



Topic A

Embedded Numbers and Decompositions

1.OA.1, 1.OA.5

Focus Standard:	1.OA.1	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart and comparing, with unknowns in all positions, e.g., by using objects, drawings and equations with a symbol for the unknown number to represent the problem.
	1.OA.5	Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).
Instructional Days:	3	
Coherence -Links from:	GK–M4	Number Pairs, Addition and Subtraction to 10
	-Links to:	G2–M4 Addition and Subtraction Within 200 with Word Problems to 100

In this first module of Grade 1, students make significant progress towards fluency with addition and subtraction of numbers to 10 (**1.OA.6**). They are presented with opportunities intended to advance them from counting all to counting on, which leads to decomposing and composing addends and total amounts. In Kindergarten, students achieved fluency with addition and subtraction facts to 5. This means they can decompose 5 into 4 and 1, 3 and 2, and 5 and 0. They can do this without counting all. They perceive the 3 and 2 embedded within the 5.

Topic A continues the work of developing this ability with all the numbers within 10 in *put together* situations, with a special focus on the numbers 6, 7, 8, and 9 in 5-group configurations, since recognizing how much a number needs to make 10 is part of the Kindergarten standards (**K.OA.4**) and is easier for most children. Students decompose numbers into two visual sets, or conceptually subitize, and record their decompositions as number bonds. In Lesson 1, students use the 5-group configuration, as this organization allows students to quickly see, or perceptually subitize, the subset of 5. Once they have identified that first subset of 5, they can perceptually subitize the other part:

T: How many dots do you see?

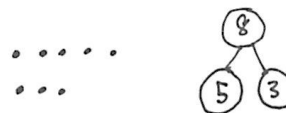
S: 8.

T: What two parts do you see?

S: I see 5 and 3.

T: Did you need to count all the dots?

S: No! I could see the top row was a full five, so I just saw the other part, which was 3.



The teacher then guides students to *count on* from the five to determine the total. This process of conceptual subitizing, or breaking apart the total into two easily identifiable subsets, continues into Lesson 2, as students are presented with dots in varied configurations. As students discuss the different parts they each see within the total and the different ways they're able to break the total apart, they begin to understand that a given quantity can be decomposed in a variety of ways. In Lesson 3, students see and describe *1 more* as $+ 1$. They use the structure of the first addend rather than its cardinality: the number is a unit to which they can add one, or *count on* by one, without recounting. Students now stand on this first embedded number, which lays the foundation for the Level 2 strategy of counting on. Students engage in math discussions throughout the lessons as they share their ways of seeing the embedded numbers and thinking of *1 more* (1.OA.5).

A Teaching Sequence Towards Mastery of Embedded Numbers and Decompositions

Objective 1: Analyze and describe embedded numbers (to 10) using 5-groups and number bonds. (Lesson 1)

Objective 2: Reason about embedded numbers in varied configurations using number bonds. (Lesson 2)

Objective 3: See and describe numbers of objects using *1 more* within 5-groups configurations. (Lesson 3)