

**Lesson Objectives****Content Objectives**

- When adding 2 one-digit numbers, understand the rationale for decomposing one addend to make ten.
- Use the strategy of making ten to add numbers within 20.
- Use and articulate mental math strategies to add.

Language Objectives

- Explain how to use the strategy of making ten to add two numbers.
- Draw jumps on a number path to show making a ten and finding a sum.
- Describe a 10-frame.

Prerequisite Skills

- Know the partner that makes 10 for any number.
- Know all decompositions for numbers within 10.
- Understand that teen numbers can be decomposed as $10 + \text{some number}$.

Lesson Vocabulary

- **make a ten** a strategy that uses combinations of numbers that add to ten when finding totals greater than 10.

Learning Progression

In Kindergarten children learn to count the number of objects and later to subitize, or recognize the number of objects in a group. They gain understanding of basic addition and subtraction situations and begin learning to compose and decompose numbers 10 or less.

In Grade 1 children learn strategies for adding and subtracting numbers within 20 and develop understanding of the properties of addition.

In this lesson children learn the strategy of making ten to add within 20. This involves breaking apart an addend and associating one part of it with another addend to make 10, and then applying the understanding that teen numbers can be thought of as " $10 + \text{some number}$."

In Grade 2 children become fluent at adding and subtracting within 20. They use strategies to add and subtract within 100.

Lesson Pacing Guide

Whole Class Instruction

Day 1 45–60 minutes	Introduction Use What You Know <ul style="list-style-type: none">• Explore It 25 min• Try It 20 min	
Day 2 45–60 minutes	Modeled Instruction Explore Together <ul style="list-style-type: none">• Example Problem 5 min• Model It 20 min• Hands-On Activity 20 min	Practice and Problem Solving Assign pages 123–124.
Day 3 45–60 minutes	Guided Instruction Learn Together <ul style="list-style-type: none">• Example Problem 5 min• Model It 15 min• Talk About It 15 min• Fluency Practice 10 min	Practice and Problem Solving Assign pages 125–126.
Day 4 45–60 minutes	Guided Practice Practice Together <ul style="list-style-type: none">• Example Problem 5 min• Problems 1–2 25 min• Visual Model 15 min	Practice and Problem Solving Assign pages 127–128.
Day 5 45–60 minutes	Independent Practice Practice by Myself <ul style="list-style-type: none">• Problems 3–5 10 min• Concept Extension 10 min• Quick Check and Remediation 15 min• Hands-On or Challenge Activity 10 min	
	Teacher-Toolbox: Lesson Quiz Lesson 14 Quiz	

Materials for Lesson Activities

- Per child:** 20 two-color counters
Activity Sheet 11, Activity Sheet 20
- Per pair:** 20 connecting cubes (10 each in two different colors), 20 counters
- For display:** 10 chairs

Small Group Differentiation

Teacher-Toolbox.com

Reteach
Ready Prerequisite Lessons 45–90 min

- Grade K**
- Lesson 18 Add Within 10
 - Lesson 23 Make Teen Numbers

Teacher-led Activities
Tools for Instruction 15–20 min

- Grade 1** (Lesson 14)
- Make a Ten to Add Within 20
 - Sums of Ten

Student-led Activities
Math Center Activities 30–40 min

- Grade K** (Lessons 18 and 23)
- K.24 Tell Addition Stories
 - K.29 Roll and Make Teen Numbers
- Grade 1** (Lesson 14)
- 1.08 Make a Ten to Add

Personalized Learning

i-Ready.com

Independent
i-Ready Lessons* 10–20 min

- Grade 1** (Lesson 14)
- Addition Facts for 10

*We continually update the Interactive Tutorials. Check the Teacher Toolbox for the most up-to-date offerings for this lesson.

Introduction**Activity Act Out Making a Ten****Objective**

Act out a "Make Ten" problem and model with counters.

Materials for each pair

- 15 counters

Materials for display

- 10 chairs

Overview

Children act out a scenario in which they make a ten to add. They model the problem with counters and discuss. Then children solve a new problem.

Step By Step**Explore It****Pose the problem.**

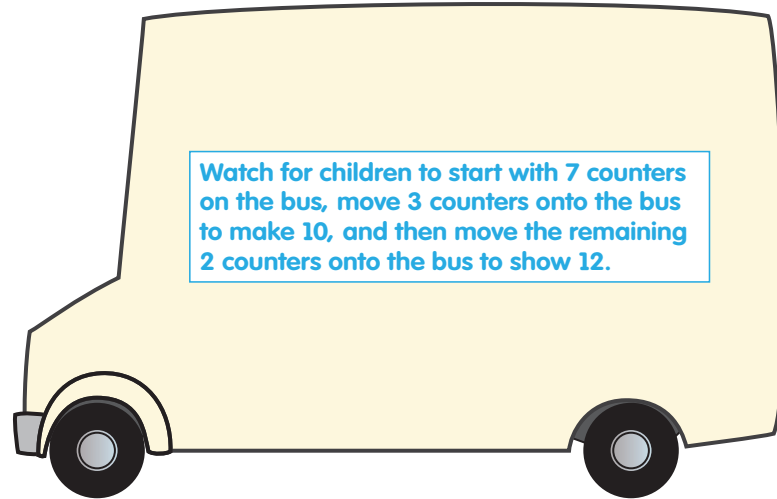
- Say: *Let's imagine you are getting on a bus for a fabulous field trip! So far there are 7 children on the bus. 5 more are ready to get on. How can thinking about 10 help us find how many children are on the bus now? Let's see.*

Model the problem.

- Organize 10 chairs in 2 rows to be the "bus." Have 7 children sit down.
- Gather a group of 5 more children. Say: *We're going to let a few children on the bus at a time. How many more children do I need to have 10 on the bus?* [3]
- Have the 5 children separate into a group of 2 and a group of 3. Have the 3 children sit with the "bus" children. Ask a child to count to verify that there are 10 children on the bus.
- Say: *There are 10 children on the bus. How many more children still need to get on the bus?* [2] Have the remaining 2 children join the "bus" children. Then ask: *What's the total number of children on the bus?* [12] Have the class count to verify the total.

Use What You Know**Make a Ten to Add****Explore It**

7 children get on the bus. 5 more children get on the bus. How many children are on the bus?



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Use counters.

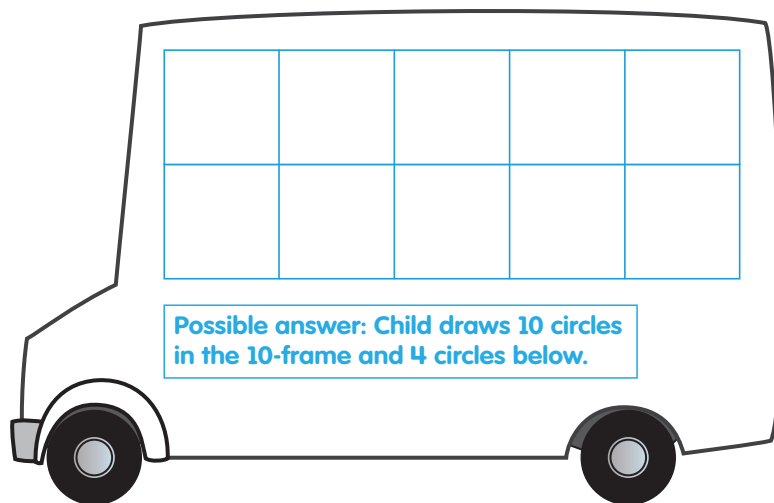
- Have children work in pairs to model the situation. They put 7 counters in the "bus" in 2 rows to represent 7 children on the bus. They put 5 more counters below the bus.
- Remind children that at first 3 children are added to make 10 on the bus. Tell them to break apart their group of 5 counters and move 3 of them onto the bus.
- Then they put the remaining 2 counters on the bus.

Discuss.

- Ask: *How many children are there in all?* [12] *How do you know?*
- Have pairs explain how they used the counters to model the problem. Ask why they think making a ten is a good strategy for finding totals that are teen numbers.

Try It

9 children get on the bus. 5 more children get on the bus. How many children are on the bus?



9 and 5 is the same as 10 and 4 more.
14 children are on the bus.

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Step By Step

Try It

Pose a different problem.

- Provide the children with the following problem: *What if there were 9 children on the bus and 5 more wanted to get on? How would thinking about 10 help you find how many children are on the bus?*

Model the problem.

- Have children work in pairs, using counters to model the problem. Have them use the 10-frame in the bus and the space below it to draw a picture of the problem. Then have them use their drawing to complete the sentence below. Observe children as they work.

Lead the class in discussion.

- After children have completed their drawings, ask them to describe their work. Look for children who are able to explain that if 1 child boards the bus, that makes 10 on the bus. Then there are 4 more, which makes 14 (10 and 4 more).
- Use the Hands-On Activity on page 90 as extra support for children who were unable to represent the problem or complete the sentence correctly.

Modeled Instruction

Step By Step

- Read aloud the problem at the top of the page. Discuss how the picture is like what you did in the Activity in the Introduction. Elicit children’s thoughts on how making a ten helps when the total is more than ten. Introduce the number sentence. Ask: *How does this number sentence relate to the picture?*

Model It

- Read Model It aloud. Direct attention to the first pair of 10-frames and have children identify which parts of the number sentence are being modeled.

► Mathematical Discourse 1

► Hands-On Activity

- Ask: *What happens in the second pair of 10-frames? How are these different from the first pair? Is this the same total number of counters? How do you know?* Discuss children’s responses, concluding that both pairs of 10-frames show a total of 13.
- Have children fill in the totals. Discuss with them how making ten helps them find the total.

SMP TIP Look for Structure

The structure of 10-frames helps children understand the make-a-ten strategy. Encourage children to think and talk about how the 10-frames help them go from “8 and some more” to the known structure of “10 and some more.” (SMP 7)

Assign Practice and Problem Solving pages 123–124 after students have completed this section.

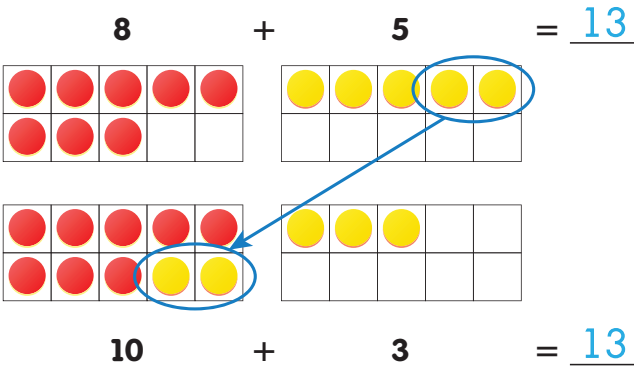
Explore Together Make a Ten to Add

8 children are on the bus. 5 more get on the bus.
How many are on the bus now?



Model It Find 8 + 5.

Start with 8. Take counters from 5 to make a ten.



► Mathematical Discourse

- 1 How does the model help you make a ten?
- Children should see the empty spots in the 10-frame as a signal to what is needed to make a ten. With more practice, this visual clue will eventually translate to recognizing the number that makes ten.

► Hands-On Activity

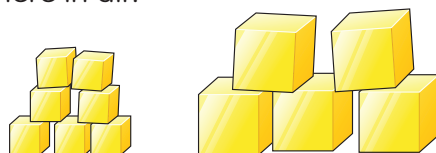
Model adding numbers on 10-frames.

- Materials** For each child: 10-Frame (Activity Sheet 11), 20 two-color counters
- Write the problem $8 + 5 = ?$ on the board.
 - Have children put 8 counters of one color in one 10-frame and 5 of another color in the second frame. Ask how they can use the 5 counters to fill the first 10-frame. [Remove 2 from the frame with 5 and use those to fill the frame with 8.]
 - Have them actually move counters and describe what they did. Help them to conclude that the total number of counters didn’t change. They just moved the counters around in the 10-frames to show a ten and some ones.

Learn Together Make a Ten to Add

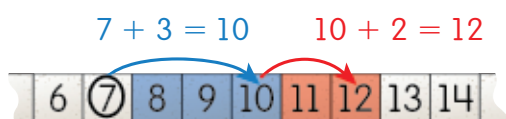
7 blocks are small. 5 blocks are big.
How many blocks are there in all?
How do you know?

$$7 + 5 = ?$$



Model It Find $7 + 5$.

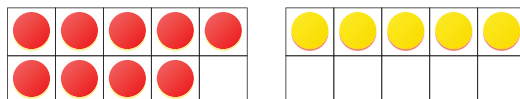
Start with 7.
Add 3 to make 10.
Then add 2 more.



$$7 + 5 = 12$$

Talk About It Do you agree? Why or why not?

Boom says that $9 + 5 = 15$.



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► Fluency Practice

Practice facts within 10.

Materials For each child: Facts Practice 4 (Activity Sheet 20)

- Have children complete Activity Sheet 20 (Facts Practice 4). Then have pairs work together to review the facts. One partner reads two addends and the other partner gives the sum.
- Children should go “out of order” for this, skipping around the worksheet and choosing addition sentences with different sums.

► Mathematical Discourse

2 How can you tell how big to make the jump from 10 to the sum?

Children need to understand how many more are left after making the ten. They might respond that after a jump of 3, there is a jump of 2 left since the partner of 3 that makes 5 (the other addend) is 2.

Step By Step

- Read aloud the problem at the top of the page. Ask children how they would approach the problem. Elicit the idea of making a ten and then seeing what’s left to add.

Model It

- In Model It, direct attention to the number path. Ask children to describe what it shows. Guide children to see that 7 is circled because it is the addend you start with. Ask: *Why start with 7?* [It’s easier if you start with the addend that is closer to 10. But the strategy will work either way.]
- Ask: *How many numbers is the blue jump?* *Why do you jump this many first?* [The blue jump is 3 because you want to make a ten. $7 + 3 = 10$]
- Explain that now they have used 3 of the big blocks to make 10. Ask: *How many more do you have to add?* [2] Elicit that the total is 10 and 2 more, which is 12. Ask Mathematical Discourse question 2 to check understanding of this idea.

► Mathematical Discourse 2

- You may want to have children verify the sum by laying green blocks or counters along the number path: 3 for the blue jump and 2 for the red jump.

Talk About It

- Present the Talk About It question. Have children describe the diagram and number sentence. Then have them answer the question and explain their thinking. [Boom is incorrect. It looks like Boom forgot to fill the 10-frame that has 9 counters but assumed that it had 10 in it. Actually, $9 + 5 = 14$.]

► Fluency Practice

Ready Mathematics
PRACTICE AND PROBLEM SOLVING

Assign *Practice and Problem Solving* pages 125–126 after students have completed this section.

Guided Practice

Step By Step

- Read the example problem aloud and have children describe the two sets of 10-frames. Ask: *What can you do in the first set of 10-frames to get what is shown in the second set of 10-frames?* [Take 2 counters from the 6 and fill the first 10-frame.]
- Read Problem 1 aloud. Point out that the model only shows one set of 10-frames. Make sure children can identify the 8 and the 7 in the model. Have some children demonstrate how to solve this problem.
- In Problem 2, children need to draw jumps to 10 and then to the total. Suggest that they answer these questions: *How many do I need to make 10?* [3] *This number and how many more make the second addend?* [4] You may wish to have children work with a partner. Have some children demonstrate their solution and explain how they solved it.

Mathematical Discourse 1

Visual Model

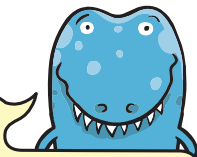
SMP TIP Repeated Reasoning

Discuss the equivalent expressions on this page, for example $8 + 6$ and $10 + 4$. Continue to develop the repeated reasoning that as one addend increases, the other decreases by the same amount. (SMP 8)

Ready Mathematics PRACTICE AND PROBLEM SOLVING

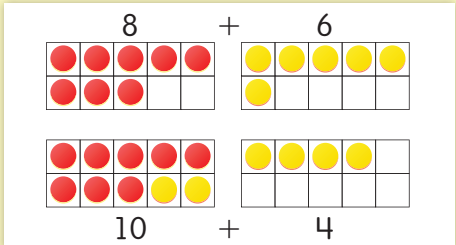
Assign Practice and Problem Solving pages 127–128 after students have completed this section.

Practice Together Make a Ten to Add



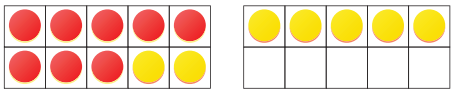
$8 + 6 = ?$

$8 + 2 = 10$
 $10 + 4 = 14$
So, $8 + 6 = 14$



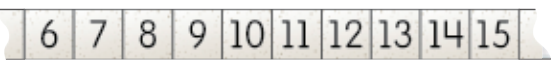
1 $8 + 7 = ?$

$8 + 2 = 10$
 $10 + 5 = 15$
 $8 + 7 = 15$



2 $7 + 7 = ?$

$7 + 3 = 10$
 $10 + 4 = 14$
 $7 + 7 = 14$



Mathematical Discourse

- 1 Can you explain in your own words how to use the make-a-ten strategy to add two numbers?
- Children should describe a two-part process. Start with one addend (preferably the greater addend) and find the partner that makes ten. To find what's left, remove the quantity added to make a ten from the other addend. In other words, the partner that makes ten has a partner that makes the other addend.

Visual Model

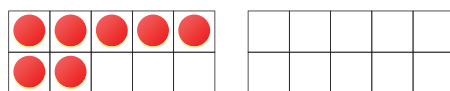
Use number bonds to make a ten and add within 20.

- Write $7 + 5$ on the board. Then draw a circle around the 5 and connect it to two circles below to form a number bond. Ask: *Starting with 7, how can you make a ten?* [Add 3.]
- Write 3 in the left circle of the number bond. Ask children what needs to go in the right circle and why. [2, because 2 and 3 are the partners that make 5.]
- Below the number bond, write: $10 + \underline{\quad} = \underline{\quad}$. Ask children what numbers go in the blanks. [2, 12]
- Consider trying this approach with different numbers for those who find it helpful.

Practice by Myself

Make a Ten to Add

3 $7 + 6 = ?$

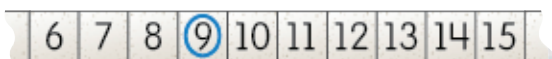


$$7 + \underline{3} = \underline{10}$$

$$10 + \underline{3} = \underline{13}$$

$$7 + 6 = \underline{13}$$

4 $9 + 4 = ?$



Possible work: $9 + 1 = 10$; $10 + 3 = 13$

$$9 + 4 = \underline{13}$$

5 $8 + 9 = ?$

Possible work: $8 + 9 = 17$; $10 + 7 = 17$

$$8 + 9 = \underline{17}$$

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Step By Step

- Read each problem aloud, then have children work independently to solve.
- If children struggle with Problem 3, ask what the red counters show. [The addend 7.] Point out that they will make ten when the first frame is filled, and that they need to add more to add a total of 6.
- After children complete Problem 4, you may wish to present the following reasoning: *Nine is 1 less than 10, so $9 + 4$ is 1 less than $10 + 4$.*

► Mathematical Discourse 2

- For Problem 5, children can use any model or strategy that they choose. Invite several children to demonstrate their solutions, and then discuss the similarities and differences in their approaches.

► Concept Extension

► Concept Extension

Use the associative property to make a ten and add within 20.

- Write the problem $9 + 6$ on the board.
- Have children work in pairs to make a ten and add. Have one pair describe what they did.
- When they tell how they made 10, write $9 + 1$ on the board.
- When they explain how they added the remaining 5 to get 15, write $+ 5$ to make the expression $9 + 1 + 5$.
- Ask: *What happens if you add $9 + 1$ first, then add 5? [We get $10 + 5 = 15$.] Ask: What happens if you add $1 + 5$ first, then add 9? [We get $6 + 9 = 15$.]*
- Lead children to conclude that grouping the addends differently does not change the total.

► Mathematical Discourse

- 2 *Why is the sum of $9 + 6$ and $10 + 5$ the same?*

Children need to understand that as a number is decomposed and composed in different ways, the total stays the same. Responses should reflect the idea that some quantity has been taken from one addend and moved to the other, decreasing one addend and increasing the other by the same amount. So the overall quantity has not changed.

Lesson 14

Make a Ten to Add

Differentiated Instruction

► Quick Check and Remediation

Materials For each child: 16 counters

- Ask children to solve $8 + 7 = ?$ by making a ten. [Add $8 + 2$ to make a 10. Then $10 + 5 = 15$, so $8 + 7 = 15$.]
- For children who are still struggling, use the chart below to guide remediation.
- After providing remediation, check children’s understanding using the following problem: *Solve $9 + 4 = ?$ by making a ten.* [Add $9 + 1$ to make a 10. Then $10 + 3 = 13$, so $9 + 4 = 13$.]

If the error is ...	Children may ...	To remediate ...
$8 + 2$ is 10, so $8 + 7 = 17$	not understand the need to decompose the second addend.	Ask: <i>Where did you get the 2?</i> Use counters to model the problem with children. Elicit that the 2 comes from the 7, leaving 5 more to add.
14 or 16	be counting on instead of making a ten, and making a mistake in counting.	Have children demonstrate how they added. If they are counting on from 8, explain that it’s easy to lose track when counting on more than 2 or 3. Guide children to use a make a ten approach.
any other teen number, or one of the addends	not have decomposed the addend correctly to make a ten, or may have simply used an addend as the sum.	Have children model “10 and some more,” using counters, for 12, 13, 15, and 16. Then have them model $8 + 7$ using counters. Ask: <i>How can you change this model to show “10 and some more”?</i>

► Hands-On Activity

Use connecting cubes to model making a 10.

Materials For each pair: 20 connecting cubes (10 each in two different colors)

- Provide pairs of children with 10 connecting cubes in each of 2 different colors. Give them an addition problem with a teen number sum, such as $8 + 6$.
- Children write the problem and model it with two trains of different color connecting cubes, one for each addend.
- Children take cubes from one train and connect them to the other train to make a ten. Then they say how many are still left on the first train and solve the problem as “10 and 4 more,” or 14. They write $10 + 4 = 14$ and $8 + 6 = 14$.
- Have pairs explain their work. You may wish to repeat the activity with other numbers.

► Challenge Activity

Write and solve addition word problems.

Materials For each pair: 20 counters (optional)

- Have children work in pairs to write word problems involving teen numbers. They may wish to use counters to act out their ideas while they write.
- Circulate and offer support and feedback. When the pairs are finished, put the problems in a pile.
- Pairs take turns picking a problem, reading it, and solving by making a ten. The rest of the group listens to see if they are correct. Children may ask questions or recommend strategies as appropriate.
- For extra challenge, see if children can solve the problems without using manipulatives or even paper and pencil.

Teacher Notes

[illegible]

LESSON QUIZ

Lesson 14 Make a Ten to Add

Teacher-Toolbox.com

Overview

Assign the Lesson 14 Quiz and have children work independently to complete it.

Use the results of the quiz to assess children's understanding of the content of the lesson and to identify areas for reteaching. See the Lesson Pacing Guide at the beginning of the lesson and the Differentiated Instruction activities for suggested instructional resources.

Tested Skills

Problems on this quiz require children to be able to add two one-digit numbers by decomposing one addend to make a ten, applying the make-a-ten strategy to add numbers within 20. Children will also need to be familiar with number partners for 10 and understand teen numbers as "10 and some more."

Ready® Mathematics

Lesson 14 Quiz Answer Key

Name _____

Solve.

1 $7 + 8 = ?$

$7 + \underline{3} = \underline{10}$

$10 + \underline{5} = \underline{15}$

$7 + 8 = \underline{15}$

●	●	●	●	●					
●	●								

2 $5 + 9 = ?$

5	6	7	8	9	10	11	12	13	14	15
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$5 + \underline{5} = \underline{10}$

$10 + \underline{4} = \underline{14}$

$5 + 9 = \underline{14}$

3 $? = 8 + 8$

Possible work: $8 + 2 = 10$; $10 + 6 = 16$

$\underline{16} = 8 + 8$



Common Misconceptions and Errors

Errors may result if children:

- do not decompose the second addend or decompose it incorrectly.
- confuse the sum with an addend.
- incorrectly apply the make-a-ten strategy.
- do not understand the concept of equivalent expressions.

Lesson 14 Quiz Answer Key continued

Name _____

Solve.

4 $7 + 9 = ?$

Possible work: $7 + 3 = 10$; $10 + 6 = 16$

16 = $7 + 9$

- 5 Amy buys 8 red cups and 5 blue cups.
How many cups in all?

Possible work: $8 + 2 = 10$; $10 + 3 = 13$

$8 + 5 =$ 13

