Huntsville City Schools
2020 - 2021 Pacing Guide
7th Grade Math

Math Practices:

The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Important Notes:

- Alabama Course of Study objectives are given by number
- This curriculum map's standards are aligned to the **2016** Alabama Course of Study.
- Resources and Instructional Strategies are suggestions for the topic studied; teachers are not required to use all resources listed and can supplement their teaching with additional resources that support the Course of Study Standards.
- The number of days listed are approximate and are padded to allow a little extra time for review and tests
- The problems listed for each section are suggested types of problems. Teachers can still assign even, odd, or selected problems from each type of problem.
- Students will be allowed to use scientific or graphing calculators on midterm & final exams, and most tests (teacher's discretion).
    - Please reference the ACAP Math Item Specifications Grade 7 for information about which standards will have access to a calculator on the ACAP assessment.

Online Resources:

- Freckle, Math – Freckle math not only offers additional practice for students, but also Inquiry Based Lessons, and Constructed Response passages by Common Core State Standards: Accessible through Clever
- MARS - Mathematics Assessment Resource Service – formative assessments and group activities: http://map.mathshell.org/lessons.php
- Geogebra – In addition to offering powerful calculators and graphing tools, Geogebra offers many interactive activities by Common Core State Standard: https://www.geogebra.org/
- Khan Academy – Example videos and practice activities that may be of additional help to students: https://www.khanacademy.org/
- Shmoop – Teachers and students can use Shmoop to view videos and practice on various math topics searchable by Common Core State Standard: https://www.shmoop.com/
- Dan Meyer's Ted Talk about teaching math: https://youtu.be/qocAoN4jNwc
    - Links to Dan Meyer's 3-act activities, sorted by standard: https://docs.google.com/spreadsheet/ccc?key=0AjIqyKM9d7ZYdEhtR3BJMmdBWnM2YWxWYVM1UWowTEE#gid=0
- Granite City Math Vocabulary: http://www.graniteschools.org/mathvocabulary/
- Open Curriculum - activities from all over the internet sorted by standard: www.opencurriculum.org
- Illustrative Mathematics: https://im.kendallhunt.com/
    - Teachers must use their school email address to create a free account to access the teacher-only resources
- MARS - Mathematics Assessment Resource Service – formative assessments and group activities: http://map.mathshell.org/lessons.php
- Desmos – free online calculator – excellent for working with linear equations, scatterplots, and best-fit lines : www.desmos.com
    - Teacher version includes lessons and activities: https://teacher.desmos.com/
- Illuminations – lessons developed by NCTM: http://illuminations.nctm.org/
- Create a MyMathLab instructors course using the book: It is a good resource for material on all the topics in this course. You can pull problems from it in MyMathLab also.

Instructional Strategies:

ELLevation: **Note**: Be sure to check the "Math Collection" for specific topic resources"

Build Background:
* Brainstorm Walk   * I Notice, I Wonder

Clarify Input:
* "5 and 2"   * Anchor Charts   * Essential Questions   * Guided Notes   * "Teach! Teach!"   * TPR

Fortify Output:
* Find Your Match   * Clock Buddies   * Think, Write, Pair Share   * Which Corner?

Foster Interactions:
* "Don't Mention it"   * Find the Fib

Develop Academic Language:
* 360 Words   * Word Walls

Assess Language and Learning:
* Wordless Books   * Whiteboard Checkpoints   * Differentiated Question Prompts

ARI/Instructional Strategies (Alabama Reading Initiative)

ARI represents the Alabama Reading Initiative. Below are ARI/Instructional strategies that can be easily adapted to work well with mathematics. Some of the strategies can be interchangeable between before, during, and after in lesson planning. There are many instructional strategies that can be used in the classroom and you are not limited to these alone. If you have other ARI/Instructional strategies that work well for you and your students, use them to assist with academic growth and development. Have fun experimenting with different strategies to reach all students and address the different learning styles.

Suggested time period	ARI/Instructional Strategy	Explanation/How to use the strategy
Before:	Admit Slip	Purpose: 1) reflect on content of previous lesson or learned concept The admit-slip strategy requires students to write responses to questions you pose at the beginning of class. Admit slips help students reflect on what they have learned and express what or how they are thinking about the information. Admit slips easily incorporate writing into your content area classroom and require students to think critically.
	KWL	Purposes: 1) link prior knowledge to new information 2) generate questions to guide meaningful learning 3) create own meaning and learning from new text Procedure: 1. On the whiteboard, on a handout, or on students' individual clean sheets, three columns should be drawn. 2. Label Column 1 **K**, Column 2 **W**, Column 3 **L**. 3. Before reading, viewing or listening, students fill in the **Know** column with words, terms, or phrases from their background or prior knowledge. If the students are drawing on a topic previously learned, then the K column may be topic related. But if the topic is something brand-new, and they don't know anything much about it, you should use the K column to have them recalling a similar, analogous, or broader idea. 4. Then have students generate questions about what they might learn or want to learn about the topic, which might follow a quick glance at the topic headings, pictures, problems and charts that are found in the text or on a handout provided. This helps set their purpose for the lesson or concept and focuses their attention on key ideas. 5. After the math lesson and reading, students should fill in their new knowledge gained from the content. They can also clear up misperceptions about the topic which might have shown up in the Know column before they learned anything about the topic. This is the stage of metacognition: Does the student fully understand?
	Think Pair Share	Purposes: There are a variety of uses for this activity 1) Think. The teacher provokes students' thinking with a problem, question, prompt or observation. The students should take a few moments just to THINK about the question and jot down their thoughts. 2) Pair with someone...Using designated partners, nearby neighbors, or a desk mate, students PAIR up to talk about the answer each came up with. They compare their mental or written notes and identify the answers they think are best, most convincing, or most unique. 3) Share. After students talk in pairs for a few moments, the teacher calls for pairs to SHARE their thinking with the rest of the class. Sharing can be accomplished in a variety of ways: going around in round-robin fashion, calling on each pair, taking answers as they are called out (or as hands are raised), pairing with another pair. Often, the teacher or a designated helper will record these responses on the board or on the overhead.

	Quick Write	Purposes: 1) introduce a concept and connect this concept with prior knowledge or experiences and 2) allow students to discuss and learn from each other Procedure: 1. Introduce a single word, phrase, problem, or question to the class. 2. Students copy the concept on index cards or sheet of paper. 3. Students are given two to five minutes to write whatever comes to their minds relative to the concept. They may write freely using single words, phrases, sentences, etc. 4. After time is called, students may volunteer to share their thoughts on the subject.
	Turn and Talk/ Table Talk	Purposes: 1) activate prior knowledge, 2) build background knowledge, 3) encourage active listening, and 4) set a purpose for concept/lesson or reading Procedure: 1. Write a thought-provoking statement or question related to the subject of the upcoming lesson on the whiteboard or project overhead. 2. Each student has two minutes to read the question or statement, reflect, and write a response. 3. Each student has three minutes to share his/her response with a partner, reflect, and write a response to his/her partner's statement. 4. Pairs combine to form small groups of 4-6 students. Responses are shared within the group and one response is chosen to share with the whole class.
	Bell Ringer/Bell Work/Warm Up	Bell ringers are questions or tasks posted before students enter the classroom. They are to be completed before class starts, or, as the name suggests, as the bell rings. Bell ringers provide benefits to both the student and the teacher in all classroom settings ranging from elementary to high school. Bell ringers help to encourage promptness, organization, responsibility, spark prior knowledge, reinforce concepts, promote student engagement and so much more.
During:	Think Pair Share	Purposes: There are a variety of uses for this activity 1) Think. The teacher provokes students' thinking with a problem, question, prompt, or observation. The students should take a few moments just to THINK about the question and jot down their thoughts. 2) Pair with someone…Using designated partners, nearby neighbors, or a desk mate, students PAIR up to talk about the answer each came up with. They compare their mental or written notes and identify the answers they think are best, most convincing, or most unique. 3) Share. After students talk in pairs for a few moments, the teacher calls for pairs to SHARE their thinking with the rest of the class. Sharing can be accomplished in a variety of ways: going around in round-robin fashion, calling on each pair, taking answers as they are called out (or as hands are raised), pairing with another pair. Often, the teacher or a designated helper will record these responses on the board or on the overhead.

	Turn and Talk/ Table Talk	Purposes: 1) activate prior knowledge, 2) build background knowledge, 3) encourage active listening, and 4) set a purpose for concept/lesson or reading Procedure: 1. Write a thought-provoking statement or question related to the subject of the upcoming lesson on the chalkboard. 2. Each student has two minutes to read the topic, reflect, and write a response. 3. Each student has three minutes to share his/her response with a partner, reflect, and write a response to his/her partner's statement. 4. Pairs combine to form small groups of 4-6 students. Responses are shared within the group and one response is chosen to share with the whole class.
	Jot Notes	Jot Notes are basically lesson notes the students jot down before, during and after the lesson (in some cases) …The notes can be given in a variety of formats or structures…Example: chart format, graphic organizer, table format, guided notes, foldables, etc.…
	Quadrant Cards / Frayer Model	Purposes: 1) motivate students to engage in vocabulary study and expand vocabulary 2) Reinforce concepts etc.…. Procedure: Divide a sheet of paper into four parts Adapt to meet your students' needs…. whether you want to emphasize on vocabulary, connecting concepts, or organizing steps or procedures for graphing or solving etc.…
	Venn Diagram	Purpose: compare concepts Procedure: 1. Draw two circles overlapping. Each circle represents a concept. 2. Unique characteristics of the two ideas being compared are recorded in the outer of the two overlapping circles. Common characteristics are recorded where the circles overlap. 3. Teacher should model the strategy first.

	Charts/Foldables	Purposes: 1) engage with concept/lesson/text 2) construct graphic organizer/chart/foldable 3) self-monitor comprehension
		Procedure:
		1. Create a Jot Chart, project on the whiteboard or produce a print copy for each student. The chart/matrix should be structured as follows. You can also use foldables to accomplish these tasks.
		  o Main ideas/items for description or analysis are listed across the top of the chart.
		  o Question/characteristics of the main concepts are listed down the left side of the chart.
		2. Discuss the purpose of the chart with students before the assignment. Give an example of a completed chart to help clarify its functions.
		3. Have students complete the chart or foldable as you go through the lesson or assign tasks to groups etc...As the teacher, you decide and adapt this to meet the needs of your students and what you want to accomplish from the task.
		4. Discuss the students' findings and compile the results into a group chart. Stress the relationships between the data in the chart.

	Partner Learning	Purpose: 1) To engage students in the content and spark meaningful discussions 2) To encourage collaboration and improve knowledge among students 3) Promote socialization and boost self-esteem 4) Reinforce concepts taught through open questioning and answer sessions Procedure: The students are paired up and given a task to complete together; open discussions, sharing of ideas, writing, final product presentation, etc....
	Concept Map	Purpose: activate and organize knowledge about a specific topic Procedure: 1. Select the main idea or topic of discussion; write it on a chart, overhead, or whiteboard; and put a circle around it. 2. Have students brainstorm subtopics; knowledge related to the topic. Use lines to connect to the main topic. 3. Have students brainstorm specific vocabulary, ideas, mathematical knowledge related to each subtopic. Record these ideas beneath each subtopic. Add new knowledge to the concept map as learning progresses.
	Graphic Organizer	Purposes: 1) provide a visual model of the structure of lesson and 2) provide a format for organizing information and concepts Procedure: 1. Introduce the graphic organizer to the students. Demonstrate how it works by noting key concepts and ideas on the organizer. 2. Have groups of students practice using the graphic organizer with ideas from independently read mathematical text and/or mathematical information presented during lessons. Students can share their ideas with the class. 3. Choose an organizer that matches what you want to accomplish with your students for the topic or lesson.

	Jigsaw	Purposes: 1) engage with mathematical concept or text 2) self-monitor comprehension 3) integrate new information with prior knowledge 4) respond to mathematical concept or text through discussion Procedure: 1. Divide class into 4-6 member groups; each member becomes an expert on a different topic/concept assigned by teacher. 2. Members of the teams with the same topic meet in an expert group with a variety of resource materials and texts available to explore their topic. 3. The students prepare how they will teach the information to others. 4. Everyone returns to their jigsaw (home) teams to teach what they learned to the other members. It may be helpful to supply each student with a graphic organizer for note taking purposes. 5. Team members listen and take notes as their classmate teaches them
After:	Cooperative Learning/ Partner Learning/Practice	Cooperative learning is the process of breaking a classroom of students into small groups so they can discover a new concept together and help each other learn. Each group is given a task or assignment to complete. Often a record keeper and team leader are assigned to keep everyone on task. Collaboration and discussion are expected with a final assignment or project completed and submitted. Open discussions between the teacher and/or students can occur during class as well.
	Stations/ Carousels etc....	Purposes: This strategy can fit almost any purpose developed. Procedure: 1. Teacher determines what topics/lessons will be placed on chart paper. 2. Chart paper is placed on walls around the room. 3. Teacher places students into groups of three- four. 4. Students begin at a designated chart. 5. They read the question or phrase, discuss with group, and respond directly on the chart or assigned task sheet. 6. After an allotted amount of time, students rotate to next chart. 7. Students read next question and records new response or discussion points. 8. Continue until each group has responded to each prompt. 9. Teacher shares information from charts and conversations heard while responding. ** This strategy can be modified by having the chart "carousel" to groups, rather than groups moving to chart.

	Exit slip	Purpose: 1) reflect on content of lesson
		The exit-slip strategy requires students to write responses to questions you pose at the end of class. Exit slips help students reflect on what they have learned and express what or how they are thinking about the new information. Exit slips easily incorporate writing into your content area classroom and require students to think critically.
		There are three categories of exit slips (Fisher & Frey, 2004):
		• Prompts that document learning,
		  o Ex. Write one thing you learned today.
		  o Ex. Discuss how today's lesson could be used in the real world.
		• Prompts that emphasize the process of learning,
		  o Ex. I didn't understand…
		  o Ex. Write one question you have about today's lesson.
		• Prompts to evaluate the effectiveness of instruction
		  o Ex. Did you enjoy working in small groups today?

	Turn and Talk/Table Talk	Purposes: 1) activate prior knowledge, 2) build background knowledge, 3) encourage active listening, and 4) set a purpose for concept/lesson or reading Procedure: 1. Write a thought-provoking statement or question related to the subject of the upcoming lesson on the whiteboard or project overhead. 2. Each student has two minutes to read the question or statement, reflect, and write a response. 3. Each student has three minutes to share his/her response with a partner, reflect, and write a response to his/her partner's statement. 4. Pairs combine to form small groups of 4-6 students. Responses are shared within the group and one response is chosen to share with the whole class.

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		Hand on activities are simply activities which students physically in some way connect with their learning…writing, drawing, graphing, demonstration through movement, use of manipulatives etc.… Hands-on activities are especially important in the classroom because it allows students to engage in kinesthetic learning. Educational studies have shown that kinesthetic learning, where a student performs some type of physical activity rather than just listening to a lecture, is the most popular type of learning with students - doing or working on something before, during, and/or after the lesson, helps them to gain a better understanding of the material. It allows students to experiment with trial and error, learn from their mistakes, and understand the potential gaps between theory and practice. It also encourages students to collaborate with their peers and share information from different perspectives.
	Hands on Activity/ Graphs, charts, diagrams, etc.	

Formatting:

- Honors or advanced material is highlighted in blue. Example: Advanced: Page 145 #75-86
- Remediation is highlighted in yellow. Example: Remediation: Small group on fractions

The Textbook for this course is:

enVisionmath2.0 Grade 7

Huntsville City Schools
2020 - 2021 Pacing Guide
7th Grade Math

First Semester
1st 9 – weeks (August 17 – October 23)
44 instructional days; 22 A-Days and 22 B-Days

Time Period	Unit Topic	Standards	Resources
Week 1	Introduction to Integers/ Operations with Rational Numbers	[7-NS1] 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. Describe situations in which opposite quantities combine to make 0. 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. Use a number line to demonstrate that the distance between two rational numbers on the number line is the absolute value of their differences and apply this principle in real-world contexts. Understand subtraction of rational numbers as adding the additive inverse, $p – q = p + (- q)$. Apply properties of operations as strategies to add and subtract rational numbers.	EnVision: Unit 1 – Rational Number Operations • Relate Integers and their opposites (1.1) • Understand the Rational Numbers (1.2) • Adding Integers (1.3) • Subtract Integers (1.4) • Add and Subtract Rational Numbers (1.5) Illustrative Mathematics: • "Rational Number Arithmetic" -- grade 7, unit 5 MARS: • "Using Positive and Negative Numbers in Context" • "Adding and Subtracting Directed Numbers" GeoGebra Links: • "Adding Integers" Pearson Success Net Khan academy

Week 2	Operations with Rational Numbers	[7-NS2] Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers. Extend strategies of multiplication to rational numbers to develop rules for multiplying signed numbers, showing that the properties of the operations are preserved. 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 and the rules for multiplying signed numbers. Apply properties of operations as strategies to multiply and divide rational numbers. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with nonzero divisor) is a rational number. Convert a rational number to a decimal using long division; know that decimal form of a rational number terminates in 0s or eventually repeats.	**EnVision: Unit 1 – Rational Number Operations** • Multiply Integers (1.6) • Multiply Rational Numbers (1.7) • Divide Integers (1.8) • Divide Rational Numbers (1.9) • Solve Problems with Rational Numbers (1.10) **GeoGebra Links:** • "Division of a Whole Number by a Fraction" Pearson Success Net Khan academy
Week 3 **Note:** Days in this week are set aside for the review and testing of Unit 1	Operations with Rational Numbers Review/Test	[7-NS1,7-NS2,7-NS3] Apply and extend understandings of addition and subtraction, multiplication and division to add, subtract, multiply and divide rational numbers. Apply properties of operations as strategies to add, subtract, multiply, and divide rational numbers. Solve real-world and mathematical problems involving the four operations with rational numbers.	

Week 4	Generate Equivalent Expressions	[7-EE1] Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients	**enVision: Unit 4 – Generate Equivalent Expressions** • Write and evaluate algebraic expressions (4.1) • Generate Equivalent Expressions (4.2) **Illustrative Mathematics:** • "Expressions, Equations, and Inequalities" -- grade 7, unit 6 Pearson Success Net Khan academy
Week 5	Operations with Expressions	[7-EE1] Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients. [7-EE2] 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.	**enVision: Unit 4 – Generate Equivalent Expressions** • Simplify Expressions (4.3) • Expand Expressions (4.4) • Factor Expressions (4.5) **Illustrative Mathematics:** • "Expressions, Equations, and Inequalities" -- grade 7, unit 6 Pearson Success Net Khan academy

Week	Topic	Standards	Resources
Week 6	Writing and Solving Basic Equations	[7-EE2] 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.	**EnVision: Unit 4 – Generate Equivalent Expressions** • Add Expressions (4.6) / Subtract Expressions (4.7) • Analyze Equivalent Expressions (4.8) **EnVision: Unit 6 – Solve Problems Using Equations and Inequalities** • Write 2-step equations (5.1) • Solve 2-step equations (5.2) **Illustrative Mathematics:** • "Expressions, Equations, and Inequalities" -- grade 7, unit 6 <mark>Pearson Success Net</mark> <mark>Khan academy</mark>
Week 7	Solving Equations Using the Distributive Property	[7-EE3] Solve multi-step real-world and mathematical problems involving rational numbers (integers, signed fractions, and decimals), converting between forms as needed. Assess the reasonableness of answers using mental computation and estimation strategies. [7-EE4] Use variables to represent quantities in a real-world or mathematical problem and construct algebraic expressions, equations, and inequalities to solve problems by reasoning about the quantities. 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.	**EnVision: Unit 5 – Solve Problems Using Equations and Inequalities** • Solve Equations Using the Distributive Property (5.3) **Illustrative Mathematics:** • "Expressions, Equations, and Inequalities" -- grade 7, unit 6 **Enrichment / Remediation Resources:** **MARS:** • "Solving Linear Equations" <mark>Pearson Success Net</mark> <mark>Khan academy</mark>

Week 8	Solve problems Using Equations / Review and Test	[7-EE3] Solve multi-step real-world and mathematical problems involving rational numbers (integers, signed fractions, and decimals), converting between forms as needed. Assess the reasonableness of answers using mental computation and estimation strategies. [7-EE4] Use variables to represent quantities in a real-world or mathematical problem and construct algebraic expressions, equations, and inequalities to solve problems by reasoning about the quantities.	*Inequalities will be addressed at the beginning of the 2nd nine weeks.

2nd 9 – weeks (October 26 – December 22)
38 instructional days; 19 A-Days and 19 B-Days

Time Period	Unit Topic	Standards	Resources
Week 1	Writing and Solving Inequalities	[7-EE2] 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.	**EnVision: Unit 5 – Solve Problems Using Equations and Inequalities** • Solve Inequalities using addition/subtraction (5.4) • Solve inequalities using multiplication/division (5.5) • Solving 2-step inequalities (5.6) **Illustrative Mathematics:** • "Expressions, Equations, and Inequalities" -- grade 7, unit 6 Pearson Success Net Khan academy
Week 2	Solving Inequalities Using the Distributive Property	[7-EE3] Solve multi-step real-world and mathematical problems involving rational numbers (integers, signed fractions, and decimals), converting between forms as needed. Assess the reasonableness of answers using mental computation and estimation strategies. [7-EE4] Use variables to represent quantities in a real-world or mathematical problem and construct algebraic expressions, equations, and inequalities to solve problems by reasoning about the quantities. 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.	**EnVision: Unit 5 – Solve Problems Using Equations and Inequalities** • Solve multi-step inequalities (5.7) **Illustrative Mathematics:** • "Expressions, Equations, and Inequalities" -- grade 7, unit 6 **Note:** Time is reserved in this week for review and test of inequalities.

Week 3	Simple Probability	[7-SP5] 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 ½ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. [7-SP6] 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.	EnVision: Unit 7 – Probability • Understand Likelihood and Probability (7.1) • Understand Theoretical Probability (7.2) • Understand Experimental Probability (7.3) Illustrative Mathematics: • "Probability and Sampling" - grade 7, unit 8 MARS: • Translating between fractions, decimals, and percents Pearson Success Net Khan academy
Week 4	Simple Probability / Compound Probability	[7-SP7, 7-SP7a, 7-SP7b] 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. b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. [7-SP8, 7-SP8a, 7-SP8b, 7-SP8c] 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.	EnVision: Unit 7 – Probability • Use Probability Models (7.4) • Determine Outcomes of Compound Events (7.5) • Find Probabilities of Compound Events (7.6) Illustrative Mathematics: • "Probability and Sampling" - grade 7, unit 8 Pearson Success Net Khan academy

Week 5	Compound Probability	[7-SP8, 7-SP8a, 7-SP8b, 7-SP8c] 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.	EnVision: Unit 7 – Probability • Simulate Compound Events (7.7) Illustrative Mathematics: • "Probability and Sampling" - grade 7, unit 8 Enrichment / Remediation Resources: MARS: • "Designing: A Game of Chance" • "Analyzing Games of Chance" • "Evaluating Statements About Probability" Pearson Success Net Khan academy
Week 6	Probability Sampling Statistics	(See Previous standards for Probability) [7-SP1] 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.	Time is given for review / test of probability during this week. EnVision: Unit 6 – Using Sampling to Draw Inferences About Populations • Populations and Samples (6.1) Illustrative Mathematics: • "Probability and Sampling" - grade 7, unit 8 Pearson Success Net Khan academy

Week 7	Statistics / Drawing Inferences	[7-SP2] 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-SP3] 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-SP4] Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	**EnVision: Unit 6 – Using Sampling to Draw Inferences About Populations** • Draw Inferences from Data (6.2) • Make Comparative Inferences about Populations (6.3) • Make More Comparative Inferences about Populations (6.4) **Illustrative Mathematics:** • "Probability and Sampling" - grade 7, unit 8 **MARS:** • "Sampling and Estimating: Counting Trees" • "Comparing Data Using Statistical Measures" • "Representing Variability with Mean, Median, Mode, and Range" • "Representing Data with Grouped Frequency Graphs and Box Plots" Pearson Success Net Khan academy
Week 8	Statistics: Review / Test	[7-SP2] 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-SP3] 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-SP4] Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.	*Activities this week may depend on individual school schedule / quarterly or mid-term test requirements

Second Semester
3rd 9 – weeks (January 4 – March 12)
48 instructional days; 24 A-Days and 24 B-Days

Time Period	Unit Topic	Standards	Resources
Week 1	Ratios, Rates, and Proportions Scale Factor	[7-RP1] Compute unit rates associated with ratios of fractions, including ratios of lengths, areas, and other quantities measured in like or different units. [7-G1] 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.	enVision: Unit 2 – Analyze and Use Proportional Relationships • Connect ratios, rates, and unit rates (2.1) • Determine the unit rates of fractions (2.2) • Understand proportional relationships (2.3) • Solve problems involving scale drawings (8.1) Illustrative Mathematics: • "Scale Drawings" -- grade 7, unit 1 • "Introducing Proportional Relationships" -- grade 7, unit 2 • "Proportional Relationships and Percentages" -- grade 7, unit 4 Pearson Success Net Khan academy
Week 2	Proportional Graphs and Equations	[7-RP2, 7-RP2a, 7-RP2b, 7-RP2c, 7-RP2d] 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.	enVision: Unit 3 – Analyze and Use Proportional Relationships • Graph proportional relationships (2.5) • Apply proportional reasoning to solve problems (2.6) • Describe proportional relationships (2.4) Pearson Success Net Khan academy

| Week 3 | Proportional Relationships | [7-RP2, 7-RP2a, 7-RP2b, 7-RP2c, 7-RP2d] Recognize and represent proportional relationships between quantities.
e. 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.
f. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
g. Represent proportional relationships by equations.
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. | Enrichment / Remediation Resources:
MARS:
• "Using Proportional Reasoning"
• "Representing: Road Race"
• "Comparing Strategies for Proportions Problems"
• "Classifying Proportion and Non-Proportion Situations"
• "Short Tasks" -- Ratio and Proportion
• "Drawing to Scale: A Garden"
• "Sharing Costs Equitably: Traveling to School"

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| Week 4 | Proportional Relationships | [7-RP2, 7-RP2a, 7-RP2b, 7-RP2c, 7-RP2d] Recognize and represent proportional relationships between quantities.
h. 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.
i. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
j. Represent proportional relationships by equations.
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. | Note: This week provides time to review and test over proportional relationships and scale factor |

Week 5	Percentages	[7-RP3] Use proportional relationships to solve multistep ratio and percent problems.	enVision: Unit 3 – Analyze and Solve Percent Problems • Analyze percents of numbers (3.1) • Connect percent and proportion (3.2) • Represent and Use the Percent Equation (3.3) Illustrative Mathematics: • "Proportional Relationships and Percentages" -- grade 7, unit 4 Pearson Success Net Khan academy
Week 6	Percentages	[7-RP3] Use proportional relationships to solve multistep ratio and percent problems.	enVision: Unit 3 – Analyze and Solve Percent Problems • Solve Percent Change problems (3.4) • Solve Markup and Markdown problems (3.5) • Solve simple interest problems (3.6) Pearson Success Net Khan academy
Week 7	Percentages: Enrichment / Remediation	[7-RP3] Use proportional relationships to solve multistep ratio and percent problems.	Enrichment / Remediation Resources: MARS: • Increasing and Decreasing Quantities by a percent • 25% Sale Pearson Success Net Khan academy

Week 8	Percentages	[7-RP3] Use proportional relationships to solve multistep ratio and percent problems.	**Note:** This week provides time to review and test over percentages
Week 9 & Week 10	Catch-up	Use this time to catch up due to remediation, testing, weather, sickness, ect.	**Note:** This week provides time to review and test

4th 9 – weeks (March 15 – May 28)
46 instructional days; 23 A-Days and 23 B-Days
+4 Exam Days

Time Period	Unit Topic	Standards	Resources
Week 1	Constructing Geometry Shapes	[7-G2] 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.	**EnVision: Unit 8 – Solve Problems Involving Geometry** • Draw Geometric Figures (8.2) • Draw Triangles with Given Conditions (8.3) **Illustrative Mathematics:** • "Angles, Triangles, and Prisms" -- grade 7, unit 7 **MARS:** • "Describing and Defining Triangles" Pearson Success Net Khan academy
Week 2	Area and Circumference of a Circle	[7-G4] Know the formulas for the area and circumference of a circle and use them to solve problems. [7G4} Give an informal derivation of the relationship between the circumference and area of a circle. [7-G6] Solve real-world and mathematical problems involving the area and volume of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**EnVision: Unit 8 – Solve Problems Involving Geometry** • Solve Problems Involving Circumference (8.5) • Solve Problems Involving Area of a Circle (8.6) **Note**: there are no specific topics in enVision for general area problems **MARS:** • "Finding Areas of Circles" **Illustrative Mathematics:** • "Measuring Circles" -- grade 7, unit 3 Pearson Success Net Khan academy

Week 3	Review / Test for 2-D figures	[7-G4] Know the formulas for the area and circumference of a circle and use them to solve problems. [7G4} Give an informal derivation of the relationship between the circumference and area of a circle. [7-G6] Solve real-world and mathematical problems involving the ==area== and volume of ==two==- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**Note:** Time is provided for review and test of 2-D figures
Week 4	"Slices" / Volume of 3-D Figures	[7-G3] 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-G6] Solve real-world and mathematical problems involving the area and ==volume== of two- and ==three==-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**EnVision: Unit 8 – Solve Problems Involving Geometry** • Describe Cross Sections (8.7) • Solve Problems Involving Volume (8.9) **Illustrative Mathematics:** • "Angles, Triangles, and Prisms" -- grade 7, unit 7 **MARS:** • "Estimating Volume: The Money Munchers" ==Pearson Success Net== ==Khan academy==
Week 5	Surface area	[7-G6] Solve real-world and mathematical problems involving the surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**EnVision: Unit 8 – Solve Problems Involving Geometry** • Solve Problems Involving Surface Area (8.8) **Illustrative Mathematics:** • "Angles, Triangles, and Prisms" -- grade 7, unit 7 **MARS:** • =="Designing a 3D product in 2D: A Sports Bag"== ==Pearson Success Net== ==Khan academy==
Week 6	Review / Test for 3-D Figures	[7-G6] Solve real-world and mathematical problems involving the surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms.	**Note:** Time is reserved for review and test of 3-D figures

Week 7	Basic Angle Relationships	[7-G5] Use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.	**EnVision: Unit 8 – Solve Problems Involving Geometry** • Solve Problems Using Angle Relationships (8.4) **Illustrative Mathematics:** • "Angles, Triangles, and Prisms" -- grade 7, unit 7 **MARS:** • "Applying Angle Theorems" ==Pearson Success Net== ==Khan academy==
Week 8	Basic Angle Relationships Review/Test	[7-G5] Use facts about supplementary, complementary, vertical, and adjacent angles in a multistep problem to write and solve simple equations for an unknown angle in a figure.	**Illustrative Mathematics:** • "Angles, Triangles, and Prisms" -- grade 7, unit 7 **Note:** Time is reserved in this week for review and test of Angle Relationships
Week 9	Catch-up	Use this time to catch up due to remediation, testing, weather, sickness, ect.	*Activities this week may depend on individual school schedule / quarterly test requirements.