**New York State Common Core** 



## **Mathematics Curriculum**



## Topic F Addition with Totals of 9 and 10

K.OA.2

Focus Standard:	K.OA.2	Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.
Instructional Days:	4	
Coherence -Links from	n: GPK–M5	Addition and Subtraction Stories and Counting to 20
-Links to:	G1–M1	Sums and Differences to 10

Topic F asks students to connect their understanding of number pairs for 9 and 10 to addition expressions and equations. Core Fluency Practice Sets and Sprints are introduced in this topic to give students practice adding and subtracting numbers to 5 quickly and accurately (**K.OA.5**).

In Lessons 29 and 30, students pictorially represent composition and decomposition addition stories using 5-group drawings and equations with no unknown. Decomposition: "There were 9 flowers. 5 were red, and 4 were yellow." Composition: "Bob picked 6 red flowers. Then, he picked 4 yellow flowers. Now he has 10 flowers."

Lesson 31 has opportunities for students to solve *add to with result unknown* and *put together with total unknown* problems with totals of 9 and 10. Both of these problem types are represented by the same equation (A + B = C) with the difference being that *add to with result unknown* problem types embed an action within the story. Conversely, *put together with total unknown* problem types join parts with no action. The latter is a more complex problem type for kindergartners to consider because there is no movement of one of the parts to support the mental act of joining inherent in addition (e.g., counting on—one at a time—from one part to the next).

The final lesson in the topic deals with the last addition situation for kindergartners—solving *put together* with both addends unknown word problems ( $C = \_\_\_ + \_\_$ ) with totals of 9 and 10 using 5-group drawings, pictures, and equations. All four lessons in this topic correspond to those of Topic C but with totals of 9 and 10.

This topic builds student understanding of addition within 10 while providing practice with multiple addition situations appropriate for kindergartners. Due to the length of this module, there is the option to take a day and a half to administer Topics E and F of the End-of-Module Assessment at the end of Lesson 32. This helps identify students who may need more support and allows more time to reassess these students throughout the module.



Addition with Totals of 9 and 10



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A Teaching Sequence Toward Mastery of Addition with Totals of 9 and 10		
Objective 1:	Represent pictorial decomposition and composition addition stories to 9 with 5-group drawings and equations with no unknown. (Lesson 29)	
Objective 2:	Represent pictorial decomposition and composition addition stories to 10 with 5-group drawings and equations with no unknown. (Lesson 30)	
Objective 3:	Solve <i>add to with total unknown</i> and <i>put together with total unknown</i> problems with totals of 9 and 10. (Lesson 31)	
Objective 4:	Solve <i>both addends unknown</i> word problems with totals of 9 and 10 using 5-group drawings. (Lesson 32)	



Addition with Totals of 9 and 10



