



## Topic I

# Decomposition Strategies for Subtraction

1.OA.5, 1.OA.6, 1.OA.4

<b>Focus Standard:</b>	1.OA.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
	1.OA.6	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$ , one knows $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$ ).
<b>Instructional Days:</b>	5	
<b>Coherence</b>	<b>-Links from:</b> GK–M4	Number Pairs, Addition and Subtraction to 10
	<b>-Links to:</b> G2–M4	Addition and Subtraction Within 200 with Word Problems to 100

Similar to Topic E's addition methods, Topic I allows students to learn methods for subtraction that involve subtracting 0 and 1, subtracting the whole number, subtracting one less than the whole number, and using familiar decompositions (5-groups and partners of 10) to conceptualize subtraction as finding a missing part (1.OA.6).

In Lesson 33, students use pictures and simple math drawings to show 0 less and 1 less and construct number sentences (1.OA.5). The discussion in Lesson 34 around what happens each time we take away 0 or 1 with numbers within 10 leads students to an understanding that this same reality remains true with all numbers. Similarly, students explore what happens in both  $n - n$  and  $n - (n - 1)$  situations. They notice, "When I take 5 away from 5, I'm left with zero every time!" and " $5 - 4$  is 1, just like  $6 - 5$  is 1!" Students generalize their understanding: "Any number minus a number that's one less will leave us with just 1!"

In Lesson 35, students relate their knowledge of both doubles and fives to the context of subtraction, where they extract those known facts from given expressions. For instance, when faced with  $8 - 5$ , students access the decomposition of 8 ("I know that 5 and 3 makes 8!") and apply that understanding to help them solve subtraction problems ("So,  $8 - 5$  must be 3!"). Lessons 36 and 37 continue on this explicit decomposition and subtraction connection as students use their knowledge of partners of 10 and partners of 9 to help them solve subtraction stories and equations efficiently. Topic I is full of students using strategies and discussing those strategies and patterns in order to gain fluency and facility with subtraction within 10, and ultimately beyond!

**A Teaching Sequence Towards Mastery of Decomposition Strategies for Subtraction**

**Objective 1:** Model 0 less and 1 less pictorially and as subtraction number sentences.  
(Lesson 33)

**Objective 2:** Model  $n - n$  and  $n - (n - 1)$  pictorially and as subtraction sentences.  
(Lesson 34)

**Objective 3:** Relate subtraction facts involving fives and doubles to corresponding decompositions.  
(Lesson 35)

**Objective 4:** Relate subtraction from 10 to corresponding decompositions.  
(Lesson 36)

**Objective 5:** Relate subtraction from 9 to corresponding decompositions.  
(Lesson 37)