Topic D

The Concept of Zero and Working with Numbers 0–5

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

Focus Standard:	K.CC.3	Write numbers from 0 to 20. Represent a number of objects with a written numeral 0–20 (with 0 representing a count of no objects)**.**
	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.
Instructional Days:	5	
Coherence -Links from:	GPK–M3	Counting to 10
-Links to:	G1–M1	Sums and Differences to 10

Up until this point in the module, students have been engaged in meaningful, varied counting activities, learning that quantities of objects have a numerical value. Topic D opens with exploring the meaning of zero in the context of groups of objects. In Topics A–C, students were asked only to identify numerals to 5. The first two lessons in this topic introduce writing the numerals 0–3. Using the understanding that numbers correspond to a value, students can now order numbers in relation to a counting sequence.

Lesson 14 builds upon the decomposition work in Lesson 11 of Topic C. Students see both the expression 2 + 1 (Topic C) and the equation 3 = 2 + 1 (Topic D) as describing a stick of three cubes decomposed into two parts (**K.OA.3**). The difference now is that the equal sign is shown. Take note that the sum is written first to demonstrate something whole being separated into two parts as opposed to two parts being joined to make a whole.

Lesson 15 extends ordering and writing numerals to 5. This topic culminates with students applying their decomposition knowledge with totals of 4 and 5 without equations. For example, five bananas are in the bowl. Two are yellow, and three are green. Draw the bananas.

A Teaching Sequence Toward Mastery of the Concept of Zero and Working with Numbers 0–5	
Objective 1:	**Understand the meaning of zero. Write the numeral 0. (Lesson 12)**
Objective 2:	**Order and write numerals 0–3 to answer *how many* questions. (Lesson 13)**
Objective 3:	**Write numerals 1–3. Represent decompositions with materials, drawings, and equations, 3 = 2 + 1 and 3 = 1 + 2. (Lesson 14)**
Objective 4:	**Order and write numerals 4 and 5 to answer *how many* questions in categories; sort by count. (Lesson 15)**
Objective 5:	**Write numerals 1–5 in order. Answer and make drawings of decompositions with totals of 4 and 5 without equations. (Lesson 16)**