Mathematics Curriculum

Topic C

Numbers to 5 in Different Configurations, Math Drawings, and Expressions

K.CC.4ab, K.CC.5, K.OA.3, K.MD.3

Focus Standards:	K.CC.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
		a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.
		b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.
	K.CC.5	Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1–20, count out that many objects.
	K.OA.3	Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1).
Instructional Days:	5	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

Building on the knowledge of Topic B, where they practiced one-to-one counting of objects in a category, students transition to answer *how many* questions of objects and dots in linear, array, circular, and scattered configurations. Topic C begins with counting groups of objects in horizontal rows and vertical columns to 5. To reinforce the understanding that the last number name said tells the number of objects counted, students sort groups of objects by count and match the groups to digit cards.

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Lesson 8 continues with counting to 5 and focuses on the idea that the number of objects counted stays the same regardless of their arrangement or the order in which they were counted. Students count 4 in linear and array formations and show the number 4 on their fingers in different ways.

 or

As they begin to understand that numbers can be represented in different ways, students advance to decomposition of numbers 3, 4, and 5. They are asked to find hidden partners in 3, 4, and 5 (representing these numbers as a combination of two smaller numbers). For example, "I found 3 and 2 and 4 and 1 hiding inside my 5." This concept is extended in Lesson 10 with the more difficult counting configurations, circular and scattered. Finally, the topic closes with the decomposition of the numbers 3, 4, and 5 using the expression ___ + ___. Emphasis is not placed on the expressions and equations or using them in isolation from the concrete and pictorial—they are simply included to show another representation of decompositions alongside counters and drawings. The equal sign is not shown until Topic D.

A Teaching Sequence Toward Mastery of Numerals to 5 in Different Configurations, Math Drawings, and Expressions
Objective 1: Sort by count in vertical columns and horizontal rows (linear configurations to 5). Match to numerals on cards. (Lesson 7)
Objective 2: Answer *how many* questions to 5 in linear configurations (5-group), with 4 in an array configuration. Compare ways to count five fingers. (Lesson 8)
Objective 3: Within linear and array dot configurations of numbers 3, 4, and 5, find *hidden partners.* (Lesson 9)
Objective 4: Within circular and scattered dot configurations of numbers 3, 4, and 5, find *hidden partners.* (Lesson 10)
Objective 5: Model decompositions of 3 with materials, drawings, and expressions. Represent the decomposition as 1 + 2 and 2 + 1. (Lesson 11)