

Core Content

Cluster Title: Use place value understanding and properties of operations to add and subtract.

Standard 7: Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that, in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones, and sometimes it is necessary to compose or decompose tens or hundreds.

MASTERY Patterns of Reasoning:

Conceptual:
 Students will understand computation strategies relating to place value (hundreds and hundreds, tens and tens, ones and ones).
 Students will understand how to compose and decompose large numbers in addition and subtraction.
 Students will understand the principle of decomposing a number with relation to subtraction (commonly known as regrouping).
 Students will understand that ten ones can be composed into a ten in the ten’s place. Similarly, ten tens can be composed into a hundred in the hundreds place (this is commonly known as regrouping).
 Students will understand how to strategically use compensation to make friendly numbers.
 Students will understand how to use incremental adding (i.e., breaking one number into tens and ones).

Procedural:
 Students can solve addition and subtraction problems (up to 1,000) in both vertical and horizontal form.
 Students can use more than one strategy to solve a given equation.
 Students can demonstrate the relationship between addition and subtraction.

Representational:
 Students can represent sums and differences in oral and written form.
 Students can model addition and subtraction problems and their relationships using manipulatives.

Supports for Teachers

Critical Background Knowledge

Conceptual:
 Concepts taught in Standard 5 must be mastered prior to teaching this standard.
 Students should already have a solid understanding of place value terms and meanings, and be able to add and subtract fluently within 100 before moving onto larger numbers.

<p>Procedural: Students can show how to properly line numbers up in the correct place value column when writing addition and subtraction problems in vertical form. Students can use a variety of strategies when adding and subtracting one- and two-digit numbers.</p>	
<p>Representational: Model two-digit addition and subtraction with or without composing or decomposing numbers. Show a solution for a two-digit problem.</p>	
<p>Academic Vocabulary and Notation compose, decompose, compensation, incremental adding/subtracting, regrouping</p>	
<p>Instructional Strategies Used</p>	
<p>Use manipulatives to model addition and subtraction problems.</p> <p>Students will use a deck of number cards (0–9). Playing with partners, each student will draw three cards and create a number of his/her choice. Partners then add their two numbers together, and record the problem and answer in their math journal or on a response sheet. After students record the answer in their journals, they will model the numbers using base ten blocks to self-check for the correct answer. The game is played the same way with subtraction, but with the consideration of place value and understanding that in subtraction, the number with the greater value is placed in the top position.</p>	
<p>Resources Used</p> <p>Sharmat, Marjorie W. <i>The 329th Friend</i>. Simon and Schuster, 1992.</p> <p>Kras, Sara Louise. <i>Animal Giants</i>. Cooper Square Publishing, 2005.</p> <p>Ochitree, Diane. <i>Cats Add Up (Hello Reader Math Level 1)</i>. Cartwheel Books, 1998.</p>	
<p>Assessment Tasks Used</p>	
<p>Skill-Based Task: Give students an addition or subtraction problem (such as $482 + 326 =$).</p> <p>Students will choose their preferred strategy and solve; they will also relate the strategy to a written method and explain the steps taken to solve the problem.</p>	<p>Problem Task: The second grade collected 235 cans for the food drive. The third grade collected 137 cans. How many cans did the second and third grades collect all together? How many more cans did the second grade class collect than the third grade? How many more cans do they need to get to 500? Justify your answer.</p>