**7th Grade Standard**

**Instructional Plan 2014-2015**

**Mathematics Instructional Plan Writing Committee**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |  |
| --- | --- | --- | --- |
| **School Board Members:**Karen AlmondTina Calderone, Ed.D.Amy LockhartDede 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 WilsonDiana Barnett | **Middle School Contributors:**Sandy Baldorossi – TWMS Jennifer Bennett – MKMSPatty Bouington – SMSAllison Child – SMS Diane Firios – SSMS Mary Ellen Freeman – MMMSSara Gibbs – MWMSKelly Goodearl – ITMS Kim Hamilton – ITMS LeeAnn Heldmyer – TWMS Joni Hudson – SMS Stephanie Johnson – MMMSBeth Karnes – ITMS Adam Kiefer – SSMSElena Lugo – RLMSJennifer Manwaring – TWMS Stuart Milchman – MMMS Lisa Morris – MMMSMichelle Mouton – JHMS Misty Naran – LCMS  | Triscia Panarello – SMSSabrina Robinson – MWMS Robyn Smith – MKMS Erica Sowpel – SMS Kristen Springfield – MKMS Jennifer Stickle – MMMS Deborah Velez – LCMS Dennis Whalen – ITMS Barbie Wigen – MMMSAgnes Wong – SMS | **High School Contributors:**Ryan Beasley – LMHSSusan Brown – LHSBrittany Campbell – HHSAglaia Christodoulides – HHSKatie Donoghue – LMHS Lauren Fedi – OHS Matt Guglielmello – OHSDavid 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 – LMHSLesley 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 Math Florida Standards (MAFS) while using the Springboard Course 2 Textbook. This document will serve as a guide for teachers of mathematics. Latitude in the execution of this document shall be determined by a school rather than by an individual teacher.

**Goals:**

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

**Instructional Plan Caveats:**

* Suggested practice corresponds to the associated lesson and left at the discretion of the instructor to be used as additional practice or assignment. Problems within the suggested pages may be exhausted or selected for targeted skills.
* Descriptions of the Mathematical Practices can be found on pages 3 – 4. Teachers are encouraged to embed the Questions to Develop Mathematical Thinking on pages 5 – 6 in their daily lessons.
* 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 and diagnostics 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** |
| --- | --- |
| **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?
 |
| **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?
 |

|  |  |
| --- | --- |
| **FIRST QUARTER (August 11 – October 9)**  | **42 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** |
| Unit 1- Integers and Rational Numbers  |  | 34 |
| Unit 2- Equations, Inequalities and Linear Relationships  |  | 4 |
| District Assessment (2 day), 9 Weeks Exams (2 days) |  | 4 |
|  |
| **SECOND QUARTER (October 13 – December 18)**  | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** |
| Unit 2- Equations, Inequalities and Linear Relationships (cont.) |  | 27  |
| Unit 3- Two-Dimensional Geometry and Similarity |  | 14 |
| District Assessment (2 day); 9 Weeks Exams (3 days) |  | 5 |
|  |
| **THIRD QUARTER (January 6 – March 12)** | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** |
| Unit 3- Two-Dimensional Geometry and Similarity (cont.) |  | 16 |
| Unit 4- Three-Dimensional Geometry  |  | 13 |
| Unit 5- Probability and Statistics  |  | 12 |
| District Assessment (2 day); 9 Weeks Exams (2 days); FSA ELA Writing (1 day) |  | 5 |
|   |
| **FOURTH QUARTER (March 23 – May 27)**  | **46 DAYS** |
| **Topic/Assessment** | **Dates Covered** | **Approximate # of Days** |
| Unit 5- Probability and Statistics (cont.) |  | 12 |
| Unit 6- Pythagorean Theorem, Transformations, & Bivariate Data (8th Grade Preview) |  | 19 |
| State Test Review (3 days); FSA Tests (7 days); Cumulative Review (2 days); 9 Weeks Exams (3 days) |  | 15 |

*\*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.\**

|  |
| --- |
| **Unit 1: Integers and Rational Numbers**  |
| **Code** | **Mathematics Florida Standard** | **SMP** |
| 7.NS.1.1 | Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram. 1. Describe situations in which opposite quantities combine to make 0.
2. 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.
3. 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.
4. Apply properties of operations as strategies to add and subtract rational numbers.
 | 1,2,3,4,5,8 |
| 7.NS.1.2 | Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. 1. 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.
2. 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.
3. Apply properties of operations as strategies to multiply and divide rational numbers.
4. 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.
 | 1,2,3,4,5,8 |
| 7.NS.1.3 | Solve real-world and mathematical problems involving the four operations with rational numbers.  | 1,2,3,4,5,8 |
| 7.RP.1.3 | Use proportional relationships to solve multistep ratio and percent problems.  | 2,3,4,5,6,7,8 |
| **Learning Goal and Scale** | **Instructional Strategies & Misconceptions** |
| [**701:** 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)  [**702:** 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:** 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) | * Students will often confuse rules of multiplying and dividing integers with adding and subtracting integers.
* Emphasize zero pairs with counters.
* Use number lines.
* Students will often incorrectly change a percent to an incorrect decimal. Ex: 5% ≠ 0.5
 |
| **Math Practices for Unit** | **Unit Connections** | **Instructional Resources** |
| 1. Make sense of problems and persevere in solving them. | 5. Use appropriate tools strategically. | **6th Grade:*** Fluentlyadd, subtract,multiply, and divide multi-digit decimals using the standard algorithm for each operation.
* Understand that positive and negative numbers are used together to describe quantities having opposite directions or values
* Use positive and negative numbers to represent quantities in real-world contexts.
* Recognize opposite signs of numbers
* 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.
* Understand the absolute value of a rational number as its distance from 0 on the number line
 | Masking or Painters TapeMeasuring TapeStopwatchComputer SpreadsheetSentence StripsKWL Chart | Measuring TapeLarge Coin or Chip Paper2 color countersCentimeter Cubes |
| 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. |

|  |
| --- |
| **FIRST QUARTER** |
| **Unit 1: Integers and Rational Numbers** |
| **Learning Goal** | [**701:** 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)  [**702:** 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:** 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** | **34** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** |
| 2 days |  | Policies and Procedures |  |  |
| 1 day | 7.NS.1.17.NS.1.3 | Getting Ready Unit 1Unpacking Embedded Assessment 1 “Raise the Roof” p.39 |  |  |
| 2 days | Unit 1.1 Real Number System p.3 | Venn Diagram with descriptions, #20; #11-18 |  |
| 5 days | Unit 1.2 Adding and Subtracting Integers p.11  | #1-25 |  |
| 2 days | 7.NS.1.27.NS.1.3 | Unit 1.3 Multiplying and Dividing Rational Numbers | #1-20 |  |
| 1 day | Unit 1.4 Powers and Roots (Focus on Exponents) | #6-9, 29 |  |
| 1 day  | Embedded Assessment 1 “Raise the Roof” p.39 |  |  |
| 1 day | 7.NS.1.17.NS.1.27.NS.1.3 | Unpacking Embedded Assessment 2 “Muffin Madness” p.73  | #1-10 ONLY |  |
| 6 days | Unit 1.5 Computations with Rational Numbers | #1-28 |  |
| 6 days | 7.RP.1.3 | Unit 1.6 Percent Applications pages 53-58 | #1-28 |  |
| 2 days | Unit 1.6 Percent Applications (See also SB Course 1 – Unit 4.5)  | #22-29 | **EngageNY Grade 7 - Module 4****Topic B: Lesson #10 –** [**TV**](https://content.engageny.org/file/61141/download/math-g7-m4-topic-b-lesson-10-teacher.pdf?token=oEPdgYSSm2_eEqKjFZowyflcl4uZroD9KfUALxl7kWE) **and** [**SV**](https://content.engageny.org/file/61136/download/math-g7-m4-topic-b-lesson-10-student.pdf?token=FN6jqqIIZhQDf5klkx2rl2GVCnJeqGaOgNjRRNPeRtg) |
| 5 days |  | Amplify Project –Pirates LootAND/OR Other Culminating ActivityReview/Assessment |  | **Resources found on Amplify Website** |

|  |
| --- |
| **Unit 2: Equations, Inequalities, and Linear Relationships**  |
| **Code** | **Mathematics Florida Standard** | **SMP** |
| 7.EE.1.1 | Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. | 2, 6 |
| 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 |
| 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. | 5 |
| 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. | 1, 2, 6, 7 |
| 7.RP.1.2 | Recognize and represent proportional relationships between quantities. 1. 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.
2. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
3. Represent proportional relationships by equations. *For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t = pn.*
4. 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.
 | 2,3,4,5,6,7,8 |
| **Learning Goal and Scale** | **Instructional Strategies & Misconceptions** |
| [**701:** 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)  [**704:** Use properties of operations to generate equivalent expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/704.docx)[**705:** Solve real life and mathematical problems using numerical and algebraic expressions and equations.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/705.docx)  | * Students may still confuse the x-axis and y-axis.
* Students may not recognize a coefficient of 1.
* Students struggle to combine like terms correctly.
* Students will often write slope incorrectly as ∆x/∆y rather than ∆y/∆x.
* Students may not switch the sign when multiplying or dividing by a negative.
 |
| **Math Practices for Unit** | **Unit Connections** | **Instructional Resources** |
| 1. Make sense of problems and persevere in solving them. | 5. Use appropriate tools strategically. | **6th grade:*** Write and evaluate numerical expressions involving whole-number exponents.
* Write, read, and evaluate expressions in which letters stand for numbers, and use correct terminology.
* Evaluate expressions at specific values of their variables.
* Apply the properties of operations to generate equivalent expressions.
* Identify when two expressions are equivalent.
* Understand solving an equation or inequality as a process of answering a question: Which values from a specified set, if any, make the equation or inequality true?
* Use substitution to determine whether a given number in a specified set makes an equation or inequality true.
* Write an inequality of the form x > c or x < c to represent a constraint or condition in a real-world or mathematical problem.
* Recognize that inequalities of the form x > c or x < c have infinitely many solutions; represent solutions of such inequalities on number line diagrams.
* Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane.
 | Masking TapeToothpicksRuler or Straight EdgeColored PencilsGrid 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. |

|  |
| --- |
| **FIRST QUARTER/ SECOND QUARTER** |
| **Unit 2: Equations, Inequalities and Linear Relationships** |
| **Learning Goal** | [**701:** 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)  [**704:** Use properties of operations to generate equivalent expressions.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/704.docx)[**705:** Solve real life 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** | **Q1: 4** **(4)****Q2: 27** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** |
| 1 day | 7.EE.1.17.EE.1.27.EE.2.37.EE.2.4 | Getting Ready Unit 2 p.86Unpacking Embedded Assessment 1 “Fundraising Fun” p.107 |  |  |
| 3 days | 2.1 Linear Equations p.87 | #1-17 |  |
| 4 days |  | District Assessments/ 9 Weeks Review and Exam  | END FIRST QUARTER |
| 1 day | 7.EE.1.17.EE.1.27.EE.2.37.EE.2.4 | 2.1 (cont.) |  |  |
| 5 days | 2.2 Solving Two-Step Equations p.93 | #1-30 |  |
| 1 day | Embedded Assessment 1 “Fundraising Fun” p.107 |  |  |
| 1 day | 7.EE.1.17.EE.1.27.EE.2.37.EE.2.47.RP.1.2 | Unpacking Embedded Assessment 2 “Negotiating an Allowance” p.125 AND Embedded Assessment 3 “Parkside Amusements” p.141 \*\*exclude #4\*\* |  |  |
| 4 days | 7.RP.1.27.EE.2.4 | 2.3 Slope as a Rate of Change p.109 | #1-30 |  |
| 2 days | 2.6 Equations and Change p.133Focus is on Direct Variation | #1-10 |  |
| 3 days | 7.EE.1.17.EE.1.27.EE.2.37.EE.2.4 | 2.4 Writing and Solving Equations p.119 | #1-15 |  |
| 1 day |  | Embedded Assessment 2 “Negotiating an Allowance” p.125 |  |  |
| 3 days | 7.EE.2.4 | 2.5 Solving and Graphing Inequalities p.127 | #1-11 |  |
| 1 day | 7.RP.1.27.EE.2.4 | Embedded Assessment 3 “Parkside Amusements” p.141  | *Exclude #4* |  |
| 5 days |  | Amplify Project –A Better GradeAND/OR Other Culminating ActivityReview/Assessment |  | **Resources found on Amplify Website** |

|  |
| --- |
| **Unit 3: Two Dimensional Geometry and Similarity**  |
| **Code** | **Mathematics Florida Standard** | **SMP** |
| 7.RP.1.1 | Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. | 2, 4, 6 |
| 7.RP.1.3 | Use proportional relationships to solve multistep ratio and percent problems. | 1, 2, 6 |
| 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.  | 2, 5 |
| 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.  | 3, 5, 6 |
| 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. | 4, 5, 6 |
| 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. | 1, 3, 6 |
| 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.  | 5, 6 |
| **Learning Goal and Scale** | **Instructional Strategies & Misconceptions** |
| [**701:** 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)  [**706:** Solve problems involving scale drawings of geometric figures.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/706.docx)[**707:** 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)[**708:** Use the formulas for the area and circumference of a circle to solve problems.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/708.docx) [**711:** 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) | * Students will have trouble recognizing that a proportion is 2 equivalent ratios.
* Students may have trouble seeing the proportionality of similar figures.
* Students may be unfamiliar with or have trouble using protractor.
 |
| **Math Practices for Unit** | **Unit Connections** | **Instructional Resources** |
| 1. Make sense of problems and persevere in solving them. | 5. Use appropriate tools strategically. | **6th grade:*** Students can draw polygons on a coordinate plane.
* Find the area of polygons by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems.
* Understand the concept of π, know common estimates of π (3.14 and 22/7) and use these values to estimate and calculate the circumference and the area of circles.
* Find the perimeters and areas of composite two-dimensional figures, including non-rectangular figures using various strategies.
* Determine a missing dimension of a plane figure or prism, given its area or volume and some of the dimensions, or determine the area of volume given the dimensions.
 | Grid PaperCard Stock or Index CardsCrayons/ Markers/ Colored PencilsProtractorsRulersKWL Chart | Construction PaperMeasuring TapeTapeStopwatchesPaper StripsScissorsCalculatorsCompass |
| 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. |

|  |
| --- |
| **SECOND QUARTER/ THIRD QUARTER** |
| **Unit 3: Two-Dimensional Geometry and Similarity** |
| **Learning Goal** | [**701:** 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)  [**706:** Solve problems involving scale drawings of geometric figures.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/706.docx)[**707:** 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)[**708:** Use the formulas for the area and circumference of a circle to solve problems.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/708.docx) [**711:** 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) | **Suggested # of Days** | **Q2: 14** **(5)****Q3: 16** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** |
| 1 day |  | Getting Ready Unit 3 p.150 |  |  |
| 2 days | 7.G.2.5 | Unit 3.1 Angle Pairs p.151 Focus on the Vocabulary)  | # 1-14 *(Focus on Equations)* |  |
| 1 day | 7.G.2.4 | Unit 3.2 Two-Dimensional Figures p.159 | #1-16 |  |
| 1 day | Two-Dimensional Figures **Focus: Circles**  |  | **EngageNY Grade 7 - Module 3****Topic C: Lesson 16 –** [**TV**](https://content.engageny.org/file/60636/download/math-g7-m3-topic-c-lesson-16-teacher.pdf?token=t0BZ9HQ4lDf7NaJZwj2etqbXXZ-89oHDFZBAk1bWSM0) **and** [**SV**](https://content.engageny.org/file/60631/download/math-g7-m3-topic-c-lesson-16-student.pdf?token=-UkAKcK3ZHAUrCYawJULzLr_RvssItf4N4ILttdoVSk)**Topic C: Lesson 17 –** [**TV**](https://content.engageny.org/file/60661/download/math-g7-m3-topic-c-lesson-17-teacher.pdf?token=ba7xvFjHw_rLO-zXDKrxSDc5ThW09MTSrEK3WZxTPG8) **and** [**SV**](https://content.engageny.org/file/60656/download/math-g7-m3-topic-c-lesson-17-student.pdf?token=-5xQsk3wI53cCABDxLqCIUMsQlCp-DElkJG4lvATHDQ) |
| 2 days | 7.G.2.5 | Unit 3.3 Angles of Polygons p.165 | #1-14 |  |
| 4 days | 7.G.1.2 | Unique Triangle Activity 1 and Unique Triangle Activity 2  |  | **(Blackboard Resources)**[Create Triangles Activity 1](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/create_triangles_activity_1.docx) [Create Triangles Activity 2](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/create_triangles_activity_2.docx)**EngageNY Grade 7 - Module 6****Topic B: Lesson 6 –** [**TV**](https://content.engageny.org/file/63566/download/math-g7-m6-topic-b-lesson-6-teacher.pdf?token=O3rP2I4HHPYdSFFsbkSktc5ncHHBfxdb42q-Bntd4QE) **and** [**SV**](https://content.engageny.org/file/63561/download/math-g7-m6-topic-b-lesson-6-student.pdf?token=9FcnHiak0twhBbKfUWTgiDnSSqrCVo2kC3V7K7BK9rs) |
| 3 days | 7.G.1.3 | Cross sections and Slices- examining 2 dimensional results from slicing solids |  | **EngageNY Grade 7 - Module 6****Topic C: Lesson 16 –** [**TV**](https://content.engageny.org/file/63816/download/math-g7-m6-topic-c-lesson-16-teacher.pdf?token=nODQurVPzaLovpGw7zN2geYIWYb_mcMSPtYYZoYuKj8) **and** [**SV**](https://content.engageny.org/file/63811/download/math-g7-m6-topic-c-lesson-16-student.pdf?token=Gh1CJSBjy6rXimmyP0LzlQabDsQZ8DGmrfhXbWg-mOE)**Topic C: Lesson 17 –** [**TV**](https://content.engageny.org/file/63841/download/math-g7-m6-topic-c-lesson-17-teacher.pdf?token=HpviDxs-WgtSzkesAfNLS2tyTUaWoNQIFspORfeQLKo) **and** [**SV**](https://content.engageny.org/file/63836/download/math-g7-m6-topic-c-lesson-17-student.pdf?token=Zbew3-Hp7dfJlVxFW0bnKU53wqzDUBlnkO4rb_jjhTY)**Topic C: Lesson 18 –** [**TV**](https://content.engageny.org/file/63866/download/math-g7-m6-topic-c-lesson-18-teacher.pdf?token=wZPFekPko5JqbB4JrNbCJldpccFhrOvaKpxzB1r47FU) **and** [**SV**](https://content.engageny.org/file/63861/download/math-g7-m6-topic-c-lesson-18-student.pdf?token=ynrWdNGGPGjU8hs7B-g-9rt6kiCyX-g_02LyXMk5Xzs)**Topic C: Lesson 19 –** [**TV**](https://content.engageny.org/file/63891/download/math-g7-m6-topic-c-lesson-19-teacher.pdf?token=CqOPLtt7sBViDnrvLjSSulleXw8sMMjpwWhV6Qd1qAQ) **and** [**SV**](https://content.engageny.org/file/63886/download/math-g7-m6-topic-c-lesson-19-student.pdf?token=1RN6rpScRl_wDMejftiFdRGWdn5JQ1bVOgb5MsVJyBQ) |
| 5 days |  | District Assessments (2 days)/ 9 Weeks Review and Exam (3 days) | END SECOND QUARTER |
| 5 days | 7.RP.1.17.RP1.3 | Unit 3.6 Proportional Reasoning p.193 | #1-22 |  |
| 2 days | 7.G.1.1 | Unit 3.7 Using Scale p.199 | #1-19 |  |
| 4 days | Unit 3.8 Similar Figures p.207 | #1- 14 |  |
| 5 days |  | Amplify Project –Packing for the IditarodAND/OR Other Culminating ActivityReview/Assessment |  | **Resources found on Amplify Website** |

|  |
| --- |
| **Unit 4: Three Dimensional Geometry and Similarity**  |
| **Code** | **Mathematics Florida Standard** | **SMP** |
| 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. | 1, 5 |
| 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. | 1, 2, 6, 7 |
| **Learning Goal and Scale** | **Instructional Strategies & Misconceptions** |
| [**709:** Solve real-world and mathematical problems involving the surface area of 3D shapes composed of triangles and polygons.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/709.docx)[**710:** 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) | * Students may have trouble visualizing plane sections of 3D figures.
* Students may confuse volume and surface area concepts.
* Students may confuse the base of a figure with the “bottom” of it.
* There will not be a reference sheet given.
* Students may accidentally leave out the area of a face when calculating the surface area.
* Make sure that when finding the surface of area of a pyramid students are reminded that they may be given the area of the base or they may have to calculate it.
* Remind students that the formula for finding the area of the base of a pyramid, *B*, differs depending on the shape of the base.
* When calculating surface areas of composite figures students may erroneously find the surface areas of each simpler figure and add them together.
 |
| **Math Practices for Unit** | **Unit Connections** | **Instructional Resources** |
| 1. Make sense of problems and persevere in solving them. | 5. Use appropriate tools strategically. | **6th grade:*** Find the volume of a right rectangular prism.
* Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems.
* Determine a missing dimension of a plane figure or prism, given its area or volume and some of the dimensions, or determine the area of volume given the dimensions.
 | Unit cubesScissorsGrid PaperDot PaperIndex Cards | TapeSand, Rice, or other Filling MaterialRulersCalculatorBlackline Masters Printouts |
| 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. |
| . Model with mathematics. | 8. Look for and express regularity in repeated reasoning. |

|  |
| --- |
| **THIRD QUARTER** |
| **Unit 4: Three-Dimensional Geometry** |
| **Learning Goal** | [**709:** Solve real-world and mathematical problems involving the surface area of 3D shapes composed of triangles and polygons.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/709.docx)[**710:** 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) | **Suggested # of Days** | **13** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** |
| 3 days | 7.G.2.67.EE.2.4 | Unit 4.1 Volume and Surface Area of Rectangular Prisms p.241 | #1-18 |  |
| 3 days | Unit 4.3 Volume p.259 *May need additional practice problems* | #1-4, 7-11, 15*(no shapes with circular faces)* | **(Blackboard Resource)**[Volume – Missing Dimensions](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/volume_-_missing_dimensions.docx)**EngageNY Grade 7 - Module 6****Topic E: Lesson 26 –** [**TV**](https://content.engageny.org/file/64066/download/math-g7-m6-topic-e-lesson-26-teacher.pdf?token=N0sRUPyBJgoCAI9_NC9_EATgkovSDA8pBDlHJ39uvbk) **and** [**SV**](https://content.engageny.org/file/64061/download/math-g7-m6-topic-e-lesson-26-student.pdf?token=3QDTvqQdeGGTybsBprcPfGUFFLmb5r7xsE63AMQszkA) |
| 5 days | Unit 4.4 Surface Area p.267  | #1-13, 29*(no shapes with circular faces)* | **(Blackboard Resource)**[Surface Area of Pyramids](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/surface_area_of_pyramids.docx) |
| 2 days |  | Review and Test |  |  |

|  |
| --- |
| **Unit 5: Statistics and Probability** |
| **Code** | **Mathematics Florida Standard** | **SMP** |
| 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. | 4 |
| 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. | 4 |
| 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 | 4 |
| 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. | 4 |
| 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.  | 4 |
| 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 | 4 |
| 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.  | 4 |
| 7.SP.3.8 | Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation. Find the probabilities of compound events using organized lists, tables, tree diagrams, and simulation.  | 4, 5 |
| **Learning Goal and Scale** | **Instructional Strategies & Misconceptions** |
| [**712:** Use random sampling to draw inferences about a population](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:** Investigate chance process and develop, use, and evaluate probability models.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/714.docx) | * Students must notice the difference between and & or in probability problems.
* Students must interpret questions that cover multiple parts of a histogram.
* Students have trouble interpreting a 3 digit number in a stem-and-leaf plot.
* As students create their own histograms, caution them to double check that the intervals they use are equal.
* When comparing two histograms, encourage student to first check to make sure that the scales and intervals are the same.
* Students may forget to order the data when finding the median. Remind students that the numbers must always be ordered, to find the median.
* Students may miscalculate the lower quartile or upper quartile when there is an even number od data value in the lower and upper halves of the data.
* Students may accidently include outliers in the whiskers.
 |
| **Math Practices for Unit** | **Unit Connections** | **Instructional Resources** |
| 1. Make sense of problems and persevere in solving them. | 5. Use appropriate tools strategically. | **6th grade:*** Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.
* Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.
* Recognize that a measure of center for a numerical data set summarizes all of its values with a single number, while a measure of variation describes how its values vary with a single number.
* Display numerical data in plots on a number line, including dot plots(line plots), histograms, and box plots.
* Summarize numerical data sets in relation to their context.
* Determine the measures of central tendency (mean, median, mode) and variability (range) for a given set of data.
 | Paper ClipsSpinnersNumber CubesCrayons, Colored Pencils, Markers | Centimeter CubesCoinsPaper Cups |
| 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. |

|  |
| --- |
| **THIRD QUARTER/ FOURTH QUARTER** |
| **Unit 5: Statistics and Probability** |
| **Learning Goal** | [**712:** Use random sampling to draw inferences about a population.](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:** Investigate chance process and develop, use, and evaluate probability models.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/714.docx) | **Suggested # of Days** | **Q3: 12 (5)****Q4: 12 (10)** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** |
| 7 days | 7.SP.3.57.SP.3.67.SP.3.77.SP.3.8 | Calculating and Interpreting Probabilities | SB 5.4 pages 321-326 #1-16SB 5.5 pages 329-333 #1-20 | **EngageNY Grade 7 - Module 5****Topic A: Lesson 1 –** [**TV**](https://content.engageny.org/file/61366/download/math-g7-m5-topic-a-lesson-1-teacher.pdf?token=mrE98pWDPbp9sBIJx40IFZUkJxGQgQeaMRn-NfkXaEU) **and** [**SV**](https://content.engageny.org/file/61361/download/math-g7-m5-topic-a-lesson-1-student.pdf?token=fMukiNmm5RPeXo6YfRZ2FugbOihjgws2-pC5W-xTY-Q)**Topic A: Lesson 2 –** [**TV**](https://content.engageny.org/file/61391/download/math-g7-m5-topic-a-lesson-2-teacher.pdf?token=pvhxaOsE9_G_LHhsTMZ_zakbX1aIC1AM_dT76xh42_E) **and** [**SV**](https://content.engageny.org/file/61386/download/math-g7-m5-topic-a-lesson-2-student.pdf?token=rAQow8IeGuiOEielCaeWXhArAVtFeLkiBKx-GeBvRHg)**Topic A: Lesson 3 –** [**TV**](https://content.engageny.org/file/61416/download/math-g7-m5-topic-a-lesson-3-teacher.pdf?token=vBNIHeGiuw7xLZhGkZWgW31yip6h-3e0cOf_pfjdrUw) **and** [**SV**](https://content.engageny.org/file/61411/download/math-g7-m5-topic-a-lesson-3-student.pdf?token=8sinDjtn9fdizg3PY9w6_xj6i72ZL_1_mi5ZBB6-bJc)**Topic A: Lesson 4 –** [**TV**](https://content.engageny.org/file/61441/download/math-g7-m5-topic-a-lesson-4-teacher.pdf?token=D1riCHMyWBtnFa06_2GFCwn3Y77N2G3uwK_1gM3KGEM) **and** [**SV**](https://content.engageny.org/file/61436/download/math-g7-m5-topic-a-lesson-4-student.pdf?token=d1dbUvQ6DVzzn8v2YVZ0y2V3vBFXAPRjPhiK3dy5fn8)**Topic A: Lesson 5 –** [**TV**](https://content.engageny.org/file/61466/download/math-g7-m5-topic-a-lesson-5-teacher.pdf?token=cxvNRxxwUhuAyH51m7JqGuPDjYkoyeP6dx1cq3K6dAc) **and** [**SV**](https://content.engageny.org/file/61461/download/math-g7-m5-topic-a-lesson-5-student.pdf?token=YJFmK5HVYT_b-wDIjqilfhTypNeFmaC3QCvZm9yfNaw)**Topic A: Lesson 6 –** [**TV**](https://content.engageny.org/file/61491/download/math-g7-m5-topic-a-lesson-6-teacher.pdf?token=HKyN60Bbws3AakOMqnLuxe7hbO1AA0k67QjP19COSNc) **and** [**SV**](https://content.engageny.org/file/61486/download/math-g7-m5-topic-a-lesson-6-student.pdf?token=jhx7iO2vEjOLbtalDeSGsIObuyWGLMoxPaWK_B-vxuE)**Topic A: Lesson 7 –** [**TV**](https://content.engageny.org/file/61516/download/math-g7-m5-topic-a-lesson-7-teacher.pdf?token=u0lEQXzr-kuYlDpuRlnvipZncNhxWeJNf9L7zj-xm1k) **and** [**SV**](https://content.engageny.org/file/61511/download/math-g7-m5-topic-a-lesson-7-student.pdf?token=ml8_uAw5O4xTirhNYrKiPIrDP71uzP3iE4fYzTbn1gk) |
| 5 days | Estimating Probabilities |  | **EngageNY Grade 7 - Module 5****Topic B: Lesson 8 –** [**TV**](https://content.engageny.org/file/61541/download/math-g7-m5-topic-b-lesson-8-teacher.pdf?token=Xb7ln_seGdpIbY3IgVEOhfAYfv9zslew3D9U20d_ruE) **and** [**SV**](https://content.engageny.org/file/61536/download/math-g7-m5-topic-b-lesson-8-student.pdf?token=NW_CtuK6yhxcb6f1mH5VcMRkp8wqvOojE6Eytdjn63I)**Topic B: Lesson 9 –** [**TV**](https://content.engageny.org/file/61566/download/math-g7-m5-topic-b-lesson-9-teacher.pdf?token=6OhxKuIrfHAqi6wmvD3RWqHTdsNLm8L6Y0iu-cPzVCY) **and** [**SV**](https://content.engageny.org/file/61561/download/math-g7-m5-topic-b-lesson-9-student.pdf?token=iASPED0c8RQUmn8rV6LRRs9Lc6vGwbGvLGj6unAyEVk)**Topic B: Lesson 10 –** [**TV**](https://content.engageny.org/file/61591/download/math-g7-m5-topic-b-lesson-10-teacher.pdf?token=01v_CsIRWG2m4aifo0TOT3Bz3zdE2IAglEpmTlfUaJE) **and** [**SV**](https://content.engageny.org/file/61586/download/math-g7-m5-topic-b-lesson-10-student.pdf?token=FP5D3xEnuAP3KtGMqVUF_vGbZvvb1W6TCnNpclGr238)**Topic B: Lesson 11 –** [**TV**](https://content.engageny.org/file/61616/download/math-g7-m5-topic-b-lesson-11-teacher.pdf?token=9cc1Hu1sJf_K0cmFNKrmvsLW0SOwt7ap1czlPMr6QC0) **and** [**SV**](https://content.engageny.org/file/61611/download/math-g7-m5-topic-b-lesson-11-student.pdf?token=WOmx-gLh9HGrxG5bZJ4S7w2gOsRWXBuoJU9wjoPkrh0)**Topic B: Lesson 12 –** [**TV**](https://content.engageny.org/file/61641/download/math-g7-m5-topic-b-lesson-12-teacher.pdf?token=8ESOfRf0mvkWsTsfvJ__YmxWCFsRnSdGRCw1B29FWd0) **and** [**SV**](https://content.engageny.org/file/61636/download/math-g7-m5-topic-b-lesson-12-student.pdf?token=9y0hJx_VP_8Z1vvBkEr8DXtrPjzxFnrKt6WajnUFscY) |
| 5 |  | District Assessments (2 days)/ 9 Weeks Exam (2 days)/FSA ELA/Writing (1 day)/END THIRD QUARTER |
| 8 days | 7.SP.1.17.SP.1.27.SP.2.37.SP.2.4 | Random Sampling and Estimating Population Characteristics |  | **EngageNY Grade 7 - Module 5****Topic C: Lesson 13 –** [**TV**](https://content.engageny.org/file/61666/download/math-g7-m5-topic-c-lesson-13-teacher.pdf?token=Sn1xP6f-B75rWeTLIz45SRLH_xfQGYQ815ORw7JOsLE) **and** [**SV**](https://content.engageny.org/file/61661/download/math-g7-m5-topic-c-lesson-13-student.pdf?token=wVrK5E6uxVccoM6ozyeBVvz15s0VtZDjrYB0XlDkwho)**Topic C: Lesson 14 –** [**TV**](https://content.engageny.org/file/61691/download/math-g7-m5-topic-c-lesson-14-teacher.pdf?token=6CRHFNQ4IElUJ6qKcMaSM4p7XtkJbeADz_L4M1VwPFg) **and** [**SV**](https://content.engageny.org/file/61686/download/math-g7-m5-topic-c-lesson-14-student.pdf?token=NIvy6kXncp7z4aSrCFNox4Buz18eQcRyZ7Mvlg_9Xdc)**Topic C: Lesson 15 –** [**TV**](https://content.engageny.org/file/61716/download/math-g7-m5-topic-c-lesson-15-teacher.pdf?token=14n8r_Gr15LJKQGSD04Q0qgWAF7HE9pL2ei-Dwq8cYo) **and** [**SV**](https://content.engageny.org/file/61711/download/math-g7-m5-topic-c-lesson-15-student.pdf?token=jIdqYtWyZzBws6iF8-1vXL2-owKe5GZ_JkOFV6ltxIE)**Topic C: Lesson 16 –** [**TV**](https://content.engageny.org/file/63241/download/math-g7-m5-topic-c-lesson-16-teacher.pdf?token=bfnqtq5KwITLleHgx3z7pDBKa3vmeIitt7QGBgWrljk) **and** [**SV**](https://content.engageny.org/file/63236/download/math-g7-m5-topic-c-lesson-16-student.pdf?token=jlrSuRWWB_nIq7YWwntqzvqEy-jCpm8Z-uav4_2y1vk)**Topic C: Lesson 17 –** [**TV**](https://content.engageny.org/file/63266/download/math-g7-m5-topic-c-lesson-17-teacher.pdf?token=OZUa4i1FU6alOn14vw7p0DfYeIoW0YREQAtAft4yQbA) **and** [**SV**](https://content.engageny.org/file/63261/download/math-g7-m5-topic-c-lesson-17-student.pdf?token=ZGxLT8gavJBTKsAaPbFQhJSYtV5fMH92R_3vDsX2YUo)**Topic C: Lesson 18 –** [**TV**](https://content.engageny.org/file/63291/download/math-g7-m5-topic-c-lesson-18-teacher.pdf?token=YoMC-RhOat8zA33GncWgeBJvxtI7I2pvaRTIRLWz7dA) **and** [**SV**](https://content.engageny.org/file/63286/download/math-g7-m5-topic-c-lesson-18-student.pdf?token=Y3KBTk_z5Eb0YjqwG2f63f_hiYAGw_nTP13VKqDFQGk)**Topic C: Lesson 19 –** [**TV**](https://content.engageny.org/file/63316/download/math-g7-m5-topic-c-lesson-19-teacher.pdf?token=591ZKh_a3FinCA2RvHG8xlgG4a_X4g1_uB6Cb9oRIxw) **and** [**SV**](https://content.engageny.org/file/63311/download/math-g7-m5-topic-c-lesson-19-student.pdf?token=f4FQvHScg7JCp-8asXJBcbiBYDxUFKq5PZj3lF-qGqY)**Topic C: Lesson 20 –** [**TV**](https://content.engageny.org/file/63341/download/math-g7-m5-topic-c-lesson-20-teacher.pdf?token=LZtDmvg9hOKapnSnDC71yYtQ4khTJmr7fW2zmBW4Uhc) **and** [**SV**](https://content.engageny.org/file/63336/download/math-g7-m5-topic-c-lesson-20-student.pdf?token=a5WdzkQKHscayxHTlbq0Z_AcAGt1L76v1oq732tqvtY) |
| 2 days | 7.SP.2.37.SP.2.4 | Comparing Populations | SB 5.1 pages 297-302 # 1-14 | **EngageNY Grade 7 - Module 5****Topic D: Lesson 22 –** [**TV**](https://content.engageny.org/file/63391/download/math-g7-m5-topic-d-lesson-22-teacher.pdf?token=iRlmqdQNLNOVI7RYj8YxKxkeDyMNOcgq-NZ4L8iCWSg) **and** [**SV**](https://content.engageny.org/file/63386/download/math-g7-m5-topic-d-lesson-22-student.pdf?token=sq7SWjHSVLrnNboJE_OS55rd00VEKwvVmcCibOIuOvc)**Topic D: Lesson 23 –** [**TV**](https://content.engageny.org/file/63416/download/math-g7-m5-topic-d-lesson-23-teacher.pdf?token=ka8xqzQ0ImtUMfk5URnCmJlawleOMTYTHUnvZg96GhY) **and** [**SV**](https://content.engageny.org/file/63411/download/math-g7-m5-topic-d-lesson-23-student.pdf?token=3BpagwMgoNeXt5cegmL1kT3Hx8LY0c81k-aduDnKGbU) |
| 2 days |  | Unit 5 Review and Assessment |  |  |
| 10 days |  | State Test Review(3 days)/FSA Testing (7 days) | State Testing Window begins April 13th and closes May 8th. |

|  |
| --- |
| **Unit 6: Pythagorean Theorem, Transformations, Bivariate Data (8th Grade Preview)** |
| **Code** | **Mathematics Florida Standard** | **SMP** |
| 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. | 1, 6 |
| 8.G.1.3 | Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates. | 1, 6 |
| 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.  | 1, 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, 6 |
| 8.G.2.8 | Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.  | 1, 6 |
| 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. | 1, 6 |
| **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)[**812:** Understand and apply the Pythagorean Theorem.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/812.docx)[**814:** Investigate patterns of association in bivariate data.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/814.docx) | * Students confuse different types of transformations.
* Students struggle to find the hypotenuse when the right triangle is rotated.
* Stress the difference between line symmetry and rotational symmetry.
* Caution students to first determine whether the shape is being enlarged or reduced prior to calculating the scale factor of dilation.
* Students struggle to find a leg when given a hypotenuse.
 |
| **Math Practices for Unit** | **Unit Connections** | **Instructional Resources** |
| 1. Make sense of problems and persevere in solving them. | 5. Use appropriate tools strategically. | **6th and 7th Grade (earlier units):*** Identify and plot points on the coordinate plane.
* Students can draw polygons on a coordinate plane.
* Graph linear equations.
* Calculate horizontal and vertical distance on the coordinate plane.
 | Grid paperRulersScissors |  |
| 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. |

|  |
| --- |
| **FOURTH QUARTER** |
| **Unit 6: Pythagorean Theorem, Transformations, Bivariate Data (8th Grade Preview)** |
| **Learning Goal** | [**809:** Understand congruence using physical models, transparencies, or geometry software.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/809.docx)[**812:** Understand and apply the Pythagorean Theorem.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/812.docx)[**814:** Investigate patterns of association in bivariate data.](http://scpsmath.weebly.com/uploads/2/9/1/7/29174797/814.docx) | **Suggested # of Days** | **19** |
| **Approx. # of Day(s)** | **MAFS** | **Lesson Objective (Instructional Resources)** | **Suggested Assignments/Assessments** | **Ancillary Materials** |
| 6 days | 8.G.2.78.G.2.8 | 3.9 The Pythagorean Theorem p.217 | # 1-13 |  |
| 8.G.2.78.G.2.8 | Pythagorean Theorem Assessment |  |  |
| 7 days | 8.G.1.28.G.1.38.G.1.4 | 3.4 & 3.5 Transformations | pages 173-177 # 1-3pages 181-189 # 1-23 |  |
| 6 days | 8.SP.1.18.SP.1.2 | 5.2 Bivariate Data p.303 | # 1-16 |  |
| 8.SP.1.18.SP.1.2 | 5.3 Interpreting Bivariate Data Displays p.313 | # 1-14 |  |
| 5 days |  | Cumulative Review (2 days) / Final Exams (3 days) |  |  |