

## Unit 3: Computing with Whole Numbers

<b>Unit #:</b>	APSDO-00017499	<b>Duration:</b>	16.0 Day(s)	<b>Date(s):</b>	11-03-2016
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**Grades:**

3

**Subjects:**

Mathematics

### Unit Focus

In this unit, students focus on computing with whole numbers by using place value to round to the nearest 10 and 100 and fluently adding and subtracting within 1000. Students will identify arithmetic patterns which will help them solve two step problems using the four operations. They will use estimation strategies to assess reasonableness in mathematical situations. Primary instructional materials for this unit include On Core and Everyday Mathematics.

### Stage 1: Desired Results - Key Understandings

Established Goals	Transfer	
<p><b>Common Core</b>  <i>Mathematics: 3</i></p> <ul style="list-style-type: none"> <li>• Use place value understanding to round whole numbers to the nearest 10 or 100.  <i>CCSS.MATH.CONTENT.3.NBT.A.1</i></li> <li>• Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.  <i>CCSS.MATH.CONTENT.3.NBT.A.2</i></li> <li>• Solve two-step word problems using the four operations. Represent these problems using equations with a letter</li> </ul>	<p><b>T1</b> (T20) Compose and decompose numbers to establish relationships, perform operations, and solve problems.</p> <p><b>T2</b> (T10) Describe, classify, and compare objects/numbers and sets of objects/numbers.</p> <p><b>T3</b> (T22) Describe and/or solve problems using algebraic expressions, equations, inequalities, and functions.</p> <p><b>T4</b> (T53) Articulate how mathematical concepts relate to one another in the context of a problem or in the theoretical sense.</p> <p><b>T5</b> (T50) Based on an understanding of any problem, initiate a plan, execute it and evaluate the reasonableness of the solution.</p> <p><b>T6</b> (T51) Examine alternate methods to accurately and efficiently solve problems.</p>	
	<b>Meaning</b>	
	<b>Understandings</b>	<b>Essential Questions</b>

<p>standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. <i>CCSS.MATH.CONTENT.3.OA.D.8</i></p> <ul style="list-style-type: none"> <li>Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. <i>CCSS.MATH.CONTENT.3.OA.D.9</i></li> <li>Construct viable arguments and critique the reasoning of others. <i>CCSS.MATH.MP.3</i></li> <li>Reason abstractly and quantitatively. <i>CCSS.MATH.MP.2</i></li> </ul>	<p><b>U1</b> (U101) When objects/numbers are combined, mathematical rules guarantee the resulting quantity.</p> <p><b>U2</b> (U102) The value of a number is quantified by the placement of its digits.</p> <p><b>U3</b> (U200) Numbers, objects, or elements may repeat in predictable ways (patterns).</p> <p><b>U4</b> (U203) Certain mathematical manipulations preserve the relationship in an expression or equation, even though they change the representation.</p> <p><b>U5</b> (U204) Substituting a correct value(s) for an unknown makes the mathematical statement/relationship true.</p> <p><b>U6</b> (U511) Placing a problem in a category gives you a familiar approach to solving it.</p> <p><b>U7</b> (U521) Evaluating arguments creates clarity about a problem, its model, and the viability of a solution.</p>	<p><b>Q1</b> (Q104) How do I use my number sense to perform operations?</p> <p><b>Q2</b> (Q200) What rule or pattern can help me simplify the expression or solve this problem?</p> <p><b>Q3</b> (Q202) What value(s) can I use/substitute to make this relationship true?</p> <p><b>Q4</b> (Q511) What characteristics/attributes define this type of problem?</p> <p><b>Q5</b> (Q520) Does the argument/thought process/logic make sense?</p>
<b>Acquisition of Knowledge and Skill</b>		
<b>Knowledge</b>	<b>Skills</b>	
	<p><b>S1</b></p> <p>Use place value to round to nearest 10 and 100</p> <p><b>S2</b></p> <p>Fluently add and subtract within 1000</p> <p><b>S3</b></p> <p>Identify arithmetic patterns (including addition and multiplication tables)</p> <p><b>S4</b></p> <p>Solve two step problems using the four operations</p> <p><b>S5</b></p>	

		<p>Represent problems using equations with a letter standing for the unknown quantity</p> <p><b>S6</b></p> <p>Use estimation to assess reasonableness</p>
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