

PAP 7th Grade Curriculum Bundle #3

Title	Suggested Dates
Rational Numbers and Integers All Operations, Squares & Square Roots, Order of Operations, Scientific Notation	October 5 – October 23 (14 days)

Big Idea/Enduring Understanding	Guiding Questions
Multiplication does not always make a larger quantity. Division does not always make a smaller quantity.	<ol style="list-style-type: none"> 1. Does multiplication always result in a product larger than either factor? Explain. 2. Does division always result in a quotient smaller than the dividend and divisor? Explain. 3. How would you decide whether the product of three or more numbers is positive or negative?
Exponents represent repeated multiplication of the base number, not the base number multiplied by the exponent.	<ol style="list-style-type: none"> 1. How is a^n different from $a * n$? 2. For what situations would you want to use exponents to write a number in scientific notation? Why is scientific notation helpful?
Square roots are the length of the side of a square.	<ol style="list-style-type: none"> 1. What is the relationship between the area of a square and the side lengths of the square? 2. What methods can be used to estimate the values of square roots of whole numbers?
The result of a series of operations is impacted by the order in which the operations are performed. There is a conventional order of operations that produces a standard outcome for a given expression.	<ol style="list-style-type: none"> 1. What is an example of an expression where the use of parentheses changes the result of a computation? 2. Why do we need a conventional order of operations?

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)	
<p>7.2 Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.</p> <p>7.2C use models, such as concrete objects, pictorial models, and number lines, to add, subtract, multiply, and divide integers and connect the actions to algorithms</p>	<ul style="list-style-type: none"> • number line-vertical and horizontal • two color counters • color tiles • positive and negative signs • applications such as altitude, temperature, profits/loss, deposits/withdrawals • Multiply and Divide 	<p>CMP2 Accentuate the Negative Pearson Investigation 3</p>	<p>PH Textbook (8th) 1.4</p> <p>PH Textbook (7th) 1.8a – 1.8</p> <p>LTF Diagnostic Unit 1</p> <p>AIRR 8th grade Activity #58-60</p>

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			<p>Kamico 7th Grade Match Point Activity</p> <p>BrainPop.Com Adding & Subtracting Integers</p> <p>Understanding Math: Understanding Integers: Topic 6, Topic 7, Topic 8</p>
<p>8.2 Number, operation, and quantitative reasoning. The student selects and uses appropriate operations to solve problems and justify solutions.</p> <p>8.2A select appropriate operations to solve problems involving rational numbers and justify the selections</p>	<ul style="list-style-type: none"> • choose correct expression/equation for a problem situation • explain which operation to use and justify its use • Recognize the correct order of operations 		<p>Kamico- Developmental Series Math 8 Book 1 pg 62-72</p> <p>Understanding Math Understanding Integers: Topic 9</p> <p>AIRR 8th grade Activity #56-57</p>
<p>8.2 Number, operation, and quantitative reasoning. The student selects and uses appropriate operations to solve problems and justify solutions.</p> <p>8.2B use appropriate operations to solve problems involving rational numbers in problem situations</p>	<ul style="list-style-type: none"> • use multiple operations in a problem (+, -, x, /) • solve multi-step problems • integers (all 4 operations) • rationals (all 4 operations) • use real-life problems 		<p>AIRR 8th grade Activity #58-70</p> <p>Accelerated Curriculum for Mathematics 8th Grade Unit 1 Lesson 4 pg 45-62</p> <p>Closing the Distance 7th Lesson 5 pg 73-92</p> <p>Closing the Distance 8th Lessons 2-3 pg 19 - 48</p>

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<p>7.1 Number, operation, and quantitative reasoning. The student represents and uses numbers in a variety of equivalent forms.</p> <p>7.1C represent squares and square roots using geometric models</p>	<ul style="list-style-type: none"> • use positive whole numbers • convert between squares and square roots using pictorial representation (tested pictorially) • describe model (example: 10 rows of 10 squares) 		<p>PH Textbook (8th) 2.7, 3.1</p> <p>PH Textbook (7th) 2.1, 8.6</p> <p>Closing the Distance 7th Lesson 2 pg 23 – 37</p> <p>Kamico 7th Grade Scoot, Root, & Square ‘Em Activity</p> <p>AIRR Grade 7 Activities #45-51</p> <p>Understanding Math: Understanding Exponents: Topic 5</p>
<p>8.1 Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations.</p> <p>8.1C approximate (mentally and with calculators) the value of irrational numbers as they arise from problem situations (such as π, $\sqrt{2}$)</p>	<ul style="list-style-type: none"> • geometric problems using the square root of a number • state answer as a range • approximate a square root to the nearest tenths place • convert between squares and square roots • arrange square roots on a number line • Use squares up to $25^2=625$ and corresponding square root 		<p>PH Textbook (8th) 3-1 Pg 106</p> <p>Understanding Math Understanding Exponents: Topic 5</p> <p>AIRR 8th grade Activity #41-48</p> <p>LTF An Interesting Limit pg 142-147 (updated version on-line)</p>
<p>8.1 Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations.</p> <p>8.1E compare and order real numbers with a calculator</p> <p>Note: This is a new TEKS for 8th grade this year</p>	<ul style="list-style-type: none"> • Use calculator to convert different forms of numbers into the same form to compare • Use calculators to convert decimals into fractions, and fractions into decimals 		<p>Closing the Distance 8th Lesson 1 pg 3 – 18 (will need to add some irrational numbers)</p>

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<p>Note: All real numbers here.</p> <p>7.2 Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.</p> <p>7.2E simplify numerical expressions involving order of operations and exponents</p>	<ul style="list-style-type: none"> • use multiple symbols for all operations • use multiple symbols for “grouping symbols” • use integers and rationals 	<p>CMP2 Accentuate the Negative Pearson Investigation 4</p>	<p>PH Textbook (8th) Chapter 1-1, 2-7</p> <p>PH Textbook (7th) 2.1</p> <p>Kamico 7th Grade 400 Meter Expression Act.</p> <p>AIRR 7th grade Activity #103-107</p> <p>TexTeams AR Making Connections</p> <p>Understanding Math: Understanding Integers: Topic 9</p>
<p>8.1 Number, operation, and quantitative reasoning. The student understands that different forms of numbers are appropriate for different situations.</p> <p>8.1D express numbers in scientific notation, including negative exponents, in appropriate problem situations</p>	<ul style="list-style-type: none"> • convert between standard form and scientific notation • use positive or negative exponents • relate to multiplying and dividing by powers of ten 		<p>PH Textbook (7th) 2.8</p> <p>PH Textbook (8th) 2-8</p> <p>LTF Discovery of Patterns pg 298-303 Negative Exponents pg 304-309 Alien Invasion pg 72-77 (updated version on-line)</p> <p>Accelerated Curriculum for Mathematics 8th Grade Unit 1 Lesson 2 pg 18-30</p> <p>AIRR 8th grade Activity #49-53</p> <p>Understanding Math Understanding Exponents: Topic 4</p>

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<p>7.14, 8.15 Underlying processes and mathematical tools. The student communicates about Grade 7/8 mathematics through informal and mathematical language, representations, and models.</p> <p>7.14A, 8.15A communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models</p>	<ul style="list-style-type: none"> • Identify the appropriate situation for application of a mathematical concept • Ability to explain the process and find the solution to any given problem 		
<p>7.14, 8.15 Underlying processes and mathematical tools. The student communicates about Grade 7/8 mathematics through informal and mathematical language, representations, and models.</p> <p>7.14B, 8.15B evaluate the effectiveness of different representations to communicate ideas</p>	<ul style="list-style-type: none"> • Students generate multiple methods of problem solving and determine the most effective method 		
<p>7.15, 8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions.</p> <p>7.15A, 8.16A make conjectures from patterns or sets of examples and nonexamples</p>	<ul style="list-style-type: none"> • Discover a pattern and describe the rule 		
<p>7.15, 8.16 Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions.</p> <p>7.15B, 8.16B validate his/her conclusions using mathematical properties and relationships.</p>	<ul style="list-style-type: none"> • Prove or disprove a method 		