



Topic A

Foundations for Addition and Subtraction Within 20

2.OA.1, 2.OA.2, K.OA.3, K.OA.4, K.NBT.1, 1.OA.6

Focus Standards:	2.OA.1	Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.
	2.OA.2	Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.
Instructional Days:	2	
Coherence -Links from:	G1–M2	Introduction to Place Value Through Addition and Subtraction Within 20
-Links to:	G2–M4	Addition and Subtraction Within 200 with Word Problems to 100
	G3–M2	Place Value and Problem Solving with Units of Measure

In this first module of Grade 2, students make significant progress towards fluency with sums and differences within 20 (**2.OA.2**). Fluency, coupled with a fundamental grasp of place value, rests on three essential skills: 1) knowing number bonds of ten, 2) adding ten and some ones, and 3) knowing the number bonds (pairs) of numbers through ten. Topic A energetically revisits this familiar ground from Kindergarten (**K.OA.3**) and Grade 1 (**1.OA.6**) at a new pace; we move quickly from concrete to pictorial to abstract. All the material included herein can be included in daily fluency work, and should be if students lack fluency with mental strategies.

In Lesson 1, students use ten-frames to model number bonds of ten as they generate addition and subtraction number sentences and solve for the missing part by bonding, counting on, or subtracting. Students record and share number bonds of 10 to review their Grade 1 fluency and understanding. Lesson 2 continues with students revisiting number pairs through 10 and each pair's related facts. Again, students work with ten-frame cards to create number bonds and to determine a corresponding subtraction number sentence. As students play a part-whole game, they practice finding the missing part and decomposing a given quantity in a variety of ways.

The Application Problems in these earlier lessons follow the Concept Development to provide students with the opportunity to discover the connection between the one-step story problems (**2.OA.1**) and the models (i.e., ten-frames, number bonds) and to articulate their observations to classmates.

A Teaching Sequence Towards Mastery of Foundations for Addition and Subtraction Within 20

Objective 1: Make number bonds of ten.
(Lesson 1)

Objective 2: Make number bonds through ten with a subtraction focus and apply to one-step word problems.
(Lesson 2)