



Topic C

Strategies for Solving *Change* or *Addend Unknown* Problems

1.3B, 1.3D, 1.3E, 1.3F, 1.5D, 1.5E, 1.5G, 1.5F

Focus Standards:	1.3B	Use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as $2 + 4 = []$; $3 + [] = 7$; and $5 = [] - 3$.	
	1.3D	Apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10.	
	1.3E	Explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.	
	1.3F	Generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20.	
	1.5D	Represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences.	
	1.5E	Understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s).	
	1.5G	Apply properties of operations to add and subtract two or three numbers.	
Instructional Days:	4		
Coherence	-Links from:	GK–M4	Number Pairs, Addition and Subtraction to 10
	-Links to:	G2–M3	Place Value, Counting, and Comparison of Numbers to 1,200
		G2–M5	Addition and Subtraction within 1,000 with Word Problems within 1,000

Topic C provides students with practice solving *add to with change unknown*, *take from with change unknown*, *put together with addend unknown*, and *take apart with addend unknown* word problems (**1.3B, 1.5D**). Drawing on the momentum gained from Topic B, Lesson 22 allows students to attack *put together/take apart with addend unknown* word problems such as, “Maria has 15 baseballs. Eight of them are old, and some of them are brand new. How many brand new baseballs does Maria have?” Students solve these problems using both the counting on strategy and subtraction strategies (**1.3D**).

Lesson 23 allows students to use counting on as it relates to subtraction, take from ten strategies, or the get to ten strategy, as they solve *add to with change unknown* problems (**1.3D, 1.3E, 1.3F, 1.5G**). The get to ten strategy has students solving $12 - 3$ as $12 - 2 - 1$, understanding that decomposing the subtrahend to easily get to the ten yields a simpler, more manageable subtraction problem. It is the way a student can make ten

when there is an unknown addend. It is a step away from counting on, where, rather than counting on by ones, students consider how much it takes to get to ten and then add on the rest to get to the teen number. For many students, the language of get to ten helps them bridge from counting on to a more efficient strategy. Up to this point, make ten for the students has shown both addends, and they are strategic about which number to break apart so that they can bond two numbers to make ten. This is a different, though related, process.

Lesson 24 presents students with *take from with change unknown* problems where they continue to select various strategies for solving. Students again relate various addition strategies to their recently acquired subtraction strategies, but in this new word problem type, the strategies they select and discuss help them better make sense of these problems. Students begin to recognize that although stories may be *take from with change unknown* problems, they can apply many strategies such as counting on, counting back, taking from ten, or getting to ten to accurately solve this challenging problem type.

Topic C closes with Lesson 25, where students move away from the context of story problems to find matching expressions to create true number sentences. They work solely with equations to show and talk about how they would re-represent a given addition or subtraction problem using a different strategy. For example, when given $9 + 6$, students decompose the 6 into 1 and 5 and then can add using their new number sentence, $10 + 5$ (i.e., $9 + 6 = 10 + 5$) (1.5E), using pictures and words.

A Teaching Sequence Toward Mastery of Strategies for Solving *Change or Addend Unknown* Problems

- Objective 1:** Solve *put together/take apart with addend unknown* word problems, and relate counting on to the take from ten strategy. Generate story problems given a number sentence. (Lesson 22)
- Objective 2:** Solve *add to with change unknown* problems, relating varied addition and subtraction strategies. (Lesson 23)
- Objective 3:** Strategize to solve *take from with change unknown* problems. (Lesson 24)
- Objective 4:** Strategize and apply understanding of the equal sign to solve equivalent expressions. (Lesson 25)