

## 7<sup>th</sup> Grade Math Curriculum Bundle # 5

<b>Title</b>	<b>Suggested Dates</b>
Finish Exponents, Square Roots, and Order of Operations; Start Rules, Solving Equations and nth Term	November 16 – December 4 (12 days)

<b>Big Idea/Enduring Understanding</b>	<b>Guiding Questions</b>
Exponents represent repeated multiplication of the base number.	1. How is $a^n$ different from $a * n$ ?
The square root of a number, $n$ , can be represented by the length of the side of a square with area = $n$ .	1. How can you estimate the square root of a number?
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.	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?
Solving an equation means finding the value of the variable that makes the number sentence mathematically true.	1. What is a process you could use to determine the value of the variable in the model of an equation?
A variable in a formula is the stage/process/position number. An important relationship in a sequence of numbers is between the term and the value of the term.	1. What is the importance of the variable in an expression or equation? 2. How would you determine the formula from which a given sequence of numbers is built?

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.

<b>Knowledge &amp; Skills with Student Expectations</b>	<b>District Specificity/Examples</b>	<b>Suggested Resources (See Note Above)</b>
<p><b>7.2 Number, operation, and quantitative reasoning. The student adds, subtracts, multiplies, or divides to solve problems and justify solutions.</b></p> <p>7.2E simplify numerical expressions involving order of operations and exponents</p>	<ul style="list-style-type: none"> <li>• use multiple symbols for all operations</li> <li>• use multiple symbols for “grouping symbols”</li> <li>• use integers</li> </ul>	<p><b>PH Textbook</b> Chapter 1.9</p> <p><b>AIRR Grade 7</b> Activities #1-3-107</p> <p><b>Kamico 7<sup>th</sup> Grade</b> 400 Meter Expression Act. Pg. 125</p> <p><b>TexTeams AR</b> Making Connections</p> <p><b>Understanding Math:</b> Understanding Integers: Topic 9</p>

## 7<sup>th</sup> Grade Math Curriculum Bundle # 5

<p><b>7.1 Number, operation, and quantitative reasoning. The student represents and uses numbers in a variety of equivalent forms.</b></p> <p>7.1C represent squares and square roots using geometric models</p>	<ul style="list-style-type: none"> <li>• use positive whole numbers</li> <li>• convert between squares and square roots using pictorial representation (tested pictorially)</li> <li>• describe model (example: 10 rows of 10 squares)</li> <li>• Use examples with other exponents (example: <math>5^3 = 5*5*5</math>)</li> </ul>		<p><b>PH Textbook</b> Chapter 8.6</p> <p><b>Kamico 7<sup>th</sup> Grade</b> Scoot, Root, &amp; Square 'Em Activity pg. 36</p> <p><b>AIRR Grade 7</b> Activities 45-51</p> <p><b>Understanding Math:</b> Understanding Exponents: Topic 5</p>
<p><b>7.4 Patterns, relationships, and algebraic thinking. The student represents a relationship in numerical, geometric, verbal, and symbolic form.</b></p> <p>7.4C use words and symbols to describe the relationship between the terms in an arithmetic sequence (with a constant rate of change) and their positions in the sequence</p> <p>Note: Continued in Bundle 6</p>	<ul style="list-style-type: none"> <li>• determine the <math>n^{\text{th}}</math> term in a pattern in table or list</li> <li>• connect term number with the position in the sequence.</li> <li>• use the <math>n^{\text{th}}</math> rule to find a specific term</li> <li>• generate an expression to describe a sequence (verbal and nonverbal)</li> <li>• use both vertical and horizontal tables</li> </ul>	<p><b>CMP2 Moving Straight Ahead</b> Pearson Investigation 3.2 &amp; 3.3</p>	<p><b>PH Textbook</b> 9.2 through 9.4</p> <p><b>Kamico 7<sup>th</sup> Grade</b> Sequential Crossing pg. 241</p> <p><b>AIRR Grade 7</b> Activities #169-180</p> <p><b>Tex Teams (Algebraic Reasoning)</b> Stretching Sequencing Activity</p> <p><b>Bonnie McNemar</b> 4 corner design/tile patterns</p>
<p><b>7.5 Patterns, relationships, and algebraic thinking. The student uses equations to solve problems.</b></p> <p>7.5A use concrete and pictorial models to solve equations and use symbols to record the actions</p> <p>Note: Keys for the models are very important. They change with each problem! Continued in Bundle 6</p>	<ul style="list-style-type: none"> <li>• solve equations with two variables (MODELS only)</li> <li>• solve one and two-step equations, with models, using positive whole numbers only</li> <li>• solving equations with variables on both sides using models</li> <li>• models using balance scales, algebra tiles, cups and beans, or other symbols</li> </ul>		<p><b>PH Textbook</b> Chapter 4.2 through 4.3</p> <p><b>AIRR Grade 7</b> Activities #181-188</p> <p><b>Kamico 7<sup>th</sup> Grade</b> Symbol Slide pg. 248</p> <p><b>Region IV Grade 7</b> Concrete Models to Solve Equations Activity</p> <p><b>Understanding Math</b></p>

## 7<sup>th</sup> Grade Math Curriculum Bundle # 5

			<p>Understanding Equations: Topic 2, Topic 3</p> <p><a href="#">Interactive site solving equations</a></p> <p><a href="#">Equation Buster</a></p>
<p><b>7.5 Patterns, relationships, and algebraic thinking. The student uses equations to solve problems.</b></p> <p>7.5B formulate problem situations when given a simple equation and formulate an equation when given a problem situation</p> <p><a href="#">Note: Continued in Bundle 6</a></p>	<ul style="list-style-type: none"> <li>• translate word phrases to algebraic expressions</li> <li>• translate word phrases to algebraic equations</li> <li>• write a real-world situation given an equation or expression</li> <li>• given a real-world situation write an equation/expression</li> </ul>		<p><b>PH Textbook</b> Chapter 9.6</p> <p><b>AIRR Grade 7</b> Activities #189-197</p> <p><b>Kamico 7<sup>th</sup> Grade</b> Stellar Stories pg. 262</p>
<p><b>7.14 Underlying processes and mathematical tools. The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.</b></p> <p>7.14A communicate mathematical ideas using language, efficient tools, appropriate units, and graphical, numerical, physical, or algebraic mathematical models</p> <p><a href="#">Note: Ongoing throughout bundles</a></p>	<p>Process skill to be addressed with relevant content</p>		<p><b>Kamico 7<sup>th</sup> Grade</b> Mathematician's Digest Activity</p> <p><b>AIRR Grade 7</b> Activities #356-357</p>
<p><b>7.14 Underlying processes and mathematical tools. The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.</b></p> <p>7.14B evaluate the effectiveness of different representations to communicate ideas</p> <p><a href="#">Note: Ongoing throughout bundles</a></p>	<p>Process skill to be addressed with relevant content</p>		