**6th Grade Great Explorations in Mathematics (GEM)**

**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 Math Florida Standards (MAFS). 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.
* 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.
* 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.**

**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: Rational Numbers |  | 24 | |
| Unit 2: Linear Functions (Part 1) |  | 15 | |
| Unit 2: Linear Functions (Virtual Bridge) |  | (10) | |
| District Assessment (2 days), 9 Weeks Exams (1 day) |  | 3 | |
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| **SECOND QUARTER (October 13 – December 18)** | | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** | |
| Unit 2: Linear Functions (Part 2) |  | 15 | |
| Unit 3: Proportional Relationships |  | 10 | |
| Unit 3: Proportional Relationships ( Virtual Bridge) |  | (20) | |
| Unit 4: Statistics and Probability (Part1) |  | 16 | |
| District Assessment (2 days); 9 Weeks Exams (3 days) |  | 5 | |
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| **THIRD QUARTER (January 6 – March 12)** | | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** | |
| Unit 4: Statistics and Probability (Part 2) |  | 12 | |
| Unit 5: Three- Dimensional Geometry (Part 1) |  | 13 | |
| Unit 5: Three-Dimensional Geometry (Virtual Bridge) |  | (15) | |
| Unit 5: Three- Dimensional Geometry (Part 2) |  | 9 | |
| Unit 6: Angles and Polygons |  | 8 | |
| District Assessment (2 days); FSA ELA /Writes (1 day) 9 Weeks Exams (1 day) |  | 4 | |
|  | | | |
| **FOURTH QUARTER (March 23 – May 27)** | | | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** | |
| Unit 7: Pythagorean Theorem |  | 11 | |
| Unit 7: Pythagorean Theorem (Virtual Bridge) |  | (9) | |
| Unit 8: Transformations (FSA Testing Window During This Unit) |  | 14 | |
| Unit 9: Monomials |  | 8 | |
| FSA Review (3 days) FSA Tests (7 days) 9 Weeks Exams (3 days) |  | 13 | |

*\*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: Rational Numbers** | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | |
| 6.NS.3.5 | Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. | | | | |
| 6.NS.3.6 | Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.  a. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., –(–3) = 3, and that 0 is its own opposite.  b. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.  c. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane. | | | | |
| 6.NS.3.7 | Understand ordering and absolute value of rational numbers.  a. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.  b. Write, interpret, and explain statements of order for rational numbers in real-world contexts.  c. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.  d. Distinguish comparisons of absolute value from statements about order. | | | | |
| 6.NS.3.8 | Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate. | | | | |
| 7.NS.1.1 | Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.  a. Describe situations in which opposite quantities combine to make 0.  b. Understand p + q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.  c. Understand subtraction of rational numbers as adding the additive inverse, p – q = p + (–q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.  d. Apply properties of operations as strategies to add and subtract rational numbers. | | | | |
| 7.NS.1.2 | Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.  a. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (–1)(–1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.  b. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then –(p/q) = (–p)/q = p/(–q). Interpret quotients of rational numbers by describing real-world contexts.  c. Apply properties of operations as strategies to multiply and divide rational numbers.  d. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. | | | | |
| 7.NS.1.3 | Solve real-world and mathematical problems involving the four operations with rational numbers. | | | | |
| **Learning Goal and Scale** | | | | **Instructional Resources** | |
| [**607:** Apply and extend previous understandings of numbers to the system of rational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/607.docx)  [**702:** Students will be able to apply and extend previous understandings of operations to add and subtract rational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/702.docx)  [**703:** Students will be able to apply and extend previous understandings of operations to multiply and divide rational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/703.docx) | | | | **Course 2**  Chapter 1: Integers  Chapter 2: Rational Numbers | |
| **Math Practices for Unit** | | | | | |
| 1. Make sense of problems and persevere in solving them. | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **FIRST QUARTER** | | | | | | |
| **Unit 1: Rational Numbers** | | | | | | |
| **Learning Goal** | [**607:** Apply and extend previous understandings of numbers to the system of rational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/607.docx)  [**702:** Students will be able to apply and extend previous understandings of operations to add and subtract rational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/702.docx)  [**703:** Students will be able to apply and extend previous understandings of operations to multiply and divide rational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/703.docx) | | | | **Suggested # of Days** | **24** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **1-0 Diagnostic Assessment and Establishing Mathematical Social Norms through Problem Solving** | | | | | | |
| 5 |  | Diagnostic Assessment & Establishing Mathematical Social Norms through Problem Solving |  |  | | |
| **1-1 Integers and the Coordinate Plane (LG# 607)** | | | | | | |
| 1 | SMP 1,2,5  6.NS.3.5  6.NS.3.6  6.NS.3.7  6.NS.3.8 | 1-1A Explore Absolute Value  1-1B Integers and Absolute Value | WB pg. 7 – 8 | Grid paper, World map, Masking tape | | |
| 1 | 1-1C The Coordinate Plane  (Incorporate the concept of equal intervals by 1, 5, 10, ½, etc. Also the x and y-axis do not have to have the same intervals.) | WB pg. 9 – 10 |
| **1-2 Add/Subtract Integers (LG# 702)** | | | | | | |
| 1 | SMP 2,5,7  7.NS.1.1 | 1-2A Exploring Adding Integers  1-2B Add Integers | WB pg. 11-12 | Counters, Equations mats | | |
| 1 | 1-2C Explore Subtracting Integers  1-2D Subtract Integers | WB pg. 13-14 |
| **1-3 Multiply/Divide Integers (LG# 703)** | | | | | | |
|  |  | (Optional)1-3A Problem Solving: Look for a Pattern | WB pg. 15 – 16 | Atlas, Counters, Equations mats | | |
| 1 | SMP 1,4,7  7.NS.1.2  7.NS.1.3 | 1-3C Multiply Integers | WB pg. 17 – 18 |
| 1 | 1-3D Divide Integers | WB pg. 19 – 20 |
| 2 |  | Assessment/Review |  | Include the Mid-Chapter Check p51 | | |
| **2-1 Rational Numbers (LG# 703)** | | | | | | |
|  |  | (Optional) 2-1A Explore the Number Line |  | Calculators, scales, fraction tiles | | |
| 1 | SMP 1,4,7  7.NS.1.2  7.NS.1.3 | 2-1B Terminating and Repeating Decimals | WB pg. 21 – 22 |
| 1 | 2-1C Compare and Order Rational Numbers | WB pg. 23 – 24 |
| **2-2 Add/Subtract Fractions (LG# 702)** | | | | | | |
| 1 | SMP 2,5,7  7.NS.1.1 | 2-2A Add and Subtract Like Fractions  2-2B Explore Unlike Fractions with Models | WB pg. 25 – 26 | Rulers, index cards, box, sheet music, paper plates, scissors, graph paper, fraction tiles | | |
| 1 | 2-2C Add and Subtract Unlike Fractions | WB pg. 27 – 28 |
| 2 | 2-2D Add and Subtract Mixed Numbers (incorporate negative mixed numbers) | WB pg. 29 – 30 |
| **2-3 Multiply/Divide Fractions (LG#703)** | | | | | | |
| 1 | SMP 1,4,7  7.NS.1.2  7.NS.1.3 | 2-3A Explore: Multiply Fractions with Models  2-3B Multiply Fractions | WB pg. 31 – 32 | Markers, scissors, paper plates, grid paper, index cards geo-board, number tiles, number cubes, unit cubes | | |
|  |  | (Optional) 2-3C Problem Solving: Draw a Diagram | WB pg. 33 – 34 |
| 1 | SMP 1,4,7  7.NS.1.2  7.NS1.3 | 2-3D Divide Fractions | WB pg. 35 – 36 |
| 1 | 2-3E Multiply and Divide Fractions | WB pg. 37 – 38 |
| 2 |  | Assessment/Review |  | Include the Mid-Chapter Check p109 | | |

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| **Unit 2: Linear Functions** | | |
| **Code** | **Mathematics Florida Standard** | |
| 6.EE.1.3 | | Apply the properties of operations to generate equivalent expressions. |
| 6.EE.1.4 | | Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). |
| 6.EE.3.9 | | Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. |
| 7.EE.1.1 | | Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. |
| 7.EE.1.2 | | Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. |
| 7.EE.2.3 | | Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. |
| 7.EE.2.4 | | Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.  a. Solve word problems leading to equations of the form px + q = r and p(x + q) = r, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.  b. Solve word problems leading to inequalities of the form px + q > r or px + q < r, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. |
| 8.F.1.1 | | Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. |
| 8.F.1.2 | | Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). |
| 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. |
| 8.F.2.4 | | Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. |
| 8.F.2.5 | | Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. |
| 8.EE.2.5 | | Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. |
| 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 equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b. |
| 8.EE.3.7 | | Solve linear equations in one variable.  a. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).  b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms. |
| 8.EE.3.8 | | Analyze and solve pairs of simultaneous linear equations.  a. 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.  b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.  c. Solve real-world and mathematical problems leading to two linear equations in two variables. |

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| **Learning Goal and Scale** | | | **Instructional Resources** | |
| [**601:** Apply and extend previous understandings of arithmetic to algebraic expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/601.docx)  [**603:** Represent and analyze quantitative relationships between dependent and independent variables.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/603.docx)  [**705:** Solve real-world and mathematical problems using numerical and algebraic expressions and equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/705.docx)  [**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, or no solution.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/805.docx)  [**806:** Analyze and solve pairs of simultaneous linear equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/806.docx)  [**807:** Define, evaluate, and compare functions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/807.docx)  [**808:** Use functions to model relationships between quantities.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/808.docx) | | | **Course2**  Chapter 3: Linear Equations  Chapter 5: Linear Functions  Chapter 13: Inequalities, Functions and Monomials (sections 13-1, 13-2, and 13-3)  **Algebra I**  Standard 6.1 page 382  **Amplify Activity**  A Fair Fine for Speeding & Stadium Seating | |
| **Math Practices for Unit** | | | | |
| 1. Make sense of problems and persevere in solving them. | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure. |
| 2. Reason abstractly and quantitatively. | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **FIRST QUARTER** | | | | | | |
| **Unit 2: Linear Functions (Part 1)** | | | | | | |
| **Learning Goal** | [**601:** Apply and extend previous understandings of arithmetic to algebraic expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/601.docx)  [**603:** Represent and analyze quantitative relationships between dependent and independent variables.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/603.docx)  [**704: Use properties of operations to generate equivalent expressions.**](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/704.docx)  [**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, or no solution.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/805.docx)  [**806:** Analyze and solve pairs of simultaneous linear equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/806.docx)  [**807:** Define, evaluate, and compare functions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/807.docx)  [**808:** Use functions to model relationships between quantities.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/808.docx) | | | | **Suggested # of Days** | **15** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **3-1 Addition/Subtraction Equations (LG# 601)** | | | | | | |
|  |  | (Optional) 3-1A Problem Solving: Work Backwards | WB pg. 39-40 | Algebra tiles, balance scale counters, equation mats, grid paper, jars, index cards, marbles, number cubes,  geo-boards  [SB p161 student](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/sb_act_3.3_p161_student.pdf)  [SB p161 teacher](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/sb_act_3.3_p161_te.pdf) | | |
| 1 | SMP 4,7  6.EE.1.1  6.EE.1.2  6.EE.1.3  6.EE.1.4 | 3-1B Explore: Solve Addition & Subtraction Equations with Bar Diagrams  3-1C Explore: Solve Equations using Algebra Tiles |  |
| 1 | SMP 4,7  6.EE1.1  6.EE1.2  6.EE.1.3  6.EE.1.4 | 3-1D Solve One-Step Addition and Subtraction Equations  Springboard Activity 3.3 p161 (Teacher must add graphing inequalities examples.) |  |
| **3-2 Multiplication/Division Equations (LG# 603)** | | | | | | |
| 1 | SMP 2,4,6  6.EE.3.9 | 3-2A Explore: Solve Multiplication Equations with Bar Diagrams  3-2B Solve One-Step Multiplication/Division Equations  Springboard Activity 3.3 p162 (Teacher must add graphing inequality examples.) | WB pg. 43 – 44 | Rulers, index cards, box, sheet music, paper plates, scissors, graph paper, fraction tiles  [SB p162 student](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/sb_act_3.3_p162_student.pdf)  [SB p162 teacher](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/sb_act_3.3_p162_te.pdf) | | |
| 1 | SMP 2,4,6,8  6.EE.3.9 | 3-2C Explore: Solve Equations with Rational Coefficients  3-2D Solve Equations with Rational Coefficients | WP pg. 45-46 |
| **3-3 Multi-Step Equations (LG# 704 and 805)** | | | | | | |
| 1 | SMP 6,7  7.EE.1.1  7.EE.1.2  8.EE.3.7 | 3-3A Explore: Solve Two-Step Equations with Bar Diagrams  3-3B Solve Two-Step Equations | WB pg. 47-48 |  | | |
| 2 | 3-3C Explore: Equations with Variables on Each Side  3-3D Solve Equations with Variables on Each Side | WB pg. 49 – 50 |  | | |
| 2 | Review/Assessment |  | Include Mid-Chapter Check p169 | | |
| **5-1 Rates and Functions (LG# 807)** | | | | | | |
| 1 | SMP 2,5,7  8.F.1.1  8.F.1.2  8.F.1.3 | 5-1A Input and Output of Functions  5-1B Equations and Functions | WB pg. 65 – 66 | Number cube, grid paper, graphing, calculator | | |
| 1 | 5-1C Functions and Graphs | WB pg. 67 – 68 |
| **5-2 Slope (LG# 804 and 808)** | | | | | | |
| 1 | SMP 2,5,7  8.EE.2.5  8.EE.2.6 | 5-1A Explore Rate of Change  5-2B Constant Rate of Change | WB pg. 69 – 70 | Grid paper, 2 step step-ladder, masking tape, colored markers | | |
| 1 | SMP 2,5,7  8.F.2.4  8.F.2.5 | 5-2C Slope | WB pg. 71 – 72 |
| **System of Linear Equations (LG# 806)** | | | | | | |
| 1 | SMS 1,6,7  8.EE.3.8 | Solving Systems by Graphing  \*Supplement Algebra I Standard 6.1 |  | Graph Paper  [Solving Systems by graphing intro](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/alg_1_6.1_teaching.doc)  [Solving Systems Practice](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/alg_6.1_practice.doc) | | |
| 1 |  | Review/Assessment |  | Include Mid-Chapter Check p269 | | |

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| **FIRST QUARTER** | | | | | | |
| **Unit 2: Linear Functions (Virtual Bridge)** | | | | | | |
| **Learning Goal** | [**705:** Solve real-world and mathematical problems using numerical and algebraic expressions and equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/705.docx) | | | | **Suggested # of Days** | **10** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 10 | 7.EE.2.3 7.EE.2.4 | Assessment- A Fair Fine for Speeding | **Amplify Activity**  A Fair Fine for Speeding: Students write equations and simplify expressions to create a system for determining speeding ticket fines based on a person's income and how fast they drive over the speed limit. | | | |

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| **SECOND QUARTER** | | | | | | |
| **Unit 2: Linear Functions (Part 2)** | | | | | | |
| **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, or no solution.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/805.docx)  [**806:** Analyze and solve pairs of simultaneous linear equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/806.docx) | | | | **Suggested # of Days** | **15** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **5-3 Variation (LG# 806)** | | | | | | |
|  |  | (Optional) 5-3A Problem Solving – Use a Graph | WB pg. 73 – 74 | Grid paper, cm cubes, index cards | | |
| 1 | SMP 2,5,7  8.EE.3.8 | 5-3B Proportional & Non-proportional Relationships |  |  | | |
| 1 | 5-3C Direct Variation | WB pg. 75 – 76 |  | | |
| 1 | 5-3D Inverse Variation |  |  | | |
| 1 | 5-3E Inverse Variation | WB pg. 77 – 78 |  | | |
| 1 |  | Review/Assessment |  |  | | |
| **13-1 Inequalities (LG# 805)** | | | | | | |
| 1 | SMP 6,7  8.EE.3.7 | 13-1A Guess, Check, and Revise  13-1B Solve Inequalities by Addition or Subtraction | WB pg. 197 – 198 |  | | |
| 1 | 13-1C Solve Inequalities - Multiplication/Division | WB pg. 199 – 200 |  | | |
| **13-2 Linear Functions (LG# 805)** | | | | | | |
| 1 | SMP 6,7  8.EE.3.7 | 13-2A Function Notation | WB pg. 207 – 208 |  | | |
| 1 | 13-2B Represent Linear Function | WB pg. 203 – 204 |  | | |
| 1 | 13-2C Slope-Intercept Form | WB pg. 205 – 206 |  | | |
| **13-3 Non-Linear Functions (LG# 804)** | | | | | | |
| 1 | SMP 4,6,7  8.EE.2.5  8.EE.2.6 | 13-3A Graphs of Nonlinear Functions  13-3B Linear and Nonlinear Functions | WB pg. 207 – 208 |  | | |
| 4 | SMP 4,6,7  8.F.1.1  8.F.1.3  8.F.2.4 | Review/Assessment- Stadium Seating | **Amplify Activity**  Stadium Seating: Students design the layout for seating arrangements in a movie theater and strive to meet THX Certification requirements for a theater offering the highest quality audio and visual entertainment | | | |

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| **Unit 3: Proportional Relationships** | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | |
| 7.RP.1 | Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. | | | | |
| 7.RP.2 | Recognize and represent proportional relationships between quantities.  a. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.  b. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.  c. Represent proportional relationships by equations.  d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. | | | | |
| 7.RP.3 | Use proportional relationships to solve multistep ratio and percent problems. *Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.* | | | | |
| **Learning Goal and Scale** | | | | **Instructional Resources** | |
| [**701:** Students will be able to analyze proportional relationships and use them to solve real-world and mathematical problems.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/701.docx) | | | | **Course 2**  Chapter 4: Proportions and Similarity  Chapter 6: Percent  **Amplify Activity**  Packing for the Iditarod | |
| **Math Practices for Unit** | | | | | |
| 1. Make sense of problems and persevere in solving them. | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **SECOND QUARTER** | | | | | | |
| **Unit 3: Proportional Relationships** | | | | | | |
| **Learning Goal** | [**701:** Students will be able to analyze proportional relationships and use them to solve real-world and mathematical problems.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/701.docx) | | | | **Suggested # of Days** | **10** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **4-1 Proportions (LG# 701)** | | | | | | |
| 1 | SMP 2,5,8  7.RP.1.1  7.RP.1.2  7.RP.1.3  7.RP.1.4 | 4-1A Explore: Unit Rates  4-1B Rates | WB pg. 51 – 52 | Stopwatch, erasers, paperclips, cups, dried beans, small bowls, counters | | |
| 1 | 4-1C Proportional & Non-proportional Relationships | WB pg. 53 – 54 |
| 1 | 4-1D Solve Proportions  4-1E Extend: Wildlife Sampling | WB pg. 55 – 56 |
| **4-2 Scale Drawings and Models (LG# 701)** | | | | | | |
| 1 | SMP 2,5,8  7.RP.1.1  7.RP.1.2  7.RP.1.3  7.RP.1.4 | 4-2A Problem Solving: Draw a Diagram | WB pg. 57 – 58 | Measuring tapes, centimeter rulers,  cm grid paper, inch grid paper, rulers, tiles, counters | | |
| 1 | 4-2B Scale Drawings | WB pg. 59 – 60 |
|  |  | (Optional) 4-2C Extend Spreadsheet Lab: Scale Drawings |  |
| **4-3 Similarity and Proportional Reasoning (LG# 701)** | | | | | | |
| 1 | SMP,2,4,5,8  7.RP.1.1  7.RP.1.2  7.RP.1.3  7.RP.1.4 | 4-3A Similar Figures | WB pg. 61 – 62 | Cm, dot paper, rulers, cm grid paper, scissors, cartoons or comics | | |
| 1 | 4-3B Perimeter and Area of Similar Figures | WB pg. 63 – 64 |
|  |  | (Optional) 4-3C Extend: The Golden Rectangle |  |
|  |  | (Optional) Extension: Problem Solving in Design Engineering: A Thrilling Ride p. 234 – 235 |  |
| 3 |  | Review/Assessment |  | Include Mid-Chapter Check p222 | | |

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| **SECOND QUARTER** | | | | | | |
| **Unit 3: Proportional Relationships (Virtual Bridge)** | | | | | | |
| **Learning Goal** | [**701:** Students will be able to analyze proportional relationships and use them to solve real-world and mathematical problems.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/701.docx) | | | | **Suggested # of Days** | **20** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 20 | SMP 2,5,6,8  7.RP1.1  7.RP.1.2  7.RP.1.3  7.RP.1.4 | 6-1A Percent Diagrams  6-1B Percent of a Number | WB pg. 79-80 |  | | |
| 6-1C Percent and Estimation | WB pg. 81 – 82 |  | | |
| 6-2A Find Percent |  |  | | |
| 6-2B The Percent Proportion  6-2C The Percent Equation | WB pg. 83 – 84  WB pg. 85 – 86 |  | | |
| 6-2D Determine Reasonable Answers | WB pg. 87 – 88 |  | | |
| 6-3A and 6-3B Percent of Change | WB pg. 89-90 |  | | |
| 6-3C Sales Tax and Tips | WB pg. 91-92 |  | | |
| 6-3D Discount | WB pg. 93-94 |  | | |
| 6-3E Simple Interest | WB pg. 95-96 |  | | |
| Assessment- Packing for the Iditarod | **Amplify Activity**  Packing for the Iditarod: Students will use ratio relationships and proportional reasoning to create food packing lists for drop bags to be delivered to checkpoints along the Iditarod route. | | | |

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| **Unit 4: Statistics and Probability** | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | |
| 6.SP.2.4 | Display numerical data in plots on a number line, including dot plots, histograms, and box plots. | | | | |
| 6.SP.2.5 | Summarize numerical data sets in relation to their context, such as by:  a. Reporting the number of observations.  b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.  c. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.  d. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data were gathered. | | | | |
| 7.SP.1.1 | Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. | | | | |
| 7.SP.1.2 | Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. | | | | |
| 7.SP.2.3 | Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. | | | | |
| 7.SP.2.4 | Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. | | | | |
| 7.SP.3.5 | Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. | | | | |
| 7.SP.3.6 | Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability | | | | |
| 7.SP.3.7 | Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.  a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.*  b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. | | | | |
| 7.SP.3.8 | Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.  a. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.  b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.  c. Design and use a simulation to generate frequencies for compound events. | | | | |
| 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. | | | | |
| 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 to the line. | | | | |
| 8.SP.1.3 | Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. | | | | |
| 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. | | | | |
| **Learning Goal and Scale** | | | | **Instructional Resources** | |
| [**609:** Summarize and describe distributions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/609.docx)  [**712:** Students will be able to investigate chance processes and develop, use, and evaluate probability models.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/712.docx)  [**713:** Draw informal comparative inferences about two populations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/713.docx)  [**714:** Students will be able to investigate chance processes and develop, use, and evaluate probability models.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/714.docx)  [**814:** Students will be able to investigate patterns of association in bivariate data.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/814.docx) | | | | **Course 2**  Chapter 7: Data Analysis and Probability  Chapter 12: Statistics  **Course 3**  Lesson 16: Two-Way Tables  **LearnZillion**  Investigate Patterns of Association in Bivariate Data | |
| **Math Practices for Unit** | | | | | |
| 1. Make sense of problems and persevere in solving them. | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **SECOND QUARTER** | | | | | | |
| **Unit 4: Statistics and Probability (Part 1)** | | | | | | |
| **Learning Goal** | [**609:** Summarize and describe distributions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/609.docx)  [**712:** Students will be able to use random sampling to draw inferences about a population.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/712.docx)  [**713:** Students will be able to draw informal comparative inferences about two populations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/713.docx)  [**714:** Students will be able to investigate chance processes and develop, use, and evaluate probability models.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/714.docx) | | | | **Suggested # of Days** | **16** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **7-1 Statistics (LG# 609)** | | | | | | |
| 1 | SMP 4  6.SP.2.4 | 7-1A (Optional) and 7-1B Circle Graphs | WB pg. 97-98 | Computers (7-1A),Protractor, paper plates, scissors, tape, compasses | | |
| 1 | 7-1C Histograms | WB pg. 99-100 | Graph paper, rulers | | |
|  | 7-1D (Optional) Graphing Calculator Histogram |  | Graphing calculators | | |
| 1 | 7-1E Stem-and-Leaf Plots | WB pg. 101-102 | Grid paper, number cubes | | |
| **7-2 Probability (LG# 714)** | | | | | | |
| 1 | SMP 4  7.SP.3.5 | 7-2A Probability | WB pg. 103-104 | Number cubes, spinners | | |
| 1 | 7-2B Sample Spaces | WB pg. 105-106 | Brown lunch bags, marbles | | |
| 1 | 7-2C Counting Outcomes | WB pg. 107-108 | Coins, counters, spinners, marbles | | |
| 1 | SMP 4  7.SP.3.6  7.SP.3.7  7.SP.3.8 | 7-2D&E Independent and Dependent Events | WB pg. 109-110 | Paper bags, two-color counters, green & purple marbles. Index cards, box or bag, math tiles | | |
| 1 |  | 7-2 Quiz and/or Enrichment |  |  | | |
| **7-3 Predictions (LG# 712, 713 & 714)** | | | | | | |
| 2 | SMP 4  7.SP.3.7 | 7-3A&B Probability Experiments (pg. 400-405) | WB pg. 111-112 |  | | |
| 1 | 7-3D Fair and Unfair Games (pg. 408-409) |  |  | | |
| 1 | SMP 4  7.SP.1.1 | 7-3E Use Data to Predict (pg. 410-413) | WB pg. 115-116 |  | | |
| 1 | SMP 4  7.SP.2.3  7.SP.2.4 | 7-3F Unbiased and Biased Samples (pg. 414-418) | WB pg. 117-118 |  | | |
| 3 |  | Review/Assessment- Funny Dice | **Amplify Activity:** Funny Dice: Students use theoretical and experimental probability models to devise a winning strategy in a game using three non-transitive dice. After observing and collecting data, students will create a pair of dice that offer both players a chance of winning, but the chances of winning are not equal. | | | |

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| **THIRD QUARTER** | | | | | | |
| **Unit 4: Statistics and Probability (Part 2)** | | | | | | |
| **Learning Goal** | [**609:** Summarize and describe distributions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/609.docx)  [**713:** Students will be able to draw informal comparative inferences about two populations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/713.docx)  [**814:** Students will be able to investigate patterns of association in bivariate data.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/814.docx) | | | | **Suggested # of Days** | **12** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **12-1 Measure of Central Tendency (LG# 609)** | | | | | | |
| 1 | SMP 4  6.SP.2.4  6.SP.2.5 | 12-1A Changes in Data Values  12-1B Measures of Central Tendency | WB pg. 183-184 | Counters and cups (12-1A) | | |
| **12-2 Statistical Displays (LG# 713 & 814)** | | | | | | |
| 2 | SMP 4  7.SP.2.3  7.SP.2.4 | 12-2A Measures of Variation  12-2B Box-and-Whisker Plots | WB pg. 185-186  WB pg. 187-188 | Counters, index cards  Sticky notes | | |
| 2 | SMP 4  8.SP.1.1  8.SP.1.2  8.SP.1.3  8.SP.1.4 | 12-2C Scatter Plots and Lines of Best Fit  \*Two-way tables(Glencoe Course 3) andInvestigate Patterns of Association in Bivariate Data (Learnzillion) | WB pg. 189-190 | Measuring cup, water, drinking glass, marbles, quadrant I graph paper, rulers, dry spaghetti | | |
| 2 | SMP 4  7.SP.2.3  7.SP.2.4 | 12-2D Select an Appropriate Data Display  Chapter 12 Review | WB pg. 191-192 | Graph paper, compass, protractors | | |
| 5 |  | Review/Assessment- How Sweet It Isn’t | Review pg. 714-717  Practice Test pg. 718 | **Amplify Activity**  How Sweet It Isn’t: Students model sweetened beverage consumption over time to identify trends and make predictions. | | |

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| **Unit 5: Three-Dimensional Geometry** | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | |
| 7.G.1.1 | Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. | | | | |
| 7.G.1.3 | Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. | | | | |
| 7.G.2.4 | Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. | | | | |
| 7.G.2.6 | Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | | | | |
| 8.G.3.9 | Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. | | | | |
| **Learning Goal and Scale** | | | | **Instructional Resources** | |
| [**604:** Students will be able to understand ratio concepts and use ratio reasoning to solve problems.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/604.docx)  [**706:** Students will be able to solve problems involving scale drawings of geometric figures.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/706.docx)  [**708:** Students will be able to use the formulas for the area and circumference of a circle to solve problems of two-dimensional shapes.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/708.docx)  [**709:** Students will be able to solve real-world and mathematical problems involving the surface area of 3D shapes composed of triangles, polygons.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/709.docx)  [**710:** Students will be able to solve real-world and mathematical problems involving the volume of 3D shapes composed of cubes and right prisms.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/710.docx)  [**813:** Students will be able to solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/813.docx) | | | | **Course 2**  Chapter 8: Surface Area and Volume  Chapter 9: Measurement and Proportional Reasoning  **Amplify Activity**  Driving Innovation  Oversized Tires | |
| **Math Practices for Unit** | | | | | |
| 1. Make sense of problems and persevere in solving them. | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **THIRD QUARTER** | | | | | | |
| **Unit 5: Three-Dimensional Geometry (Part 1)** | | | | | | |
| **Learning Goal** | [**708:** Students will be able to use the formulas for the area and circumference of a circle to solve problems of two-dimensional shapes.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/708.docx)  [**709:** Students will be able to solve real-world and mathematical problems involving the surface area of 3D shapes composed of triangles, polygons.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/709.docx)  [**710:** Students will be able to solve real-world and mathematical problems involving the volume of 3D shapes composed of cubes and right prisms.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/710.docx)  [**813:** Students will be able to solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/813.docx) | | | | **Suggested # of Days** | **13** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **8-1 Volume (LG# 708, 710 & 813)** | | | | | | |
| 1 | SMP 1,5  8.G.3.9 | 8-1A Explore: Meaning of Volume  8-1B Volume of Prisms | WB pg. 119 – 120 | Grid paper, ruler, scissors, tape, colored paper, cardstock, rice or dried beans, manipulative models, rectangular prism, cylinder, pyramid, cone, base-ten unit cubes | | |
| 1 | 8-1C Volume of Cylinders | WB pg. 121 – 122 |
| 1 | 8-1D Explore: Volume of Pyramids and Cones  8-1E Volume of Pyramids | WB pg. 123 – 124 |
| 1 | 8-1F Volume of Cones | WB pg. 125 – 126 |
| **8-2 Surface Area (LG# 708 & 709)** | | | | | | |
| 1 | SMP 1,5  7.G.2.2 | 8-2A Explore: Nets of 3 Dimensional Net Figures  8-2B Surface Area of Prisms | WB pg. 127 – 128 | Empty cereal boxes, scissors, rulers, markers, soup cans, tape, grid paper, various cylinders, manipulatives,  base-ten unit cubes | | |
| 1 | 8-2C Surface Area of Cylinders | WB pg. 129 – 130 |
| 1 | 8-2D Extend: Surface Area and Volume |  |
| 1 | 8-2E Surface Area of Pyramids | WB pg. 131 – 132 |
| **8-3 Composite Shapes (LG# 709 & 813)** | | | | | | |
|  |  | (Optional) 8-3 A Solve a Simpler Problem | WB pg. 133 – 134 | Centimeter grid paper, digital cameras, manipulatives, base-ten unit cubes, geometric models | | |
| 2 | SMP 1,5  7.G.2.2 | 8-3 B Explore: Composite Figures  8-3 C Volume & Surface Area of Composite Fig.  \*Include examples of describing the two-dimensional shapes that result from slicing three-dimensional figures. | WB pg. 135 – 136 |
| 3 |  | Review/Assessment |  | Include Mid-Chapter Check p453 | | |

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| **THIRD QUARTER** | | | | | | |
| **Unit 5: Three-Dimensional Geometry (Virtual Bridge)** | | | | | | |
| **Learning Goal** | [**604:** Students will be able to understand ratio concepts and use ratio reasoning to solve problems.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/604.docx) | | | | **Suggested # of Days** | **15** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 15 | 6.RP.1.1  6.RP.1.2  6.RP.1.3 | 9-1 A Explore: Units of Measure |  |  | | |
| 9-1 B Convert Customary Units | WB pg. 137 – 138 |  | | |
| 9-1 C Convert Metric Units | WB pg. 139 – 140 |  | | |
| 9-1 D Convert Between Systems | WB pg. 141 – 142 |  | | |
| 9-1 E Convert Rates | WB pg. 143 – 144 |  | | |
| Assessment- Driving Innovation | **Amplify Activity**  Driving Innovation: Students compare costs of electric and gasoline cars in terms of driving miles. | | | |

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| **THIRD QUARTER** | | | | | | |
| **Unit 5: Three-Dimensional Geometry (Part 2)** | | | | | | |
| **Learning Goal** | [**706:** Students will be able to solve problems involving scale drawings of geometric figures.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/706.docx) | | | | **Suggested # of Days** | **9** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **9-2 Similar Solids (LG# 706)** | | | | | | |
| 2 | SMP 1,5 7.G.1.1 | 9-1 F Convert Units of Area and Volume  **\*To fully address this benchmark, you must include temperature conversion problems; one can be found in 13-2’s Spiral Review p753 #31** | WB pg. 145 – 146 |  | | |
| 1 | 9-2 A Make a Model | WB pg. 147 – 148 | Cardboard, scissors, glue | | |
| 1 | 9-2 B Explore: Changes in Scale |  | Grid paper, cm cubes | | |
| 1 | 9-2 C Changes in Dimensions | WB pg. 149 – 150 | Inch cubes | | |
| 4 |  | Review/Assessment- Oversized Tires | **Amplify Activity**  Oversized Tires: Students use circumference to analyze the effects of putting larger tires on an SUV and then calculate the speeds that should appear on the speedometer so the driver will be able to drive the speed limit on the larger tires. | | | |

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| **Unit 6: Angles and Polygons** | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | |
| 7.G.1.2 | Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. | | | | |
| 7.G.2.5 | Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and solve simple equations for an unknown angle in a figure. | | | | |
| 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. | | | | |
| **Learning Goal and Scale** | | | | **Instructional Resources** | |
| [**707:** Students will be able to use given conditions to draw and construct triangles and other geometric figures and describe the relationships between them.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/707.docx)  [**711:** Students will be able to use facts about a variety of angles in a multi-step problem to write and solve simple equations of unknown angles.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/711.docx)  [**811:** Students will be able to 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) | | | | **Course 2**  Chapter 11: Geometry and Spatial Reasoning (Sections 11-1, and 11-2) | |
| **Math Practices for Unit** | | | | | |
| 1. Make sense of problems and persevere in solving them. | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **THIRD QUARTER** | | | | | | |
| **Unit 6: Angles and Polygons** | | | | | | |
| **Learning Goal** | [**707:** Students will be able to use given conditions to draw and construct triangles and other geometric figures and describe the relationships between them.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/707.docx)  [**711:** Students will be able to use facts about a variety of angles in a multi-step problem to write and solve simple equations of unknown angles.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/711.docx)  [**811:** Students will be able to 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** | **8** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **11-1 Line and Angle Relations (LG# 711& 811)** | | | | | | |
| 1 | SMP 3,5,7  7.G.2.5  8.G.1.5 | 11-1A Angle Relationships | WB pg. 161-162 |  | | |
| 2 | 11-1B Parallel Lines | WB pg. 163-164 |  | | |
| **11-2 Polygons (LG# 707 & 811)** | | | | | | |
| 1 | SMP 3,5,7  7.G.1.2  8.G.1.5 | 11-2B Triangles | WB pg. 165-166 | Rulers, protractors (11-2C, 11-2D)  IMPACT Unit K Investigations 2-3 pg. 176-183 | | |
| 1 | SMP 3,5,7  8.G.1.5 | 11-2D Quadrilaterals | WB pg. 169-170 |
| 1 | 11-2E Polygons and Angles | WB pg. 171-172 |
| 2 |  | Review/Assessment |  |  | | |

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| **Unit 7: Pythagorean Theorem** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | |
| 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. | | | | |
| 8.NS.1.2 | | Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π²). | | | | |
| 8.G.2.6 | | Explain a proof of the Pythagorean Theorem and its converse. | | | | |
| 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. | | | | |
| 8.G.2.8 | | Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. | | | | |
| **Learning Goal and Scale** | | | | | **Instructional Resources** | |
| [**708:** Use formulas for the area and circumference of a circle to solve problems of two-dimensional shapes.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/708.docx)  [**801:** Students will be able to use rational approximations to compare and estimate expressions with irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/801.docx)  [**812:** Understand and apply the Pythagorean Theorem.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/812.docx) | | | | |  | |
| **Math Practices for Unit** | | | | | | |
| 1. Make sense of problems and persevere in solving them. | | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **THIRD QUARTER** | | | | | | |
| **Unit 7: Pythagorean Theorem** | | | | | | |
| **Learning Goal** | [**801:** Students will be able to use rational approximations to compare and estimate expressions with irrational numbers.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/801.docx)  [**812:** Understand and apply the Pythagorean Theorem.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/812.docx) | | | | **Suggested # of Days** | **11** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **11-3 Pythagorean Theorem (LG# 801 & 812)** | | | | | | |
| 2 | SMP 2,4,5 8.NS.1.1  8.NS.1.2 | 11-3 A Square Roots  11-3 B Estimate Square Roots | WB pg. 173 – 174  WB pg. 175 – 176 |  | | |
| 2 | 11-3 C The Real Number System | WB pg. 177 – 178 |  | | |
| 4 | SMP 2,4,5 8.G.2.6  8.G.2.7  8.G.2.8 | 11-3 D Explore: The Pythagorean Theorem  11-3 E The Pythagorean Theorem  11-3 F Distance on the Coordinate Plane | WB pg. 179 – 180  WB pg. 181 – 182 |  | | |
| 3 |  | Review/Assessment |  |  | | |

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| **THIRD QUARTER** | | | | | | |
| **Unit 7: Pythagorean Theorem** | | | | | | |
| **Learning Goal** | [**708:** Use formulas for the area and circumference of a circle to solve problems of two-dimensional shapes.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/708.docx)  [**812:** Understand and apply the Pythagorean Theorem.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/812.docx) | | | | **Suggested # of Days** | **9** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| 9 | 8.G.2.7  7.G.2.4 | Assessment- The Spiral Staircase | **Amplify Activity**  The Spiral Staircase: Students explore the Pythagorean Theorem to determine the length of the outer railing for the spiral staircase at the Loretto Chapel in New Mexico. | | | |

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| **Unit 8: Transformations** | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | |
| 8.G.1.1 | Verify experimentally the properties of rotations, reflections, and translations:  a. Lines are taken to lines, and line segments to line segments of the same length.  b. Angles are taken to angles of the same measure.  c. Parallel lines are taken to parallel lines. | | | | |
| 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. | | | | |
| 8.G.1.3 | Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. | | | | |
| 8.G.1.4 | Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. | | | | |
| **Learning Goal and Scale** | | | | **Instructional Resources** | |
| [**809:** Understand congruence using physical models, transparencies, or geometry software.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/809.docx)  [**810:** Understand similarity using physical models, transparencies, or geometry software.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/810.docx) | | | | **Course 2**  Chapter 10: Transformations | |
| **Math Practices for Unit** | | | | | |
| 1. Make sense of problems and persevere in solving them. | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **FOURTH QUARTER** | | | | | | |
| **Unit 8: Transformations** | | | | | | |
| **Learning Goal** | [**809:** Understand congruence using physical models, transparencies, or geometry software.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/809.docx)  [**810:** Understand similarity using physical models, transparencies, or geometry software.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/810.docx) | | | | **Suggested # of Days** | **14** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **10-1 Translations (LG# 809 & 810)** | | | | | | |
| 2 | SMP 3,5,8  8.G.1.1  8.G.1.2  8.G.1.3  8.G.1.4 | 10-1B Translations in the Coordinate Plane | WB pg. 151 – 152 | Scissors, cardstock, ruler, grid paper parallelogram-shaped pattern | | |
| **10-2 Reflections (LG# 809 & 810)** | | | | | | |
| 1 | SMP 3,5,8  8.G.1.1  8.G.1.2  8.G.1.3  8.G.1.4 | 10-2A Explore: Symmetry and Reflections |  | Scissors, cardstock, protractor, ruler, tracing paper, hexagon patterns, graph paper, mirrors, number cubes | | |
| 2 | 10-2B Reflections on the Coordinate Plane | WB pg. 153 – 154 |  | | |
| **10-3 Rotations (LG# 809 & 810)** | | | | | | |
| 1 | SMP 3,5,8  8.G.1.1  8.G.1.2  8.G.1.3  8.G.1.4 | 10-3A Explore: Rotational Symmetry |  | Cardstock, straight pins, scissors, patty paper, tracing paper, rulers, protractors, glue, grid paper, tracing paper, fasteners, patterns of alphabet letters, poster board, triangle grid, paper | | |
| 2 | 10-3B Rotations in the Coordinate Plane | WB pg. 155 – 156 |
| **10-4 Dilations (LG# 809 & 810)** | | | | | | |
| 1 | SMP 2,7  8.G.1.3  8.G.1.4 | 10-4A Dilations | WB pg. 157 – 158 |  | | |
| 2 | SMP 2,7  8.G.1.1  8.G.1.2  8.G.1.3  8.G.1.4 | 10-4B Work Backwards | WB pg. 159 – 160 |  | | |
|  |  | (Optional) Computer Animation (p. 578 – 579) |  |  | | |
| 3 |  | Review/Assessment |  |  | | |

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| **Unit 9: Monomials** | | | | | | |
| **Code** | **Mathematics Florida Standard** | | | | | |
| 8.EE.1.1 | | Know and apply the properties of integer exponents to generate equivalent numerical expressions. | | | | |
| 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. | | | | |
| 8.EE.1.3 | | Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. | | | | |
| 8.EE.1.4 | | Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. | | | | |
| **Learning Goal and Scale** | | | | | **Instructional Resources** | |
| [**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) | | | | | **Course 2**  Chapter 13: Inequalities, Functions, and Monomials (13-4) | |
| **Math Practices for Unit** | | | | | | |
| 1. Make sense of problems and persevere in solving them. | | | 3. Construct viable arguments & critique reasoning of others. | 5. Use appropriate tools strategically. | | 7. Look for and make use of structure.. |
| 2. Reason abstractly and quantitatively. | | | 4. Model with mathematics. | 6. Attend to precision. | | 8. Look for and express regularity in repeated reasoning. |

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| **FOURTH QUARTER** | | | | | | |
| **Unit 9: Monomials** | | | | | | |
| **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) | | | | **Suggested # of Days** | **8** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** | | |
| **13-4 Monomials (LG# 802 & 803)** | | | | | | |
| 2 | SMP 4,7  8.EE.1.1  8.EE.1.2 | 13-4A Multiply and Divide Monomials | WB pg. 209-210 | Index cards, highlighters | | |
| 2 | 13-4B Negative Exponents | WB pg. 211-212 | Index cards, number cubes | | |
| 2 | SMP 6,7,8 8.EE.1.3  8.EE.1.4 | 13-4C Scientific Notation | WB pg. 213-214 | 10x10 grids | | |
| 2 |  | Review/Assessment |  |  | | |