Topic A

Counting On or Making Ten to Solve Result Unknown Problems

1.OA.1, 1.OA.2, 1.OA.3, 1.OA.6

Focus Standard:

1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)

1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Instructional Days: 11

Coherence -Links from: GK–M4 Number Pairs, Addition and Subtraction to 10
-Links to: G2–M3 Place Value, Counting, and Comparison of Numbers to 1000
G2–M5 Addition and Subtraction Within 1000 with Word Problems to 100
Topic A begins with students solving word problems with three addends (1.OA.2) as a way for them to begin to explore the make ten Level 3 strategy in a meaningful context. With problems that always include at least two numbers that yield 10 when added together, Lesson 1 encourages students to use the associative and commutative properties as they set up and read equations in various ways. The story problem on the right, for instance, can be solved by adding 1 + 9 first, then adding the five (see image below story problem).

This leads into Lesson 2’s focus of explicitly using the associative and commutative properties\(^1\) to add three addends without the context of story problems (1.OA.3). This lesson is where students practice associating the two addends that make ten (1.OA.6), and then adding the third addend; they prove to themselves that this simplification of addition is a viable strategy.

Following this introduction, Lessons 3, 4, and 5 afford students ample practice with adding 9 and another single-digit number as they decompose the second addend to make ten with the 9. Students solve problems such as, “Maria has 9 snowballs and Tony has 6. How many do they have in all?” as follows: \(9 + 6 = 9 + (1 + 5) = (9 + 1) + 5 = 10 + 5 = 15\). This triad of lessons takes students through a concrete–pictorial–abstract progression as they work with physical 5-groups using objects, 5-group drawings, and finally number bonds.

Lesson 6 reminds students of the commutative property again, by focusing them on when and why they might apply commutativity: to compose ten from the larger addend. Lessons 7, 8, and 9 mirror the earlier set of three lessons, but students decompose one addend to make ten with 8 as they key addend. This extensive practice allows students to internalize both why and how they would compose ten from the larger addend as they come to realize that this is an efficient strategy.

Students use the make ten strategy with 5-group drawings and number bonds to solve a variety of problems involving a mixture of 7, 8, or 9 as addends in Lesson 10. This gives students an opportunity to not only practice their newly discovered strategies, but it also allows them to generalize this make ten strategy to a new number: 7. It is important to note that students can continue to use counting on as a strategy throughout this entire Topic A, although many students will begin to use the make ten strategy more and more as they continually discuss addition strategies and efficiency with one another.

Topic A ends with Lesson 11, where students solve story problems with two addends (1.OA.1), using independently selected methods. With students themselves asking each other, “Why did you solve the problem that way? How did we solve these differently?” students are able to engage in rich dialogue about the mathematical strategies and determining which are most useful.

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\(^1\) Just as the Common Core Standards note, students do not learn or use these formal terms.
### A Teaching Sequence Towards Mastery of Counting On or Making Ten to Solve Result Unknown Problems

**Objective 1:** Solve word problems with three addends, two of which make ten.  
(Lessons 1)

**Objective 2:** Use the associative and commutative properties to make ten with three addends.  
(Lesson 2)

**Objective 3:** Make ten when one addend is 9.  
(Lessons 3–4)

**Objective 4:** Compare efficiency of counting on and making ten when one addend is 9.  
(Lesson 5)

**Objective 5:** Use the commutative property to make ten.  
(Lesson 6)

**Objective 6:** Make ten when one addend is 8.  
(Lessons 7–8)

**Objective 7:** Compare efficiency of counting on and making ten when one addend is 8.  
(Lesson 9)

**Objective 8:** Solve problems with parts of 7, 8, and 9.  
(Lesson 10)

**Objective 9:** Share and critique peer solution strategies for *put together with result unknown* word problems.  
(Lesson 11)
Lesson 1

Objective: Solve word problems with three addends, two of which make ten.

Suggested Lesson Structure

- Fluency Practice (10 minutes)
- Application Problem (5 minutes)
- Concept Development (35 minutes)
- Student Debrief (10 minutes)
- Total Time (60 minutes)

Fluency Practice (10 minutes)

- Sparkle: The Say Ten and Regular Way 1.NBT.2 (3 minutes)
- Take Out 1.0A.5 (2 minutes)
- Equal Number Pairs for Ten 1.OA.6 (5 minutes)

Sparkle: The Say Ten and Regular Way (3 minutes)

Note: Say Ten counting reinforces place value and prepares students to add ten and some ones.

Count from 10–20, alternating between the regular and the Say Ten way (e.g., 10, ten 1, 12, ten 3, 14, ten 5). If time permits, try counting back, too. (Refer to game directions in G1–M1–Lesson 7.)

Take Out 1 (2 minutes)

Note: This activity supports fluency with decomposing numbers within 10. This skill is critical for using the upcoming Level 3 addition strategy of make ten. Students will need to fluently get 1 out of the second addend when adding 9.

T: Take out 1 on my signal. For example, if I say 5, you say 1 and 4.
T: 3 (snap).
S: 1 and 2.
T: 10 (snap).
S: 1 and 9.

Continue with all numbers within 10.
Equal Number Pairs for Ten (5 minutes)

Materials: (S) 5-group cards (1 “=” card and 2 “+” cards) per set of partners

Note: This activity builds fluency with partners to ten and promotes an understanding of equality. The 5-group cards can be accessed and printed from G1–M1–Lesson 5.

Assign students partners of equal ability. Students arrange 5-group cards from 0 to 10, including the extra 5, and place the “=” card between them. Write 4 numbers on the white board (e.g., 5, 9, 1, or 5). Partners take the 5-group cards that match the numbers written to make two equivalent expressions (e.g., $9 + 1 = 5 + 5$).

Suggested sequence: $5, 9, 1, 10; 0, 1, 9, 10; 2, 5, 5, 8; 2, 3, 7, 8; 4, 1, 9, 6; 3, 4, 6, 7$.

Application Problem (5 minutes)

John, Emma, and Alice each had 10 raisins. John ate 3 raisins, Emma ate 4 raisins, and Alice ate 5 raisins. How many raisins do they each have now? Write a number bond and a number sentence for each.

Note: This problem was chosen as an application of the culminating subtraction work from Module 1. All three subtraction sentences and number bonds focus on partners to ten, which are foundational to the first lesson of Module 2.

Concept Development (35 minutes)

Materials: (T) Bin, three different kinds of blocks/pattern blocks, string (S) Three different kinds of pattern blocks (10 of each shape, e.g., trapezoid, triangle, and square blocks), personal white boards

Have students sit in a semicircle at the meeting area with their personal white boards.

T: The first grade classrooms each have these special bins with different types of blocks in them. Let’s figure out how many we have! (Lay out 9 triangle blocks in a 5-group configuration.) How many triangle blocks do we have?

\[
\begin{align*}
\triangle & \triangle \triangle \triangle \\
\triangle & \triangle \triangle 
\end{align*}
\]

S: 9 triangle blocks!

T: (Lay out 1 square block and 4 trapezoid blocks. Ask students to state the quantity of each group.) We need to figure out how many there are altogether. Help me write the number sentence.

\[
\begin{align*}
\triangle & \triangle \triangle \triangle \\
\triangle & \triangle \triangle \square \\
\square & \square \square \square \square
\end{align*}
\]
Lesson 1

Solve word problems with three addends, two of which make ten.

Date: 7/3/13

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NOTES ON MULTIPLE MEANS OF REPRESENTATION:
Facilitate students’ discovery of patterns and structure in math by allowing for a variety of responses to questions. For example, some students may use their pictorial representation and see 4 + 1 = 5, and then use the 5 triangles embedded in the 9 to make a ten.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:
Having students act out number stories is a great way to provide math-they-can-see. This will help your students who are hearing impaired. It will also provide visual and kinesthetic learners an opportunity to engage in the lesson using their preferred style of learning.

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S: 9 + 1 + 4 = ___.

T: (Write this on the board.)

T: Talk to your partner. What are some ways we could add these blocks to solve for our unknown?

S: (As students discuss, the teacher circulates and selects students to share.) We could start with the larger number and count on. → We could add the groups together by counting them all.

T: True! Also, I wonder if we can make ten since it is such a friendly number. Talk with your partner.

S: (Discuss.) 9 and 1. → The 9 triangles and the 1 square.

T: Let’s check to be sure your idea is true! (Select a student, one who may particularly benefit from proving this to be true, to move the 1 to the 9 in order to make ten.) Did 9 and 1 make ten?

S: Yes!

T: (Place the square block back in its original position.) I’m going to make the 9 and 1 one group, to show this is 10. (Place string around the 9 and 1. Circle 9 and 1 in the equation.) We have 10 (gesture to the 10), and 4 more (gesture to the 4). How many blocks?

S: We have 14 blocks! (Teacher writes 14 to complete the equation.)

T: Talk with your partner. Write the new number sentence explaining what we just did, starting with 10, on your personal white board.

S: (Discuss and write 10 + 4 = 14.)

T: Good! Now it’s your turn.

Assign partners and hand out blocks. The following is a suggested sequence of stories to tell as students work with a partner to represent each problem on their personal white boards. Students should put their boards next to one another to make a larger board. Together, they write the expression, circle 10, and solve for the unknown.

- At lunch, Marcus put 2 pepper slices, 8 carrots, and 6 banana pieces on his tray. When he reached the checkout, how many fruits and veggies did he have?
Lesson 1

Lesson Objective: Solve word problems with three addends, two of which make ten.

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.
Lesson 1:

You may choose to use any combination of the questions below to lead the discussion.

- Earlier, we had 9 triangles, 1 square, and 4 trapezoid blocks on the floor. The teacher next door has 4 triangles and 10 squares in her bin of blocks. Does she have more, less, or the same number of blocks as we have? How do you know? (Re-create the configuration from the concept development if necessary.)
- What similarities do you notice between Problem 3 and Problem 4?
- How did the Application Problem connect to today’s lesson?
- What new way or strategy to add did we learn today? Talk with your partner. (Make ten.) Why is 10 such a friendly number?

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 1 Problem Set

Name ___________________________ Date _____________

Read the math story. Make a simple math drawing with labels. (Circle 10 and solve).

1. Bill went to the store. He bought 1 apple, 9 bananas, and 6 pears. How many pieces of fruit did he buy in all?

   [Diagram: a b p with 10 circled]
   
   1 + 9 + 6 = ____________
   10 + ______ = ________
   Bill bought _____ pieces of fruit.

2. Maria gets some new toys for her birthday. She gets 4 dolls, 7 balls, and 3 games. How many toys did she receive?

   _____ + _____ + _____ = ________
   10 + _____ = _______
   Maria received _____ toys.
3. Maddy goes to the pond and catches 3 bugs, 2 frogs, and 8 tadpoles. How many animals did she catch altogether?

\[ \_ + \_ + \_ = \_
\]

\[ 10 + \_ = \_ \]

Maddy caught ____ animals.

4. Molly arrives at the party first with 4 red balloons. Kenny comes next with 2 green balloons. Dara comes last with 6 blue balloons. How many balloons did these friends bring?

\[ \_ + \_ + \_ = \_
\]

\[ 10 + \_ = \_ \]

There are ____ balloons.
Name ______________________________ Date ______________

Read the math story. Make a simple math drawing with labels. (Circle 10 and solve).

1. Toby has ice cream money. He has 2 dimes. He finds 4 more dimes in his jacket and 8 more on the table. How many dimes does Toby have?

___ + ___ + ___ = ___

10 + ___ = ___

Toby has ____ dimes.
Read the math story. Make a simple math drawing with labels. (Circle 10 and solve.)

1. Chris buys some treats. He buys 5 granola bars, 6 boxes of raisins, and 4 cookies. How many treats did Chris buy?

   ___ + ___ + ___ = ___

   10 + ___ = ___

   Chris bought ____ treats.

2. Cindy loves pets. She has 5 cats, 7 goldfish, and 5 dogs. How many pets does she have in all?

   ___ + ___ + ___ = ___

   10 + ___ = ___

   Cindy has ____ pets.
3. Mary gets stickers at school for good work. She got 7 puffy stickers, 6 smelly stickers, and 3 flat stickers. How many stickers did Mary get at school altogether?

\[ \text{___ + ___ + ___ = ____} \]
\[ 10 + ____ = ____ \]

Mary got ____ stickers at school.

4. Jim went to breakfast at school. He sat at a table with 4 teachers and 9 children. How many people were at the table after Jim sat down?

\[ \text{___ + ___ + ___ = ____} \]
\[ ____ + ____ = ____ \]

There were ____ people at the table after Jim sat down.
Lesson 1 Template

Lesson 1: Solve word problems with three addends, two of which make ten.

Date: 7/3/13
Lesson 2

Objective: Use the associative and commutative properties to make ten with three addends.

Suggested Lesson Structure

- Fluency Practice (12 minutes)
- Application Problem (5 minutes)
- Concept Development (33 minutes)
- Student Debrief (10 minutes)

Total Time (60 minutes)

Fluency Practice (12 minutes)

- Take Out 1: Number Bonds 1.OA.6 (5 minutes)
- 5-Group Flash: Partners to Ten 1.OA.6 (5 minutes)
- Say Ten Conversion 1.NBT.2 (2 minutes)

Take Out 1: Number Bonds (5 minutes)

Materials: (S) Personal white boards

Note: This is an anticipatory fluency for the make ten with an addend of 9. Students take 1 from the other addend and so must be able to do that quickly and accurately.

Say a number within 10. Students quickly write a number bond for the number said, using 1 as a part, and hold up their boards when finished.

5-Group Flash: Partners to Ten (5 minutes)

Materials: (T) 5-Group cards (S) Personal white boards

Note: This is a maintenance fluency with partners to ten to facilitate the make ten addition strategy.

Flash a card for 1–3 seconds (e.g., 9). Students write 2 expressions that make ten (e.g., 9 + 1 and 1 + 9).
Lesson 2

Say Ten Conversion (2 minutes)

Note: This activity strengthens students’ understanding of the place value system as it relates to counting.

Call out numbers between 10 and 20, alternating between saying the number the regular or the Say Ten way. When you use the Say Ten way, students say the number the regular way. When you use the regular way, students say it the Say Ten way. Play for a minute and then give students a chance to be the caller.

Application Problem (5 minutes)

Lisa was reading a book. She read 6 pages the first night, 5 pages the next night, and 4 pages the following night. How many pages did she read?

Make a drawing to show your thinking. Write a statement to go with your work.

Extension: If she read a total of 20 pages by the fifth night, how many pages could she have read on the fourth night and the fifth night?

Note: This problem applies Lesson 1 objective of adding three addends, two of which make ten. The two addends that make ten are separated within the story, which will be discussed during the Student Debrief in connection with today’s lesson.

Concept Development (33 minutes)

Materials: (S) Personal white boards

Have students sit in a semicircle at the meeting area with their materials.

T: (Write 5 + 3 + 5 = ___ on the board.) Draw to solve for this unknown.

S: (Draw to solve, as the teacher circulates and notices student strategies.)

T: Let’s see how our friends solved this. (Select a student who added all in a row to show.)

S: I added 5 + 3 and remembered that was 8. And then counted up 5 more from 8 and got 13! I drew the groups of 5 together and added those first since I knew they made ten. Then I added 10 and 3 is 13!

T: Talk with your partner. How were Jo’s strategy and Bob’s strategy the same and different? Which one was correct?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

During this lesson it is important for students to articulate the way they chose to solve a problem so that other students can hear how they are thinking. This should help guide students towards the most efficient choice as they benefit from hearing strategies multiple times.
Lesson 2

NYS COMMON CORE MATHEMATICS CURRICULUM

Use the associative and commutative properties to make ten with three addends.

Date: 7/3/13

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Addends should be chosen so that students can easily identify the partners to ten, recognizing that they can add these two addends first, regardless of where they are positioned within the number sentence. If students are not fluent with 7 and 3, they may be replaced with 9 and 1, respectively.

S: (Discuss, as the teacher circulates and listens.) They were both correct! → Bob put the fives together and made ten, and Jo added them in order.

T: So, even though they added two different numbers together first, did they get the same total?

S: Yes!

T: Wow! Okay, let’s try this again. Let’s use Bob’s strategy of making ten from two of our addends. (Write 7 + 5 + 3 = ___.) Write the equation. Draw to show the three amounts.

S: (Draw to show the three quantities.)

T: What two numbers make ten?

S: 7 and 3!

T: Good. Show that 7 and 3 make ten in your drawing by circling like we did yesterday with the string.

S: (Circle the 3 and the 7, making a group of 10.)

T: Here is a new number sentence that shows what numbers you added first. (Write 7 + 3 + 5 = ___.)

T: I’ll make a number bond to show how you made ten from two numbers. (Bond the 7 and 3 to make ten.)

T: You just showed 10 and 5 more, which equals?

S: 15!

T: Good. I’ll show how we solved for the unknown. I’ll write the new number sentence explaining what we just did, starting with 10 on your personal white board.

S: (Solve 7 + 3 + 5 = ___ while the teacher writes 10 + 5 = 15.)

T: Jo showed us at the beginning of the lesson that she could solve from left to right, without moving the addends around, in order to get the same answer as Bob. Work and talk with your partner to see if this is true again!

Repeat this process, using the following suggested sequence: 9 + 2 + 1, 2 + 4 + 8 (highlighting that students might begin with the 8 rather than the 2), 4 + 3 + 6, and 3 + 8 + 7. Students complete the number sentence, while the teacher completes the drawing for the third example.

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.

Note: Look at the example for Problem 1 in the Problem Set. Discuss the importance of making a simple math drawing by drawing three different simple shapes to represent three different numbers in the equation, reminding children about their experience using different concrete materials during previous lessons. Model this drawing if necessary.
Student Debrief (10 minutes)

Lesson Objective: Use the associative and commutative properties to make ten with three addends.

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.

- Look at your Problem Set. We added amounts in different orders. When we did this, did we get the same amount? Is this always true?
- Talk with your partner. How did you organize your drawings to show the three different amounts? How did you show that you used the make ten strategy in your drawing?
- Look at Problem 1 and Problem 4. What similarities do you notice?
- Are there any problems in the Problem Set that you can solve using your knowledge of doubles?
- Look at Problem 9. How did you show the number bond for making ten? How is it different from some of your other bonds? (Students share strategies of number bond above or below, or rewrite the number sentence below to enable the addends that make ten to be adjacent.)

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 2: Use the associative and commutative properties to make ten with three addends.

Date: 7/3/13

1. \(7 + 3 + 4 = \) □
   - Circle the numbers that make ten. Draw a picture. Complete the number sentence.
   - \(10\)  
   - \(7\)  
   - \(3\)  
   - \(4\)

\[10 + ____ = ____\]

2. \(9 + 1 + 4 = \) □
   - \(10\)  
   - ____  
   - ____  
   - ____

\[10 + ____ = ____\]

3. \(5 + 6 + 5 = \) □
   - \(10\)  
   - ____  
   - ____  
   - ____

\[10 + ____ = ____\]
Lesson 2: Use the associative and commutative properties to make ten with three addends.

**Problem Set**

4. $4 + 3 + 7 = \square$

   $\underline{10}$

   $\underline{\quad + \quad + \quad}$

   $\underline{10 + \quad = \quad}$

---

5. $2 + 7 + 8 = \square$

   $\underline{10}$

   $\underline{\quad + \quad + \quad}$

   $\underline{10 + \quad = \quad}$

---

Circle the numbers that make ten, put them into a number bond and solve.

6. $9 + 1 + 5 = \underline{\quad}$

7. $8 + 2 + 4 = \underline{\quad}$

---

8. $3 + 5 + 5 = \underline{\quad}$

9. $3 + 6 + 7 = \underline{\quad}$
Lesson 2 Exit Ticket

Name ___________________________ Date ________________

Circle the numbers that make ten.
Draw a picture and complete the number sentences to solve.

a. 8 + 3 + 2 =____

___ + ___ + ___

10 + ___ = ___

b. 4 + 7 + 3 =____

___ + ___ + ___

10 + ___ = ___
Lesson 2: Use the associative and commutative properties to make ten with three addends.

Date: 7/3/13

1. $6 + 2 + 4 = \square$

   \[
   \begin{array}{c}
   \text{10} \\
   6 + \, \square + 2 \\
   \end{array}
   \]  

   \[
   10 + \, \square = \, \square
   \]

2. $5 + 3 + 5 = \square$

   \[
   \begin{array}{c}
   \square \\
   \square + \, \square + \, \square \\
   \end{array}
   \]  

   \[
   10 + \, \square = \, \square
   \]

3. $5 + 2 + 8 = \square$

   \[
   \begin{array}{c}
   \square \\
   \square + \, \square + \, \square \\
   \end{array}
   \]  

   \[
   \, \square + 10 = \, \square
   \]
Lesson 2 Homework

4. $2 + 7 + 3 = \Box$

\[ \Box + \Box + \Box \]

\[ \Box + 10 = \Box \]

(Circle the numbers that make ten. Put them into a number bond and solve. Write the new number bond.)

5. $3 + 5 + 7 = \Box$

\[ \Box \]

\[ 10 + \Box = \Box \]

6. $4 + 8 + 2 = \Box$

\[ \Box \]

\[ 10 + \Box = \Box \]

Challenge: Circle the addends that make ten. Circle the true number sentences.

a. $5 + 5 + 3 = 10 + 3$

b. $4 + 6 + 6 = 10 + 6$

c. $3 + 8 + 7 = 10 + 6$

d. $8 + 9 + 2 = 9 + 10$
Lesson 3

Objective: Make ten when one addend is 9.

Suggested Lesson Structure

- Fluency Practice (10 minutes)
- Application Problem (5 minutes)
- Concept Development (35 minutes)
- Student Debrief (10 minutes)
- Total Time (60 minutes)

Fluency Practice (10 minutes)

- Take Out 1 1.OA.6 (1 minute)
- Break Apart 10 1.OA.6 (5 minutes)
- Add Partners of Ten First 1.OA.3 (4 minutes)

Take Out 1 (1 minute)

Materials: (S) Personal white boards

Note: This is an anticipatory fluency for the make ten addition strategy, as students will need to fluently get 1 out of the second addend when adding 9.

Make the pace quicker now that students have done this for a few days. Celebrate their improvement.

Say a number between 1 and 9. Students say the number decomposed with one part as one.

Break Apart 10 (5 minutes)

Materials: (T) 5-group cards (S) Personal white boards

Students write the numeral 10 on their boards. Flash a 5-group card. Students break apart 10 using the number flashed as a part, without making bubbles or boxes around the numerals.
Add Partners of Ten First (4 minutes)

Note: This activity reviews adding three numbers and prepares students for the make ten addition strategy when one addend is 9.

Build towards three addends. Begin with $9 + 1$.

- T: $9 + 1$.
- S: 10.

- T: $10 + 5$
- S: 15.

- T: $9 + 1$ (pause) $+ 5$ is?
- S: 15.

Continue through a few more.

Application Problem (5 minutes)

Tom’s mother gave him 4 pennies. His father gave him 9 pennies. His sister gave him enough pennies that he now had a total of 14. How many pennies did his sister give him? Use a drawing, number sentence, and a statement.

Extension: How many more would he need to have 19 pennies?

Note: This application problem challenges students to consider finding an unknown addend within a context with three addends. Students may add 4 and 9 together first, noticing that they need 1 more penny to make 14. Other students may recognize that 14 is made of 10 and 4, and realize that they are looking for the partner for 9 when making ten. During the debrief, students will explore how they could use making ten as a quick strategy to add the sets of pennies that Tom’s parents gave him (9 pennies and 4 pennies).

Concept Development (35 minutes)

Materials: (T) 10 red and 10 green linking cubes (S) 10 red and 10 green linking cubes, personal white boards

Have students sit at their seats with materials.

- T: (Project and read aloud.) Maria has 9 snowballs and Tony has 3. How many do they have altogether?

- T: What is the expression to solve this problem?

- S: $9 + 3$. 

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

While some students are experts at solving 10+ number sentences, others may need pictorial support such as ten-frames (rather than numerals) to help develop mental calculations.
T: Use your green linking cubes to show how many snowballs Maria has.
S: (Lay out 9 green linking cubes.)
T: Using the red cubes, show how many snowballs Tony has. Put them in a separate pile.
S: (Lay out 3 linking cubes.)
T: How would you solve this problem?
S: Count on!
T/S: Nine, 10, 11, 12.
T: Is there a way to make ten with the amounts we have in front of us? Turn and talk to your partner.
S: (Discuss while the teacher circulates.)
T: (Choose a student who used the strategy below.)
S: I made ten by moving 1 green cube to the red pile.
I had 9 cubes in that pile but now I have 10.
T: You made ten! Everyone make ten.
S: (Move 1 green cube to the red pile.)
T: Now, we have 10 here. (Gesture to the pile of 10.) What do we have left here? (Point to the other pile.)
S: 2.
T: Look at your new piles. What is our new number sentence?
S: 10 + 2 = 12!
T: (Write 10 + 2 = 12 on the board.) Did we change the amount of linking cubes we have?
S: No.
T: So, 9 + 3 is the same as what addition expression?
S: 10 + 2.
T: (Write 9 + 3 = 10 + 2.)
T: What is 10 + 2?
S: 12.
T: What is 9 + 3? Say the number sentence.
S: 9 + 3 = 12.
T: How many snowballs do Maria and Tony have?
S: 12 snowballs.

Repeat the process with snowball situations for 9 + 2 and 9 + 4. Then, change to 5-group drawings instead of cubes and continue to repeat the process with the following suggested sequence: 9 + 5, 9 + 8, 9 + 7. Create different story situations for 9 + 6, 8 + 9, and 9 + 9. Be sure to have students label their pictures, circle 10, and write three number sentences (9 + 6 = 15, 10 + 5 = 15, 9 + 6 = 10 + 5).
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.

Note: Students should save the Problem Sets from this lesson through Lesson 6. They will provide comparisons for the students when they begin making ten when one addend is 8. Setting up a portfolio of past Problem Sets and strategies will help students access these readily.

Student Debrief (10 minutes)

Lesson Objective: Make ten when one addend is 9.

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.

- Look at Problem 1. What are the two number sentences that show your work?
- Look at Problem 1 and Problem 3 with a partner. How was setting up the problem to complete Problem 1 different from setting up Problem 3? What did you need to be sure to do? Why?
- How can solving Problem 1 help you solve Problem 4?
- After you made ten, what did you notice about the addend you broke apart? (The other addend is left with 1 less!)
Lesson 3

What new strategy did we use today to solve math problems? How is it more efficient than counting on to add?
What new strategy did we use today to solve math problems? How is it more efficient than counting on to add?

Look at your Application Problem. How could you use the make ten strategy to solve the problem?

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.
1. Maria has 9 snowballs and Tony has 6. How many snowballs do they have in all?

   Draw and circle to show how you made ten to help you solve the problem.

   9 and ______ make ______
   10 and ______ make ______

   Maria and Tony have ______ snowballs in all.

2. Bob has 9 raisins and Jonny has 4. How many raisins do they have altogether?

   9 and ______ make ______
   10 and ______ make ______

   Bob and Jonny have ______ raisins altogether.
3. There are 3 chairs on the left side of the classroom and 9 on the right side. How many chairs are in the classroom?

9 and ______ make ______
10 and ______ make ______
There are ______ total chairs.

4. There are 7 children sitting on the rug and 9 children standing. How many children are there in all?

9 and ______ make ______
10 and ______ make ______
There are ______ children in all.
Name ______________________________ Date ________________

Draw and circle to show how to make ten to solve. Complete the number sentences.

1. Tammy has 4 books and John has 9 books. How many books do Tammy and John have altogether?

___ + ___ = ___

___ + ___ = ___  

Tammy and John have ____ books.
Lesson 3 Homework

1. Ron has 9 marbles and Sue has 4 marbles. How many marbles do they have in all?

\[9 + 4 = \_\_\_\_\_\_\_\_\]
\[10 + 3 = \_\_\_\_\_\_\_\_\_\]
Ron and Sue have \_\_\_\_\_\_ marbles.

2. Jim has 5 cars and Tina has 9. How many cars do they have altogether?

\[\_\_\_\_\_\_ + \_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\]
\[10 + \_\_\_\_\_\_ = \_\_\_\_\_\_\_\_\_\]
Jim and Tina have \_\_\_\_\_\_ cars.
3. Stan has 6 fish and Meg has 9. How many fish do they have in all?

   ___ + ___ = ___
   ___ + ___ = ___
   Stan and Meg have ___ fish.

4. Rick made 7 cookies and Mom made 9. How many cookies did Rick and Mom make altogether?

   ___ + ___ = ___
   ___ + ___ = ___
   Rick and Mom made ____ cookies.

5. Dad has 8 pens and Tony has 9. How many pens do Dad and Tony have in all?

   ___ + ___ = ___
   ___ + ___ = ___
   Dad and Tony have ___ pens.
Lesson 4

Objective: Make ten when one addend is 9.

Suggested Lesson Structure

- Fluency Practice (12 minutes)
- Application Problem (5 minutes)
- Concept Development (33 minutes)
- Student Debrief (10 minutes)
- Total Time (60 minutes)

Fluency Practice (12 minutes)

- Happy Counting the Say Ten Way 1.NBT.2 (2 minutes)
- Sprint: Adding Three Numbers 1.OA.3 (10 minutes)

Happy Counting the Say Ten Way (2 minutes)

Note: Say Ten counting strengthens student understanding of place value.

Tell students to look at your thumb and count up and down between 10 and 120 the Say Ten way. When your thumb points and motions up, the students count up. When your thumb is to the side, students stop. When your thumb points and motions down, the students count down (see example below).

T:  

T/S: 4 ten 4 ten 1 4 ten 2 (pause) 4 ten 1 4 ten (pause) 4 ten 1 4 ten 2 4 ten 3

Choose numbers based on student skill level. If students are very proficient up to 40, start at 40 and quickly go up to 80. If they are proficient between 40 and 80, Happy Count between 80 and 120. Alternate at times between regular and Say Ten counting, too.

Sprint: Adding Three Numbers (10 minutes)

Note: This Sprint provides practice with adding three numbers by making ten first.

Materials: (S) Adding Three Numbers Sprint
Lesson 4

Lesson 4: Make ten when one addend is 9.

Date: 7/3/13

Application Problem (5 minutes)

Michael plants 9 flowers in the morning. He then plants 4 flowers in the afternoon. How many flowers did he plant? Make a drawing, number bond, and a statement.

Note: Students can apply the make ten strategy from Lesson 3 as they solve this problem. During the debrief, the teacher will discuss how using rows to show the plants can create a clear and quick visual for identifying the compositions and decompositions needed to apply the make ten strategy.

Concept Development (33 minutes)

Materials: (T) 10 green and 10 red linking cubes, a ten-frame border (S) 10 green and 10 red linking cubes, personal white boards

Have students come to the meeting area with linking cubes and personal white boards.

T: (Project and read aloud.) Maria has 9 green erasers. Tony has 3 red erasers. How many erasers do Maria and Tony have?

T: What is the expression to solve this story problem?

S: 9 + 3.

T: (Show two piles: 9 scattered green erasers and 3 scattered red erasers.)

T: How can you check that I have the correct number of cubes representing Maria’s erasers?

S: We can count, one at a time.

T: Okay, but that’s not very efficient. Is there a way to organize my green cubes so we can tell there are 9 cubes faster?

S: Put them in a 5-group!

T: Great idea. When we arrange or draw things in a 5-group, we are all going to follow these steps. Just like reading, we’ll start with the top row and from the left. (Place 5 green cubes in a row.)

T: We start in the next line with 6 and try to match it up to the top as closely as we can. (Place 4 in the bottom row.)

T: Now, can you see we have 9 cubes right away?

S: Yes!

T: (Arrange the 3 red cubes in a 5 group on the other side.) The red cubes are also organized.

T: What do we do to solve 9 + 3?

S: Make ten.

T: (Circle 9 green cubes and 1 red cube.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

It is important to make the connection between concrete math and math models. This helps English language learners and struggling learners understand the math without getting bogged down with language acquisition.

MP.4
Lesson 4

Make ten when one addend is 9.

Date: 7/3/13

T: Here’s another way to show ten. (Move 1 red cube to add to 9 green cubes.)
T: (Places a red cube in the tenth slot.) We made ten!
T: I’m going to put a frame around it. (Place the frame around ten.) We are going to call this a ten-frame. It looks just like our 5-group drawings but now that we are making ten, we can call it a ten-frame. Whenever we make ten, we make or draw a frame around it. That way, we can see ten right away.

T: Look at the new piles. What new expression do you see?
S: 10 + 2.
T: So, 9 + 3 is the same as?
S: 10 + 2.
T: (Write 9 + 3 = 10 + 2.)
T: What is 10 + 2?
S: 12.
T: What is 9 + 3?
S: 12.
T: How many erasers do Maria and Tony have?
S: 12 erasers.
T: Where are the 9 green erasers? Point to them.
S: (Point to 9.)
T: Where are the 3 red erasers? Point to them.
S: (Point to 1 and 2.)
T: You are pointing to 2 different places. Why?
S: We broke 3 apart to 1 and 2.
T: Let’s use a number bond to show how we broke apart 3.
T: Just like we framed the ten in our picture, we’ll frame the numbers that make ten. (Circles 9 and 1.)
T: 9 and 1 make?
S: 10.
T: 10 and 2 make?
S: 12.
T: So, 9 plus 3 equals?
S: 12!

Repeat the process by having students work with cubes. Be sure to guide students when organizing their cubes into a ten-frame. The following is a suggested sequence: 9 + 2, 4 + 9, and 5 + 9. In Lesson 4, we are at times putting the smaller addend first. Simply guide students to realize they can still compose ten from the 9 for efficiency during the last two problems.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:
Be aware of the different learning needs in your class and adjust the lesson as necessary. As some students may need to work at the concrete level for a longer period of time, allow students access to manipulatives.
Next, repeat the process by having students use math drawings to solve the following in this suggested sequence: 9 + 6, 3 + 9, and 7 + 9. The 9 should be drawn with open circles. The other addend should be drawn with filled-in circles. Before students add dark circles to their math drawing, ask them, “How many does 9 need to make ten?” and “How many do you have when you take away 1 from [the other addend]?” to guide how they will decompose the addend. Additionally, encourage students to place the 1 closer to the 9 as they write the number bond below the other addend, making it easier to make ten with 9.

**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:** Make ten when one addend is 9.

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 did solving Problem 4 help you solve Problem 5?
- What new (or significant) math vocabulary did we use today to make our pictures precise?
- What were some strategies we learned today to solve addition problems efficiently? (Organizing materials and drawings in ten-frame, making ten, starting with the 9 to add.)
- Look at your Problem Set. What pattern did you notice when adding 9 to a number? Why is it always a ten and the number that is 1 less than the other addend?
- Look at the Application Problem. Share your drawing with a partner. How could you use the ten-frame to show your work? How does the ten-frame help you see your total amount?
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 4 Sprint

Lesson 4: Make ten when one addend is 9.

<table>
<thead>
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<th></th>
<th>Circle the addends that make ten and add.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9 + 1 + 3 = ☐</td>
</tr>
<tr>
<td>2</td>
<td>9 + 1 + 5 = ☐</td>
</tr>
<tr>
<td>3</td>
<td>1 + 9 + 5 = ☐</td>
</tr>
<tr>
<td>4</td>
<td>1 + 9 + 1 = ☐</td>
</tr>
<tr>
<td>5</td>
<td>5 + 5 + 4 = ☐</td>
</tr>
<tr>
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<td>5 + 5 + 6 = ☐</td>
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<td>25</td>
<td>8 + 2 + ☐ = 11</td>
</tr>
<tr>
<td>26</td>
<td>☐ + 3 + 4 = 13</td>
</tr>
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<td>27</td>
<td>2 + ☐ + 6 = 16</td>
</tr>
<tr>
<td>28</td>
<td>1 + 1 + ☐ = 11</td>
</tr>
<tr>
<td>29</td>
<td>19 = 5 + ☐ + 9</td>
</tr>
<tr>
<td>30</td>
<td>18 = ☐ + 8 + 6</td>
</tr>
</tbody>
</table>

Number correct: ___
Lesson 4 Sprint

Lesson 4: Make ten when one addend is 9.

Date: 7/3/13

Common Core Mathematics Curriculum

Name ___________________________ Date _____________________ Number correct: ______

**B* Circle the addends that make ten and add.**

<p>| | | | | |</p>
<table>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>5 + 5 + 4 = ☐</td>
<td>16</td>
<td>6 + 4 + 2 = ☐</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>5 + 5 + 6 = ☐</td>
<td>17</td>
<td>6 + 4 + 3 = ☐</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>5 + 5 + 5 = ☐</td>
<td>18</td>
<td>4 + 6 + 3 = ☐</td>
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<tr>
<td>4</td>
<td>9 + 1 + 1 = ☐</td>
<td>19</td>
<td>4 + 6 + 6 = ☐</td>
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<td>5</td>
<td>9 + 1 + 2 = ☐</td>
<td>20</td>
<td>4 + 7 + 6 = ☐</td>
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<tr>
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<td>5 + 4 + 5 = ☐</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>1 + 9 + 6 = ☐</td>
<td>23</td>
<td>1 + 7 + 9 = ☐</td>
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<tr>
<td>9</td>
<td>8 + 2 + 4 = ☐</td>
<td>24</td>
<td>9 + 1 + ☐ = 11</td>
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<tr>
<td>10</td>
<td>8 + 2 + 7 = ☐</td>
<td>25</td>
<td>8 + 2 + ☐ = 12</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>2 + 8 + 7 = ☐</td>
<td>26</td>
<td>☐ + 3 + 4 = 14</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>7 + 3 + 7 = ☐</td>
<td>27</td>
<td>4 + ☐ + 8 = 18</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>7 + 3 + 8 = ☐</td>
<td>28</td>
<td>7 + 8 + ☐ = 17</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>7 + 3 + 9 = ☐</td>
<td>29</td>
<td>16 = 3 + ☐ + 6</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>3 + 7 + 9 = ☐</td>
<td>30</td>
<td>19 = ☐ + 9 + 3</td>
<td></td>
</tr>
</tbody>
</table>
Lesson 4 Problem Set

Name __________________________________________ Date _______________

Change the picture to make a ten. Write the easier number sentence and solve.

1. Tom has 9 red pencils and 5 yellow. How many pencils does Tom have in all?

Tom has 9 red pencils and 5 yellow. How many pencils does Tom have in all?

\[ 9 + 5 = \_] \\

\[ 10 \text{ pencils } + \_ \text{ pencils} = \_ \text{ pencils} \]

Circle 10 and solve.

2. \[ 9 + 3 \]

\[ \bullet \bullet \bullet \bullet \bullet \bullet \bullet \bullet \]

\[ 10 + \_ = \_ \]

3. \[ 4 + 9 \]

\[ \square \square \square \square \square \square \square \square \]

\[ 10 + \_ = \_ \]
Lesson 4 Problem Set

Solve. Make math drawings using the ten-frame to show how you made 10 to solve.

4. \[ 9 + 5 = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_\_ \]

5. \[ 6 + 9 = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_\_ \]

6. \[ 8 + 9 = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_\_ \]

Solve. Use a number bond to show how you made a ten.

7. \[ 5 + 9 = \_\_\_ \]

8. \[ \_\_\_\_\_ = 9 + 7 \]
Name ________________________________  Date ________________

Make math drawings using the ten-frame to solve. Rewrite as a 10+ number sentence.

1. 6 + 9 = ____
   
   [Ten-frame drawing with 6 dots filled]

2. ____ = 4 + 9
   
   [Ten-frame drawing with 4 dots filled]

10 + ____ = ____
   
   [Ten-frame drawing with dots labeled]

   ____ + ____ = ____

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Lesson 4 Homework

Name _____________________________ Date ____________

Solve. Make math drawings using the ten-frame to show how you made 10 to solve.

1. \(9 + 3 = \) ___ 
   ___ + ___ = _____

2. \(9 + 6 = \) ___ 
   ___ + ___ = _____

3. \(7 + 9 = \) ___ 
   ___ + ___ = _____
Match the number sentences to the bonds you used to help you make a ten.

a. $9 + 8 = \underline{\quad}$

b. $\underline{\quad} = 9 + 6$

c. $7 + 9 = \underline{\quad}$

Make math drawings using ten-frames for the $+ 9$ expressions to find and circle the true number sentences.

d. $5 + 10 = 6 + 9$

e. $3 + 10 = 9 + 2$

f. $9 + 4 = 10 + 5$
Lesson 5

Objective: Compare efficiency of counting on and making ten when one addend is 9.

Suggested Lesson Structure

- Fluency Practice (13 minutes)
- Application Problem (5 minutes)
- Concept Development (32 minutes)
- Student Debrief (10 minutes)

Total Time (60 minutes)

Fluency Practice (13 minutes)

- Partners to Ten 1.OA.6 (5 minutes)
- Add Partners of Ten First 1.OA.6 (4 minutes)
- Take Out 2 1.OA.6 (4 minutes)

Partners to Ten (5 minutes)

Materials: (S) Single-sided 5-group cards and 2 personal white boards per pair

Note: This fluency activity provides maintenance with partners to ten while applying the commutative property.

Students put 5-group cards face down and write 10 on their boards. Each partner takes a 5-group card, then draws a number bond without bubbles using the selected card as one part. Students write two addition sentences for the number bond and check each other’s work.

Add Partners of Ten First (4 minutes)

Note: This activity reviews adding three numbers and prepares students for the make ten addition strategy when one addend is 9.

Conduct activity as outlined in G1–M2– Lesson 3.
Lesson 5

Take Out 2 (4 minutes)

Note: This is an anticipatory fluency for making ten when one addend is 8 since 8 needs 2 to make ten.

T: Take out 2 on my signal. For example, if I say 5, you say 2 and 3.
T: 3. (Pause. Snap.)
S: 2 and 1.
T: 10. (Pause. Snap.)
S: 2 and 8.

Continue with all numbers within 10 for about a minute. Give about 30 seconds of practice with a partner. Repeat the set as a whole class and celebrate improvement.

Application Problem (5 minutes)

There are 9 red birds and 6 blue birds in a tree. How many birds are in the tree? Use a ten-frame drawing and a number sentence. Write a number bond to match the story and a number bond to show the matching 10+ fact. Write a statement.

Note: This problem continues to provide contextual practice of solving addition situations where one addend is 9. By drawing a number bond to match the story, and drawing a number bond to match the ten-frame drawing, students will also continue to relate the addition facts of 9 with the addition facts of 10. Students will consider the problem’s relationship to today’s lesson during the Debrief.

Concept Development (32 minutes)

Materials: (S) Personal white boards

Have students sit at their desks or the meeting area with their materials.

T: (Project or write the two number bonds shown here.) Which number bond is easier to solve?
S: 10 and 5!
T: (Write 10 + 5 = ___.) 10 + 5 = ...
S: 15!
T: (Record the solution.) How did you know that so quickly?
S: Because we know our 10+ facts. → Because 10 is a friendly number.
T:  (Write $9 + 6 = $.) Now let’s count on to solve $9 + 6$.
T/S: Niiiine, 10, 11, 12, 13, 14, 15. 15!
T:  (Record the solution.) Wait, $9 + 6$ is equal to $10 + 5$?
S:  Yes!
T:  Both number bonds have the same total, but when we had ten to solve, our solution came to us automatically.
T:  (Read aloud.) Sergio and Lila were getting ready to go to recess. They both had to solve $9 + 8$. The first one to solve it got to go to recess first! Sergio decided he was going to count on to solve it. (Pause.) Was there another way to solve $9 + 8$ that Sergio could have used?
S:  (Discuss, as the teacher circulates and listens.) Make ten! → Take 1 out from 8 and give it to the 9, in order to make ten.
T:  Some of you said that you would make ten. Well, that is just what Lila decided to do. (Assign partners.) Partner A, use your materials to show how Sergio solved $9 + 8$ by counting on. Partner B, use your materials to how Lila solved $9 + 8$ by making ten.
S:  (Use materials to show $9 + 8$.)
T:  Share the strategy you showed on your white board with you partner. Talk to your partner about what you did.
S:  (Discuss and share as the teacher circulates.)
T:  Help me make a number bond to show what Sergio did. What were the parts that Sergio used?
S:  9 and 8!
T:  (Write the bond.) What was the total?
S:  17.
T:  (Complete the bond.) Help me make a number bond to show what Lila did. What were the parts that Lila used?
S:  10 and 7!
T:  (Write the bond.) What was the total?
S:  17.
T:  (Complete the bond.) Which number bond will help you solve more efficiently or quickly?
S:  10 and 7.
T:  So, based on these number bonds, and the work you and your partner just did, who do you think got to go to recess first?
S:  Lila!
T:  You’re right! By using the make ten strategy, she was able to solve for the unknown quickly or efficiently.
Lesson 5

Lesson 5: Compare efficiency of counting on and making ten when one addend is 9.

Date: 7/3/13

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.

Note: Students should save the Problem Set to provide the opportunity to compare making ten when adding 8.

Student Debrief (10 minutes)

Lesson Objective: Compare efficiency of counting on and making ten when one addend is 9.

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.

- Which problems could you solve more efficiently by making ten?
- Why was that a more efficient way to solve?
- Were there any problems that you think could have been solved more efficiently using counting on? Why?
- Look at Problems 8–10. What do you notice about the number bonds? How does knowing your 10+ facts help you with your 9 plus facts?
Lesson 5

Compare efficiency of counting on and making ten when one addend is 9.

Date: 7/3/13

- Look at your Application Problem. What is the related 10+ fact for this problem? How does your drawing show both the 9 plus fact and the related 10+ fact?
- Look at Problems 3–6. Think about these statements: 9 and _____ make _____ and 10 and _____ make _____. (For example, 9 and 2 make 11 and 10 and 1 make 11.) What pattern do you notice?

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 5 Problem Set

Name ___________________________ Date ______________

Make ten to solve. Use the number bond to show how you took the 1 out.

1. Sue had 9 tennis balls and 3 soccer balls. How many balls did she have?

   \[ 9 + 3 = \_
   \]

   \[ 10 + \_
   \]

   Sue has ___ balls.

2. \[ 9 + 4 = \_
   \]

   \[ 10 + \_
   \]

Use number bonds to show your thinking. Write the 10+ fact.

3. \[ 9 + 2 = \_
   \]

   \[ \_
   + \_
   = \_
   \]

4. \[ 9 + 5 = \_
   \]

   \[ \_
   + \_
   = \_
   \]

5. \[ 9 + 4 = \_
   \]

   \[ \_
   + \_
   = \_
   \]
6. \(9 + 7 = \underline{\_\_\_\_}\)  \(\underline{\_\_\_\_} + \underline{\_\_\_\_} = \underline{\_\_\_\_}\)

7. \(10 + 7 = \underline{\_\_\_\_}\)  \(9 + \underline{\_\_\_\_} = \underline{\_\_\_\_}\)

Complete the addition sentences.

8. a. \(10 + 1 = \underline{\_\_\_\_}\)
   b. \(9 + 2 = \underline{\_\_\_\_}\)

9. a. \(10 + 8 = \underline{\_\_\_\_}\)
   b. \(9 + 9 = \underline{\_\_\_\_}\)

10. a. \(10 + 7 = \underline{\_\_\_\_}\)
    b. \(9 + 8 = \underline{\_\_\_\_}\)

11. a. \(5 + 10 = \underline{\_\_\_\_}\)
    b. \(6 + 9 = \underline{\_\_\_\_}\)

12. a. \(6 + 10 = \underline{\_\_\_\_}\)
    b. \(7 + 9 = \underline{\_\_\_\_}\)
Show the most efficient way to solve the number sentences.

1. $9 + 7 = ____$
2. ____ = $9 + 5$
3. $9 + 2 = ____$
Lesson 5: Compare efficiency of counting on and making ten when one addend is 9.

Solve the number sentences. Use number bonds to show your thinking. Write the 10+ fact and new number bond.

1. \(9 + 6 = \_\) \(10 + \_ = \_

2. \(9 + 8 = \_\) \(\_ + \_ = \_

3. \(5 + 9 = \_\) \(\_ + \_ = \_

4. \(7 + 9 = \_\) \(\_ + \_ = \_

Date: 7/3/13

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Solve and match the number sentence to the 10+ number bond.

\[ 9 + 5 = \_\_\_ \quad 9 + 6 = \_\_\_ \quad 9 + 8 = \_\_\_ \]

Show the most efficient strategy to solve the number sentences.

1. \[9 + 7 = \_\_\_\]  
2. \[8 + 9 = \_\_\_\]  
3. \[9 + 2 = \_\_\_\]  
4. \[4 + 9 = \_\_\_\]  
5. \[9 + 1 = \_\_\_\]  
6. \[9 + 9 = \_\_\_\]
Lesson 6

Objective: Use the commutative property to make ten.

Suggested Lesson Structure

- Fluency Practice (10 minutes)
- Application Problem (5 minutes)
- Concept Development (35 minutes)
- Student Debrief (10 minutes)

Total Time (60 minutes)

Fluency Practice (10 minutes)

- Happy Counting by Twos 1.OA.5 (2 minutes)
- Take Out 2: Number Bonds 1.OA.6 (4 minutes)
- Decompose Addition Sentences into Three Parts 1.OA.6 (4 minutes)

Happy Counting by Twos (2 minutes)

Note: Reviewing counting on allows students to maintain fluency with adding and subtracting 2. Repeat the Happy Counting activity from G1–M1–Lesson 3, counting by twos from 0 to 20 and back.

Take Out 2: Number Bonds (4 minutes)

Materials: (S) Personal white boards

Note: This is an anticipatory fluency for the make ten addition strategy when one addend is 8.

Say a number within 10. Students quickly write a number bond for the number said, using 2 as a part, and hold up their boards when finished.

Decompose Addition Sentences into Three Parts (4 minutes)

Note: This fluency activity reviews adding three numbers and making ten when one addend is 9.
Decompose addition sentences into three steps.

T: (Write $9 + 3$.) Say 3 as an addition sentence starting with 1.
S: $1 + 2$.

T: (Write $1 + 2$ below 3.) Say $9 + 3$ as a three-part addition sentence.
S: $9 + 1 + 2 = 12$.

Write out the equation for students to see if necessary. Repeat process for other problems.

**Application Problem (5 minutes)**

There are 6 children on the swings and 9 children playing tag. How many children are playing on the playground? Make ten to solve. Create a drawing, number bond, and number sentence along with your statement.

Note: This problem gives students the chance to apply learning from Lessons 3, 4, and 5 as they solve problems with 9 as an addend. During the Debrief, the teacher can discuss how the commutative property applies to most efficiently solving the problem.

**Concept Development (35 minutes)**

Materials: (S) Personal white boards

Students sit next to their partner at tables or in the meeting area.

T: (Write $5 + 9 =$ on the board.) Turn and talk to your partner. What strategy should we use to solve efficiently?
S: Make ten.

T: Should we make ten with 5 or with 9? Let’s have each partner try it a different way. Partner A, solve this by making ten with 5. Partner B, solve this by making ten with 9.

S: (Solve on personal white boards as the teacher circulates.)
T: Share your solution with your partner. Did you get the same total or a different total? Discuss how you solved it.
S: (Share solutions and how they broke apart the numbers.)
T: How much is $5 + 9$?
S: 14!
Lesson 6

Use the commutative property to make ten.

Problem Set (10 minutes)

T: Did you solve for the total using the same way? How did you and your partner solve this?
S: We used different ways. I broke apart 9 into 5 and 4 so I could make ten with 5 + 5, and my partner broke apart the 5 into 4 and 1 so she could make ten with 9 + 1.
T: (Write the students’ solutions on board, including bonds.) So Partner A added 5 + 9 using 5 + 5 + 4. (Point to number bond.) You’re saying that this is the same as Partner B’s work, where she added 5 + 9 using 9 + 1 + 4. (Point to number bond.) So 5 + 5 + 4 is the same as 9 + 1 + 4? (Point to number bonds.)
S: Yes!
T: Which way did you prefer? Why?
S: I know 9 is made from 5 and 4, so taking apart 9 was fast for me.
S: Making 9 with 10 was fast and easy for me. It’s just 1 away from 10. It’s easy to take away 1 from a number.
T: Do we always have to start with the first addend when we are adding?
S: No. We can add in any order, as long as we add all of the parts.
T: (Project 3 + 9.) Which number should we start with?
S: 9, because all we have to do is take the 1 out of 3 to make ten.
T: On your board, find the total and show your bonds.
S: (Write 3 + 9 = 12, showing bonds of 2 and 1 under 3.)
T: What is the related 10+ fact to help you solve 3 + 9?
S: 10 + 2 = 12.
T: So what is 3 + 9? Say the number sentence.
S: 3 + 9 = 12.
T: (Write 9 + 4 = ____ on the board.) Which number should we make ten with?
S: 9.
T: Which number should we break apart?
S: 4.
T/S: (Repeat the process to find the sum.)

Repeat the process using the suggested sequence: 9 + 6, 8 + 9, and 7 + 9. For each problem, have students make ten to solve and alternate writing the related 10+ fact as a number bond and a number sentence.

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.

Note: Students should save the Problem Set so it is available as a comparison during debriefs focusing on making ten when one addend is 8.
Lesson 6: Use the commutative property to make ten.

Student Debrief (10 minutes)

Lesson Objective: Use the commutative property to make ten.

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.

- Look at Problem 8. Find as many related equal equations as you can.
- Look at Problem 8. In which problem can you use your doubles + 1 fact to help you solve?
- How did we apply the make ten strategy today to solve addition problems efficiently?
- To solve 3 + 9, which addend should we make ten with? Why?
- Look at your Application Problem. Turn and talk to your partner about which addend we should break apart to solve the problem more efficiently.

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.

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Lesson 6 Problem Set

Name ___________________________ Date ____________

1. Solve.

\[ 9 + 2 = 11 \quad 2 + 9 = 11 \]

Write the bond for the related 10 fact.

\[ \begin{array}{c}
10 \\
11 \\
\end{array} \]

2. \[ 9 + 6 = \_\_\_ \quad 6 + 9 = \_\_\_ \]

3. \[ 7 + 9 = \_\_\_ \quad 9 + 7 = \_\_\_ \]

Use number bonds to show your thinking. Write the related 10+ fact.

4. \[ 9 + 4 = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_ \]

5. \[ 3 + 9 = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_ \]

6. \[ 9 + 5 = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_ \]
7. Match the equal expressions.

a. 9 + 3 \qquad 10 + 4
b. 5 + 9 \qquad 10 + 0
c. 9 + 6 \qquad 10 + 2
d. 8 + 9 \qquad 10 + 5
e. 9 + 7 \qquad 10 + 7
f. 9 + 1 \qquad 10 + 6

8. Complete the addition sentences to make them true.

a. 2 + 10 = ____

f. 7 + 9 = ____

k. ___ + 10 = 14

b. 3 + 9 = ___

f. 3 + 10 = ___

l. ___ + 9 = 14

c. 10 + 9 = ____

h. 8 + 9 = ____

m. ___ + 7 = 17

d. 5 + 9 = ___

i. ____ + 10 = 18

n. ___ + 9 = 17

e. 6 + 10 = ____

j. ___ + 9 = 16
1. Solve. Use number bonds to show your thinking.

\[9 + 5 = \_
\]  \[5 + 9 = \_
\]

Write the bond for the related 10 fact.

2. Solve. Draw a line to match the related facts. Write the related 10+ fact.

\[9 + 7 = \_
\]  \[\_
\] = \[9 + 8\]

\[\_
\] = \[6 + 9\]

\[7 + 9 = \_
\]

\[\_
\] = \[9 + 8\]

\[8 + 9 = \_
\]

\[9 + 6 = \_
\]
Lesson 6 Homework

Name __________________________________________ Date ________________

1. Solve. Use your number bonds. Draw a line to match the related facts. Write the related 10+ fact.

\[ 9 + 6 = \underline{\hspace{1cm}} \]
\[ \underline{\hspace{1cm}} = 9 + 8 \]
\[ \underline{\hspace{1cm}} = 3 + 9 \]
\[ \underline{\hspace{1cm}} = 7 + 9 \]
\[ \underline{\hspace{1cm}} = 9 + 5 \]
\[ 6 + 9 = \underline{\hspace{1cm}} \]
\[ \underline{\hspace{1cm}} = 9 + 5 \]
\[ 10 + 5 = 15 \]
\[ 8 + 9 = \underline{\hspace{1cm}} \]
\[ 9 + 3 = \underline{\hspace{1cm}} \]
\[ 9 + 7 = \underline{\hspace{1cm}} \]
\[ 5 + 9 = \underline{\hspace{1cm}} \]

2. Complete the addition sentences to make them true.

a. \(3 + 10 = \underline{\hspace{1cm}}\)

b. \(4 + 9 = \underline{\hspace{1cm}}\)

c. \(10 + 5 = \underline{\hspace{1cm}}\)

d. \(9 + 6 = \underline{\hspace{1cm}}\)

e. \(7 + 10 = \underline{\hspace{1cm}}\)

f. \(\underline{\hspace{1cm}} = 7 + 9\)

g. \(\underline{\hspace{1cm}} = 10 + 8\)

h. \(9 + 8 = \underline{\hspace{1cm}}\)

i. \(\underline{\hspace{1cm}} + 9 = 19\)

j. \(5 + 9 = \underline{\hspace{1cm}}\)
3. Find and color the expression that is equal to the snowman’s hat. Write the true number sentence below.

\[
10 + 3 = 6 + 9
\]

\[
10 + 6 = 8 + 7
\]

\[
10 + 7 = 8 + 9
\]

\[
10 + 8 = 2 + 9
\]
Lesson 7

Objective: Make ten when one addend is 8.

Suggested Lesson Structure

- Fluency Practice (13 minutes)
- Application Problem (7 minutes)
- Concept Development (30 minutes)
- Student Debrief (10 minutes)
- Total Time (60 minutes)

Fluency Practice (13 minutes)

- Add to 9 1.OA.6 (5 minutes)
- Friendly Fact Go Around: Make it Equal 1.OA.6 (5 minutes)
- Take Out 2: Addition Sentences 1.OA.6 (3 minutes)

Add to 9 (5 minutes)

Materials: (T) 9 + n addition cards (S) Personal white boards

Note: This activity supports the make ten addition strategy, as students will need to fluently decompose an addend in order to make ten.

Show an addition flashcard (e.g., 9 + 3). Students write the three-addend expression (9 + 1 + 2 = 12).

Friendly Fact Go Around: Make it Equal (5 minutes)

Materials: (T) Friendly Fact Go Around: Make it Equal

Note: This activity reinforces the make ten adding strategy and promotes an understanding of equality.

Project the Friendly Fact Go Around: Make it Equal (or make and display a poster). Point to a problem and call on a student: 9 + 6 = 10 + □. The student answers “five.” The class says the number sentence aloud, with the answer, “Nine plus six equals ten plus five.” If a student gives an incorrect answer, he then repeats the correct equation that the class gave. The teacher can adapt the problem to individual children, pointing to easier problems for children who are less fluent.
Take Out 2: Addition Sentences  (3 minutes)

Note: This activity supports the make ten addition strategy when one addend is 8, since 8 needs 2 to make ten.

Say a number between 2 and 10 (e.g., 3). Students say an addition sentence beginning with 2 (2 + 1 = 3).

Application Problem  (7 minutes)

Stacy made 6 drawings. Matthew made 2 drawings. Tim made 4 drawings. How many drawings did they make altogether?
Use a drawing, a number sentence, and a statement to match the story.

Note: Some students may actually create detailed drawings. You may wish to continue discussing how simple shapes, such as squares or circles, can be used to efficiently represent the story’s drawings, rather than spending time and thought on elaborate pictures.

Concept Development  (30 minutes)

Materials: (T) 10 blue and 10 yellow linking cubes, a ten-frame border (S) 10 blue and 10 yellow linking cubes, personal white boards

Have students sit at their seats with materials.

T: (Project and read aloud.) Peter has 8 books and Willie has 5. How many books do they have altogether?
T: What is the expression to solve this problem?
S: 8 + 5.
T: Use your blue linking cubes in 5-groups to show how many books Peter has on your personal white board.
S: (Organize 8 blue linking cubes.)
T: Use your yellow cubes to show how many books Willie has. Put them in a line of five next to your personal board.
S: (Organize 5 yellow linking cubes.)
T: What are the different ways we can solve 8 + 5?
S: Count on! → Make ten with 5! → Make ten with 8!
T: (Call on students to demonstrate each of these strategies, saving making 10 with 8 for the end. As a student volunteer makes ten, use the ten-frame border to physically group the ten.)
Lesson 7

Lesson 7: Make ten when one addend is 8.

Date: 7/3/13

T: Let’s use the last strategy to solve 8 + 5. Everyone, make ten with 8!
S: (Move 2 yellow cubes to the blue pile.)
T: With your marker, draw a frame around your 10 cubes.
S: (Frame 10 cubes.)
T: We have 10 here. (Gesture to the 10.) What do we have left here? (Point to the other pile.)
S: 3.
T: Look at your new groups. What is our new number sentence?
S: 10 + 3 = 13!
T: (Write 10 + 3 = 13 on the board.) Did we change the number of linking cubes we have?
S: No.
T: So, 8 + 5 is the same as what addition expression?
S: 10 + 3.
T: (Write 8 + 5 = 10 + 3.)
T: What is 10 + 3?
S: 13.
T: What is 8 + 5? Say the number sentence.
S: 8 + 5 = 13.
T: How many books do Peter and Willie have?
S: 13 books.

Repeat the process with the following suggested sequence: 8 + 3; 8 + 6; 4 + 8; 8 + 7; 8 + 8. Be sure to have students make ten with 8, reinforcing the concept of commutativity for efficient problem solving. Write both number sentences (8 + 6 = 14, 10 + 4 = 14) and a number sentence equating the equivalent expressions (8 + 6 = 10 + 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.
Lesson 7: Make ten when one addend is 8.

Student Debrief (10 minutes)

Lesson Objective: Make ten when one addend is 8.

Note: Distribute the student Problem Set from Lesson 3 for comparing with today’s Problem Set.

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.

- Look at Problem 1. What are the two number sentences that match the statements? (Repeat with other problems as expeditious and necessary.)
- How can we write a true number sentence with these expressions? \(8 + 5 = 10 + 3\)
- When you had 8 as an addend, how many objects did you circle from the other addend?
- Look at your Problem Set from a few days ago. How are these problems similar? How are they different? What do you notice about the answers when you have 9 as an addend compared to 8 as an addend? Why do you think this is?
- Look at the Application Problem. What did you add first? Why? (Some students may have added 6 + 4 because it is an efficient way to make ten. Some students may still be adding the numbers in order. If students added 6 + 2 first, ask them to use today’s lesson to show making ten to solve.)

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.
### Friendly Fact Go Around: Make it Equal

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<td>$9 + \square = 10 + 6$</td>
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</tbody>
</table>
Name ___________________________  Date ____________

Draw and circle to show how you made ten to help you solve.

1. John has 8 tennis balls. Toni has 5. How many tennis balls do they have in all?

   8 and _____ make ______.
   10 and _____ make ______.

   John and Toni have ______ tennis balls in all.

2. Bob has 8 raisins and Jenny has 4. How many raisins do they have altogether?

   8 and _____ make ______.
   10 and _____ make ______.

   Bob and Jenny have ______ raisins altogether.
3. There are 3 chairs on the right side of the classroom and 8 on the left side. How many total chairs are in the classroom?

8 and ______ make ______.

10 and ______ make ______.

There are ______ total chairs.

4. There are 7 children sitting on the rug and 8 children standing. How many children are there in all?

8 and ______ make ______.

10 and ______ make ______.

There are ______ children in all.
Name ___________________________ Date _______________

Draw, label, and circle to show how you made ten to help you solve.

Write the number sentences you used to solve.

1. Nick picks some peppers. He picks 5 green peppers and 8 red peppers. How many peppers does he pick in all?

   ____ + ____ = ____

   ____ + ____ = ____

   Nick picks ____ peppers.
Name ____________________________ Date ________________

Draw, label, and circle to show how you made ten to help you solve.

Write the number sentences you used to solve.

1. Meg gets 8 toy animals and 4 toy cars at a party. How many toys does Meg get in all?

8 + 4 = ____

10 + ____ = ____

Meg gets ____ toys.

2. John makes 6 baskets in his first basketball game and 8 baskets in his second. How many baskets does he make altogether?

____ + ____ = ____

____ + ____ = ____

John makes ____ baskets.
3. May has a party. She invites 7 girls and 8 boys. How many friends does she invite in all?

\[ \_ + \_ = \_ \]

\[ \_ + \_ = \_ \]

May invites \_ friends.

4. Alec collects baseball hats. He has 9 Mets hats and 8 Yankee hats. How many hats are in his collection?

\[ \_ + \_ = \_ \]

\[ \_ + \_ = \_ \]

Alec has \_ hats.
### 9 + \(n\) Addition Cards

Directions: Print on cardstock and cut.

<table>
<thead>
<tr>
<th>9 + 2</th>
<th>3 + 9</th>
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<td>9 + 6</td>
<td>7 + 9</td>
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<tr>
<td>9 + 8</td>
<td>9 + 9</td>
</tr>
</tbody>
</table>
Lesson 8

Objective: Make ten when one addend is 8.

Suggested Lesson Structure

- Fluency Practice  (15 minutes)
- Application Problem  (5 minutes)
- Concept Development  (30 minutes)
- Student Debrief  (10 minutes)
- Total Time  (60 minutes)

Fluency Practice  (15 minutes)

- Sprint: 9 + n  1.OA.6  (10 minutes)
- Happy Counting by Twos  1.OA.5  (2 minutes)
- Take Out 2: Addition Sentences  1.OA.6  (3 minutes)

Sprint: 9 + n  (10 minutes)

Materials: (S) 9 + n Sprint

Note: This sprint provides practice with the make ten addition strategy, when one addend is 9.

Happy Counting by Twos  (2 minutes)

Note: Reviewing counting on allows students to maintain fluency with adding and subtracting 2.

Repeat the Happy Counting activity from G1–M2–Lesson 4, counting by twos from 0 to 20 and back (this range may be adjusted to meet the needs of students). As students strengthen their skills, start with other numbers such as 1, 7, 11, or 8.

Take Out 2: Addition Sentences  (3 minutes)

Note: This activity supports the make ten addition strategy when one addend is 8 since 8 needs 2 to make ten.

Say a number between 2 and 10 (e.g., 3). Students say an addition sentence beginning with 2 (2 + 1 = 3).
Lesson 8

Application Problem (5 minutes)

A tree lost 8 leaves one day and 4 leaves the next. How many leaves did the tree lose at the end of the two days? Use a number bond, a number sentence, and a statement to match the story.

Extension: On the third day, the tree lost 6 leaves. How many leaves did it lose by the end of the third day?

Note: This problem revisits the idea of making ten when one addend is 8, which students have been working on since Lesson 7. It also challenges students to use addition though the leaves are being lost.

Concept Development (30 minutes)

Materials: (T) 10 blue and 10 yellow linking cubes, ten-frame border (S) Personal white boards

Have students come to the meeting area with their personal white boards.

T: (Project and read aloud.) Amy wrote 8 letters to her friends. Peter wrote 3 to his friends. How many letters did they write? (Pause.) What is the expression to solve this story?

S: 8 + 3.

T: How many blue cubes do I need to represent the number of letters Amy wrote? How should I arrange it?

S: 8 cubes. Put them in a 5-group.

T: Why should I organize them in 5-group?

S: It's easy for everyone to see that there are 8 instead of counting the cubes.

T: With your partner, figure out how many letters Amy and Peter wrote. Use your personal white board to record how you solved it.

S: (Discuss and solve problem, while teacher circulates and listens.)

T: How many letters did Amy and Peter write?

S: 11!

T: How did you solve the problem?

S: I counted on from 8. Eight, 9, 10, 11. → I put 2 cubes with the 8 blue ones and had 1 cube left. That made 11. → I broke apart the 3 into 2 and 1 to make 10 and 1.

T: Let’s all try using this last strategy of making ten to solve this problem.

T: (Lay out 8 blue cubes.) How many yellow cubes do I need to represent the number of letters Peter wrote?

S: 3 cubes.
Lesson 8

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Offer opportunities for student leadership as “teacher.” Have students demonstrate for the class how they are breaking apart and joining their linking cubes. Listen for accurate use of math vocabulary in their description. Words you want to hear them using include expression, organize, join, broke apart and frame.
Repeat the process adding the numbers 4–9 in order as time allows, alternating 8 as the first and the second addend. Use linking cubes to illustrate what the math drawings should look like for perhaps one more example but move towards having students draw without the visual aid.

Before students add dark circles to their math drawing, ask them, “How many does 8 need to make ten?” and “How many do you have when you take away 2 from [the other addend]?” to guide how they will decompose the addend when drawing.

Be sure to have students make ten with 8, reinforcing the concept of commutativity for efficient problem solving, and write two number sentences (8 + 6 = 14, 10 + 4 = 14) and the equivalent expression (8 + 6 = 10 + 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**: Make ten when one addend is 8.

Note: Distribute student Problem Set from Lesson 4 for comparing with today’s Problem Set.

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.

- Look at Problem 1 and Problem 6. How are your drawings different? Which drawing shows how you solved 8 + 5 more easily?
- What did you notice about having 8 as an addend? What happens to the other addend when it gets broken apart?
- How did Problem 6 help you solve Problem 7?
- Look at your Problem Set from a few days ago. What do you notice about the answers when you have 9 as an addend compared to 8 as an addend? Why do you think this is?
- How would you solve 8 + 9? Turn and talk to your partner. Explain your strategy.
Why is it important to make our math drawings in an organized way?

Look at your Application Problem. Draw an organized picture to show how you can solve this problem.

**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 8: Make ten when one addend is 8.

Name ____________________________ Date ________________

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Number correct:
**Lesson 8 Sprint**

**Name ____________________________ Date __________**

**B** Write the missing number.

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**Number correct:**
Lesson 8 Problem Set

Name ___________________________ Date _____________

Circle to make ten. Write the 10+ number sentence and solve.

1. Tom only has 8 goldfish and 5 angelfish. How many fish does Tom have in all?

\[
8 + 5 = _____
\]

10 fish + _____ fish = _____ fish

Make ten by circling and solve.

2. \[8 + 3 = ___\]

3. \[4 + 8 = ___\]
Solve. Make math drawings using the ten-frame to show how you made ten to solve.

4. $8 + 4 = \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_

5. $6 + 8 = \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_

6. $8 + 5 = \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_

Solve. Use a number bond to show how you made a ten.

7. $5 + 8 = \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_ = \_\_\_\_\_\_

8. $\_\_\_\_\_\_\_\_\_ = 8 + 7$
Lesson 8 Exit Ticket

Name __________________________ Date ________________

Make math drawings using the ten-frame to solve. Rewrite as a 10+ number sentence.

1. 6 + 8 = ___

2. ___ = 4 + 8

10 + ___ = ___

___ + ___ = ___
Solve. Make math drawings using the ten-frame to show how you made ten to solve.

1. $8 + 3 = \_\_\_ + \_\_\_ = \_\_\_\_\$

   8 + 3 = 11
   \[\begin{array}{cc}
   2 & 1 \\
   \hline
   \end{array}\]
   \[\begin{array}{c}
   10 + 1 = 11
   \end{array}\]

2. $8 + 6 = \_\_\_ + \_\_\_ = \_\_\_\_\$

3. $7 + 8 = \_\_\_ + \_\_\_ = \_\_\_\_\$

   $8 + 3 = 11$
   $10 + 1 = 11$
Make math drawings using ten-frames to solve. **Circle** the true number sentences. Write an X to show number sentences that are not true.

a. 8 + 4 = 10 + 2
b. 10 + 6 = 8 + 8
c. 7 + 8 = 10 + 6

d. 5 + 10 = 5 + 8
e. 2 + 10 = 8 + 3
f. 8 + 9 = 10 + 7
Lesson 9

Objective: Compare efficiency of counting on and making ten when one addend is 8.

Suggested Lesson Structure

- Fluency Practice (12 minutes)
- Application Problem (8 minutes)
- Concept Development (30 minutes)
- Student Debrief (10 minutes)

Total Time (60 minutes)

Fluency Practice (12 minutes)

- Decompose Addition Sentences into Three Parts 1.OA.6 (5 minutes)
- Cold Call: Break Apart Numbers 1.OA.6 (2 minutes)
- Make It Equal 1.OA.6 (5 minutes)

Decompose Addition Sentences into Three Parts (5 minutes)

Note: This fluency activity reviews adding three numbers and making ten when one addend is 8.

Decompose addition sentences into three steps.

T: (Write 8 + 3.) How many do we need from 3 to make ten?
S: 2.
T: Say 3 as an addition expression, starting with 2.
S: 2 + 1.
T: (Write 2 + 1 below the 3, showing the decomposition of 3.) Say 8 + 3 as a three-part addition sentence.
S: 8 + 2 + 1 = 12.

Repeat process for other problems.
Cold Call: Break Apart Numbers (2 minutes)

Note: This is an anticipatory fluency for making ten when one addend is 7 since 7 needs 3 to make ten.

Say a number between 3 and 10. Tell students you will Cold Call them to say the number bond with 3 as a part. Alternate between calling on individual students, the whole class, and groups of students (e.g., only boys, only girls). Use the example below as a reference.

T: 4 (Pause to provide thinking time.) Everybody.
S: 3 and 1.
T: 6. (Pause.) Boys.
S: (Only boys.) 3 and 3.
Repeat with numbers 3 through 10.

Make It Equal (5 minutes)

Materials: (S) 5-group cards, 1 “=” card, and 2 “+” cards (from G1–M2–Lesson 1) per set of partners

Note: This activity reinforces the make ten addition strategy as students relate 10 + n addition sentences to an equivalent sentence with an addend of 8 or 9. Students ready to use the numeral side of the 5-group cards should be encouraged to do so.

Assign students partners of equal ability. Students arrange 5-group cards from 0 to 10, including the extra 5, and place the “=” card between them.

Write four numbers on the white board (e.g., 10, 9, 1, and 2). Partners take the 5-group cards that match the numbers written to make two equivalent expressions (e.g., 10 + 1 = 9 + 2).

Suggested sequence: 10, 9, 1, 2; 10, 3, 9, 2; 10, 4, 5, 9; 10, 8, 1, 3; 10, 8, 4, 2; etc.

Application Problem (8 minutes)

A squirrel found 8 nuts in the morning, 5 nuts in the afternoon, and 2 nuts in the evening. How many nuts did the squirrel collect in all?

Extension: The next day, the squirrel found 3 more nuts in the morning, 1 more in the afternoon, and 1 more in the evening. How many did he collect over the two days?

Note: This problem uses three addends, revisiting the associative and commutative properties from earlier in this topic. During the Debrief, students who used making ten as a strategy to solve will share their work, supporting students’ development toward independent use of the strategy.
Concept Development (30 minutes)

Materials: (S) Personal white boards

Have students sit at their desks or the meeting area with their materials.

**T:** (Project or write the two number bonds shown here.) Which number bond are you able to solve faster?

**S:** 10 and 4!

**T:** (Write $10 + 4 = \_\_\_\_\_\_$.) $10 + 4 = ?$

**S:** 14!

**T:** (Record the solution.) How did you know that so quickly?

**S:** Because we know our 10+ facts. → Because 10 is a friendly number.

**T:** (Write $8 + 6 = \_\_\_\_\_\_$.) Let’s count on to solve $8 + 6$.

**T/S:** Eeeiiight, 9, 10, 11, 12, 13, 14. 14!

**T:** (Record the solution.)

**T:** (On another line, write $8 + 6 = \_\_\_\_\_\_$.) What expression is equal to $8 + 6$?

**S:** 10 + 4!

**T:** (Record this to make the true number sentence $8 + 6 = 10 + 4$.) Use your personal white board to show how you can solve $8 + 6$ by making ten, to be sure that this is a true number sentence.

**S:** (Solve by making ten with 8, taking apart 6 into 2 and 4, etc.)

**T:** (Read aloud.) Our friends Sergio and Lila are back again! They were getting ready to go to P.E. They both had to solve $8 + 7$. The first one to solve it got to go to P.E. first! Sergio decided he was going to count on to solve it again. (Pause.) Was there another way to solve $8 + 7$ that Sergio could have used?

**S:** (Discuss, as teacher circulates and listens.) Make ten! → Take 2 from 7 to make ten from 8.

**T:** Some of you said that you would make ten. Well, that is just what Lila decided to do again. (Assign partners.) Partner A, explain to your partner how Sergio solved $8 + 7$ by counting on. Partner B, explain to your partner how Lila solved $8 + 7$ by making ten. Use your personal white board if it helps you share your thoughts.

**S:** (Discuss, as teacher circulates and listens.)

**Notes on Multiple Means for Engagement:**
Students enjoy the use of interactive technology in the classroom. Do an Internet search of *make ten* or something similar. This provides some websites for use during independent time or if you have the means to use the website with the entire class.
Lesson 9

T: Help me make a number bond to show what Sergio did. What were the parts that Sergio used?
S: 8 and 7! (Write the bond.)
T: What was the total?
S: 15. (Complete the bond.)
T: Help me make a number bond to show what Lila did. What were the parts that Lila used?
S: 10 and 5! (Write the bond.)
T: What was the total?
S: 15. (Complete the bond.)
T: Which number bond will help you solve more efficiently?
S: 10 and 5.
T: So, based on these number bonds, and the work you and your partner just did, who do you think got to go to P.E. first?
S: Lila!
T: Again, you’re right! Since Lila really knows how to use the make ten strategy, she was able to solve for the unknown very quickly or efficiently. Sometimes it takes practice before we can use a strategy quickly. When a strategy is new to us, it can take longer for us to use it until we get better at it. Let’s keep practicing.

Continue with partners solving each problem showing how to solve using counting on and making ten. The following is a suggested sequence of problems: 8 + 5; 8 + 4; 8 + 8; 8 + 3 (counting on may actually be more efficient here); 8 + 9.

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: Compare efficiency of counting on and making ten when one addend is 8.
Note: Distribute student Problem Set from Lesson 5 for comparing with today’s Problem Set.

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.

- Look at Problem 1 and Problem 2. How are your bonds different? How can Problem 1 help you solve Problem 2?
- Look at Problems 8–10. What do you notice about the number bonds? How does knowing your 10+ facts help you with your 8+ facts?
- Look at Problem 5 and Problem 8. Do you think counting on or making ten was more efficient to solve these? Why?
- Look at your Problem Set from a few days ago. What do you notice about the answers when you have 9 as an addend compared to 8 as an addend? Why do you think this is?
- Look at your Application Problem. Would counting on or making ten help you solve this problem most efficiently? If you used making ten to solve this, share your work and explain your thinking.
- One first grader I know makes ten for some of her 8+ facts, some she counts on to solve. Sometimes she just knows the solution. Is that true for any of you? Which 8+ facts do you use a particular strategy to help you solve? Why?

**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

Name ___________________________________ Date ________________

Make ten to solve. Use a number bond to show how you took 2 out to make ten.

1. Ben has 8 green grapes and 3 purple grapes. How many grapes does he have?

   \[8 + 3 = \______\quad 10 + \______ = \______\]

   Ben has ___ grapes.

2. \[8 + 4 = \______\quad 10 + \______ = \______\]

Use number bonds to show your thinking. Write the 10+ fact.

3. \[8 + 5 = \______\quad \______ + \______ = \______\]

4. \[8 + 7 = \______\quad \______ + \______ = \______\]
Lesson 9 Problem Set

5. \[ 4 + 8 = \_\_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_ \]

6. \[ 7 + 8 = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_ \]

7. \[ 8 + \_\_\_ = \_\_\_ \quad \_\_\_ + \_\_\_ = \_\_\_ \]

Complete the addition sentences.

8. a. \[ 10 + 1 = \_\_\_ \quad \_\_\_ \]
b. \[ 8 + 3 = \_\_\_ \quad \_\_\_ \]

9. a. \[ 10 + 5 = \_\_\_ \quad \_\_\_ \]
b. \[ 8 + 7 = \_\_\_ \quad \_\_\_ \]

10. a. \[ 10 + 6 = \_\_\_ \quad \_\_\_ \]
b. \[ 8 + 8 = \_\_\_ \quad \_\_\_ \]

11. a. \[ 2 + 10 = \_\_\_ \quad \_\_\_ \]
b. \[ 4 + 8 = \_\_\_ \quad \_\_\_ \]

12. a. \[ 4 + 10 = \_\_\_ \quad \_\_\_ \]
b. \[ 6 + 8 = \_\_\_ \quad \_\_\_ \]

Compare efficiency of counting on and making ten when one addend is 8.

Date: 7/3/13
Name ____________________________ Date ______________

Seyla has 3 stamps in her collection. Her father gives her 8 more stamps. How many stamps does she have now? Show how you make ten and write the 10+ fact.

3 + 8 = ____  
10 + ____ = ____

Complete the addition sentences.

a. 8 + 6 = ___  

b. 10 + ____ = 14
Lesson 9 Homework

Name ___________________________ Date ______________

Use number bonds to show your thinking. Write the 10+ fact.

1. 8 + 3 = ____  
   ____ + 10 = ____

2. 6 + 8 = ____  
   ____ + 10 = ____

3. ____ = 8 + 8  
   ____ = 10 + ____

4. ____ = 5 + 8  
   ____ = 10 + ____

Complete the addition sentences.

5. a. 7 + 8 = ____
     15
   b. 10 + 5 = ____

6. a. 16 = ____ + 8
     __________
   b. 10 + 6 = ____
Lesson 9 Homework

7. a. ____ = 9 + 8

b. 10 + 7 = ___

Draw a line to the matching number sentence. You may use a number bond or 5-group drawing to help you.

8. 11 = 8 + 3

8 + 6 = 14

9. Lisa had 5 red rocks and 8 white rocks. How many rocks did she have?

10 + 1 = 11

10.

14

10

4

13 = 10 + 3

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Lesson 10

Objective: Solve problems with addends of 7, 8, and 9.

Suggested Lesson Structure

- Fluency Practice (10 minutes)
- Application Problem (6 minutes)
- Concept Development (30 minutes)
- Student Debrief (14 minutes)

Total Time (60 minutes)

Fluency Practice (10 minutes)

- 1, 2, and 3 Less 1.OA.6 (3 minutes)
- Decomposing Addition Sentences 1.OA.6 (5 minutes)
- Happy Counting by Threes 1.OA.5 (2 minutes)

1, 2, and 3 Less (3 minutes)

Note: This fluency activity prepares students for today’s lesson, as students will decompose numbers to make ten with addends of 7, 8, and 9.

T: On my signal, say the number that is 1 less.
T: 3 (snap).
S: 2.

Continue with all numbers within 10. Then repeat with 2 less and 3 less.

Decomposing Addition Sentences (5 minutes)

Note: This activity reviews how to decompose numbers to make ten, creating equivalent but easier number sentences.

Write number sentences on the board to model how to decompose number sentences into three addends.

T: (Write 9 + 5 = ___ on the board.) What does 9 need to make ten?
S: 1.
T: (Write 9 + 1 below 9 + 5 = ___.)
T: (Point to the 5.) If we take 1 from 5 to make ten, what part is left?
Lesson 10

NYS COMMON CORE MATHEMATICS CURRICULUM

Solve problems with addends of 7, 8, and 9.

Date: 7/3/13

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:
Maintain student attention with short fluency games that are energetically presented. You will hear students asking to play many of these games during fluency time as they enjoy this active engagement.

Happy Counting by Threes (2 minutes)

Note: Reviewing counting on and back allows students to maintain fluency with adding and subtracting 3. Repeat the Happy Counting activity from G1–M2–Lesson 4, counting by threes from 0 to 12 and back.

Application Problem (6 minutes)

There were 4 boots by the classroom door, 8 boots in the hallway, and 6 boots by the teacher’s desk. How many boots were there altogether?

Extension: How many pairs of boots were there in all?

Note: In this problem, the numbers 4, 8, and 6 are used as addends, allowing students to choose either making ten by adding (4 + 6) + 8, or by decomposing either the 4 or 6 to make ten with 8. During the Debrief, students will have the opportunity to share work and notice how peers are using Level 3 strategies such as making ten to solve.

Concept Development (30 minutes)

Materials: (S) Personal white boards, numeral cards or 5-group cards, 1 “+” card for each student, 1 “=” card (from G1–M2–Lesson 1) for each pair of students

Have students come to the meeting area with their personal white boards and sit in a semi-circle.

T: (Write 9 + 6 = ___ on the board.) Using an organized math drawing or a number bond, solve 9 + 6. Think about the equal 10+ fact and write a true number sentence using two expressions.

S: (Solve by drawing or using a number bond as teacher circulates.)
Lesson 10: Solve problems with addends of 7, 8, and 9.

Date: 7/3/13

T: (Choose one student to share the use of counting on and another student to share the use of making ten.) When there is a 9 as an addend, what could you do to the other addend?

S: Get the 1 out! Break apart 6 into 1 and 5 as parts.

Repeat the process with 4 + 8. Begin by asking students which number they should make ten with to solve more efficiently.

T: (Write 7 + 6 = ___ on the board.) Turn and talk to your partner. How might you solve this problem using what you already know about the make ten strategy?

T: Which number should we make ten with? Why?

S: Make ten with 7 because it’s only 3 away from 10. → 6 is 4 away from 10. → It’s easier for me to get the missing part from 7 than 6.

T: With your partner, use a number bond to solve this problem.

T: Look at your picture. What expression is 7 + 6 the same as?

S: 10 + 3!

T: Write that as true number sentence.

S: (Write 7 + 6 = 10 + 3 or 10 + 3 = 7 + 6.)

T: What is 10 + 3?

S: 13.

T: So what is 7 + 6? Say the number sentence.

S: 7 + 6 = 13.

Repeat the process with 4 + 7, 7 + 5, and 7 + 7.

T: When 7 is the bigger addend, what could you do to the other addend?

S: Get the 3 out! Make 3 as a part.

T: Now we are going to play Simple Strategies! (Assign partners. Instruct each pair to combine their numeral cards and make two piles: digits 1–6 and digits 7–9, placing the 9 card on top of this second pile.) Here’s how you play:

1. Partner A picks a card from the first pile (digits 1–6).
2. Using the 9 card from the second pile and the card picked by Partner A, Partner B writes an addition expression (e.g., 6 + 9).
3. Partners use counting on and then use making ten to solve the expression.
4. After using the make ten strategy, Partner A writes down the equal 10 + ___ fact.
5. Partners place the equal sign card between the boards to make a true number sentence.
6. Switch roles. Keep the 9 card up each time you begin a new expression.
As students play, the teacher circulates and moves students to replacing the 9 card with the 8 card and then the 7 card, as appropriate.

**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 (14 minutes)**

**Lesson Objective:** Solve problems with addends of 7, 8, and 9.

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.

- Look at Problems 8–10. Can you find number sentences that have the same total? What are the number sentences? How are they related?
- Why is it efficient to start with a larger addend when you add? Give an example.
- Solve 9 + 6 = __, 8 + 6 = __, 7 + 6 = __. What patterns do you notice? Look at how you broke apart the second addend. What patterns do you see there? How did this breaking apart affect your totals? (When you take out 1 more from the second addend, your total is 1 less.)
- Which is easier for you to use? Counting on, making ten, or just knowing? Why?
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 10 Problem Set

Name ________________________________ Date ________________

Solve. If you want to, use drawings or number bonds. Write the equal 10+ fact.

1. 4 + 9 = ___

2. 6 + 8 = ___

3. 7 + 4 = ___

4. Match the equal expressions.

   a. 9 + 3 ______________________________
      10 + 1 ______________________________

   b. 5 + 8 ______________________________
      10 + 4 ______________________________

   c. 9 + 6 ______________________________
      10 + 2 ______________________________

   d. 8 + 9 ______________________________
      10 + 5 ______________________________

   e. 4 + 7 ______________________________
      10 + 7 ______________________________

   f. 6 + 8 ______________________________
      10 + 3 ______________________________
Complete the addition sentences to make them true.

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<tr>
<td>9.</td>
<td>9 + ___ = 17</td>
<td>8 + ___ = 16</td>
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<td>___ + 9 = 15</td>
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Name ________________________________ Date ________________

Solve. Use number bonds or 5-group drawings if needed. Write the equal 10+ number sentence.

9 + 5 = ____ 8 + 4 = ____ 7 + 6 = ____

10 + ____ = ____ 10 + ____ = ____ 10 + ____ = ____
Name ____________________________ Date ________________

Solve. Match the number sentence to the 10+ number bond that helped you solve the problem. Write the 10+ number sentence.

8 + 6 = ____  
___ + ___ = ____

7 + 5 = ____  
___ + ___ = ____

5 + 8 = ____  
___ + ___ = ____

4 + 7 = ____  
___ + ___ = ____

6 + 9 = ____  
___ + ___ = ____

9 + 3 = 12  
10 + 2 = 12
Complete the number sentences so that they equal the given number bond.

\[
\begin{array}{c@{\quad}c@{\quad}c}
10 & 13 & 14 \\
\_\_ & \_\_ & \_\_ \\
\_\_ & \_\_ & \_\_
\end{array}
\]

\[
\begin{array}{c@{\quad}c@{\quad}c}
10 & 16 & 10 \\
5 & 6 & 7 \\
\_\_ & \_\_ & \_\_
\end{array}
\]

\[
\begin{array}{c@{\quad}c@{\quad}c}
9 + \_\_ = 12 & 9 + \_\_ = 13 & 9 + \_\_ = 14 \\
8 + \_\_ = 12 & 8 + \_\_ = 13 & 8 + \_\_ = 14 \\
7 + \_\_ = 12 & 7 + \_\_ = 13 & 7 + \_\_ = 14 \\
15 = 9 + \_\_ & 16 = 9 + \_\_ & \_\_ = 9 + 8 \\
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Lesson 11

Objective: Share and critique peer solution strategies for put together with result unknown word problems.

Suggested Lesson Structure

- Fluency Practice (13 minutes)
- Application Problem (6 minutes)
- Concept Development (31 minutes)
- Student Debrief (10 minutes)

Total Time (60 minutes)

Fluency Practice (13 minutes)

- Sprint: Adding Across Ten 1.OA.6 (10 minutes)
- Rekenrek: Ten Less 1.NBT.5 (3 minutes)

Sprint: Adding Across Ten (10 minutes)

Materials: (S) Sprint: Adding Across Ten

Note: This sprint reviews the make ten addition strategy.

Rekenrek: Ten Less (3 minutes)

Materials: (T) Rekenrek

Note: This is an anticipatory fluency for the take-from-ten subtraction strategy in Topic B, as students will need to decompose numbers by taking out a ten.

T: (Show 14 on the Rekenrek). Say the number.
S: 14.
T: Say it the Say Ten way.
S: Ten 4.
T: What will my number be if I take out ten ones?
S: 4.
T: Let’s check. (Take out ten.) Yes!

Continue with other teen numbers.
Application Problem (6 minutes)

Nicholas bought 9 green apples and 7 red apples. Sofia bought 10 red apples and 6 green apples. Sofia thinks she has more apples than Nicholas. Is she right? Choose a strategy you have learned to show your work. Also, write number sentences to show how many apples Nicholas and Sofia each have.

Note: This problem allows students to revisit equivalent expressions, as they work with $9 + 7$ and $10 + 6$. The teacher can extend this thinking by either showing $9 + 7 = 10 + 6$, or having students write the true number sentence themselves, then asking students to explain how they know.

Concept Development (31 minutes)

Materials: (T) Student work samples (S) Personal white boards

Have students come to the meeting area and sit in a semi-circle.

T: (Project and read.) Louie made 7 puppets out of paper bags. Roberto made 6 puppets out of socks. How many puppets did the boys make? (Pause.) Turn and talk to your partner about how you would solve this problem.

S: (Discuss, as teacher circulates and listens.)

T: (Project Student A sample.) How did Student A solve this problem? Explain to your partner what this student was thinking.

S: She counted all the circles starting with 1. → Maybe she used counting on. See even, 8, 9, 10, 11, 12, 13.

T: (Project Student B sample.) How did Student B solve this problem? Can you explain his thinking? Turn and talk to your partner.

S: He drew his shapes in 5-groups. When he made ten starting with 7, he drew a frame around it so you can see 10 and 3. His strategy was to make ten from 7 by breaking 6 into 3 and 3.

T: (Project Student C sample.) How did Student C solve this problem? How is it similar and different from Student B’s work?

S: She didn’t need to make a picture. She used the make ten strategy. But instead of making ten with 7, she made ten with 6 and broke apart 7 into 4 and 3.

T: (Project Student D sample.) How did Student D solve the problem?
S: He drew a picture but it’s a little hard to count because the shapes are not organized. He probably had to count all of them, starting with 1. Or maybe he counted on from 7. See even, 8, 9, 10, 11, 12, 13.

T: Do these all show ways to solve the problem? Which way seems like it’s a better shortcut? Turn and talk to your partner.

S: (Discuss, as teacher circulates and listens.)

T: Oh, I found one more! Actually, I did this one. Ta-dah! Pretend you are my teacher and take a look at my work. What are your thoughts? (Project teacher work.)

S: Your picture is organized. I like the way you drew your circles in a 5-group. But you didn’t solve it right. The picture doesn’t make sense.

T: What do you mean? With your partner, draw a picture that will help me see how I can make this better.

S: (Discuss, as teacher circulates and listens.)

T: (Project and read aloud, “Louie glued on 5 pieces of brown yarn for his puppet’s hair. He then glued on 8 pieces of red yarn for more hair. How many pieces of yarn did Louie use?”) Solve this problem by showing your work clearly on your personal white board.

S: (Solve.)

Have students swap personal white boards with their partner and discuss the following:

- Study what strategy your partner used.
- Did you get the same answer?
- Take turns to explain your partner’s strategy.
- Are your strategies similar? How? Are they different? How?
- What did your partner do well?
- Which strategy is more efficient?

If time allows, repeat partner work following the suggested sequence: 9 + 7, 8 + 6, and 7 + 7.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:
Make sure to validate the different strategies students are using to solve so no one feels they have completed the work incorrectly. Be sensitive to students thinking in different ways and encourage and cultivate healthy competition in your classroom.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:
As students compare their strategies, be sure to listen to their conversations. By having these discussions with one another, you are facilitating students’ reflection and ability to actively process what they are learning.
Lesson 11: Share and critique peer solution strategies for put together with result unknown word problems.

Lesson Objective: Share and critique peer solution strategies for put together with result unknown word problems.

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.

- Compare Problem 3 to Problem 4 with your partner. How are your strategies similar and different?
- Look at Problem 1(b). How did this student solve his problem? How is it similar and different from the way we use the make ten strategy?
- Which samples use similar strategies? Explain your thinking.
- Which sample seems like it could be the most efficient strategy once you became an expert with it?
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.
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<td>14</td>
<td>6 + 9 = □</td>
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<td>9 + 3 = 5 + □</td>
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<td>15</td>
<td>9 + 6 = □</td>
<td>30</td>
<td>□ + 7 = 8 + 6</td>
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**Lesson 11 Sprint**

Write the missing number.

**Name** ________________________________  **Date** __________

A* Write the missing number.  

Number correct: __________________________

**Lesson 11:** Share and critique peer solution strategies for put together with result unknown word problems.

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### Lesson 11 Sprint

#### NYS COMMON CORE MATHEMATICS CURRICULUM

**Lesson 11**: Share and critique peer solution strategies for *put together* with *result unknown* word problems.

**Date**: 7/3/13

**Name** ____________________________  
**Date** ____________________________  

**B* Write the missing number.**

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | 9 + 1 = □ | 16 | 3 + 8 = □ |
| 2 | 9 + 2 = □ | 17 | 8 + 3 = □ |
| 3 | 9 + 4 = □ | 18 | 7 + 3 = □ |
| 4 | 9 + 3 = □ | 19 | 7 + 4 = □ |
| 5 | 8 + 2 = □ | 20 | 7 + 5 = □ |
| 6 | 8 + 3 = □ | 21 | 5 + 7 = □ |
| 7 | 8 + 5 = □ | 22 | 8 + 8 = □ |
| 8 | 8 + 4 = □ | 23 | 8 + □ = 16 |
| 9 | 9 + 4 = □ | 24 | □ + 3 = 12 |
| 10 | 8 + 5 = □ | 25 | □ + 4 = 12 |
| 11 | 9 + 5 = □ | 26 | 12 = 3 + □ |
| 12 | 8 + 7 = □ | 27 | 14 = 7 + □ |
| 13 | 9 + 7 = □ | 28 | 9 + 3 = 8 + □ |
| 14 | 7 + 9 = □ | 29 | 9 + 3 = 5 + □ |
| 15 | 9 + 7 = □ | 30 | □ + 7 = 8 + 5 |

**Number correct:** □□□□

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Lesson 11 Problem Set

Name ___________________________ Date ______________

Jeremy had 7 big rocks and 8 little rocks in his pocket.

How many rocks does Jeremy have?

1. Circle all student work that correctly matches the story.

   a. 
   
   7 + 8 = 15

   b. 
   
   7 + 8 = 15

   c. 
   
   7 + 8 = 15

   d. 
   
   7 + 8 = 15

   e. 
   
   7 + 8 = 15

   f. 
   
   7 + 8 = 15

2. Fix the work that was incorrect by making a new drawing in the space below with the matching number sentence.
Solve on your own. Show your thinking by drawing or writing. Write a statement to answer the question.

3. There are 4 vanilla cupcakes and 8 chocolate cupcakes for the party. How many cupcakes were made for the party?

4. There were 5 girls on the playground. Then 7 boys came out to play. How many students are on the playground?

When you are done, share your solutions with a partner. How did your partner solve each problem? Be ready to share how your partner solved the problems.
Lesson 11 Exit Ticket

Name ___________________________________________ Date ________________

John thinks the problem below should be solved using 5-group drawings and Sue thinks it should be solved using a number bond. Solve both ways and circle the strategy you think is the most efficient.

1. Kim scores 5 goals in her first soccer game and 8 runs in her softball game. How many points does she score altogether?

   John's work

   Sue's work
Lesson 11 Homework

Name ____________________________ Date _____________

Look at the student work. Correct the work. If the answer is incorrect, show a correct solution in the space below the student work.

1. Todd has 9 red cars and 7 blue cars. How many cars does he have altogether?

   Mary’s work
   \[9 + 7 = 16\]

   Joe’s work
   \[9 + 7 = 15\]

   Len’s work
   \[9 + 7 = 16\]

2. Jill has 8 beta fish and 5 goldfish. How many fish does she have in total?

   Frank’s work
   \[8 + 5 = 13\]

   Lori’s work
   \[8 + 5 = 14\]

   Mike’s work
   \[8 + 5 = 13\]
3. Dad baked 7 chocolate and 6 vanilla cupcakes. How many cupcakes did he bake in all?

**Mary's work**

\[
\begin{array}{c}
\text{O O O O O O} \\
\text{O O x x x x}
\end{array}
\]

\[13 = 7 + 6\]

**Joe's work**

\[10 + 3 = 13\]

**Lori's work**

\[7 + 6 = 13\]

4. Mom caught 9 fireflies and Sue caught 8 fireflies. How many fireflies did they catch altogether?

**Mike's work**

\[10 + 7 = 17\]

**Len's work**

\[17 = 9 + 8\]

**Frank's work**

\[18 = 9 + 8\]
Lesson 11: Share and critique peer solution strategies for put together with result unknown word problems.

Date: 7/3/13