

# Solving Addition Math Stories

Lesson by Great Minds, as featured on EngageNY,  
annotation by Student Achievement Partners

GRADE LEVEL First

IN THE STANDARDS: 1.OA.A.1, 1.OA.C.6 (1.OA.C.5)

WHAT WE LIKE ABOUT THIS SET OF LESSONS

Mathematically:

- Highlights multiple ways for students to work towards key grade-level fluency expectations
- Covers two of the fifteen addition and subtraction problem types students should work with in first grade (see additional thoughts below)
- Guides students to move between the concrete and the abstract (MP.2)

In the classroom:

- Uses multiple concrete representations and visual models to make the mathematics explicit
- Prompts students to share their developing thinking and understanding (Student Debrief and throughout lessons)
- Provides opportunities and suggestions for differentiation
- Gives formal and informal opportunities for teachers to check for understanding

MAKING THE SHIFTS<sup>1</sup>

	Focus	Belongs to the major work <sup>2</sup> of first grade
	Coherence	Builds on work started in kindergarten (K.CC, K.OA) and lays the groundwork for problem solving with addition and subtraction in second grade (2.OA.A.1).
	Rigor <sup>3</sup>	Conceptual Understanding: not addressed in this lesson Procedural Skill and Fluency: secondary in this lesson (1.OA.C.6) Application: primary in this lesson (1.OA.A.1)

<sup>1</sup>For more information read [Shifts for Mathematics](#).

<sup>2</sup>For more information, see [Focus in Grade One](#).

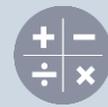
<sup>3</sup>Lessons may target one or more aspect(s) of rigor.

ADDITIONAL THOUGHTS

It's important to note that this sample lesson is just one of a 39-lesson unit called [Sums and Differences to 10](#). It is not intended for students to meet the full expectations of the grade-level standards addressed in these lessons through only this selected lesson. These sample lessons lay a strong foundation for the work that is to come in the unit. In the subsequent lessons, explore other types of story problems and get more practice with representing and solving those problems using addition and subtraction.

As indicated in the Table 1 on page 88 of the CCSSM, there are 15 distinct addition and subtraction situations with which students should be able to work. The progression document, [K, Counting and Cardinality; K-5, Operations and Algebraic Thinking](#), gives guidance as to when students should encounter these types of problems and at which grades they should be expected to master working with them.

The structure of these lessons and the unit/curriculum overall have some interesting aspects to highlight. The units make explicit the coherence within the fully developed curriculum. Each topic (a set of lessons) is connected to prior learning and also points to the next lesson that follows in the learning progression. Within individual lessons, there are a number of components that add to their strength including daily fluency practice, variety in questioning techniques, and daily opportunities for students to debrief about their learning,



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# GRADE 1 • MODULE 1

## Sums and Differences to 10

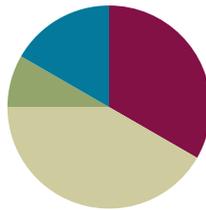
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## Lesson 9

**Objective:** Solve *add to with result unknown* and *put together with result unknown* math stories by drawing, writing equations, and making statements of the solution.

### Suggested Lesson Structure

■ Fluency Practice	(20 minutes)
■ Application Problem	(5 minutes)
■ Concept Development	(25 minutes)
■ Student Debrief	(10 minutes)
<b>Total Time</b>	<b>(60 minutes)</b>



### Fluency Practice (20 minutes)

- Sparkle: The Say Ten Way **1.NBT.2** (5 minutes)
- 5-Group Flash: Partners to 10 **1.OA.6** (5 minutes)
- X-Ray Vision: Partners to 10 **1.OA.6** (5 minutes)
- Number Bond Dash: 10 **1.OA.6** (5 minutes)

### Sparkle: The Say Ten Way (5 minutes)

Note: By providing students with ongoing practice with counting throughout the year, they build and maintain their counting skills, which are foundational for later first grade work on using the Level 3 strategies of making ten and taking from ten when adding and subtracting.

See instructions in Lesson 7.

### 5-Group Flash: Partners to 10 (5 minutes)

Materials: (T/S) 5-group cards (see **G1-M1-L5**)

Note: This activity addresses the core fluency objective for Grade 1 of adding and subtracting within 10.

Teacher flashes 5-group cards for 2–3 seconds and instructs students to say the number when the teacher snaps. On the second snap, ask students to identify the partner to 10. Remind students they can use their fingers to help. Flash higher numbers first to facilitate finding the partner to 10 so that all students can feel successful.

Next, break students into partners and instruct them to take turns flashing their 5-group cards with each other.

### X-Ray Vision: Partners to 10 (5 minutes)

Materials: (T) 10 counters, container

Note: This activity addresses the core fluency objective for Grade 1 of adding and subtracting within 10.

1. Tell students you heard a rumor that some of the children in your class are superheroes and you are wondering if any of them have x-ray vision. Place 10 counters on the floor next to a container.
2. Tell the students to close their eyes.
3. Put 1 of the items into the container
4. Tell students to open their eyes and identify how many counters you put inside it.
5. When a student figures it out, deem her a superhero with x-ray vision!
6. Continue the game, eliciting all partners to 10.

### Number Bond Dash: 10 (5 minutes)

Materials: (T) Stopwatch or timer (S) Number Bond Dash: 10 (save a master for use in later lessons), marker to correct work.

Note: By using the same system, students can focus on the mathematics alone. The activity addresses the core fluency objective for Grade 1 of adding and subtracting within 10.

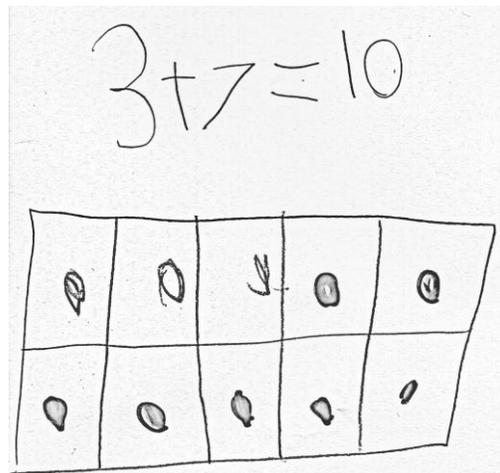
Follow procedure for Number Bond Dash (see **G1-M1-L5**).

### Application Problem (5 minutes)

Kira was making a number bracelet with a total of 10 beads on it. She put on 3 red beads so far. How many more beads does she need to add to the bracelet? Explain your thinking in a picture and number sentence.

Early Finishers: If Kira wants to use 5 red beads and 5 yellow beads for her bracelet, how many red beads and how many yellow beads will she need to add?

Note: This problem is designed as a bridge from the previous lesson's focus on decompositions of 10.



## Concept Development (25 minutes)

Materials: (S) Personal white boards with number bond and equation boxes template

Have students sit in a big semi-circle facing front. The teacher will be using students to act out math stories. Begin the lesson with *add to* story problems.

- T: Good morning, boys and girls. Welcome to Math Stories Theater! You will be watching some math stories and have a hand at solving them. First, close your eyes. When I tap you on the shoulder, quietly come up to the front.
- S: (Close eyes.)
- T: (Tap 5 students to come up. Have 1 of the students hide behind the bookcase.)
- T: Open your eyes. How many students do you see?
- S: 4 students.
- T: There are 4 students dancing at a party. After a little while, along came their dancing friend, [name of the hiding student]. How many students are dancing at the dance party now?
- S: 5 students.
- T: How many students were dancing at first?
- S: 4 students.
- T: (Records on the number bond.) How many more students came over to dance?
- S: 1 more student.
- T: (Records on the number bond.) Think about the math story you just watched. Turn and tell your partner the number sentence that tells how many students were dancing in all.
- S: (Turn and talk.)
- T: Say the number sentence.
- S:  $4 + 1 = 5$ .
- T: (Write on the board.) What is the total?
- S: 5.
- T: What does 5 equal? What are the 2 parts that make 5?
- S: 4 and 1.



### NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

When choosing numbers to use in a story, start at a simple level and change the choice of numbers after students have solved it with easy numbers to harder numbers. Here is a suggested sequence starting from simple to more complex:

add within 5 (e.g.,  $4 + 1 = 5$ ),

add adding 1 (e.g.,  $8 + 1 = 9$ ),

add using 5 (e.g.,  $5 + 2 = 7$ ),

add with the smaller addend first

(e.g.,  $3 + 5 = 8$ ),

add to 9 and 10 (e.g.,  $7 + 3 = 10$ ),

add to 9 and 10 with smaller addend

first, (e.g.,  $3 + 7 = 10$ ),

add including 0,

(e.g.,  $0 + 8 = 8$  or  $8 + 0 = 8$ ).



### NOTES ON MULTIPLE MEANS FOR ACTION AND EXPRESSION:

For those students who have moved into abstract thinking, ask them to solve the subsequent problems without drawing. Ensure that they're still making sense of the problems by having them write or talk about how they solved each one.

T: Say the number sentence starting with 5 equals.

S:  $5 = 4 + 1$ . (Teacher writes on the board.)

Analyze the referents for each number ensuring that students understand what each number represents in the story. You might continue with  $8 + 1 = 9$ , but without writing in the number bond on the board.

Choose a group of new actors to act out *put together* math stories (e.g., 5 students sitting, 2 students standing:  $5 + 2 = 7$ ; 3 students facing sideways, 5 students facing forward:  $3 + 5 = 8$ .)

T: We will now make math drawings. (Distribute personal white boards.)

T: I will tell you a story and you draw. There are 4 inch-worms on a giant leaf.

S: (Draw 4 worms on a leaf.)

T: 3 more inch-worms crawled onto the leaf.

S: (Draw 3 more worms.)

T: Does your drawing show the two parts of our story clearly? (Have students share how to make their drawings match the story by drawing two distinct groups.)

T: Write a number sentence to show what happened in your picture and find the total.

T: Turn and talk to your partner about what each number tells about the story.

S: (Share with their partners.)

T: Write the rest of the number sentences that go with your story.

MP.2

You might continue with the following suggested sequence:  $7 + 3 = 10$ ,  $3 + 6 = 9$ ,  $0 + 2 = 2$ .

T: This time, I will only write the number sentence on the board. Your job is to draw a picture with math drawings to match the number sentence and to find the total. (Write  $5 + 2 = 7$ .)

S: (Draw 5 circles with one color and 2 circles with another color and write  $5 + 2 = 7$ .)

Repeat the process for  $6 + 4 = 10$ ,  $2 + 7 = 9$  and  $4 + 0 = 4$ .

### Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students solve these problems using the RDW approach used for Application Problems.

### Student Debrief (10 minutes)

**Lesson Objective:** Solve *add to with result unknown* and *put together with result unknown* math stories by drawing, writing equations, and making statements of the solution.

The screenshot shows a student's work on a math problem set. The page is titled "NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 9 Problem Set 1•1". The student's name is "Marica".

Problem 1: A drawing shows 5 black circles and 2 grey circles. Below the drawing is a number sentence:  $5 + 2 = 7$ . The student has written "5 balls are here. 2 more roll over. Now, there are 7 balls." Below the number sentence is a number bond with 5 in the top part and 2 in the bottom part, both pointing to a 7 in the right part.

Problem 2: A drawing shows 6 frogs and 1 frog. Below the drawing is a number sentence:  $6 + 1 = 7$ . The student has written "6 frogs are here. 1 more hops over. Now, there are 7 frogs." Below the number sentence is a number bond with 6 in the top part and 1 in the bottom part, both pointing to a 7 in the right part.

The page includes the Common Core logo and the EngageNY logo.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson. You may choose to use any combination of the questions below to lead the discussion.

- How are the problem set stories the same? What did we do to solve them? How are the ball and frog examples different from the flag and flower examples?
- Which of our Math Story Theater situations was like the ball and frog examples? Which situations were like the flag and flower examples?
- Use your picture from your personal white board, or think of your own story for us to act out for Math Stories Theater!
- How was today’s lesson related to our lesson on ways to make 9? (You may also cite the lessons on ways to make 6, 7, 8, or 10.)

**Exit Ticket (3 minutes)**

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help you assess the students’ understanding of the concepts that were presented in the lesson today and plan more effectively for future lessons. You may read the questions aloud to the students.

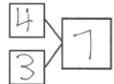
Lesson 9 Problem Set 1•1

3. 

$4 + 3 = 7$

There are 4 dark flags. There are 3 white flags.  
 Altogether, there are 7 flags.

Make a number bond to match the story.



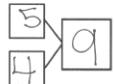
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4. 

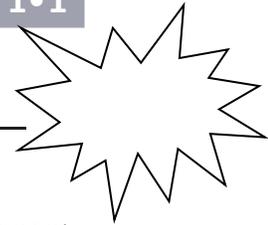
$5 + 4 = 9$

There are 5 white flowers. There are 4 dark flowers.  
 Altogether, there are 9 flowers.

Make a number bond to match the story.



COMMON CORE Lesson 9: Solve add to with result unknown and put together with result unknown math stories by drawing, writing equations, and making statements of the solution. Date: 5/30/13 engage<sup>ny</sup> 1.C.8



Name \_\_\_\_\_

Date \_\_\_\_\_

**Number Bond Dash!**

Directions: Do as many as you can in 90 seconds. Write the amount you finished here:

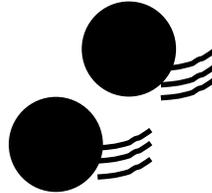
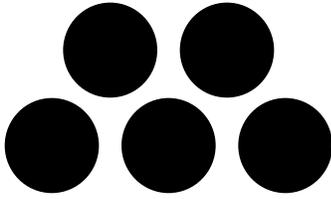
1.		2.		3.		4.		5.	
6.		7.		8.		9.		10.	
11.		12.		13.		14.		15.	
16.		17.		18.		19.		20.	
21.		22.		23.		24.		25.	

© Kelly Spinks

Name \_\_\_\_\_

Date \_\_\_\_\_

1.




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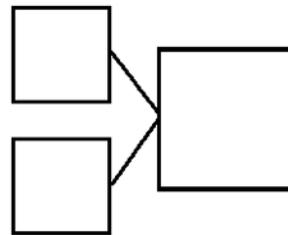
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\_\_\_\_\_ balls are here.

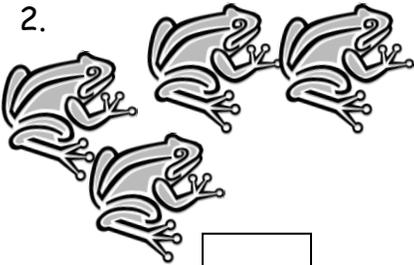
\_\_\_\_\_ more roll over.

Now, there are \_\_\_\_\_ balls.

Make a number bond to match the story.



2.




+

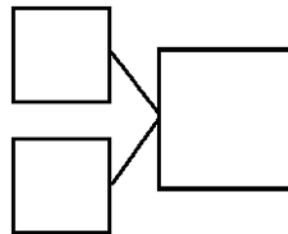
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\_\_\_\_\_ frogs are here.

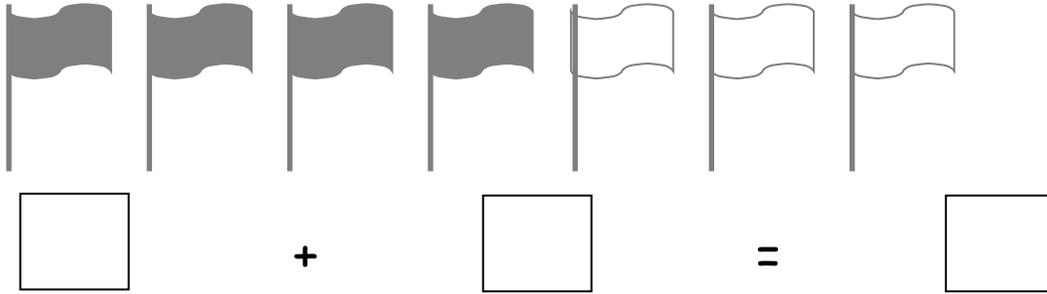
\_\_\_\_\_ more hops over.

Now, there are \_\_\_\_\_ frogs.

Make a number bond to match the story.



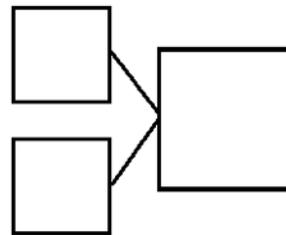
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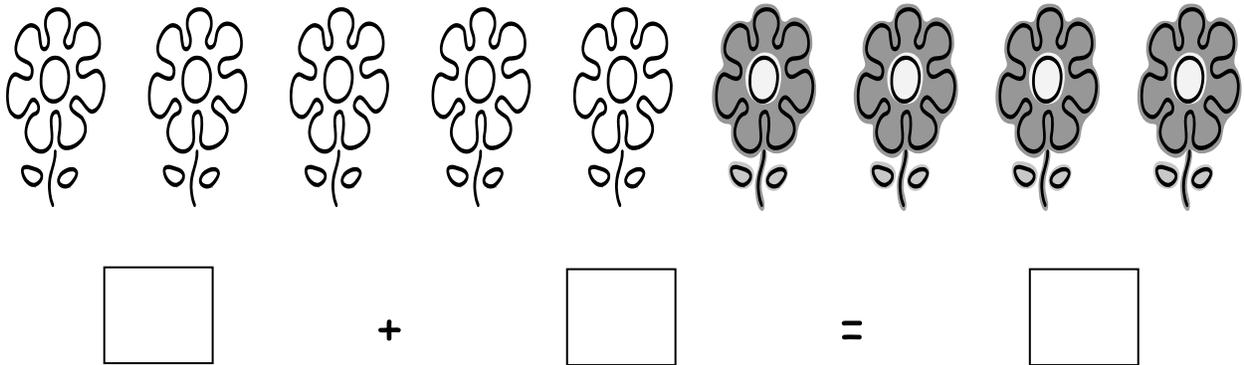
There are \_\_\_\_\_ dark flags. There are \_\_\_\_ white flags.

Altogether, there are \_\_\_\_\_ flags.

Make a number bond to match the story.



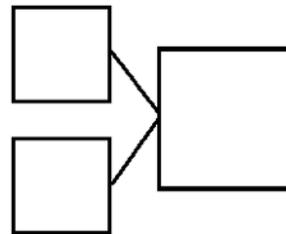
4.



There are \_\_\_\_\_ white flowers. There are \_\_\_\_ dark flowers.

Altogether, there are \_\_\_\_\_ flowers.

Make a number bond to match the story.



Name \_\_\_\_\_

Date \_\_\_\_\_

Draw a picture and write a number sentence to match the story.



1. Ben has 3 red balls and gets 5 green balls. How many balls does he have now?

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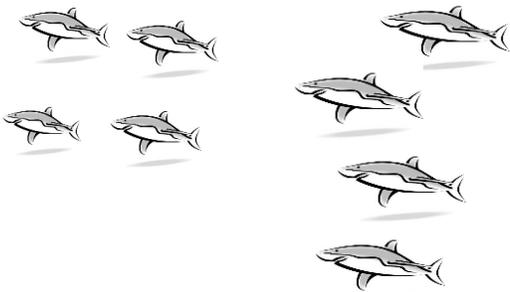
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Ben has \_\_\_\_\_ balls.

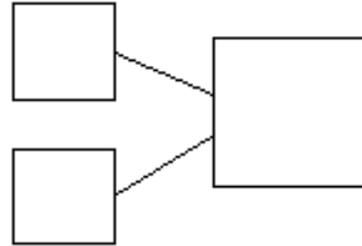
Name \_\_\_\_\_

Date \_\_\_\_\_

1. Use the picture to tell a math story.



Write a number bond to match your story.

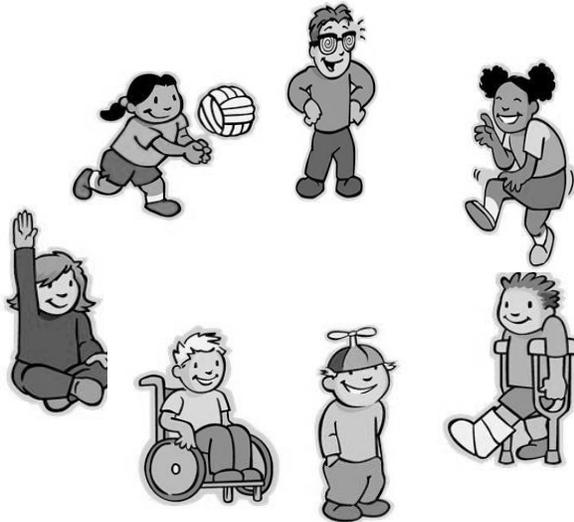


Write a number sentence to tell the story.

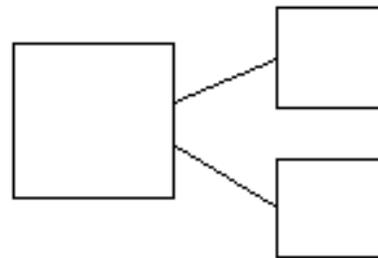
$$\square + \square = \square$$

There are \_\_\_\_\_ sharks.

2. Use the picture to tell a math story.



Write a number bond to match your story.



Write a number sentence to tell the story.

$$\square = \square + \square$$

There are \_\_\_\_\_ students.

3. Jim has 4 big dogs and 3 small dogs. How many dogs does Jim have?

$$\square + \square = \square$$

Jim has \_\_\_\_\_ dogs.

4. Liv plays at the park. She plays with 3 girls and 6 boys. How many kids does she play with at the park?

$$\square = \square + \square$$

Liv plays with \_\_\_\_\_ kids.

