16-19, 38, 41, 42 |  | | |
| 3 | ACE or MSA Assessment AND/OR | Use ACE questions not used previously |  | | |

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| **Unit 4: Shapes and Designs** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 8.G.1.5 | Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. | | | | | | 2, 3, 8 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**811**: Use informal arguments to establish facts about angle relationships with parallel lines, triangles, and polygons.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/811.docx) | | | | * Strategy -students need to be able to connect to real world applications * Misconception – students are unsure of angles over 180 degrees * Misconception – students have trouble with interior and exterior angle sum being 180 degrees | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Connect with complementary and supplementary angles * Parallel and Intersecting Lines ( Moving Straight Ahead) * This unit supports the Angle Relationships Unit in Pre- Algebra. | | 1. Text- CMP2 Shapes and Designs (red book)  2. Include all needed vocabulary  3. Angle rulers  4. Lab Sheets |  | |
| 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: Shapes and Designs (CMP2 6th Grade Text)** | | | | | | |
| **Learning Goal** | [**811**: Use informal arguments to establish facts about angle relationships with parallel lines, triangles, and polygons.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/811.docx) | | | | **Suggested # of Days** | **13** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1 | 8.G.1.5 | Review polygons and types of angles  Prove 180 degrees in a triangle (text pg. 56) |  | TE p. 3-10 | | |
| 4 | SD 2.5 Angles and Parallel Lines  CMP2 does not cover all angle vocabulary  BE SURE TO DO SO (i.e. alternate interior angles)  Tie lesson to real world problems beyond diagram of two parallel lines cut by a transversal  ACE questions and Assessment |  | TE p. 53-61  **CPALMS:** [Special Angles Discovery Activity](http://www.cpalms.org/Public/PreviewResourceLesson/Preview/26664)  *\*Teachers should use discretion on which parts of this to use to fully meet standards and needs of their students.* | | |
| 1.5 | SD 3.1 Angle Sums of Regular Polygons | 1, 16 | TE p. 62-66  Angle rulers  Shape sets – prep time required | | |
| 1.5 | SD 3.2 Angle Sums of Any Polygon  Split class in half: half Cody half Tia then students can teach each other | 3-10, 17, 22, 24 | TE p. 67-70 | | |
| 2 | SD 3.4 Exterior Angles of Polygons | 13, 14, 20 | TE p. 75-78 | | |
| 3 | Ace questions and/or SD Assessment | 11 |  | | |

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| **Unit 5: Statistics** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 8.SP.1.1 | Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. | | | | | | 3, 5, 7 |
| 8.SP.1.2 | Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points on the line. | | | | | | 2, 5, 7 |
| 8.SP.1.3 | Use the equation of a linear model to solve problems in the context or bivariate measurement data, interpreting the slope and intercept. | | | | | | 2, 4, 6, 7 |
| 8.SP.1.4 | Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. | | | | | | 2, 4, 5, 7 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**814:** Investigate patterns of association in bivariate data.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/814.docx) | | | | * Misconception- using points from the scatter plot to find the slope of the line of best fit * Misconception – time is not base 10 * Strategy - remind students that to find the y-intercept x must be zero | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Moving Straight Ahead has the background knowledge needed for writing equations of lines * Modeling situations with linear equations (Moving Straight Ahead, Variables and Patterns, Comparing and Scaling) * Solve Problems in Algebraic Context ( Moving Straight Ahead and Variables and Patterns) * Finding Slopes of lines and investigating parallel lines ( Moving Straight Ahead) * Recognizing linear and non-linear patterns in tables and graphs and describing those patterns using words and equations (Variables and Patterns and Moving Straight Ahead) * This unit supports the Statistics unit in Pre- Algebra | | 1. Text- CMP2 Thinking with Mathematical Models (green book)  2. Amplify: A Fair Fine for Speeding |  | |
| 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 5: Statistics** | | | | | | |
| **Learning Goal** | [**814:** Investigate patterns of association in bivariate data.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/814.docx) | | | | **Suggested # of Days** | **14** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | 8.SP.1.1  8.SP.1.2 | Scatter Plots |  | **EngageNY Grade 8 - Module 6**  Topic B: Lesson 6 – [TV](https://www.engageny.org/file/48716/download/math-g8-m6-topic-b-lesson-6-teacher.pdf?token=wKse202chluRoqV_OTusXfAsbmQATj1Dmud_cW3EsRA) and [SV](https://www.engageny.org/file/48711/download/math-g8-m6-topic-b-lesson-6-student.pdf?token=5liwzTN7ApDjV_L3Wy5IDRV3rvCqduYziq43MDJHrcc) | | |
| 2 | Patterns in Scatter Plots |  | **EngageNY Grade 8 - Module 6**  Topic B: Lesson 7 – [TV](https://www.engageny.org/file/48741/download/math-g8-m6-topic-b-lesson-7-teacher.pdf?token=i1jsIyMUb8jvClBzkhIEMaWMz9qsmzekb8cCZmF-mNg) and [SV](https://www.engageny.org/file/48736/download/math-g8-m6-topic-b-lesson-7-student.pdf?token=4yb9WnjePj9T3E0WPITVnIJZo3wbOq82Hlchi-4yfRo) | | |
| 2 | Determining the Equation of a Line of Best Fit |  | **EngageNY Grade 8 - Module 6**  Topic C: Lesson 9 – [TV](https://www.engageny.org/file/48821/download/math-g8-m6-topic-b-lesson-9-teacher.pdf?token=NakdwVG1WBVqlp9F22V-E4Ps1tPOCollu3sD8DSpGDM) and [SV](https://www.engageny.org/file/48811/download/math-g8-m6-topic-b-lesson-9-student.pdf?token=zj4Mbu61yaT4E2-i2jsXzStlJbKadXfUyxbGkrWJBCM) | | |
| 2 | 8.SP.1.1  8.SP.1.2  8.SP.1.3 | Linear Models |  | **EngageNY Grade 8 - Module 6**  Topic C: Lesson 10 – [TV](https://www.engageny.org/file/48866/download/math-g8-m6-topic-c-lesson-10-teacher.pdf?token=S1cq8G6CSG7HVXaanBc-Pah-ALgUkZuMZ7kcFl0o9p4) and [SV](https://www.engageny.org/file/48856/download/math-g8-m6-topic-c-lesson-10-student.pdf?token=lb5kP3Ycq1QU_jX6b19gM3NKUjjIJ7rZep6YcJ3uBqY) | | |
| 2 | Using Linear Models in a Data Context |  | **EngageNY Grade 8 - Module 6**  Topic C: Lesson 11 – [TV](https://www.engageny.org/file/48906/download/math-g8-m6-topic-c-lesson-11-teacher.pdf?token=9rS4fBrT7Nh28BAO_rgW0NH0XHQpPhyv2qfS1GGO0oI) and [SV](https://www.engageny.org/file/48901/download/math-g8-m6-topic-c-lesson-11-student.pdf?token=jrcSundp8LCrIUvVWk6PzbK4xZvhzQ22Y47rlEJsn5c) | | |
| 2 | 8.SP.1.4 | Summarizing Bivariate Categorical Data in Two-Way Tables |  | **EngageNY Grade 8 - Module 6**  Topic D: Lesson 13 – [TV](https://www.engageny.org/file/48981/download/math-g8-m6-topic-d-lesson-13-teacher.pdf?token=0cNZivsTI2oBlwuj_5XlHIh_Ys3IPEJik27ck7qydh4) and [SV](https://www.engageny.org/file/48976/download/math-g8-m6-topic-d-lesson-13-student.pdf?token=W3aGKcZKMjcKVZT85m01giLVfOL8_eU42nOMANfyeA0) | | |
| 2 |  | Review/Assessment |  | **(on Blackboard)**  *Optional:* [*Scatterplot Activity*](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/scatterplot.doc) | | |

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| **Unit 6: The Shapes of Algebra Pt. I** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 8.EE.3.8 | Analyze and solve pairs of simultaneous linear equations.   1. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. 2. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. 3. Solve real-world and mathematical problems leading to two linear equations in two variables. | | | | | | 1, 5, 6, 7 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**806:** Analyze and solve pairs of simultaneous linear equations**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/806.docx) | | | | * Misconception- students try to perform inverse operations with unlike terms * Misconception – students will remove all terms from one side of equation leaving nothing * Strategy - students should check their solution in each equation | | | |
| **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 with variables on both sides was addressed in Moving Straight Ahead * Students need to be able to understand that the point of intersection on a graph is the solution to a system of equations * Solving linear equations(Moving Straight Ahead and Thinking with Mathematical Models) * Identify point of intersection and interpret meaning ( Moving Straight Ahead) * This unit was previously taught in the Linear and Simultaneous Linear Equations unit in Pre- Algebra. | | 1. Text- CMP2 The Shapes of Algebra (green book)  2. Graphing calculator  3. Graph Paper |  | |
| 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 6: The Shapes of Algebra Pt. I** | | | | | | |
| **Learning Goal** | [**806:** Analyze and solve pairs of simultaneous linear equations**.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/806.docx) | | | | **Suggested # of Days** | **10** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 3 | 8.EE.3.8 | SOA 4.1 The y=mx + b Case  SOA 4.2 The ax + by = c Case | 1-6, 27-37, 61  8-13, 38-46, 62 | TE p. 75-80  TE p. 81-84 | | |
| 2 | SOA 4.3 Solving Systems of Linear Equations by Substitution | 15-20, 47-50, 63 | TE p. 85-88 | | |
| 2 | SOA 4.4 Solving Systems of Linear equations by Combination (Elimination) | 23-26, 51-60, 64-67 | TE p. 89-94 | | |
| 3 | ACE questions and/ or SOA Assessment |  |  | | |

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| **Unit 7: Looking for Pythagoras** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 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. | | | | | | 7, 8 |
| 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. | | | | | | 5, 7, 8 |
| 8.EE.1.2 | Use square root and cube root symbols to represent solutions to equations of the form x2=p and x3=p, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that √2 is irrational. | | | | | | 1, 4, 6 |
| 8.G.2.6 | Explain a proof of the Pythagorean Theorem and its converse. | | | | | | 1, 4, 6 |
| 8.G.2.7 | Apply the Pythagorean theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. | | | | | | 1, 4, 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**801:** Use rational approximates to compare and estimate expressions with irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/801.docx)  [**802:** Work with radicals and integer exponents.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/802.docx)  [**812:** Understand and apply the Pythagorean Theorem.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/812.docx) | | | | * Misconception- assuming the hypotenuse is the missing side * Strategy - show the students how to use slope to draw the tilted squares if needed * Misconception - students will confuse square root with division by two | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Students learned exponents in Growing, Growing, Growing * Students may need to recall how to find slope * Working with coordinate points (Variables and Patterns, Moving Straight Ahead and Thinking with Mathematical Models) * Solving problems in geometric and algebraic contexts (Shapes and Designs, Moving Straight Ahead and Thinking with Mathematical Models) * Finding slopes of lines and investigating parallel lines (Variables and Patterns and Moving Straight Ahead * Apply exponent rules (Growing, Growing, Growing) * This unit supports the Pythagorean Thereon unit in Pre- Algebra | | 1. Text- CMP2 Looking for Pythagoras (green book)  2. Lab sheets  3. straight edge  4. dot paper |  | |
| 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/FOURTH QUARTER** | | | | | | |
| **Unit 7: Looking for Pythagoras** | | | | | | |
| **Learning Goal** | [**801:** Use rational approximates to compare and estimate expressions with irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/801.docx)  [**802:** Work with radicals and integer exponents.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/802.docx)  [**812:** Understand and apply the Pythagorean Theorem.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/812.docx) | | | | **Suggested # of Days** | **Q3: 21**  **Q4: 3** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 1.5 | 8.NS.1.2 | LPF 1.1 Driving Around Euclid | 1-7, 26-28 | TE P. 3-9, 16-22  [Labsheet 1.1](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/pythag_labsheet_1.1.pdf) **(on Blackboard)** | | |
| 1 | LFP 1.2 Planning Parks | 8-10, 14 | TE p. 23-36  [Labsheet 1.2](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/pythag_labsheet_1.2.pdf) **(on Blackboard)** | | |
| 1.5 | LFP 1.3 Finding Areas | 15-25, | TE p. 27-30  [Labsheet 1.3](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/pythag_labsheet_1.3.pdf) **(on Blackboard)** | | |
| 2 | ACE questions and/or Assessment | 30, 31, 34 |  | | |
| 1 | 8.EE.1.2 | LFP 2.1 Looking for Squares | 42 | TE p. 34-48  [Labsheet 2.1](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/pythag_labsheet_2.1.pdf) **(on Blackboard)** | | |
| 1.5 | LFP 2.2 Square Roots- perfect squares | 6-24 | TE p. 39-41 | | |
| 1.5 | LFP 2.3 Using Squares to Find Lengths | 38 | TE p. 42-46 | | |
| 2 | Ace questions and/or Assessment | 44, 45, 51-53 | TE p. 47-50 | | |
| 3 | 8.G.2.6 | LFP 3.1 The Pythagorean Theorem | 1, 2, 5-12 | TE p. 51-56  Graph paper  Colored pencils | | |
| 2 | LFP 3.2 A Proof of the Pythagorean Theorem | 13 | TE p. 57-60  Colored pencils  Scissors  Glue sticks | | |
| 1 | 8.G.2.7 | LFP 3.3 Finding Distances | 14 | TE p. 61-64  [Labsheet 3.3](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/pythag_labsheet_3.3.pdf) **(on Blackboard)** | | |
| 1 | 8.G.2.6  8.G.2.7 | LFP 3.4 Measuring the Egyptian Way | 15-17 | TE p. 65-68 | | |
| 2 | 8.EE.1.2  8.G.2.6  8.G.2.7 | ACE questions  Assessment | 24, 25, 32, 33, 34, 56 |  | | |
| **3RD QUARTER ENDS** | | | | | | |
| 3 | 8.NS.1.2  8.EE.1.2  8.G.2.6  8.G.2.7 | Amplify: An Irrational Ruler  OR Alternative Culminating Assessment |  | **Resources found on Amplify website** | | |

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| **Unit 8: Kaleidoscopes, Hubcaps, and Mirrors** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 8.G.1.1 | Verify experimentally the properties of rotations, reflections, and translations:   1. Lines are taken to lines, and line segments of the same length. 2. Angles are taken to angles of the same measure. 3. Parallel lines are taken to parallel lines. | | | | | | 3, 5, 8 |
| 8.G.1.2 | Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. | | | | | | 2, 7 |
| 8.G.1.3 | Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. | | | | | | 2, 3, 5 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**809:** Understand congruence using physical models, transparencies, or geometry software.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/809.docx) | | | | * Strategy - When rotating refer to point of rotation often * Strategy - Remind students how to indicate the transformation image notation | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Recognize basic reflection, translations, dilation, and rotation.(Shapes and Designs) * Relating similarity transformations of scale factor (Stretching and Shrinking) * Describing similarity transformations in words and with coordinate rules (Stretching and Shrinking) * This unit supports the Transformational Geometry unit in Pre- Algebra. | | 1. Text- CMP2 Kaleidoscopes, Hubcaps and Mirrors (green book)  2. Lab sheets  3. graph paper  4. tracing paper (patty paper)  5. colored pencils |  | |
| 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 8: Kaleidoscopes, Hubcaps and Mirrors** | | | | | | |
| **Learning Goal** | [**809:** Understand congruence using physical models, transparencies, or geometry software.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/809.docx) | | | | **Suggested # of Days** | **14**  **(15)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 2 | 8.G.1.1  8.G.1.2 | KHM 5.1 Coordinate Rules for Reflections | 1-3, 19, 25 | TE p. 112-116 | | |
| 2 | KHM 5.2 Coordinate Rules for Translations | 4, 20, 21 | TE p. 117-120 | | |
| 2 | KHM 5.3 Coordinate Rules for Rotations | 5-14, 22, 23, 26-28 | TE p. 121-124 | | |
| 1 | 8.G.1.3 | Dilations | 24 |  | | |
| 2 | KHM 5.4 Coordinate Rules for Transformation Combinations | 15-18 | TE p. 125 - 130 | | |
| 5 | 8.G.1.1  8.G.1.2  8.G.1.3 | Amplify: Exploring Nautilus Shells  ACE  KHM Assessment | Additional Practice pages 101 - 108 | **Resources found on Amplify website** | | |
| 15 |  | Test Taking Strategies and Review during Testing Schedule | | | | |

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| **Unit 9: Shapes of Algebra Pt. II** | | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | | **SMP** |
| 7.EE.2.4b | Solve word problems leading to inequalities of the form px+q>r or px+q<r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it the context of the problem. | | | | | | 7 |
| A-REI.4.12 | Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solutions set to a system of linear inequalities in two variable as the intersection of the corresponding half planes. | | | | | | 1, 5, 6 |
| **Learning Goal and Scale** | | | | **Instructional Strategies & Misconceptions** | | | |
| [**705:** Solve real life and mathematical problems using numerical and algebraic expressions and expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/705.docx)  [**A104:** Solve systems of linear equations and inequalities, algebraically and graphically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/a104.docx) | | | | * Strategy – solve inequalities just like equations except for multiplication or division by negative integers * Misconception – sign is only switched if multiplication or division by a negative term | | | |
| **Math Practices for Unit** | | | **Unit Connections** | | **Instructional Resources** | | |
| 1. Make sense of problems and persevere in solving them. | | 5. Use appropriate tools strategically. | * Formulating, reading and interpreting symbolic rules (Variables and Patterns, Moving Straight Ahead, Thinking with Mathematical Models and Accentuate the Negative) * Solving Linear Equations ( Moving Straight Ahead and Thinking with Mathematical Models) * This unit begins Algebra I curriculum. | | 1. Text- CMP2 Shades of Algebra (green book)  2. Amplify: A Better Grade (7th grade project)  3. Graphing calculator  4. Graph paper |  | |
| 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 9: Shapes of Algebra Pt. II** | | | | | | |
| **Learning Goal** | [**705:** Solve real life and mathematical problems using numerical and algebraic expressions and expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/705.docx)  [**A104:** Solve systems of linear equations and inequalities, algebraically and graphically.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/a104.docx) | | | | **Suggested # of Days** | **14** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 5 | 7.EE.2.4b | Skill and Additional Practice Pages  Solving and Graphing Linear Inequalities | 148-151 |  | | |
| 5 | 7.EE.2.4b | Amplify: A Better Grade  Or authentic inequality activity/assessment  Or reviewing graphing inequalities on the number line |  | **Resources found on Amplify website** | | |
| 1 | 7.EE.2.4b | SOA 5.1 Limiting Driving Miles | 1, 2, 13, 14 | TE p. 100-104  Colored pencils | | |
| 2 | 7.EE.2.4b | SOA 5.2 Limiting carbon Dioxide Emissions | 3, 4, 15 | TE p. 105-108  Colored pencils | | |
| 2 | 7.EE.2.4b | SOA 5.3 Graphs of Linear Inequalities | 5-8 | TE p. 109-112  Colored pencils | | |
| 4 | A-REI.4.12 | SOA 5.4 Systems of Linear Inequalities | 9-12, 6-20 | TE p. 113-116  Colored pencils | | |
| 1 | A-REI.4.12 | ACE and/or SOA Assessment |  |  | | |
| 2 | A-REI.4.12 | SOA 1.2 Parallels and Perpendiculars | 4-16, 49 | TE p. 23-26 | | |
| 2 | 7.EE.2.4b  A-REI.4.12 | ACE and/or Assessment | 3, 47, 48, 50, 51 |  | | |