

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

- Solve take-away subtraction word problems within 10 using pictures or objects.
- Recognize take-away situations as subtraction problems.
- Relate a subtraction number sentence to a subtraction problem.
- Subtract within 10.

Language Objectives

- Model take-away subtraction word problems using fingers and counters.
- Cross out the number of objects being taken away in a subtraction sentence.
- Describe subtraction situations.
- Write the difference for a subtraction sentence.
- Compare two approaches that show subtraction and tell how they are the same and how they are different.

Prerequisite Skills

- Solve take-away subtraction word problems within 5 using pictures or objects.
- Count groups of up to 10 objects.
- Read subtraction number sentences.

Lesson Vocabulary

There is no new vocabulary. Review the following key terms.

- **equals** is equal to, is the same as, or is the same quantity or amount.
- **subtract** take away or remove.
- **minus, –** the math term and symbol that mean subtract.

Learning Progression

In Kindergarten children develop an understanding of the meaning of subtraction and learn to subtract within 10, including solving subtraction word problems.

In this lesson children explore real-world or story situations that involve taking away one part of a group and determining how much is left. Children start by describing subtraction situations they see in a picture. They move to solving specific subtraction problems

using pictures of objects, hands and fingers, and 10-frames.

In the next lesson children practice both addition and subtraction facts together.

In Grade 1 children will use their understanding of the meaning of subtraction to develop strategies to learn subtraction facts and subtract with numbers greater than 10.

Lesson Pacing Guide

Whole Class Instruction

Day 1 45–60 minutes	Introduction Use What You Know • Activity 35 min • Building Fluency 10 min	
Day 2 45–60 minutes	Modeled Instruction Explore Together • Problem 15 min • Talk About It 5 min • Hands-On Activity 10 min • Problem Solving Connection 15 min	Practice and Problem Solving Assign pages 159–160.
Day 3 45–60 minutes	Guided Practice Practice Together • Problems 20 min • Talk About It 10 min • Hands-On Activity 15 min	Practice and Problem Solving Assign pages 161–162.
Day 4 45–60 minutes	Guided Practice Practice Together • Problems 20 min • Talk About It 5 min • Hands-On Activity 10 min • Fluency Practice 10 min	Practice and Problem Solving Assign pages 163–164.
Day 5 45–60 minutes	Independent Practice Practice by Myself • Problems 10 min • Talk About It 5 min • Hands-On Activity 10 min • Quick Check and Remediation 10 min • Hands-On or Challenge Activity 10 min	
	Teacher-Toolbox: Lesson Quiz Lesson 19 Quiz	

Materials for Lesson Activities

- Per child:** 10 two-color counters, 10 bear counters, 10 connecting cubes, 1 index card
Activity Sheet 5, Activity Sheet 14
- Per pair:** 2 number cubes
- For display:** none

Small Group Differentiation

Teacher-Toolbox.com

Teacher-led Activities

Tools for Instruction 15–20 min

Grade K (Lesson 19)

- Add and Subtract 1 and 2
- Subtraction Number Sentences

Student-led Activities

Math Center Activities 30–40 min

Grade K (Lesson 19)

- K.25 Subtract and Match

Personalized Learning

i-Ready.com

Independent

i-Ready Lessons* 10–20 min

Grade K (Lesson 19)

- Taking Away to Subtract
- One Less

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

Introduction

Activity Act Out Subtraction Within 10**Objective**

Act out subtraction word problems to find the solution.

Materials per child

- 1 index card
- 8 counters

Overview

Children act out subtraction word problems and record the corresponding number sentences. Then children solve subtraction word problems using counters and record the corresponding number sentences.

Use What You Know

Name _____

Subtract Within 10

Have children act out subtraction word problems and record the corresponding number sentences. Say: There are 7 birds sitting on a branch. 1 bird flies away. How many birds are still on the branch? Have children cover

1 bird using an index card. Guide children to complete a subtraction sentence to represent the story problem. Repeat with the problem: There are 7 birds on a branch. 2 birds fly away. How many birds are still on the branch?

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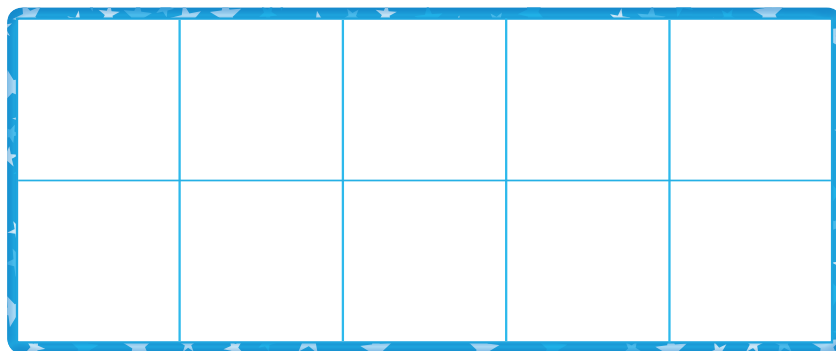
Introduction • Lesson 19

109

Step By Step

- **Act out a subtraction problem.** Pose the problem. Say: *There are 6 children in line for a slide. One child leaves to play in the sandbox. How many children are still waiting in line?*
- Invite 6 children to the front of the class and stand in a line.
- Write " $6 - 1 = \underline{\quad}$ " on the board. Read it aloud: *6 take away 1 equals what number?*
- Ask one child to sit down, and discuss that this is the 1 child who leaves the line. Lead the class in counting the 5 children who are still standing and write the answer on the board. Say: *6 take away 1 equals 5. There are 5 children still waiting in line.*
- **Pose a problem.** Direct children's attention to the Student Book page. Say: *There are 7 birds sitting on a branch. 1 bird flies away. How many birds are still on the branch?*
- Write " $7 - 1 = \underline{\quad}$ " on the board.
- Repeat the story problem. Then read the number sentence aloud: *7 take away 1 equals what number?*

- Have children use the index card to cover 1 of the birds. Discuss that this is the 1 bird that flies away. Lead the class in counting the 6 uncovered birds. Write the answer (6) on the board and have children complete the corresponding number sentence on the Student Book page. Say: *7 take away 1 is 6. There are 6 birds still on the branch.*
- **Pose another problem and solve it.** Direct children's attention back to the line of birds. Say: *Now we're going to solve a different problem. There are 7 birds on a branch. 2 birds fly away. How many birds are still on the branch?*
- Invite children to tell you the subtraction sentence to write on the board. [$7 - 2 = \underline{\quad}$] Then ask children to describe how to show this new subtraction problem with their index cards.
- After children use the index card to cover 2 birds, say: *2 birds fly away. How many birds are left on the branch?* Have children count the remaining birds and write the 5 on the board. Have children complete the corresponding number sentence on the Student Book page. Say: *7 take away 2 is 5. 5 birds are still on the branch.*



$$8 - 1 = \underline{7}$$

$$8 - 2 = \underline{6}$$

Children solve more subtraction word problems using counters and record corresponding number sentences. Say: Katie has 8 pennies. She gives 1 to her brother. How many pennies does Katie have left for herself? Have children

show the problem with counters on the 10-frame, then complete the corresponding subtraction sentence. Repeat with the situation: Will has 8 pennies. He gives 2 to his sister. How many pennies does Will have left for himself?

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Step By Step

- **Solve a new problem using counters.** Say: *Katie has 8 pennies. She gives 1 to her brother. How many pennies does Katie have left for herself?*
- Have children show the story problem with counters and the 10-frame on the Student Book page.
- Invite children to help you write a subtraction sentence on the board. Then have children complete the corresponding number sentence on the Student Book page.
- **Pose another problem.** Say: *Will has 8 pennies. He gives 2 to his sister. How many pennies does Will have left for himself?*
- Have children use counters and the 10-frame to solve the problem, then have them complete the subtraction sentence on the Student Book page.
- Watch to see who is confident and who looks around to copy the others. The less confident children may benefit from the other Hands-On Activities in this lesson.

Building Fluency

Building Fluency

Practice rote counting by tens to 100.

Use actions to practice rote counting. As children count, have them tap alternating legs, pump alternating fists in the air, etc.

Practice numbers to 10.

Write or post the numbers 1–10 on the board. Occasionally point to a random number and ask what the number is or ask a child to point to a particular number.

Modeled Instruction

Step By Step

- **Encourage children to describe take-away situations they see in the picture.** Remind children of the subtraction story problems they solved about the birds sitting on the branch in the Activity in the Introduction.
- Ask children to identify the groups of similar objects they see in the picture. Guide them to find groups of swans, ducks, balloons, nuts, and flowers.
- Invite children to tell take-away stories about the groups they identified. You may need to prompt them by asking questions such as: *What is different about some of the ducks in this group?* Children might tell a story about there being 9 ducks and 3 swim away, leaving 6 on the grass.]
- Make sure children's stories include the number in the group at the beginning, the number taken away, and the number left.

SMP TIP Reason Quantitatively

Children make sense of quantities and their relationships when they tell about the subtraction situations in the picture. Encourage children to describe subtraction situations throughout the day, such as there being 8 children sitting and 3 get up to wash their hands, leaving 5 children sitting. (SMP 2)

- **For each group of items, have children circle the ones that are left after the others are taken away.** Review the different groups shown in the picture and tell children to circle the ones left in each. For example, in the group of flowers, they may circle the ones still standing.

► Mathematical Discourse

► Hands-On Activity

Assign *Practice and Problem Solving* pages 159–160 after students have completed this section.

Explore Together
Subtract Within 10

Possible answer: Children circle the swimming swans, the standing flowers, the acorns on the ground, the balloons in the boy's hand, and the ducks on land.



Encourage children to describe take-away situations they see in the picture. For each group of items, have children circle the ones that are left after the others are taken away.

Talk About It How do the flowers show a take-away story?

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Modeled Instruction • Lesson 19

111

► Mathematical Discourse

Talk About It When children have completed the page, ask: *How do the flowers show a take-away story?* Children might say that there were 6 flowers and the soccer ball rolled over 2 flowers. So, there are 4 flowers left standing.

► Hands-On Activity

Tell take-away stories with bear counters.

Materials For each child: 10 bear counters

- Ask children to show 9 bear counters. Invite a child to tell a take-away story about a group of 9 bears and 2 bears going away. Then have children remove 2 of the 9 bears and tell how many bears are left.
- Using the bears that are left, have children tell a story about more bears, such as 3, going away. Ask children to describe the subtraction situation, such as 7 take away 3 is 4.
- You may wish to continue with a few more stories.

Problem Solving Connection

 Modeled Instruction

Teacher-Toolbox.com

Subtract Within 10 Problem Solving Connection

Problem 1

There are 9 ducks.
3 ducks swim away.
How many ducks are there now?



Read the problem as a class. Have children work independently to solve the problem, allowing sufficient time for them to work through the problem on their own. Invite children to share their answers and discuss as a class.

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Subtract Within 10 Problem Solving Connection

Problem 2

There are 7 nuts on the ground.
The squirrels take some.
Then there are 4 nuts left.
How many nuts did the squirrels take?



Read the problem as a class. Have children work independently to solve the problem, allowing sufficient time for them to work through the problem on their own. Invite children to share their answers and discuss as a class.

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Subtract Within 10 Problem Solving Connection

Problem 3

The girl has 10 balloons.
Some fly away.
Then she has 9 balloons.
How many balloons fly away?



Read the problem as a class. Have children work independently to solve the problem, allowing sufficient time for them to work through the problem on their own. Invite children to share their answers and discuss as a class.

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At A Glance

Children solve and discuss subtraction problem-solving situations. The problems are located on the online Teacher-Toolbox as individual PDFs for use as whole class instruction.

These provide problem-solving opportunities beyond the Student Book. They may be used along with the *Explore Together* scene in the Student Book. They may also be used with the corresponding black-and-white scene in *Practice and Problem Solving* for a more open-ended approach.

Step By Step

- **Read the problem as a class.** Display a problem and read it aloud. Discuss the problem with children to make sure they understand what it is asking before having them think about ways to solve it.
- **Have children work independently to solve the problem, allowing sufficient time for them to work through the problem on their own.**

SMP TIP Persevere in Problem Solving

Allowing children sufficient time to think through the problem on their own encourages them to try different approaches if their first or second attempt does not work. This builds confidence in finding ways to use what they learned from those attempts to revise their thinking on subsequent attempts. (SMP 1)

- **Invite children to share their answers and discuss as a class.** Encourage children to explain how their answers are alike and how they are different. Ask if anyone got a different answer to assess understanding and help children avoid common errors.

Solutions

Problem 1

Take From, result unknown

$$9 - 3 = \boxed{6}$$

Problem 2

Take From, change unknown (Challenge)

$$7 - \boxed{3} = 4$$

Problem 3

Take From, change unknown (Challenge)

$$10 - \boxed{1} = 9$$

 Guided Practice

Step By Step

- **Guide children to compare the picture to the number sentence to answer the subtraction problem.** Before beginning this page, provide opportunities for children to connect number sentences to subtraction situations with activities such as Hands-On Activity 1.

► Hands-On Activity 1

- Tell stories about each picture as children compare the picture to the number sentence.

► English Language Learners

- **Guide children to cross out the objects being taken away with an X. Then have children complete the number sentence.** Discuss that the answer is the number that are left after taking away objects.
- **Read each number sentence aloud together.** Ask children to describe what it means in relation to the picture.
- Guide children to recognize that both flower problems show a group of 7, but a different number is subtracted in each. Ask: *How can you find $7 - 3$ if you know $7 - 2$?*

► Mathematical Discourse 1 and 2



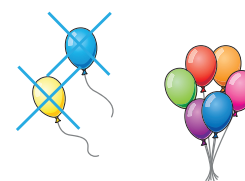
Assign *Practice and Problem Solving* pages 161–162 after students have completed this section.

Practice Together
Subtract Within 10

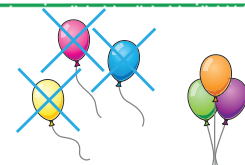
$$7 - 2 = \underline{\quad 5 \quad}$$



$$7 - 3 = \underline{\quad 4 \quad}$$



$$8 - 2 = \underline{\quad 6 \quad}$$



$$6 - 3 = \underline{\quad 3 \quad}$$

Guide children to compare the picture to the number sentence to answer the subtraction problem. Guide children to cross out the objects being taken away with an X. Then have children complete the number sentence. Read each number sentence aloud together.

Talk About It How did you know how many were left?

112

Lesson 19 • Guided Practice

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► Mathematical Discourse

- 1 *How can you find $8 - 2$ if you know $7 - 2$?*

Look for responses that indicate that the same number is being subtracted in each problem. Since 8 is 1 more than 7, $8 - 2$ is 1 more than $7 - 2$.

- 2 **Talk About It** When children have completed the page, ask: *How did you know how many were left?*

Children's responses might include crossing off the objects taken away, then counting what is left.

► English Language Learners

Point to the items on the page, or show pictures of the items, when telling story problems. You may also wish to display fingers when stating numbers in story problems.

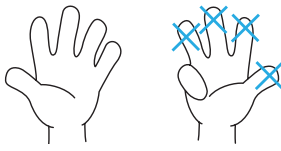
► Hands-On Activity 1

Break apart cube trains to model subtraction word problems.

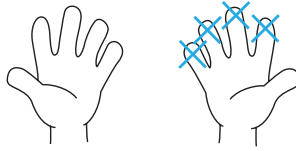
Materials For each child: 10 connecting cubes

- Say: *There were 10 balloons.* Tell children to make a cube train with 10 connecting cubes. Then say: *2 balloons popped.* Have children remove 2 cubes from the train. Ask: *How many balloons are left?* Children count the 8 cubes that are left.
- Ask children to identify the number sentence that shows the subtraction situation, then write " $10 - 2 = 8$ " on the board. Point out what each number and symbol represents.
- Present other subtraction story problems for children to model with cube trains.

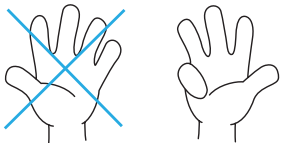
Pictures will vary. There are many ways to show how to subtract 4 or 5 fingers. Possible work:



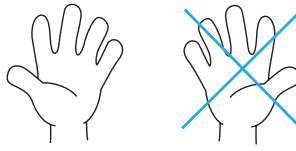
$$9 - 4 = \underline{\quad 5 \quad}$$



$$10 - 4 = \underline{\quad 6 \quad}$$



$$9 - 5 = \underline{\quad 4 \quad}$$



$$10 - 5 = \underline{\quad 5 \quad}$$

Guide children to compare the fingers showing the numbers to the number sentence to answer the subtraction problem. Have children put an X over fingers being taken away. Guide children to complete each number sentence. Read each number sentence aloud.

Talk About It How did you choose which fingers to "take away" in each problem?

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Guided Practice • Lesson 19 **113**

Step By Step

- **Guide children to compare the fingers showing the numbers to the number sentence to answer the subtraction problem.** Before beginning this page, provide opportunities for children to use fingers to model subtraction story problems with activities such as Hands-On Activity 2.

► Hands-On Activity 2

- Direct attention to the 9 fingers showing at the top left of the page, and relate them to the first number in the number sentence. Invite children to make up a story problem for the number sentence.
- **Have children put an X over fingers being taken away. Guide children to complete each number sentence.** Remind them that the answer is the number left after taking some away.
- **Read each number sentence aloud.** As you do, you may want to have them model the problem with their fingers. Continue in the same way with the remaining problems.

► Mathematical Discourse 3 and 4

► Fluency Practice

Ready Mathematics
PRACTICE AND PROBLEM SOLVING

Assign *Practice and Problem Solving* pages 163–164 after students have completed this section.

► Hands-On Activity 2

Use fingers to model subtraction stories.

- Present subtraction story problems involving objects in the classroom, such as pencils, crayons, and markers. Write the subtraction sentence on the board and have children use their fingers to model it.
- For example, say: *There are 8 crayons in the box. Jon takes out 5 crayons. How many crayons are still in the box?* Write " $8 - 5 = \underline{\quad}$ " on the board. Children show 8 fingers and then turn 5 down. After they count the extended fingers, write 3 in the blank.

► Fluency Practice

Practice subtraction with number cubes.

Materials For each pair: 2 number cubes
Ask children to take turns rolling the number cubes and subtracting the numbers shown. Make sure children know he or she should subtract the lesser number from the greater number.

► Mathematical Discourse

- 3 Talk About It** When children have completed the page, ask: *How did you choose which fingers to "take away" in each problem?*

Responses might include crossing out an entire hand with all 5 fingers when subtracting 5 or starting on one hand and crossing out each finger.

- 4** *How did you use the picture, your own fingers, or other objects to solve the problem?*

Children might count to the number taken away in the problem and cross out that number of fingers in the picture. Others might use their own fingers to model the subtraction and then cross out the fingers in the picture to match what they did with their hands.

Independent Practice

Step By Step

- **Encourage children to use the pictures of the counters to help them solve each problem.** Before beginning this page, provide opportunities for children to model and solve subtraction problems using counters on a 10-frame with activities such as the Hands-On Activity.

► Hands-On Activity

- **Have children cross out the number of counters being taken away and complete the number sentence.** Review different ways that children might show subtraction, including crossing out or covering up the amount taken away.
- You may want to model the first problem with the class before having children complete the page independently.

Error Alert As they work on the page, watch for children who write the number taken away as the answer. Emphasize that the answer is the number of objects that are left after taking away some.

- **Have children share how they used the model with the class.**

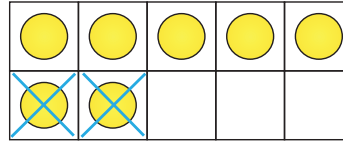
SMP TIP Construct Arguments and Critique Reasoning

When children share different ways they used the models, they are constructing arguments using concrete referents. Encourage children to respond to each other's strategies. (SMP 3)

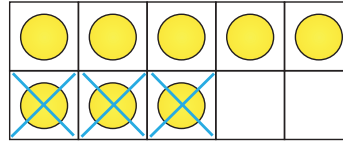
► Mathematical Discourse 1 and 2

Practice by Myself
Subtract Within 10

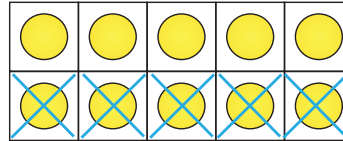
Pictures will vary. Children may cross out any correct number of counters. They do not need to cross out the counters in the bottom row. Possible work:



$$7 - 2 = \underline{5}$$



$$8 - 3 = \underline{5}$$



$$10 - 5 = \underline{5}$$

Encourage children to use the pictures of the counters to help them solve each problem. Have children cross out the number of counters being taken away and complete the number sentence. Have children share how they used the model with the class.

Talk About It How are all the problems the same? How are they different?

114

Lesson 19 • Independent Practice

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► Mathematical Discourse

- 1 **Talk About It** When children have completed the page, ask: *How are all the problems the same? How are they different?*

All the results are the same: 5. The amount taken away is also always shown in the bottom row of the 5-frame. The starting numbers are all different and the amounts taken away are all different.

- 2 *Why are the answers all the same?* Responses might include that the top rows of all the 10-frames have 5 counters and that children always take away the number of counters that are shown in the bottom rows.

► Hands-On Activity

Model subtraction with counters on a 10-frame.

Materials For each child: 10-Frames (Activity Sheet 14), 10 counters

- Say: *Sarah picks 9 flowers. She gives 1 to her mom. How many flowers does Sarah have left?* Guide children to show 9 counters on the 10-frame, take 1 away, and then count the 8 counters that are left.
- Write the subtraction sentence on the board, connecting each number to the story.
- Continue with other similar problems.

Differentiated Instruction

► Quick Check and Remediation

Materials For each child: Number Cards 0 to 9—Small (Activity Sheet 5), 10 counters or connecting cubes

- Present this subtraction word problem aloud: *There are 10 eggs. Mrs. Johns uses 3 eggs. How many eggs are left?* Ask children to answer orally. Then write the subtraction sentence on the board, having children write the number that is left. [$10 - 3 = 7$]
- For children who are still struggling, use the chart below to guide remediation.
- After providing remediation, check children’s understanding by posing another problem and following the procedure described above. For example, say: *There are 8 eggs. Mrs. Johns uses 1 egg. How many eggs are left?* [$8 - 1 = 7$]

If the error is ...	Children may ...	To remediate ...
a number greater than 10	have added instead of subtracted.	Provide more exposure to the language of subtraction word problems and have children act them out with objects, such as counters or connecting cubes.
3	not understand the relationship between the amount taken away and the result.	Provide practice in linking numbers in a number sentence to pictorial representations. For example, have the child draw lines from each number in a number sentence to the quantity it represents.
saying 7, but writing a different number	not know the symbols for numbers or how to write numbers.	Provide practice matching quantities with number cards (Activity Sheet 5) and writing numbers for quantities named orally.

► Hands-On Activity

Match counters to number sentences.

Materials For each child: 10 two-color counters

- Write “ $6 - 1$ ” on the board. Invite children to use their counters to model the subtraction. Guide them to show the red side of 6 counters and then take one counter away or flip one counter to the yellow side. Ask: *How many are left?* Complete the number sentence as children suggest.
- Write other expressions on the board, such as “ $7 - 2$,” “ $8 - 3$,” and “ $9 - 3$.” Have children model with counters and complete the number sentences.

► Challenge Activity

Solve change unknown problems.

Materials For each child (optional): 10 connecting cubes or two-color counters

- Say: *I had 10 crackers. I ate some, and now I have 8. How many crackers did I eat?* Suggest that children use connecting cubes or counters to model the problem to find that 2 crackers were eaten, or taken away.
- Present children with similar story problems in which the starting number and the result are known, but the amount taken away is unknown.

Overview

Assign the Lesson 19 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.

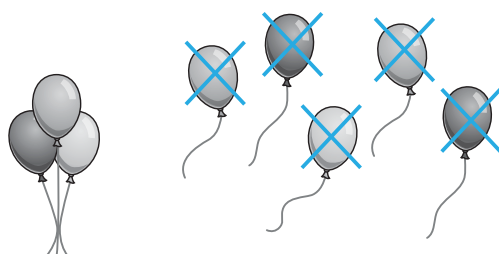
Tested Skills

Problems on this quiz require children to be able to solve take-away subtraction situations within 10 using pictures. Children will also need to be familiar with subtraction number sentences, counting up to 10 objects, and solving take-away subtraction situations within 5 using pictures.

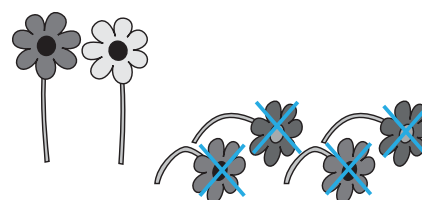
Ready® Mathematics

Lesson 19 Quiz Answer Key

Name _____

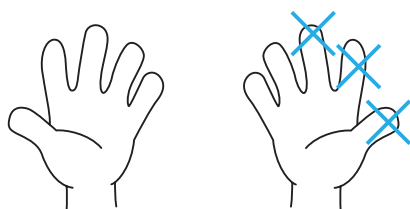


$$8 - 5 = \underline{3}$$



$$6 - 4 = \underline{2}$$

Pictures will vary. Children may cross out any 3 fingers. Possible work:



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

Have children compare the picture to the number sentence to help them solve the subtraction problem. Then have children cross out the number of objects or fingers being taken away and complete the number sentence.



Common Misconceptions and Errors

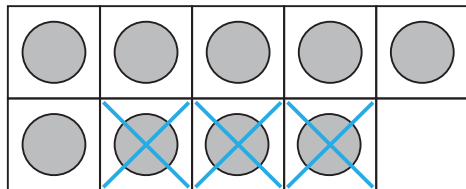
Errors may result if children:

- do not understand the subtraction situations represented in the pictures.
- add instead of subtract.
- confuse the number being taken away with the result.
- write numbers incorrectly or miscount.

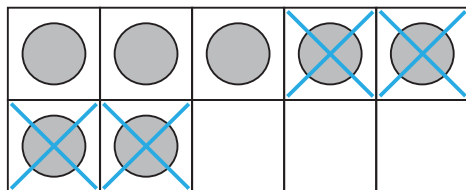
Lesson 19 Quiz Answer Key continued

Name _____

Pictures will vary. In the top 10-frame, children may cross out any 3 counters. In the bottom 10-frame, children may cross out any 4 counters. Possible work:



$$9 - 3 = \underline{6}$$



$$\underline{3} = 7 - 4$$

Have children use the pictures of counters to help them solve each problem. Have children cross out the number of counters being taken away and complete the number sentence.

