

Unit 1: Place Value and Addition and Subtraction

Unit #:	APSDO-00017467	Date(s)	
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Grade(s): 4

Subject(s): Mathematics

Course(s): GR. 4 - MATH

Unit Focus

In this unit, students will use their understanding of place value to 1,000,000 to identify, order, compare and round numbers. Students will read and write numbers in standard, expanded, and word form. They will add and subtract up to 6-digit whole numbers with regrouping. Primary instructional materials for this unit include On Core and Everyday Mathematics.

Stage 1: Desired Results - Key Understandings

Established Goals	Transfer		
<p>Common Core <i>Mathematics: 4</i></p> <ul style="list-style-type: none"> • Generalize place value understanding for multi-digit whole numbers. <i>()</i> <ul style="list-style-type: none"> ○ Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division. <i>(CCSS.MATH.CONTENT.4.NBT.A.1)</i> • Generalize place value understanding for multi-digit whole numbers. <i>()</i> <ul style="list-style-type: none"> ○ Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record 	<p><i>What kinds of long-term, independent accomplishments are desired? Students will be able to independently use their learning to...</i></p> <ul style="list-style-type: none"> T1 (T20) Compose and decompose numbers to establish relationships, perform operations, and solve problems. T2 (T10) Describe, classify, and compare objects/numbers and sets of objects/numbers. T3 (T13) Move from one representation to another without changing the quantity. T4 (T50) Based on an understanding of any problem, initiate a plan, execute it and evaluate the reasonableness of the solution. T5 (T53) Articulate how mathematical concepts relate to one another in the context of a problem or in the theoretical sense. T6 (T51) Examine alternate methods to accurately and efficiently solve problems. T7 (T52) Use appropriate tools strategically to deepen understanding of mathematical concepts. 		
	Meaning		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">Understanding(s)</td> <td style="width: 50%; text-align: center;">Essential Question(s)</td> </tr> </table>	Understanding(s)	Essential Question(s)
Understanding(s)	Essential Question(s)		

<p>the results of comparisons. (CCSS.MATH.CONTENT.4.NBT.A.2)</p> <ul style="list-style-type: none"> • Generalize place value understanding for multi-digit whole numbers. () <ul style="list-style-type: none"> ○ Use place value understanding to round multi-digit whole numbers to any place. (CCSS.MATH.CONTENT.4.NBT.A.3) • Use place value understanding and properties of operations to perform multi-digit arithmetic. () <ul style="list-style-type: none"> ○ Fluently add and subtract multi-digit whole numbers using the standard algorithm. (CCSS.MATH.CONTENT.4.NBT.B.4) 	<p><i>What specifically do you want students to understand? What inferences should they make? Students will understand that...</i></p> <p>U1 (U203) Certain mathematical manipulations preserve the relationship in an expression or equation, even though they change the representation.</p> <p>U2 (U103) The same value can be represented in multiple ways.</p> <p>U3 (U102) The value of a number is quantified by the placement of its digits.</p> <p>U4 (U502) Effective problem solvers identify and apply an appropriate model, tool, or strategy.</p> <p>U5 (U530) Every problem belongs to a category of problems that has a similar structure and set of characteristics; which means it can be solved using a similar model.</p>	<p><i>What thought-provoking questions will foster inquiry, meaning making, and transfer? Students will keep considering...</i></p> <p>Q1 (Q200) What rule or pattern can help me simplify the expression or solve this problem?</p> <p>Q2 (Q203) What is the relationship between/among these values?</p> <p>Q3 (Q103) What is the value of this number/relationship and how can I represent it in different ways?</p> <p>Q4 (Q104) How do I use my number sense to perform operations?</p> <p>Q5 (Q500) What is a reasonable estimate?</p> <p>Q6 (Q503) What strategies/approaches are best for this problem?</p> <p>Q7 (Q532) Which model best represents this problem?</p>
Acquisition of Knowledge and Skill		
Knowledge		Skill(s)
<p><i>What facts and basic concepts should students know and be able to recall? Students will know...</i></p> <hr/>		<p><i>What discrete skills and processes should students be able to use? Students will be skilled at...</i></p> <p>S1 Identify and compare digits in a number based on place value (up to 1,000,000)</p> <p>S2 Write the number value for a digit within the actual number</p> <p>S3 Read and write the number in standard, expanded, and word form</p> <p>S4 Compare and order numbers up to 1,000,000 place value, using symbols $<$, $>$, $=$</p> <p>S5 Round numbers up to different place values, up to the nearest 1,000,000 place</p> <p>S6 Add and subtract multidigit whole numbers</p>