

Grade: 5 Unit: 3	Operations and Algebraic Thinking	3 Weeks
---------------------	-----------------------------------	---------

Progression	
4 <sup>th</sup> Grade	Students learned to multiply and divide whole numbers, and show patterns.
<b>5<sup>th</sup> Grade</b>	<b>Students will learn to evaluate and write expressions. Students will learn to analyze patterns and relationships.</b>
6 <sup>th</sup> Grade	Students will extend their work on numerical expressions with exponents.

**STUDENT LEARNING GOALS**

**Mathematics Standards** (*Appendices A & B*)

**CCSS.MATH.CONTENT.5.OA.A.1** Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

**CCSS.MATH.CONTENT.5.OA.A.2** Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation "add 8 and 7, then multiply by 2" as  $2 \times (8 + 7)$ . Recognize that  $3 \times (18932 + 921)$  is three times as large as  $18932 + 921$ , without having to calculate the indicated sum or product.

**CCSS.MATH.CONTENT.5.OA.B.3** Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule "Add 3" and the starting number 0, and given the rule "Add 6" and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.

*(Include MP1 and MP6 for all units for 2014-2015)*

[MP1](#): Make sense of problems and persevere in solving them.

[MP6](#): Attend to Precision

<i>Interdisciplinary Standards</i>		<b>Key Vocabulary</b>	
<b>Technology Integration</b> <i>(Appendix C)</i>	<b>21<sup>st</sup> Century Skills</b> <i>(Appendix D)</i>	Coordinate Plane Corresponding Terms Evaluate Expression	Ordered Pair Parentheses
IS1. Information Strategies IS2. Information Use	TCS1. Use of Information TCS5. Problem Solving		

<p><b>Enduring Understandings</b></p> <ul style="list-style-type: none"> <li>I can evaluate expressions, for example: <math>48 \div (6 + 10) = 3</math></li> <li>I can write expressions, for example: “subtract 5 from 12, then multiply by 4” can be written as <math>(12 - 5) \times 4</math></li> <li>I can find the relationship between two sequences, for example: <ul style="list-style-type: none"> <li>Sequence 1: 0,2,4,6,8,...</li> <li>Sequence 2: 0,8,16,24,32...</li> </ul> Each term in sequence 2 is 4 times the corresponding term in sequence 1.</li> <li>I can create ordered pairs for two sequences and graph the relationship on the coordinate plane, for example: ordered pairs for sequence 1 and sequence 2 above are (0,0), (2,8), (4, 16), (6,24), (8,32)</li> </ul>	<p><b>Essential Questions</b></p> <ul style="list-style-type: none"> <li>How do you evaluate an expression?</li> <li>How do you write expressions?</li> <li>How do you find relationships between two sequences?</li> <li>How do you create ordered pairs for two sequences and graph the relationship?</li> </ul>
---	--

Assessment Plan	
<p><b>Summative Assessment(s)/Performance Based Assessments including 21<sup>st</sup> Century Learning</b></p> <p>RCC Interim Assessment, Student p.184-185 RCC Performance Task, Student p.186</p>	<p><b>Formative and Diagnostic Assessment(s)</b></p> <p>STAR Math Assessment (Fall) RCC Embedded Tasks and Assessments</p>

Learning Plan Components	
Text	<b>Ready Common Core Mathematics Instruction 2</b> , 2014, Curriculum Associates, ISBN: 978-0-7609-8637-0
Print	<b>Ready Common Core Mathematics Teacher Resource Book 2</b> , 2014, Curriculum Associates, ISBN: 978-0-7609-8644-8
Electronic	<a href="http://www.teacher-toolbox.com">www.teacher-toolbox.com</a> <a href="http://www.stratfordmath.wikispaces.com">www.stratfordmath.wikispaces.com</a> <a href="http://www.xtramath.org">www.xtramath.org</a>
<b>Week 1</b>	Students will: <ul style="list-style-type: none"> <li>Evaluate and write expressions containing parentheses</li> <li>Write numerical expressions containing parentheses</li> <li>Interpret numerical expressions without evaluating them</li> </ul>

Lessons	Tasks / Activities	Worksheets	Technology
RCC Lesson 19: Evaluate and Write Expressions (TRB p. 183-192)  PEMDAS Step by Step OA Lesson Step by Step OA Guided Lesson	Assessment Task - Card Collection Assessment Task – Boxes of Baseball Cards Assessment Task – Math Class Expressions Activity – Equations Match Activity – Numerical Expressions Clock Activity – Target number Dash	MI p. 164-173 PPS p. 193-202 HW 1- 5	RCC Teacher-Toolbox Numerical Expressions and Order of Operations - Level F <a href="#">Evaluate Expressions 2</a> <a href="#">Variables</a> <a href="#">Create Your Own WS Order of Operations</a> <a href="#">AdaptEd Mind Game</a>

<b>Week 2</b>	Students will: <ul style="list-style-type: none"> <li>• Generate a numeric sequence given a rule</li> <li>• Identify apparent relationships between corresponding terms of two sequences</li> <li>• Graph ordered pairs on coordinate plane</li> </ul>		
<b>Lessons</b>	<b>Tasks / Activities</b>	<b>Worksheets</b>	<b>Technology</b>
RCC Lesson 20: (TRB p. 193-202)  Patterns Lesson Patterns Guided Lesson	Assessment Task – Animal Speed Assessment Task – Cookie Bake Activity – Addition on the Coordinate Plane Activity – Subtraction on the Coordinate Plane Activity – Comic Books for Sale Activity – What’s the Pattern	MI p. 174-183 PPS p. 203-212 HW 1-3	RCC Teacher-Toolbox <a href="#">Background Knowledge for Teacher</a> <a href="#">Number Cracker Game</a> <a href="#">Spooky Sequences</a>
<b>Week 3</b>	Students will: <ul style="list-style-type: none"> <li>• Demonstrate mastery of unit objectives</li> </ul>		
<b>Summative Assessment</b>		<b>Performance Task</b>	
RCC Unit 3 Interim Assessment - Practice and Problem Solving p. 213-226 -Student p. 184-185 -Scoring Guide (p. 203)		RCC Unit 3 Performance Task -Student p. 186 -Rubric (p. 20-205)	