



## Topic B

# Contextualizing Addition Stories to Solve

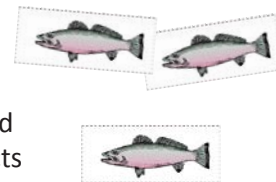
**PK.OA.1, PK.CC.2, PK.CC.3, PK.CC.4**

|                             |         |                                                                                                                                                                                                                    |
|-----------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Focus Standards:</b>     | PK.OA.1 | Demonstrate an understanding of addition and subtraction by using objects, fingers, and responding to practical situations (e.g., if we have 3 apples and add two more, how many apples do we have all together?). |
| <b>Instructional Days:</b>  | 5       |                                                                                                                                                                                                                    |
| <b>Coherence -Links to:</b> | GK-M1   | Numbers to 10                                                                                                                                                                                                      |
|                             | GK-M4   | Number Pairs, Addition and Subtraction to 10                                                                                                                                                                       |

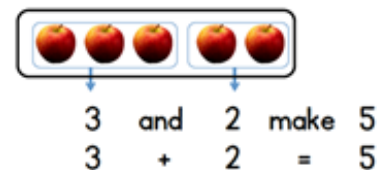
Topic B marks an exciting point in Pre-Kindergarten math learning as students begin exploring the addition of numbers to 5 through story problems. They build on the comparison work of Module 4, so *putting more* indicates addition: "If we have 3 apples and *add 2 more*, how many apples do we have altogether (PK.OA.1)?" Throughout this exploration, students use concrete objects, pictures, or drawings to count the parts and total (PK.OA.1).

In Lesson 6, students act out *add to with result unknown* stories, counting to find the total: "2 friends are picking up trash. 2 more friends come to help. How many friends are picking up trash all together?" Students take turns being a part of the action and counting the parts (2 friends and 2 friends) and the total (4 friends). Asking questions is one of the most difficult parts of posing word problems. Students begin restating the situation, as well as the question, in their own words to prepare for creating their own word problems in later lessons.

In Lesson 7, children begin using objects to solve addition stories (PK.OA.1). For example, they use pictures of fish to solve this problem (shown to the right): "There were 2 fish splashing in the river. 1 more fish came to splash. How many fish are splashing now?" Then, students work in pairs to solve addition stories, and they write the answer in their writing rectangles. Throughout this topic, the objects children manipulate are similar to the objects in the story.



Students expand their knowledge of addition in Lesson 8 by making a statement and learning to say a number sentence: "3 apples and 2 apples make 5 apples. 3 plus 2 equals 5." The boxed drawings used in this lesson emphasize the parts and total (shown on the following page). The teacher will write a number sentence ( $3 + 2 = 5$ ) as an exposure to



the more abstract concept, but children are not expected to write or master number sentences in Pre-Kindergarten.

In Lesson 9, students work with *put together with total unknown* story problems. On the surface, these problems appear similar to the problems of Lessons 6–8, but they lack the embedded action of the previous problems. Instead, they focus on a set of objects and part-whole relationships: "1 book is lying on the couch. 2 books are being read. How many books are there in all?" In this lesson, students create simple drawings, compare them, and practice saying the number sentence together.

Students have an opportunity to create their own addition stories in Lesson 10. For example, given  $2 + 3 = 5$ , students provide the context by creating a story for the abstract number sentence. They create detailed drawings to accompany their stories, as well as help share and solve one another's problems. Teachers continue to provide language support as students ask and answer questions because this is one of the more challenging aspects of addition word problems.

In Topic B Fluency Practices, students participate in rote counting exercises by means of ski jumps, swimming, swinging monkeys, or similar ways. Students must remain attentive to the counting sequence as the stop number varies; for example, at 17 or 18. Students also maintain fluency practice with counting objects (buttons, coins, beans, etc.) up to 10 and reading written numerals. In addition to these core fluency practices, students also decompose 4 bean bags, counting on their fingers the number of bean bags tossed.

#### A Teaching Sequence Toward Mastery of Contextualizing Addition Stories to Solve

- Objective 1:** Act out *add to with result unknown* story problems to solve.  
(Lesson 6)
- Objective 2:** Solve *add to with result unknown* story problems using objects from the story.  
(Lesson 7)
- Objective 3:** Represent *add to with result unknown* story problems using number sentences.  
(Lesson 8)
- Objective 4:** Solve *put together with total unknown* story problems with objects from the story and drawings.  
(Lesson 9)
- Objective 5:** Create and solve addition story problems using drawings.  
(Lesson 10)