Lesson Overview

LESSON 17

Add Within 5

Lesson Objectives

Content Objectives

- Solve addition word problems within 5, using pictures or objects.
- Recognize both put-together and add-to situations as addition problems.
- Find pairs of addends to make a given total.

Language Objectives

- Tell put-together and add-to addition problems to match a given picture.
- Count pictures to find the total for an addition equation.
- Model addition problems with counters.
- Write the total for an addition equation.
- Listen to the ideas of others and ask questions to clarify.

Prerequisite Skills

- Count up to 5 objects.
- Recognize the plus sign (+).
- Recognize the equal sign (=).

Standards for Mathematical Practice (SMP)

SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the *Try-Discuss-Connect* routine.*

In addition, this lesson particularly emphasizes the following SMPs:

2 Reason abstractly and quantitatively.

5 Use appropriate tools strategically.

7 Look for and make use of structure.

*See page 311k to see how every lesson includes these SMPs.

Lesson Vocabulary

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

- **add** to put together groups to find the total.
- **equal sign (=)** the symbol that means *is the same as*.
- **equation** a mathematical sentence that uses an equal sign (=) to show that two things are equal.
- **plus sign (+)** the symbol that means *add*.
- **total** altogether. The result of adding two or more groups or quantities.

Learning Progression

In Kindergarten children learn to add and subtract within 10 using objects and pictures, and to associate equations with those operations. They apply these skills to solving problems illustrated with pictures. In the previous lesson, children were introduced to the plus sign as meaning *and* and the equal sign as meaning *is the same as* or *equals*.

In this lesson children explore real-world story situations that involve adding (either an add-to or a put-together situation), and for each situation they find the total. They are also given a total and asked to find two missing addends. By the end of Kindergarten, children should be able to find any sum up through 10.

In Grade 1 children will apply their understanding of addition to solve word problems involving greater quantities.

Lesson Pacing Guide

Whole Class Instruction

SESSION 1 Explore *45–60 min*	**Adding Within 5** • Start *5 min* • Try It *20 min* • Connect It *15 min* • Close: Exit Ticket *5 min*	**Additional Practice** Lesson pages 333–334 **Building Fluency** Use throughout lesson
SESSION 2 Develop *45–60 min*	**Adding Within 5** • Start *5 min* • Try It *5 min* • Discuss It *15 min* • Connect It *15 min* • Close: Exit Ticket *5 min*	**Additional Practice** Lesson pages 337–338 **Fluency Practice** Add Within 5 Make 5 with Dot Cards
SESSION 3 Develop *45–60 min*	**Adding Within 5** • Start *5 min* • Try It *10 min* • Discuss It *10 min* • Connect It *15 min* • Close: Exit Ticket *5 min*	**Additional Practice** Lesson pages 341–342 **Fluency** Adding Within 5
SESSION 4 Refine *45–60 min*	**Adding Within 5** • Start *5 min* • Apply It *10 min* • Discuss It *25 min* • Close: Exit Ticket *5 min*	**Additional Practice** Lesson pages 345–346
SESSION 5 Refine *45–60 min*	**Adding Within 5** • Start *5 min* • Apply It *15 min* • Small Group Differentiation *20 min* • Close: Exit Ticket *5 min*	**Lesson Quiz** or **Digital Comprehension Check**

Lesson Materials

Lesson *(Required)*	*Per child:* 10 counters (5 each of two different colors), 5 two-color counters, 2 crayons (1 red, 1 yellow), copy of Close slide (Session 5) *For display:* 5 chairs
Activities	*Per child:* 10 counters (5 each of two different colors), piece of string *Per pair:* 3 index cards with addition equations, crayons *For display:* various classroom objects, such as an eraser, a pencil, a crayon *Activity Sheets:* 5-Frames, Dot Cards 1: Small**
Math Toolkit	counters, two-color counters, crayons
Digital Math Tool	Counters and Connecting Cubes

**Used for more than one activity.

Teacher Toolbox

Small Group Differentiation

RETEACH

Tools for Instruction

Grade K
- Lesson 17 Add Within 5

REINFORCE

Math Center Activity

Grade K
- Lesson 17 Add and Move

EXTEND

Enrichment Activity

Grade K
- Lesson 17 Ways to Make 6

i-Ready

Independent Learning

PERSONALIZE

i-Ready Lessons*

Grade K
- Number Partners for 3
- Number Partners for 4 and 5

Learning Games
- *Hungry Guppy*
- *Hungry Fish*
- *Match*

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

Connect to Family, Community, and Language Development

The following activities and instructional supports provide opportunities to foster school, family, and community involvement and partnerships.

Connect to Family

Use the **Family Letter**—which provides background information, math vocabulary, and an activity—to keep families apprised of what their child is learning and to encourage family involvement.

Goal

The goal of the Family Letter is to help children add within 5.

- Adding within 5 helps children solve problems with numbers.

Activity

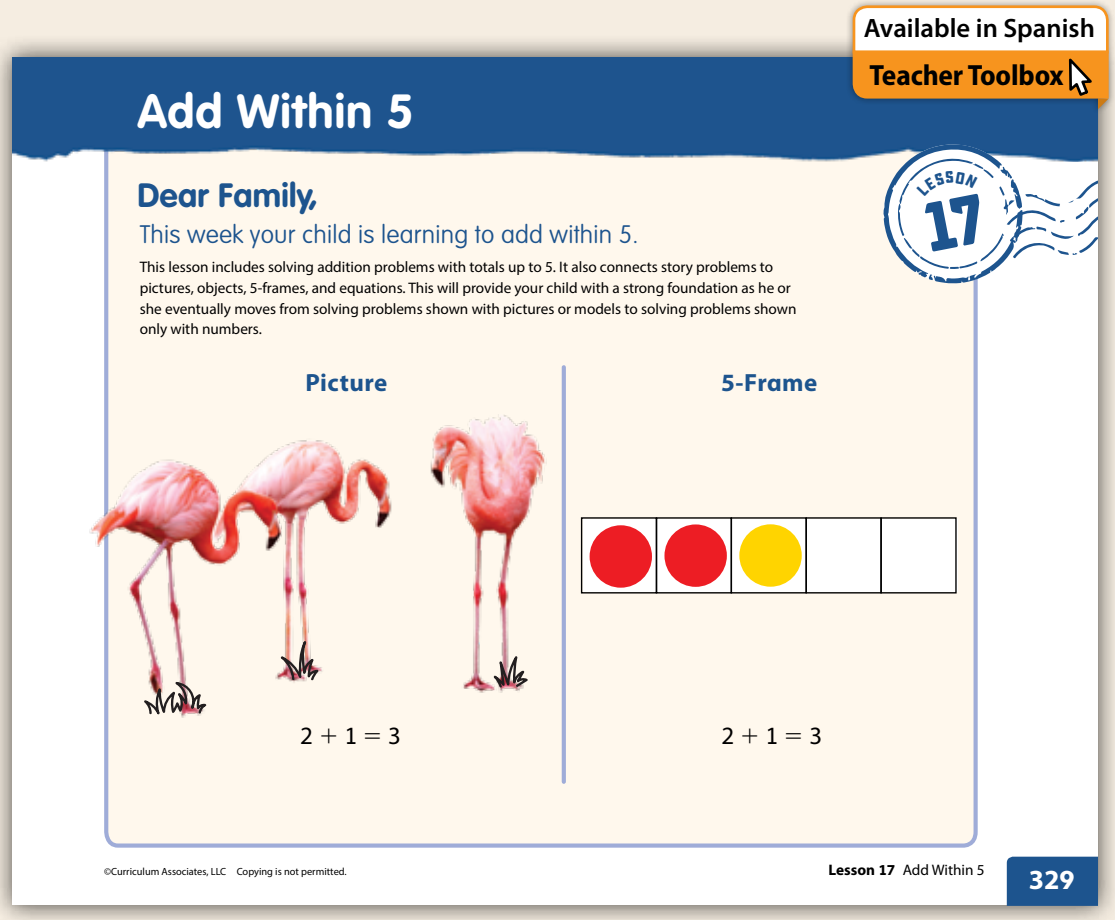
The activity will help children connect story problems to objects and equations. Look at the *Adding Within 5* activity and adjust as necessary to connect with children.

Math Talk at Home

Encourage children to work with a family member to find 8 small objects of different colors or types, such as buttons or beans. A family member writes an addition equation that equals 5 or less on one half of a folded sheet of paper. Children say the equation aloud and place a group of objects above each number. Then they write the total.

Conversation Starters Below are additional conversation starters children can write in their Family Letter or math journal, with your guidance, to engage family members:

- *Do you have the same number of buttons as the number below them?*
- *Does 2 + 3 equal five?*
- *What happens if we switch the numbers to 3 + 2?*
- *What did you do with the buttons when we switched the numbers?*



Available in Spanish

Teacher Toolbox

Add Within 5

LESSON 17

Dear Family,

This week your child is learning to add within 5.

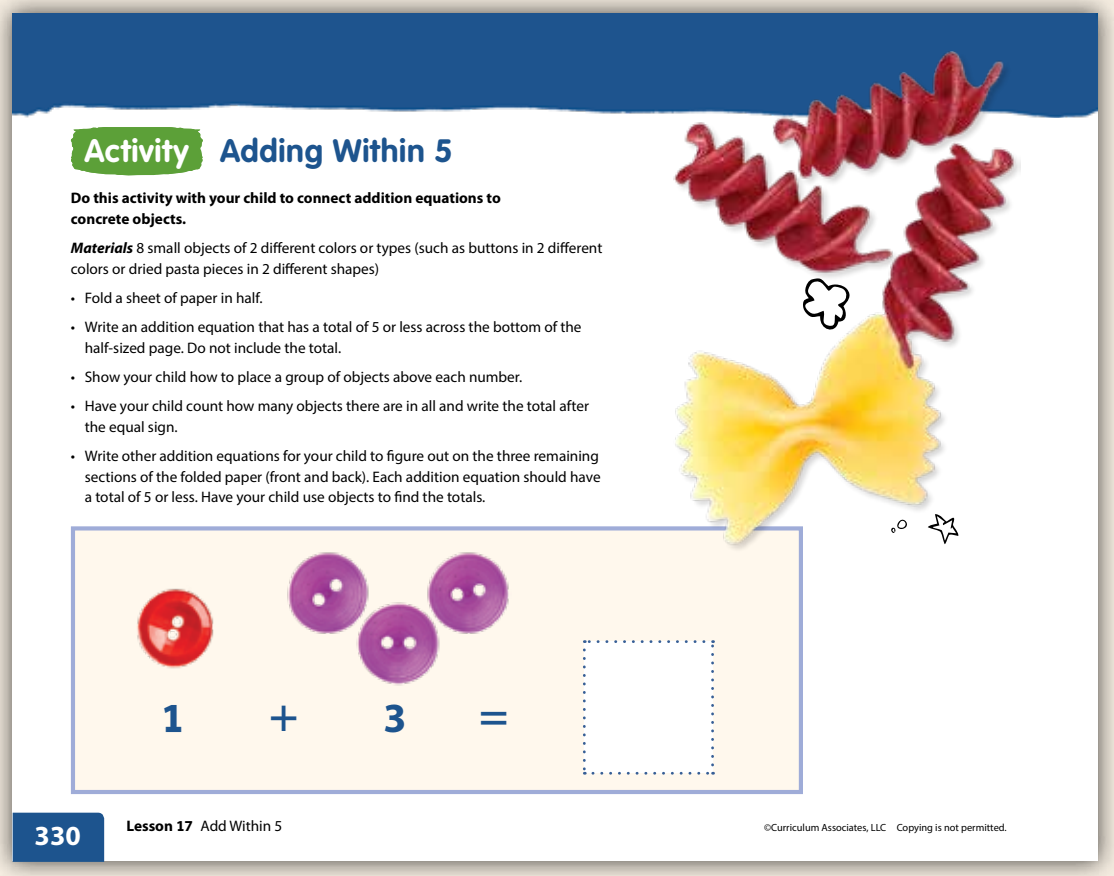
This lesson includes solving addition problems with totals up to 5. It also connects story problems to pictures, objects, 5-frames, and equations. This will provide your child with a strong foundation as he or she eventually moves from solving problems shown with pictures or models to solving problems shown only with numbers.

Picture

2 + 1 = 3

5-Frame

2 + 1 = 3



Activity Adding Within 5

Do this activity with your child to connect addition equations to concrete objects.

Materials 8 small objects of 2 different colors or types (such as buttons in 2 different colors or dried pasta pieces in 2 different shapes)

- Fold a sheet of paper in half.
- Write an addition equation that has a total of 5 or less across the bottom of the half-sized page. Do not include the total.
- Show your child how to place a group of objects above each number.
- Have your child count how many objects there are in all and write the total after the equal sign.
- Write other addition equations for your child to figure out on the three remaining sections of the folded paper (front and back). Each addition equation should have a total of 5 or less. Have your child use objects to find the totals.

1 + 3 =

Connect to Community and Cultural Responsiveness

Use these activities to connect with and leverage the diverse backgrounds and experiences of all children.

Session 2 **Use with *Try It*.**

- Ask if any children have visited or read about farms. Encourage them to explain how farms may be different from the one pictured in the Student Worktext. Expand the conversation by asking what different animals or different types of buildings might be on other farms. Explain that farms are also where crops are grown and harvested. Invite volunteers to share what foods they eat that come from a farm. Display photos of farms and farm animals. Encourage children to make up their own number stories with farm animals. For example, say: *2 brown horses are running. 1 white horse joins them. How many horses are running now?* If time allows, sing the popular children's song "Old MacDonald Had a Farm," incorporating the animals in the picture.

Session 4 **Use with *Apply It*.**

- Music and rhythm are important elements in many oral traditions. Make rhythms with beats that have totals within 5 using claps and stomps. Draw a hand on the board to represent claps. Below, draw a foot to represent stomps. Write numbers in front of the icons that have totals within 5, mirroring the equations presented in the *Apply It* problems. Divide the class into two groups. Have one group clap the designated number of claps and the other group stomp the number of times indicated. For example, the number 2 with a picture of a hand and the number 1 with a picture of a foot will represent two claps and one stomp. Pair children up and ask them to make their own beat within 5 to share with another pair of children.

Session 5 **Use anytime during the session.**

- Activate kinesthetic learners by leading children in groups of actions with totals up to 5. For example, have children touch their toes 3 times and reach to the ceiling 2 times. Ask children how many actions they did. Work together to write an equation. [3 + 2 = 5] Repeat the activity throughout the session using different number partners for 5. Include a variety of actions, such as hopping, twisting, turning, and raising a hand or foot.

Connect to Language Development

For ELLs, use the Differentiated Instruction chart to plan and prepare for specific activities in every session.

ELL English Language Learners: Differentiated Instruction

Prepare for Session 1
Use with *Connect It*.

Levels 1–3	Levels 2–4	Levels 3–5
Listening/Speaking Provide counters and read the ***Connect It*** problem aloud. Ask children to point to the symbol that represents the word *plus*. Say the word and have children repeat. Using two sets of counters, demonstrate that *plus* means to join the two sets of counters. In groups of four, have children act out the problem. Then have them re-create the scenario using counters on the workmat. Say: *3 plus 1*. Have children repeat. Then point to the equation and say: *3 plus 1 equals 4*. Have children practice reading the equation to a partner.	**Speaking/Reading** Read the ***Connect It*** problem aloud. Write the following sentence frames on the board: • _____ *and* _____ *is the same as* _____. • _____ *plus* _____ *equals* _____. Read the sentence frames aloud. Have children point to the word in the second sentence that means the same as *and* in the first sentence (*plus*). Explain that *and* and *plus* both mean *to join together*. Reread the sentence frames, this time allowing time for children to supply the words to fill in the blanks: *3 and 1 is the same as 4. 3 plus 1 equals 4.* Pair children up and have them retell the problem to each other, using the sentence frames to verbalize their thinking.	**Speaking/Reading** Read the ***Connect It*** problem aloud. After children have solved the problem, have them practice connecting the math symbols to words. Write the following sentence frames on the board: • _____ *and* _____ *is the same as* _____. • _____ *plus* _____ *equals* _____. Use sticky notes with the symbols + and = on them to remind children that in the first sentence *and* means + and *is the same as* means =. Have children work with a partner to complete the sentence frames. Provide additional support by asking: *What do the 3 red counters represent? What does the 1 yellow counter represent? Which symbol means to join them together? How many are there altogether?*

LESSON 17

SESSION 1 Explore

Purpose In this session children act out add-to addition situations and then model the same situation with counters. Then they see the addition situation expressed as a written addition equation.

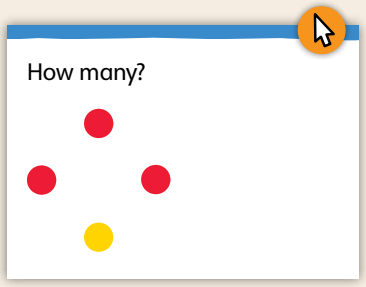
Start

Develop Fluency

Materials none, children use their fingers

Why A quantity (4) may be seen as 4, or as composed of two parts, preparing children for work with addition.

How Ask children to first show with their fingers how many red counters there are, then say the number aloud together. Repeat for the yellow counters and for the total.



Listen for You can count all the counters to find the total. Some children may use the term *add* or say that 3 plus 1 is 4.

Try It

Materials For each child: 10 counters (5 each of two different colors); For display: 5 chairs (or 5 Xs taped to the floor)

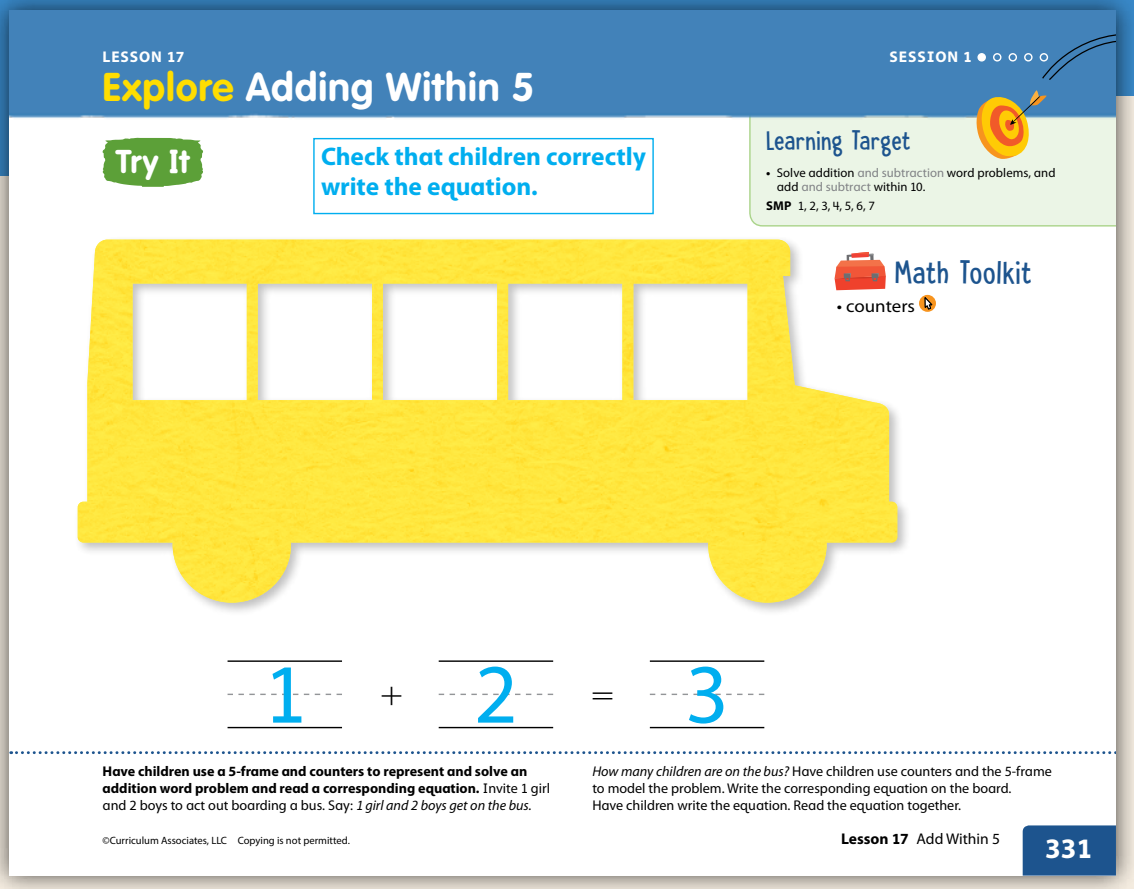
Act Out the Addition Problem

Say: *At the first bus stop, 1 girl and 2 boys get on the bus. How many children are on the bus?*

Arrange 5 chairs (or 5 Xs taped to the floor) in a row to represent seats on the bus. Invite 1 girl and 2 boys to act out boarding the bus at the front.

Invite a child to be the driver and count the children on the bus to find how many there are.

Prompt children to represent the problem they acted out with 1 counter of one color (1 girl) and 2 counters of a different color (2 boys) on the 5-frame on the "bus" workmat.


LESSON 17

Explore Adding Within 5

SESSION 1 ● ○ ○ ○ ○

Try It

Check that children correctly write the equation.

Learning Target

- Solve addition and subtraction word problems, and add and subtract within 10.

SMP 1, 2, 3, 4, 5, 6, 7

Math Toolkit

- counters

1 + 2 = 3

Have children use a 5-frame and counters to represent and solve an addition word problem and read a corresponding equation. Invite 1 girl and 2 boys to act out boarding a bus. Say: *1 girl and 2 boys get on the bus.*

How many children are on the bus? Have children use counters and the 5-frame to model the problem. Write the corresponding equation on the board. Have children write the equation. Read the equation together.

Prompt children to recognize that each counter stands for 1 child.

Ask *How many counters did you use to show the girl? How many counters did you use to show the boys? How are the numbers of counters like the number of children who got onto the bus?*

Listen for I showed 1 counter for the girl and 2 counters for the boys. The numbers of children and counters are the same.

Ask *How can the counters tell you how many children are on the bus in all?*

Listen for You can count the counters to know how many children are on the bus.

Review the Plus Sign (+) and the Equal Sign (=)

Tell children that now they are going to show the same problem another way, using numbers and an equation.

Write "__ + __ = __" on the board.

Review the plus sign (+) and the equal sign (=). Remind children they learned that a plus sign means *and*, or *plus*, and an equal sign means *is the same as*, or *equals*.

Ask for children's help in filling in the missing numbers. [1 + 2 = 3] Make sure to connect each number with the corresponding number of children on the bus and counters on the 5-frame.

Have children write the equation on the Student Worktext page. It is also correct if children write 2 + 1 = 3 instead of 1 + 2 = 3.

Practice reading the completed equation two ways by saying together: *1 and 2 is the same as 3* and *1 plus 2 equals 3*.

Common Misconception **If** children do not understand that the plus sign joins the two smaller parts, and that the number alone on the other side of the = sign is the total, **then** encourage children to think of the + sign as a hook that links parts together.

Connect It

Materials For each child: 10 counters (5 each of two different colors)

Use Counters to Model Another Problem

Tell children to imagine that at the next stop another girl gets on the bus. Say: *There are 3 children on the bus. One more girl gets on the bus. How many children are on the bus now?*

Have children use counters on the 5-frame on the "bus" workmat on the Student Worktext page to model the problem. Children can use one color to represent the children already on the bus and a different color to represent the child getting on the bus.

Support Whole Class Discussion

Have several children share how they found the total.

Ask *How many counters are there altogether? How many children are on the bus if there are 3 and 1 more? How do you know?*

Listen for There are 4. Counting the 4 counters tells you that there are 4 children on the bus.

Ask *What is another way you could find the total of 3 and 1 more if you did not have counters? Will you get the same answer if you use a different way to find the total?*

Listen for 1 more is the next number after 3. You can count on your fingers, draw a picture, or act it out. The total is the same regardless of how you represent the problem.

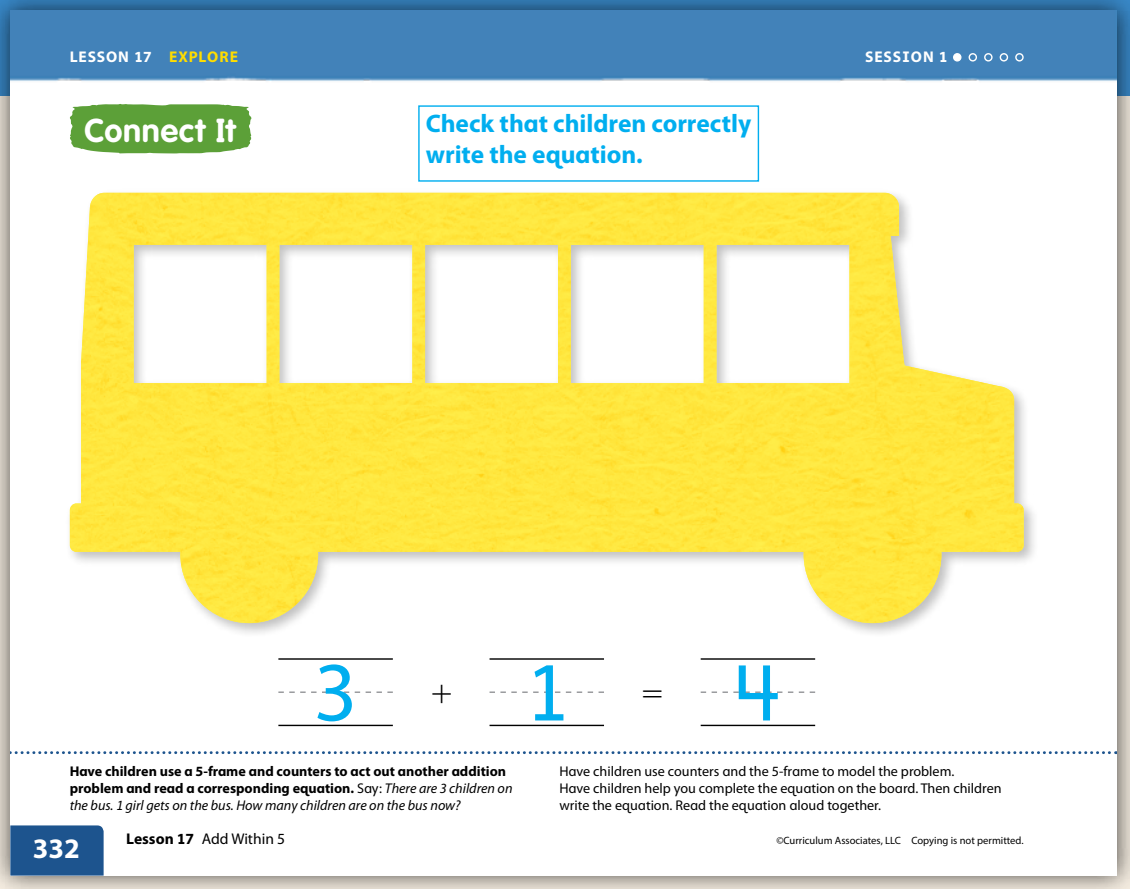
Write the Equation on the Board

Write "__ + __ = __" on the board. Invite children to help you complete the equation to show the problem. [3 + 1 = 4]

Have children complete the equation on the Student Worktext page.

Ask *How does this equation tell the same story as the counters?*

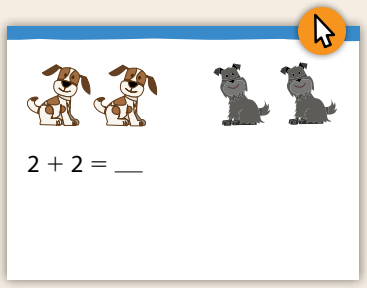
Listen for The numbers in the equation show that you started with 3 and added 1 more, which is the same thing the counters did and the same thing the children on the bus did.



Close: Exit Ticket

Materials none, children use their fingers

Ask children to show with their fingers the number that goes in the blank.



Solution 2 + 2 = 4

Listen for The total can be found by counting all the dogs.

Common Misconception **If** children do not know there are 4 dogs altogether, **then** have them represent the problem using red and yellow counters. Encourage children to confirm the total by touching all four counters as they count.

Real-World Connection

Encourage children to think about real-world situations in which people might add numbers to find the total. Jump-start their thinking with ideas. For example, you might add to find out how many people are going to be in the car after you pick up some friends, or how many pens you have altogether if you have 2 red pens and 3 black pens.

Solutions

Support Vocabulary Development

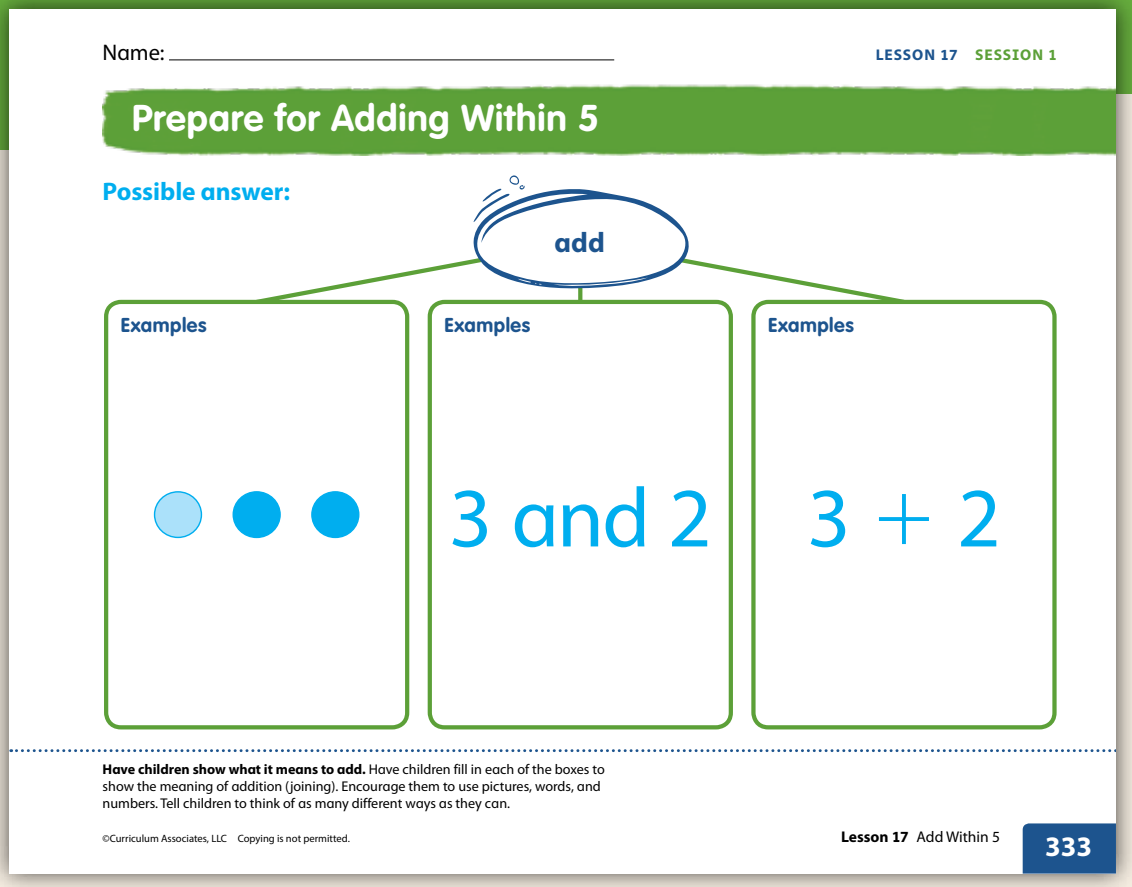
This activity can be used to informally assess children's understanding of adding within 5. Children can show what they know now. You can have them revise their thinking and revisit their responses once they have completed the lesson or unit.

If children need additional support, the following steps provide explicit instructions to guide them.

Have children point to the term *add*. Read the term and have children repeat after you. Say: *We use the word* add *to join groups together.* Hold up 3 crayons and count them aloud with children. Then hold up 2 more crayons in the other hand and count them aloud with children. Say: *I add 3 crayons and 2 crayons.* Write "3 and 2" and "3 + 2" on the board. Say: *I add 3 plus 2.* Have children use objects or counters to show a partner what they think *add* means. Then encourage children to fill in the boxes in the graphic organizer to show the idea of adding with drawings and numbers.

Supplemental Math Vocabulary

- *equals*


Name: _____

LESSON 17 SESSION 1

Prepare for Adding Within 5

Possible answer:

add

Examples	Examples	Examples
● ● ●	3 and 2	3 + 2

Have children show what it means to add. Have children fill in each of the boxes to show the meaning of addition (joining). Encourage them to use pictures, words, and numbers. Tell children to think of as many different ways as they can.

Building Fluency

Extend counting using one-to-one correspondence to 15.

Take advantage of opportunities to lead children in counting, such as counting days in the month, objects in books, art supplies used, steps it takes to get into line, etc.

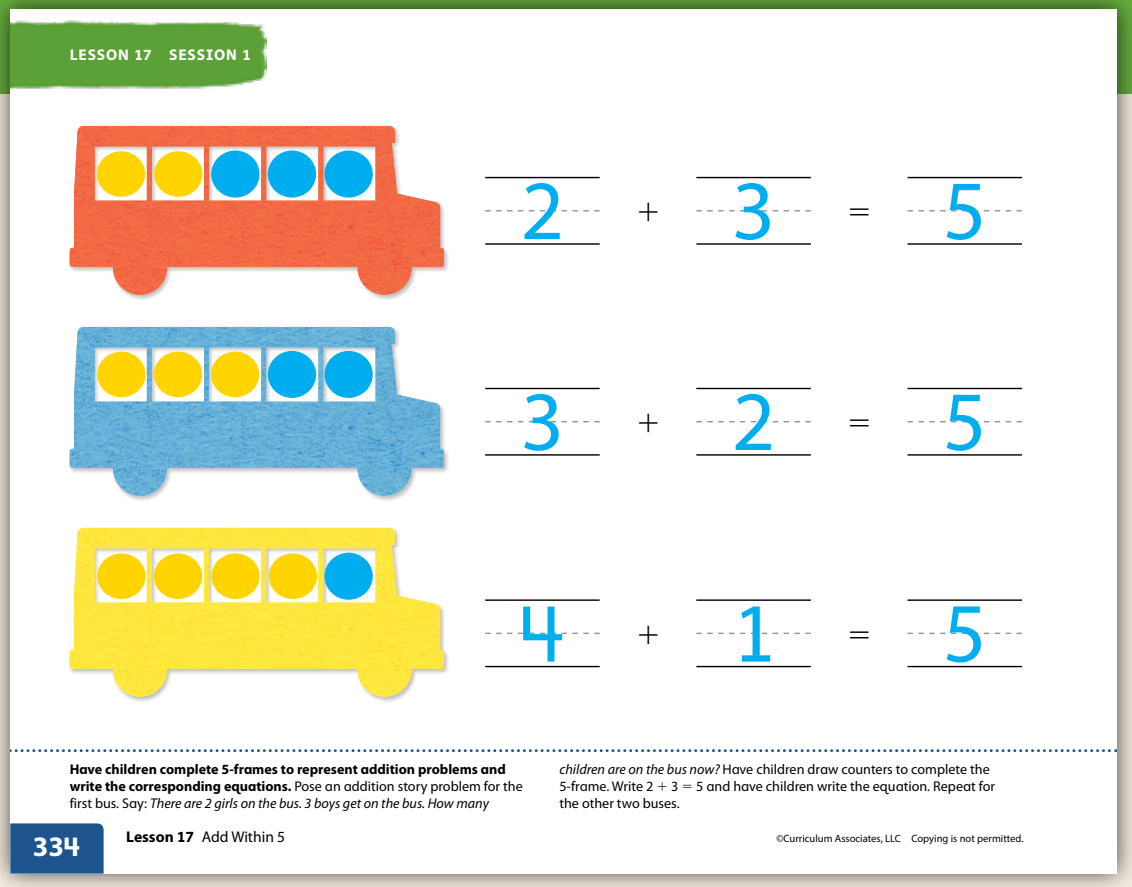
Solutions

Assign the problems to provide another look at put-together addition problems.

These problems are very similar to the problems about children getting on the bus. In these problems, children draw counters in 5-frames to represent addition problems and write the corresponding equations.

Children may want to use objects to solve the problems.

- Drawing should show 3 counters; $2 + 3 = 5$
  Medium
- Drawing should show 2 counters; $3 + 2 = 5$
  Medium
- Drawing should show 1 counter; $4 + 1 = 5$
  Medium



ELL English Language Learners: Differentiated Instruction

Prepare for Session 2
Use with *Connect It*.

Levels 1–3

Listening/Speaking Focus on the bottom illustration in ***Connect It***. Review the names of the farm animals with children. Think aloud as you model describing an addition problem using the picture. Say: *1 big horse and 1 small horse is 2 horses.* Have children point to the big horse, then the small horse. Write $1 + 1 = 2$. Ask children to think of an addition problem using the pigs. Have them discuss ideas with a partner. Then have each group share. Encourage children to make addition problems with other animals.

Levels 2–4

Listening/Speaking Point to the different groups of animals in ***Connect It*** and have children provide the names. Think aloud as you model describing an addition problem using the horses. Say: *1 big horse and 1 small horse is 2 horses.* Have children point to the big horse, then the small horse. Write $1 + 1 = 2$. Ask: *What addition problem could you make with the pigs?* Have children turn and talk with a partner to make an addition problem. Provide the sentence frame to help them:

- _____ *plus* _____ *equals* _____.

Levels 3–5

Speaking/Writing Have children work in pairs to make addition problems about the groups of animals in ***Connect It***. Give each child two index cards. Have them choose one problem to illustrate on one index card. On the other index card, have them write the equation. Group children into fours. Have children make two separate groups of index cards: one group of illustrations and another group of equations. Have children organize the cards in a pocket chart, matching each equation with the illustration it represents. Ask children to practice reading each equation as it is matched with an illustration.

LESSON 17

SESSION 2 Develop

Purpose In this session children tell addition stories based on groups of animals shown as two smaller groups. Then they relate the addends and the totals in those stories to the addends and totals in written addition equations.

Start

Connect to Prior Knowledge

Materials none, children use their fingers

Why Reinforce the concept of the plus sign linking two quantities.

How Tell stories about classroom objects related to each equation, such as *There are 2 jars of paint on the easel. 1 is red and 1 is blue.* Ask children to show the numbers in the story using fingers on two hands. Then ask them to tell which equation matches the story.

$1 + 4 = 5$

$1 + 1 = 2$

$1 + 3 = 4$

Listen for The two addends in the story are the two numbers linked by the plus sign.

Develop Language

Why Clarify the meaning of the comparison word *like*.

How Explain that *like* means *the same* or *similar*. Say: *Let us compare the group of sheep and the group of pigs in the farm scene. How is the group of sheep like the group of pigs?* [Possible answers: There are 3 babies in each group. There is 1 big pig and 1 big sheep. Both groups have 4.]

Try It

Present the scene, and engage children by having them tell addition problems for groups of animals and objects.

Ask *When you look at a group of animals, do you see how the group is made of two smaller groups?*

Provide an example, such as *3 little pigs and 1 big pig is 4 pigs.* Write a blank equation on the board (__ + __ = __). Together, fill in the missing numbers, discussing what each number represents. Emphasize that *plus* means *and*.

Have children circle the two groups of animals that show 3 + 1.

Discuss It

Support Partner Discussion

Have children talk in pairs about other groups of animals and objects they see. Encourage children to identify as many groups as they can.

Support as needed with questions such as:

- *How did you decide which animals or objects were in a group?*
- *How did you know you found as many groups as you could?*

Common Misconception **If** children struggle to describe the groups of pigs or sheep using addition, **then** have them first count the group, then count baby pigs, and then count big pigs.

Select and Sequence Solutions

Select children to present many different solutions. Choose children who have identified groups such as:

- 3 plus 2 chicks is 5
- 1 plus 4 butterflies is 5
- 2 plus 3 clouds is 5
- 2 plus 1 hen is 3

End with more creative solutions, if any, such as "1 big horse, 1 big sheep, and 1 big pig is 3 big animals."

Support Whole Class Discussion

Compare and connect children's solutions by having them share groups they found and state the addition fact, for example: *3 chicks plus 2 chicks equals 5 chicks.*

Write and discuss each addition equation. Connect the addends in the equation to the subgroups and the total to the whole group.

Look for opportunities to compare similarities and differences.

Ask *How is the group of sheep like the group of pigs?*

Listen for They are both groups of 4. They both show groups of 3 and 1.

Ask *How is the group of butterflies different from the group of horses?*

Listen for The group of butterflies shows 1 + 4, or 5. The group of horses shows 1 + 1, or 2.

Connect It

Materials For each child: 10 counters (5 each of two different colors)

Support Whole Class Discussion

Explain to children that they will match each picture to an equation and confirm their answers with counters.

Have children tell the number of large and small animals as well as the total in each picture.

Then, for each equation, have a child read it aloud. For 2 + 1 = 3, engage children by asking the following questions. Then repeat for the other two problems.

Ask *How can you show 2 and 1 with counters?*

Listen for You can show 2 counters of one color and 1 of another color, or 3 all one color.

Have children model the equation with counters.

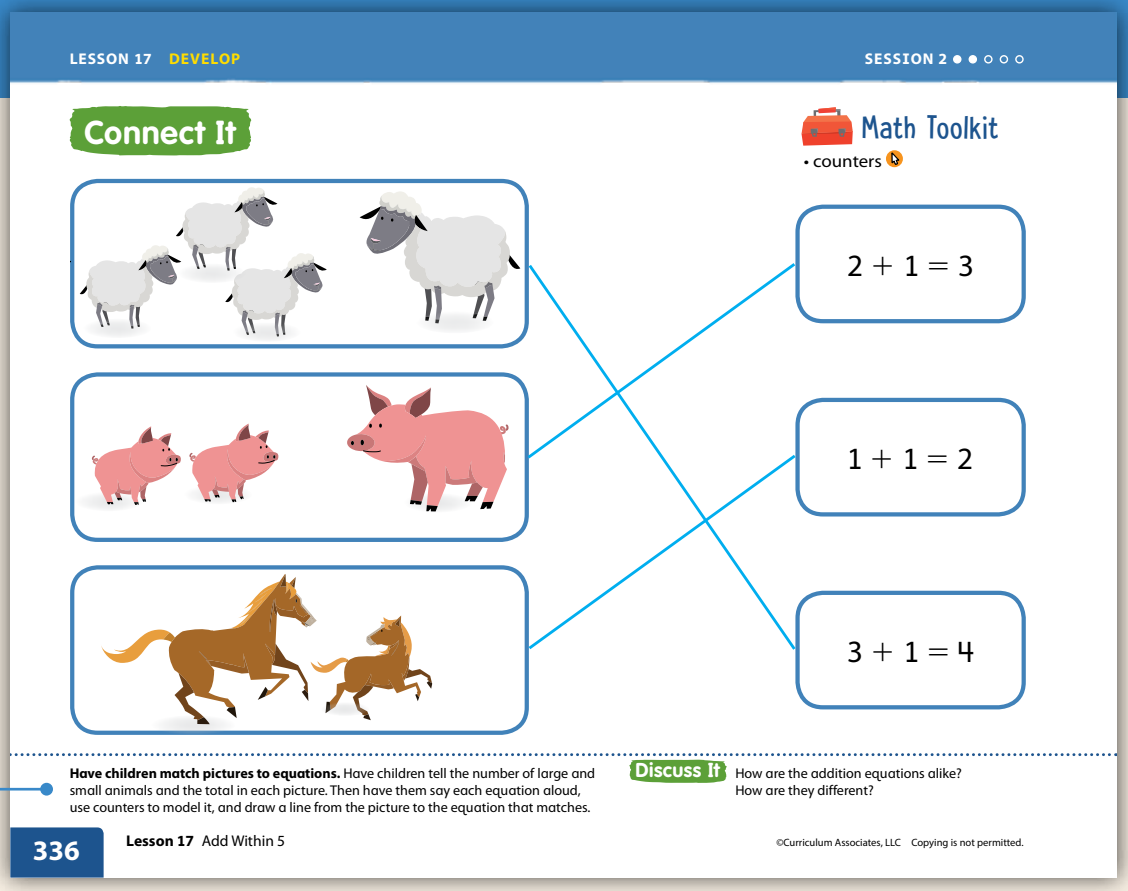
Ask *Which picture matches 2 + 1 = 3? How can you tell?*

Listen for The 3 counters and 3 pigs match. 2 little pigs and 1 big pig is 2 + 1. 2 plus 1 means 2 and 1.

Have children draw a line to match 2 + 1 to the group of pigs.

Ask *How are the equations alike? How are they different?*

Listen for They all have 1 as a number you add. They all have a plus sign and an equal sign. They have different totals.



Deepen Understanding

Equations

SMP 2 Reason abstractly and quantitatively.

Materials none, children use their fingers

When discussing the equations, prompt children to recognize that equations represent quantities, not specific objects.

Ask *Show me how you can show 2 little pigs plus 1 big pig with your fingers.*

Look for Children may use 2 fingers on one hand and 1 on the other.

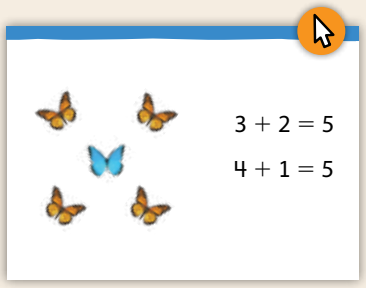
Ask *What different stories can you tell for 2 + 1 = 3?*

Listen for Children may tell any story with a group of 2 and a group of 1, in any order.

Generalize *Is the total the same in all the stories for 2 plus 1? Why do you think that is?* Listen for understanding that 2 plus 1 and 3 are the same quantities regardless of what objects they refer to.

Close: Exit Ticket

Have children tell which equation matches the picture.



Solution 4 + 1 = 5

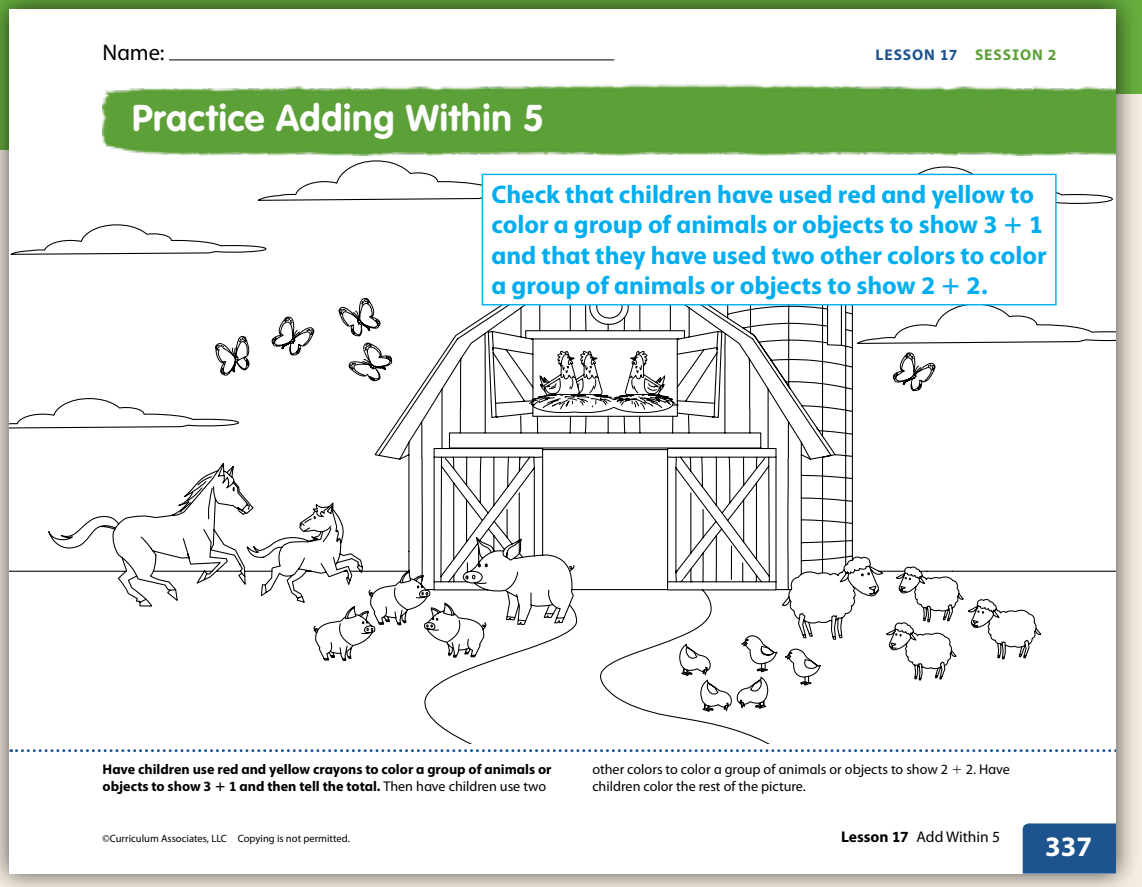
Listen for Children should recognize the relationship between the two groups in the picture and the addends and that 5 represents the total number of butterflies.

Common Misconception **If** children do not connect addition to the group of butterflies, **then** have them use counters to first show 3 + 2, then 4 + 1.

Solutions

Children's coloring should show the following:

- red and yellow to color one group of animals or objects that shows 3 + 1 (for instance, pigs)
- two other colors to color a group of animals or objects to show 2 + 2 (for instance, sheep)



Name: _____ LESSON 17 SESSION 2

Practice Adding Within 5

Check that children have used red and yellow to color a group of animals or objects to show 3 + 1 and that they have used two other colors to color a group of animals or objects to show 2 + 2.

Have children use red and yellow crayons to color a group of animals or objects to show 3 + 1 and then tell the total. Then have children use two other colors to color a group of animals or objects to show 2 + 2. Have children color the rest of the picture.

Fluency Practice

Add within 5.

Find opportunities throughout each day to tell informal put-together and add-to number stories such as: *There are 2 red crayons and 3 brown crayons. How many crayons are there in all?* (put together) or *There were 2 children jumping rope. 2 more children join them. How many children are jumping rope now?* (add to)

Make 5 with dot cards.

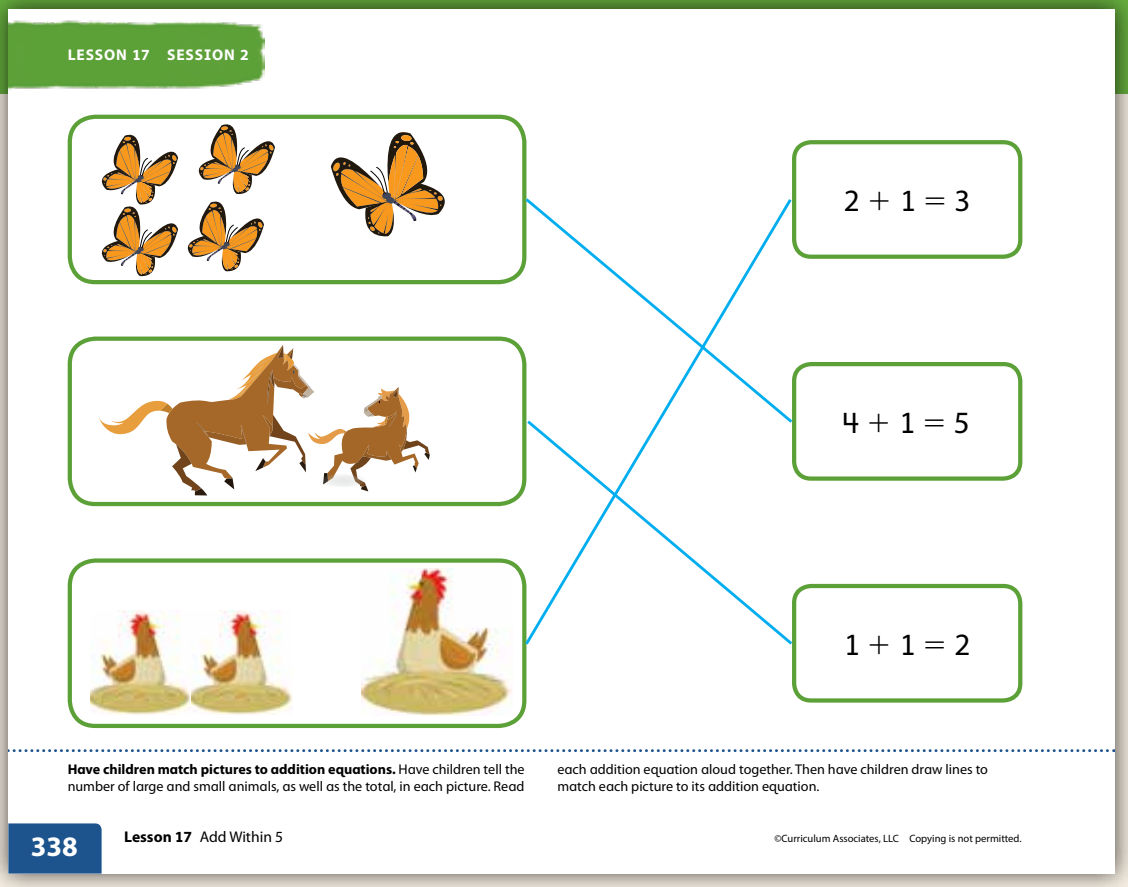
Materials For each pair: two copies of Activity Sheet *Dot Cards 1: Small*

- Give each pair two each of the cards for 1–4.
- Have each pair spread the cards on the table, facedown. Partners take turns turning over 2 cards. If the dots on the cards total 5, the player wins the pair and the other player takes a turn. If the cards do not total 5, turn the cards facedown and the other player takes a turn.
- Play continues until no cards remain.
- Have children mix up the cards and play again.

Solutions

Children should find the following matches.

- Butterflies: 4 + 1 = 5
  Medium
- Horses: 1 + 1 = 2
  Medium
- Hens: 2 + 1 = 3
  Medium



ELL English Language Learners: Differentiated Instruction

Prepare for Session 3
Use with *Try It*.

Levels 1–3

Reading/Speaking Model making a story to go with the first ***Try It*** equation using words from the list of nouns and actions that the class generated in the *Develop Language* section. For example, if *frog* and *jumped* are on the list, you might say: *2 frogs were on a rock. 1 more frog jumped on. Now there are 3 frogs. 2 and 1 is the same as 3. 2 + 1 = 3.* Work with small groups of three or four children to make a number story for the remaining ***Try It*** equations using words from the chart. Have children supply the nouns and actions.

Levels 2–4

Speaking/Writing Have children work with a partner to make number stories for the ***Try It*** equations. Before they begin, reread the nouns and actions from the chart the class generated in *Develop Language*. Tell children to work with their partners to decide which nouns and actions they will use in their number stories. Have children illustrate each number story and label the pictures with the corresponding words from the chart. Guide their conversations by asking: *Do the numbers tell you how many there are? Can you use the same numbers for different stories?*

Levels 3–5

Writing/Listening Have children work with a partner to make number stories for the ***Try It*** equations. If necessary, remind children that they can use the chart of nouns and actions they generated in *Develop Language*. Encourage children to write one of their addition stories in their math journal using resources to help them spell or using invented spelling. Choose two or three number stories to read aloud. Have children point to the equation from ***Try It*** that matches the number story.

LESSON 17

SESSION 3 Develop

Purpose In this session children start with a given addition equation (total unknown). First they create and model a story with counters to find the total. Then they use pictures to find and write the total.

Start

Connect to Prior Knowledge

Materials For each child: 10 counters (5 each of two different colors)

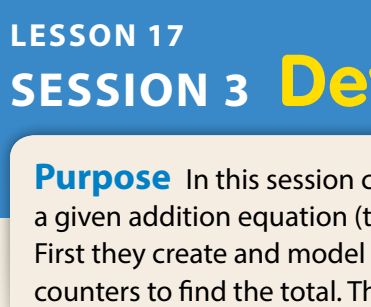
Why Reinforce the meaning of addition, and the relationship between the numbers in an addition equation and the quantities they represent.

How Relate addition stories to equations.

Tell an addition problem for 1 + 3. For example, *1 duck swims in the pond. 3 more ducks come to swim. How many ducks are swimming now?*

Have children model the problem with counters using a different color for each addend. Ask children to find the answer and tell how they know.

Repeat with a similar problem for 2 + 3 = 5.



Solution 4 ducks

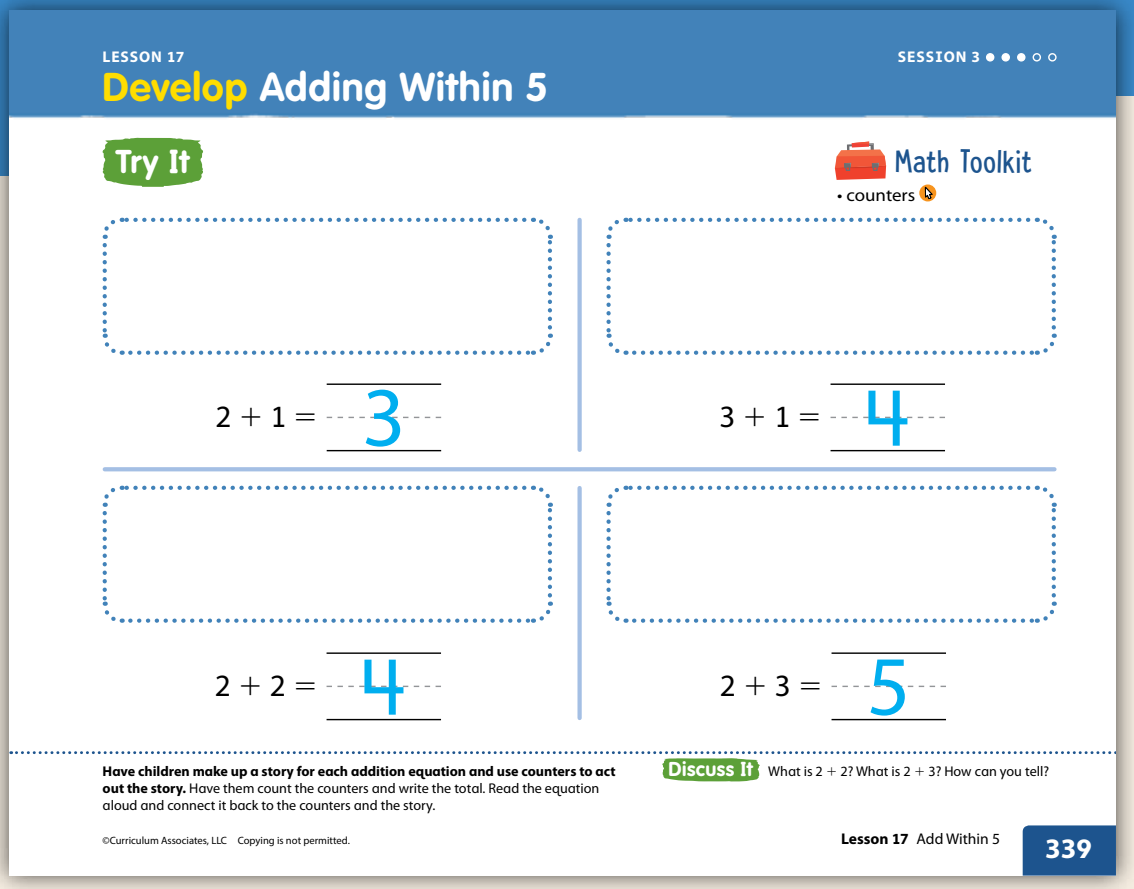
Look for Numbers in the equation represent quantities that include a total.

Develop Language

Why Facilitate language production to support children as they create their own addition stories.

How Lead children in a brainstorming activity to help them list nouns and corresponding actions that would give meaning to the counters and prepare children to create their own math stories. For example: *2 frogs sat on a rock. 1 more frog jumped on.*

Noun	Action
frog	jumped
fish	swam



Try It

Materials For each child: 10 counters (5 each of two different colors)

Explain to children that they will make up a story for each addition equation and act out the story with counters.

Support Partner Discussion

Have children tell a partner a story for each equation. Then have them use counters to show their own story in the space above each equation.

Support as needed with questions such as:

- *How did you decide which numbers to use in your addition story?*
- *How were your stories alike? How were they different?*

Common Misconception **If** children know how to add but struggle relating objects to quantities, **then** have them act out addition stories with sums to 5.

Select and Sequence Solutions

Select children to present different addition stories for each equation. Choose children who have identified:

- add-to stories
- put-together stories

Discuss It

Support Whole Class Discussion

Compare and connect children's stories. For 2 + 1, ask the following questions. Then repeat for the other three problems.

Ask *What were there 2 of? What was there 1 of? Did you and your partner tell the same story? Did you and your partner show the same number of red and yellow counters? How many were there altogether?*

Listen for The stories were different but used the same numbers. Some may have 2 red counters and 1 yellow, others the reverse.

Ask *How can you have the same total when you told different stories?*

Listen for Numbers can represent different things. Numbers tell how many, so 2 + 1 is always 2 + 1.

Have children find the total and write the number, 3.

Ask *What is 2 + 2? What is 2 + 3? How can you tell?*

Listen for 2 + 2 has a total of 4. 2 + 3 has a total of 5. There are 2 and 2 counters for 4. There are 2 and 3 counters for 5. 3 is 1 more than 2.

Hands-On Activity

Model addition problems with classroom objects and 5-frames.

If . . . *children are unsure about using objects to represent addition*

Then . . . *use the activity below to model addition.*

Materials For each child: 10 counters (5 each of two different colors), Activity Sheet *5-Frames*; For display: various classroom objects

- Display one each of classroom objects, such as an eraser, a pencil, and a crayon.
- Present an addition problem about two of the items. For example: *Inez has 3 erasers and 1 pencil. How many items does she have?*
- Have children use counters in the 5-frame to show the two addends. Together, write the corresponding equation on the board. Discuss the answer, 4.
- Repeat, posing other addition problems using different objects.

Connect It

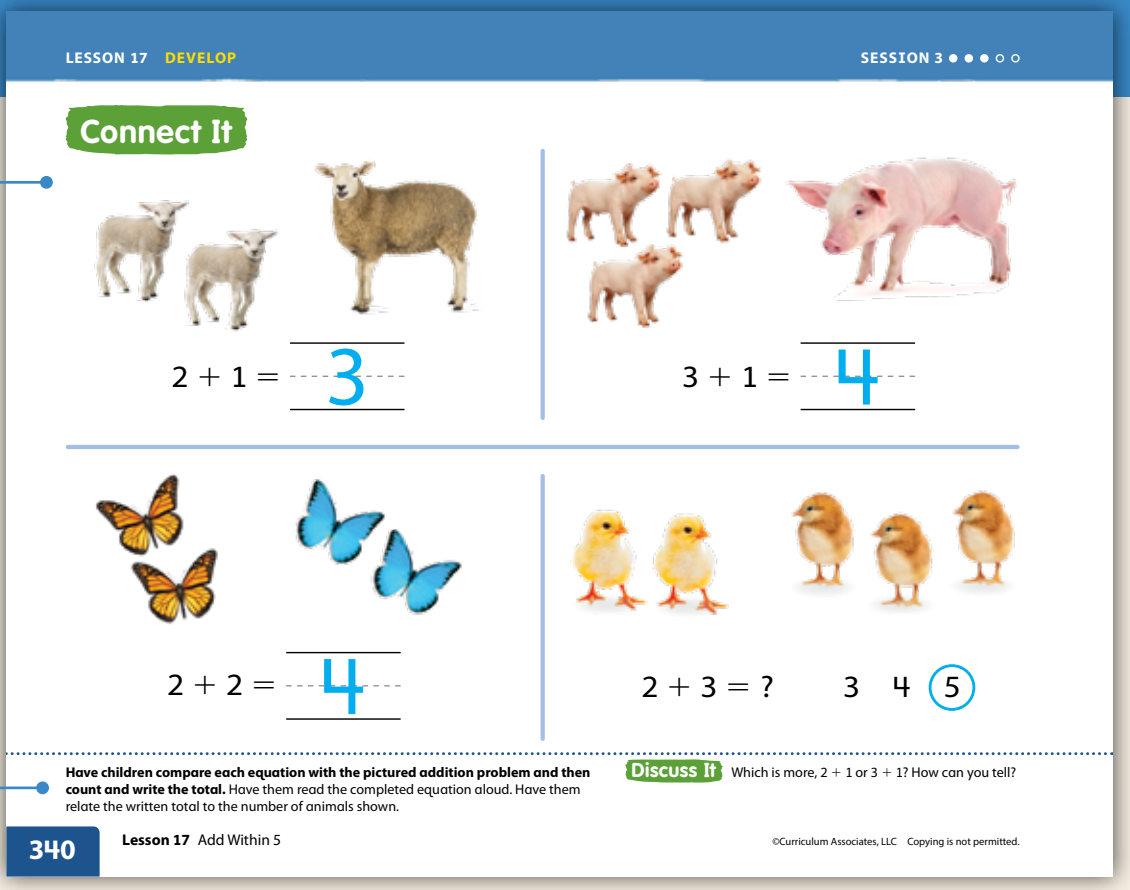
Support Whole Class Discussion

For each problem, have children compare each equation with the pictured addition problem, then count and write or circle the total. When all four problems have been completed, have several children share their answers and thinking.

As children share, prompt them to explain how each picture shows the numbers in the equation. For 2 + 1, engage children by asking the following questions. Then repeat for the other three problems.

Ask *Where does the picture show 2? Where does it show 1? How did you find the total?*

Listen for Children may count all to find the sum, use fingers to find the total, or count on.



Deepen Understanding

Properties of Addition

SMP 7 Use structure.

When all problems have been discussed, challenge children to think more broadly about the problems, comparing one problem to another.

Ask *Which is more, 2 + 1 or 3 + 1?* [3 + 1] *How do you know?*

Listen for I counted them, and 4 is more than 3. 3 is more than 2, so 3 and 1 is more than 2 and 1. If you start with more and then you add the same, the one with more still has more.

Ask *Which is more, 2 + 2 or 2 + 3?* [2 + 3] *How do you know?*

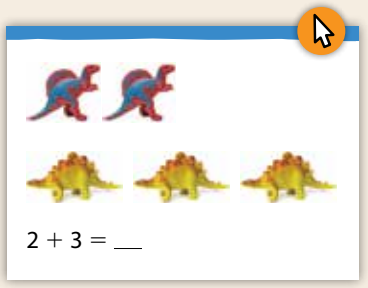
Listen for I counted them, and 4 is less than 5. They both start with 2, but then you add some, and adding 3 is more than adding 2. If you line them up, there is one extra when you add 3. There are more chicks than butterflies.

Generalize Prompt children to recognize that there are many ways to compare quantities.

Close: Exit Ticket

Materials none, children use their fingers

Read the problem. Have children show the answer with their fingers.



Solution 2 + 3 = 5

Listen for The problem is asking for the total number. Children may count to find the total number.

Common Misconception **If** children are not writing the correct total, **then** check to see if they can give the correct answer orally. If necessary, provide practice recognizing and writing numerals. **If** the oral answer is also incorrect, **then** provide practice counting and counting out groups of 1 to 5 objects.

LESSON 17

SESSION 3 Additional Practice

Solutions

For each problem, children:

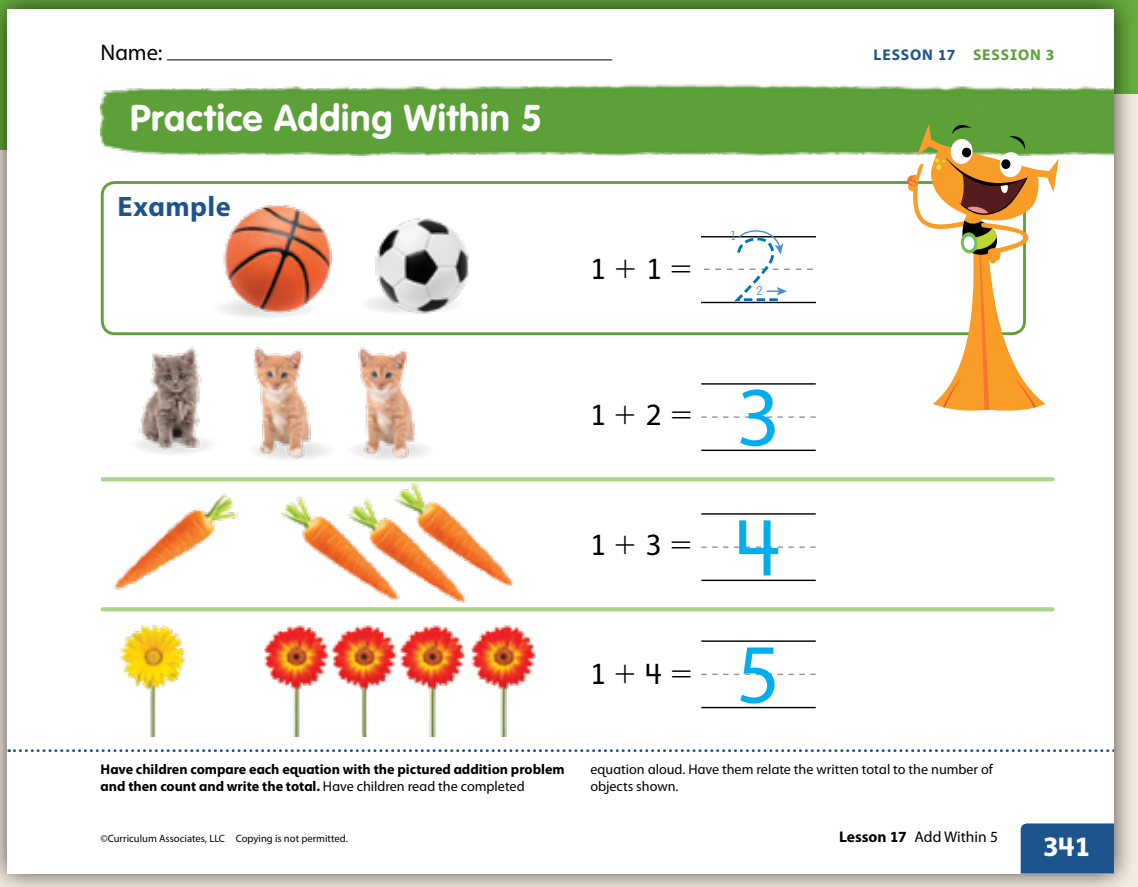
- identify how each addend is shown in the picture
- find the total
- write the total
- read the completed equation aloud

Example

1 + 1 = 2
Basic

Problems

- 1 + 2 = 3
  Basic
- 1 + 3 = 4
  Medium
- 1 + 4 = 5
  Medium


Name: _____ LESSON 17 SESSION 3

Practice Adding Within 5

Example

1 + 1 = 2

1 + 2 = 3

1 + 3 = 4

1 + 4 = 5

Have children compare each equation with the pictured addition problem and then count and write the total. Have children read the completed equation aloud. Have them relate the written total to the number of objects shown.

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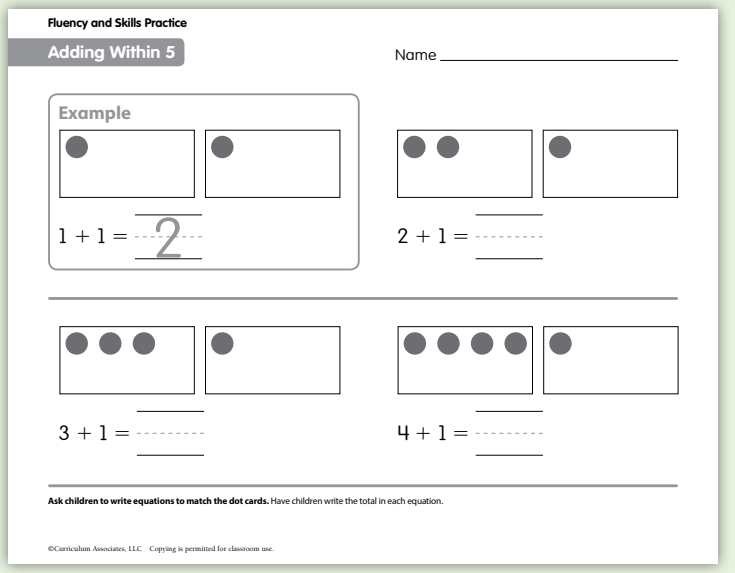
Lesson 17 Add Within 5 341

Fluency & Skills Practice

Teacher Toolbox

Assign *Adding Within 5*

In this activity children practice adding within 5. Children will add these numbers in many real-world situations. For example, children may want to find out how many people can ride in a car by adding the number of seats in the front and the number of seats in the back, or they may need to find the total number of apples in a bag if some apples are added.


Fluency and Skills Practice

Adding Within 5

Name _____

Example

1 + 1 = 2

2 + 1 = _____

3 + 1 = _____

4 + 1 = _____

Ask children to write equations to match the dot cards. Have children write the total in each equation.

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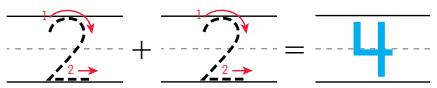
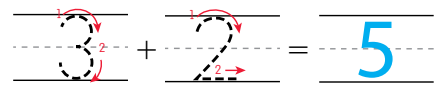
Solutions

- 2 + 1 = 3
  Medium
- 2 + 3 = 5
  Medium
- 2 + 2 = 4
  Medium
- 3 + 2 = 5
  Medium

2 + 1 = 3

2 + 3 = 5





Have children compare each equation with the pictured addition problem and then complete the equation. Have children read the completed equation aloud. Have them relate the written total to the number of objects shown.

ELL English Language Learners: Differentiated Instruction

Prepare for Session 4
Use with *Apply It*.

Levels 1–3

Listening/Speaking To prepare children for the ***Apply It*** problems, write the following sentence frame: _____ *and* _____ *is the same as* _____. Read the sentence frame aloud and have children repeat. Then choral read it together. Model using the frame to express a math story using the first problem. Say: *2 red apples and 1 yellow apple is the same as 3 apples.* Then have pairs of children work together to use the sentence frame to tell number stories for each of the remaining problems. Provide additional support by supplying the names of nouns: *butterflies, balloons, flowers.*

Levels 2–4

Listening/Speaking To prepare children for the ***Apply It*** problems, write the following sentence frames on the board and read them aloud:

- _____ *and* _____ *is the same as* _____.
- _____ *plus* _____ *equals* _____.

Model completing each sentence frame using the first problem. Say: *2 red apples and 1 yellow apple is the same as 3 apples. 2 plus 1 equals 3.* Have children work in pairs and use the sentence frames to tell the number stories for each equation. Tell children to take turns using each sentence frame.

Levels 3–5

Reading/Speaking To prepare children for the ***Apply It*** problems, write the following words and phrases on index cards and review them with children: *and, plus, equals, is the same as*. Place children in groups of three or four and have each child choose a different ***Apply It*** problem to explain to the group using the words from the index cards. If children need additional support, provide an example using the first problem. Say: *2 red apples and 1 yellow apple is the same as 3 apples. 2 plus 1 equals 3.*

LESSON 17

SESSION 4 Refine

Purpose In this session children continue to model given addition equations (total unknown) with counters. They find the total and write the total to complete the equation.

Start

Connect to Prior Knowledge

Materials For each child: 10 counters (5 each of two different colors)

Why Reinforce children's understanding of the relationship between the addends and the total.

What Represent sums with counters to find the total.

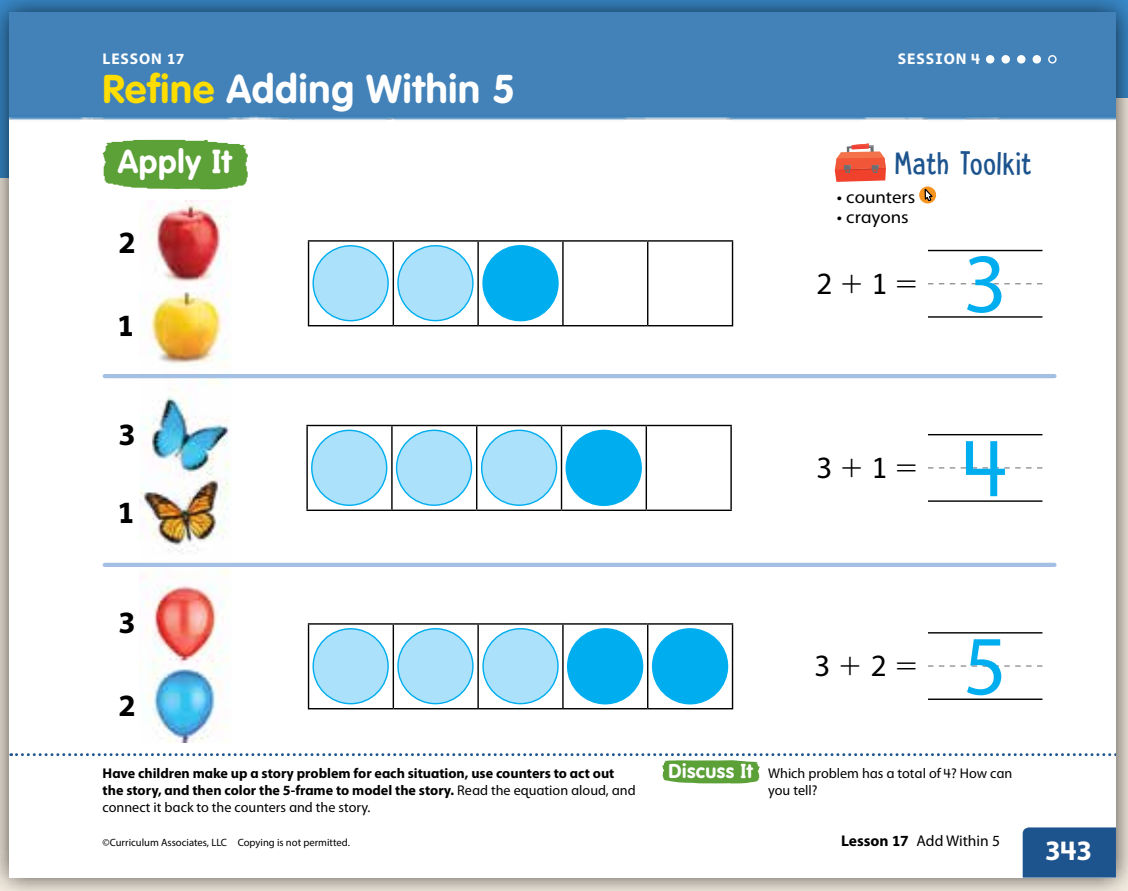
For each equation, have children model the problem with counters, then count all to find the total. Have them show the answer with their fingers or write the total on a whiteboard.

$3 + 2 =$ ___

$2 + 2 =$ ___

Solution 5, 4

Listen for Children should find a total given pairs of addends.


LESSON 17

Refine Adding Within 5

SESSION 4 ●●●●●○

Apply It

Math Toolkit
• counters
• crayons

2 + 1 = 3

3 + 1 = 4

3 + 2 = 5

Have children make up a story problem for each situation, use counters to act out the story, and then color the 5-frame to model the story. Read the equation aloud, and connect it back to the counters and the story.

Discuss It Which problem has a total of 4? How can you tell?

Apply It

Materials For each child: 10 counters (5 each of two different colors), 2 crayons (1 red, 1 yellow)

For the problems on the first page, explain to children that they will tell a story to match each equation. Then they will show the story with counters and write the total.

For each problem, invite children to tell an addition story problem. For example, *I gave 3 apples to the horse. 2 were red and 1 was yellow;* or *The pig ate 2 red apples and 1 yellow apple. The pig ate 3 apples altogether.*

Have children model each story by placing different colored counters for each addend in the 5-frame. After two or three stories, have children count the total and write the total on the page.

Discuss It

Support Whole Class Discussion

Ask children to share their work. Discuss how they approached the problems and found the totals.

Ask *How did you find the total? Is there another way you could find the total?*

Listen for I counted all the counters. I counted on my fingers. I already know $2 + 1$ is 3.

Ask children to say in their own words what the equation says about the problem and the solution. Encourage the use of varied language. For example: *2 plus 1 equals . . .* or *2 and 1 is the same as . . .*

Ask *Which problem has a total of 4? How can you tell?*

Listen for $3 + 1$. You can count all. 3 and 1 more is the same as 4.

For the problems on the second page, tell children that now they will find some more totals.

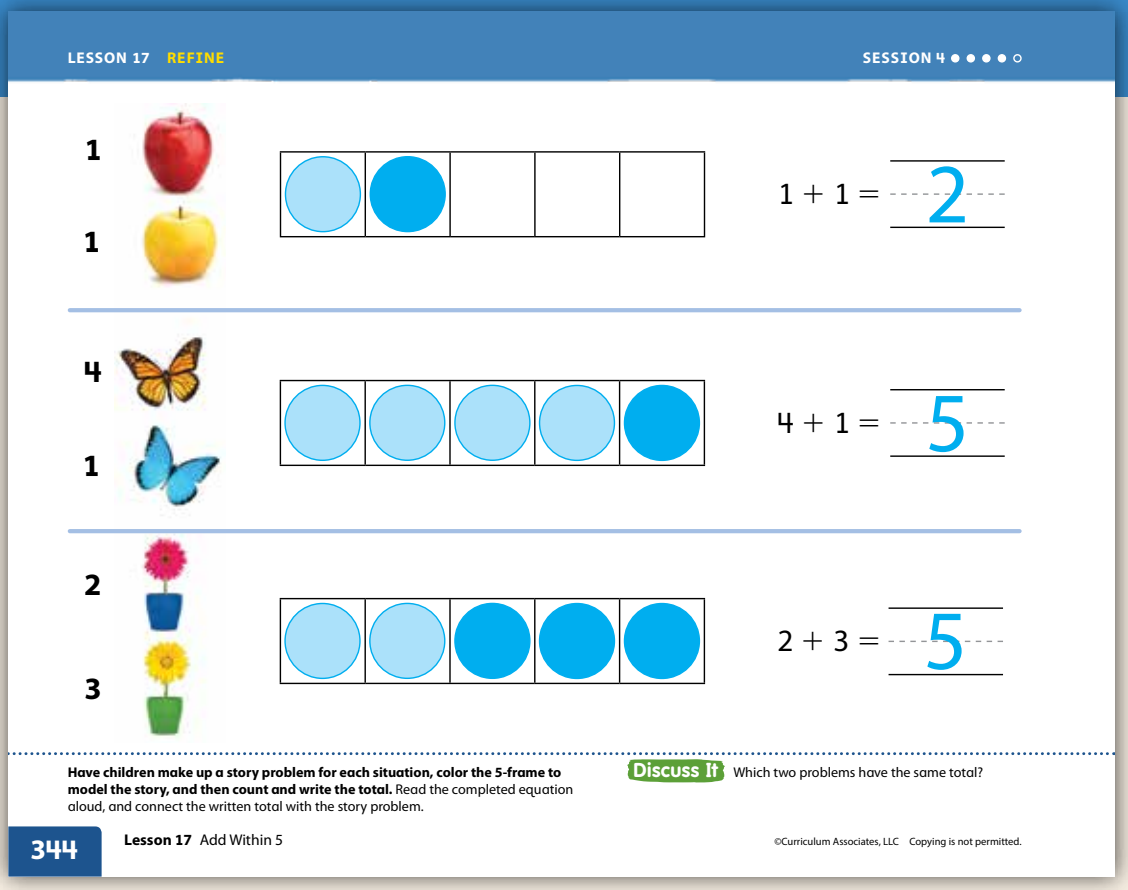
For each problem, have children tell a story to match the numbers and then color the 5-frame to show the numbers. Then have children write the total.

Support Whole Class Discussion

Read each completed addition equation aloud and connect the written total with the story problem. Have children explain how the numbers they used in their stories are shown in the equation.

Ask *Which two problems have the same total? How can you tell?*

Listen for 4 + 1 and 2 + 3. They both have a total of 5.

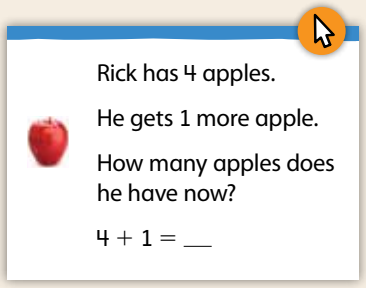


Close: Exit Ticket

Check for Understanding

Materials For each child: none, children use their fingers; For remediation: 10 counters (5 each of two different colors), groups of 10 objects such as erasers, Activity Sheet *Number Cards 0 to 10: Small*

Read the problem below for children to solve. Ask them to show the answer with their fingers and then write the number for the answer on paper or a whiteboard.



Solution 4 + 1 = 5

Error Alert For children who are still struggling, use the chart to the right to guide remediation.

After providing remediation, check children's understanding by posing another addition word problem (total unknown) and having children repeat the steps above.

Error Alert

If the error is . . .	*Children may . . .*	*To support understanding . . .*
answering 1 or 4	not recognize the problem requires joining the two groups of apples together.	Use the farmyard scene from Session 2 of this lesson. Pose an addition problem about the animals. Have the child identify the counters for each addend as you name it, then move the 2 groups of counters together to find the total. Continue, posing both add-to and put-together addition problems.
answering 4 or 6	have miscounted.	Provide practice counting groups of up to 10 objects.
saying 5, but writing a different numeral	not correctly associate quantities with their numerals.	Provide practice matching quantities with number cards and writing numerals for quantities named orally, both in and out of counting sequence.

Solutions

For each problem, children:

- tell an addition story using the numbers and the object shown
- color the 5-frame to show the problem
- write the number to complete the equation
- read the equation aloud
- relate the equation to the story

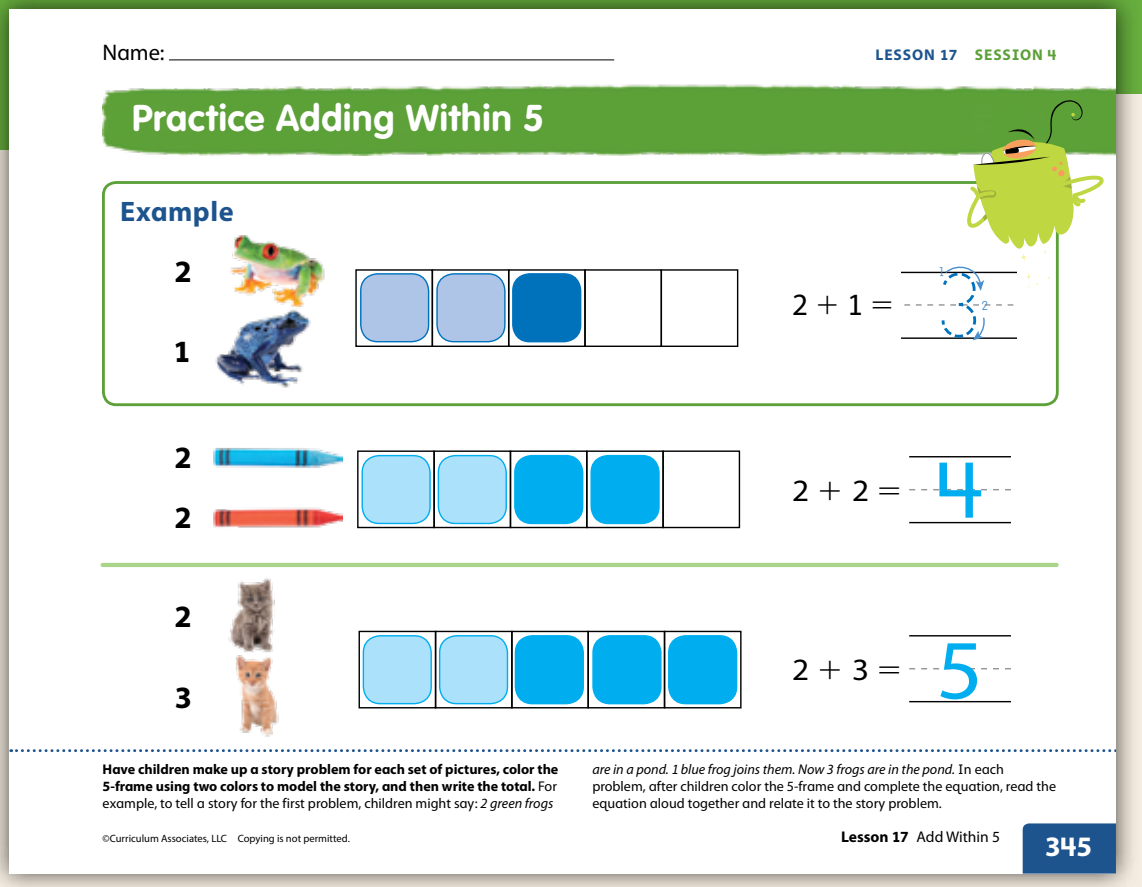
Example

3 squares colored altogether, so 2 and 1 is 3;
$2 + 1 = 3$
Basic

Problems

- 4 squares colored altogether, so 2 and 2 is 4;
  $2 + 2 = 4$
  Basic

- 5 squares colored altogether, so 2 and 3 is 5;
  $2 + 3 = 5$
  Medium


Name: _____ LESSON 17 SESSION 4

Practice Adding Within 5

Example

2
1
$2 + 1 = 3$

2
2
$2 + 2 = 4$

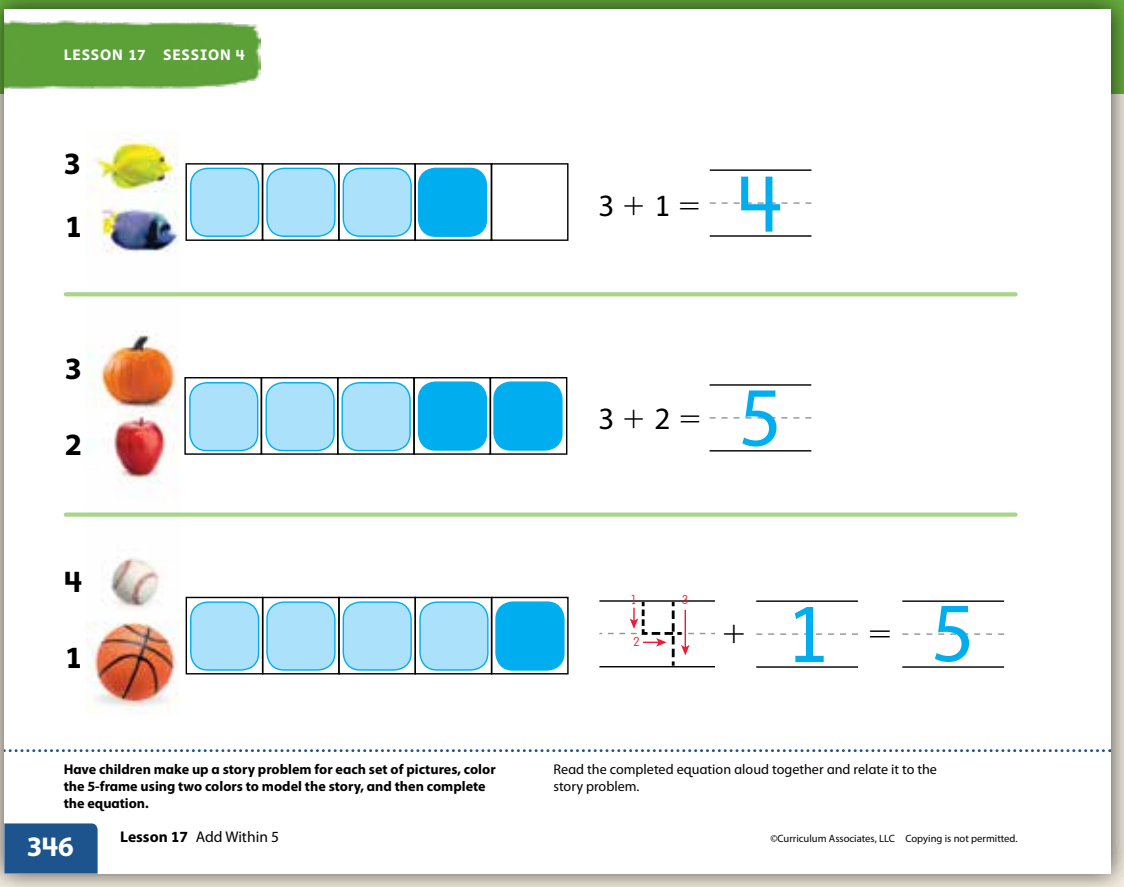
2
3
$2 + 3 = 5$

Have children make up a story problem for each set of pictures, color the 5-frame using two colors to model the story, and then write the total. For example, to tell a story for the first problem, children might say: *2 green frogs are in a pond. 1 blue frog joins them. Now 3 frogs are in the pond.* In each problem, after children color the 5-frame and complete the equation, read the equation aloud together and relate it to the story problem.

Lesson 17 Add Within 5 345

Solutions

- 4 squares colored altogether, so 3 and 1 is 4; $3 + 1 = 4$
  Medium
- 5 squares colored altogether, so 3 and 2 is 5; $3 + 2 = 5$
  Medium
- 5 squares colored altogether, so 4 and 1 is 5; $4 + 1 = 5$
  Challenge



LESSON 17

SESSION 5 Refine

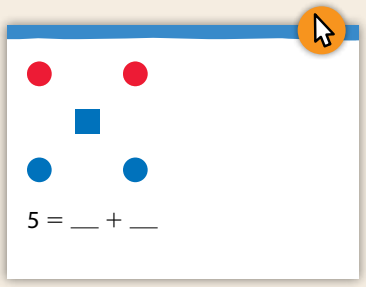
Purpose In this session children work with addition equations where both addends are unknown. They use counters to model various solutions.

Start

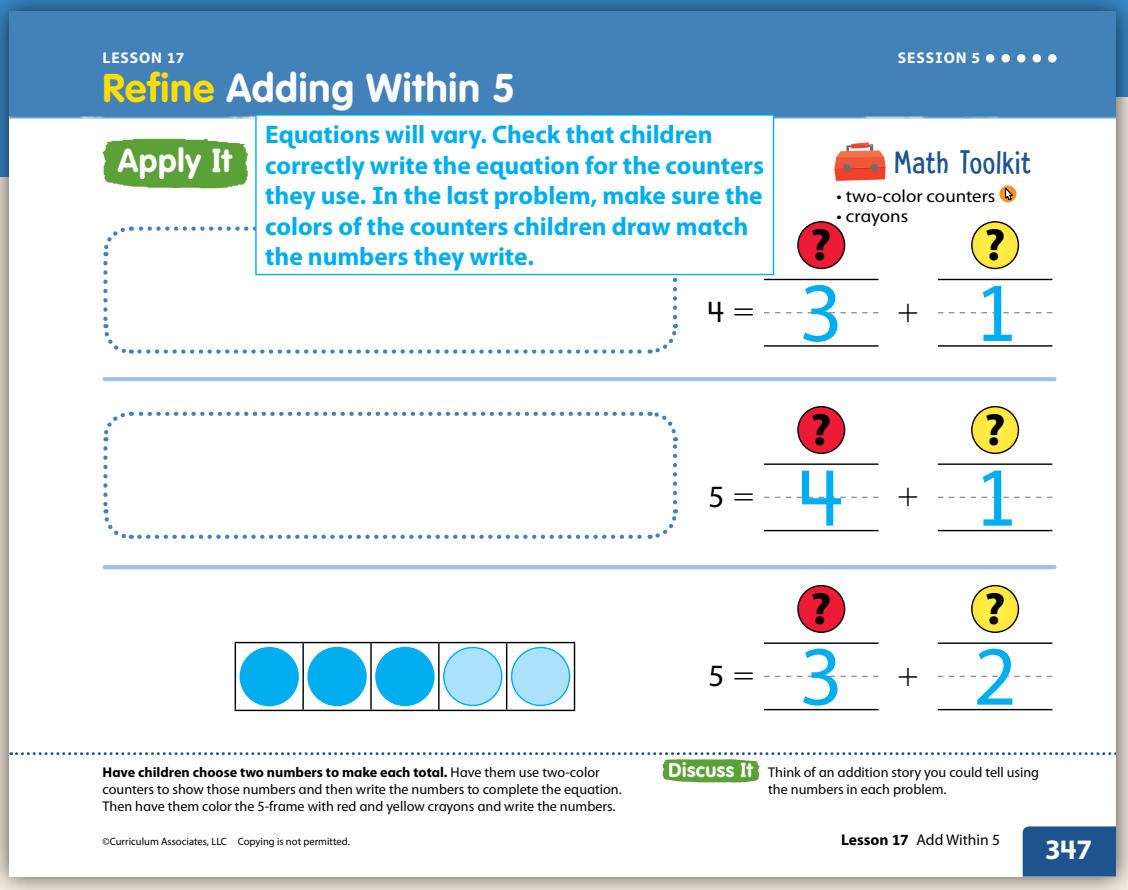
Connect to Prior Knowledge

Why Reinforce the concept that any number can be decomposed into two parts in various ways.

What Express 5 as the sum of two numbers. Have children name as many ways as they can to make a total of 5.



Listen for Children should recognize that 5 is 4 + 1, 1 + 4, 3 + 2, or 2 + 3. Some children may also say 5 is 0 + 5 or 5 + 0.


LESSON 17

Refine Adding Within 5

SESSION 5 ●●●●●

Apply It

Equations will vary. Check that children correctly write the equation for the counters they use. In the last problem, make sure the colors of the counters children draw match the numbers they write.

Math Toolkit
- two-color counters
- crayons

4 = ? 3 + ? 1

5 = ? 4 + ? 1

5 = ? 3 + ? 2

Have children choose two numbers to make each total. Have them use two-color counters to show those numbers and then write the numbers to complete the equation. Then have them color the 5-frame with red and yellow crayons and write the numbers.

Discuss It Think of an addition story you could tell using the numbers in each problem.

Lesson 17 Add Within 5 347

Apply It

Materials For each child: 5 two-color counters, 2 crayons (1 red, 1 yellow)

Tell children that they will choose two numbers to make a total.

For each of the first two problems, have children count out the indicated number of counters. Then have them choose how many to show red and how many to show yellow.

Clarify that there is more than one way to choose and that each child may not make the same choice.

Have children write the numbers to show the quantities they chose.

For the other four problems, have children look at the total given and choose how to make that total.

Have them color the 5-frame with red and yellow to show their choice, then write the numbers to complete the equation.

Then have children color with crayons to show their work.

Ask *What is an addition story you could tell about the numbers in each problem?*

Listen for The numbers in the addition stories represent addends and a total.

Discuss It

Support Whole Class Discussion

When children have all finished all the problems, share answers for each. Invite children to share different equations.

Ask *How can you have two different equations for the same total?*

Listen for There are different ways to break apart a number.

For 3 = ? + ?, children may write either 3 = 1 + 2 or 3 = 2 + 1. Show both of these answers.

Ask *What can you discover about these answers? How are they alike? How are they different?*

Listen for The addends and the total are the same, but the addends are in a different order.

Differentiated Instruction

PERSONALIZE

i-Ready

Provide children with opportunities to work on their personalized instruction path with *i-Ready* Online Instruction to:

- fill prerequisite gaps
- build up grade-level skills

Close: Exit Ticket

Math Journal

Materials For each child: copy of Close slide

Read the problem aloud and have children solve.

There are 4 butterflies.

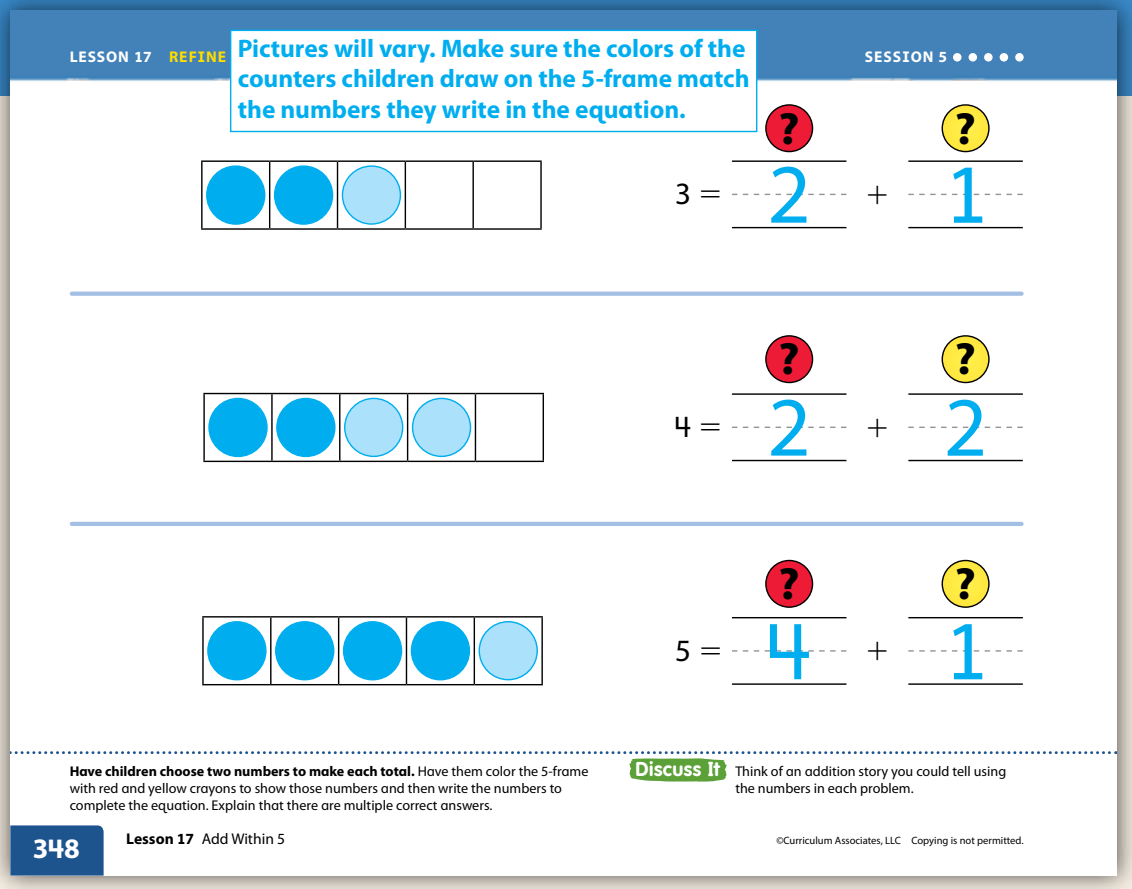
1 more joins them.

How many butterflies are there now?

4 + 1 = ____

Solution 4 + 1 = 5

Error Alert **If** children answer with any number other than 5 but drew 5, **then** provide practice recognizing and writing numbers. **If** they draw any total other than 5, **then** provide practice representing addition with concrete objects.



RETEACH

Hands-On Activity

Match equations to pictures.

Children struggling to understand the relationship between addends and the quantities they represent

Will benefit from joining pictorial quantities

Materials For each pair: 3 index cards, each with an addition equation (sums within 5) written at the top, 2 copies of Activity Sheet *Dot Cards 1: Small*, crayons

- Give each pair 2 dot cards each for 1–5.
- Have each pair choose an index card and find dot cards to match the addends and the sum. Have them then draw the groups of dots on the index card. Repeat for each index card.
- Invite pairs to choose one of their cards and share an addition problem about it with the class.

EXTEND

Challenge Activity

Explore missing addend problems.

Children who have achieved proficiency

Will benefit from deepening understanding of finding sums within 5

Materials For each child: piece of string, Activity Sheet *Dot Cards 1: Small*

- Give each child a dot card for 5.
- Pose a missing addend problem. For example: *There are 5 goats standing on a rock. 3 are black. The rest are brown. How many goats are brown?*
- Elicit that there are 5 goats in all. Ask: *How many of them are black?* [3] Have children place the string on the card to show a group of 3 dots. Ask what the remaining 2 dots represent. [the brown goats]
- Repeat, posing other missing addend problems with totals of 5.

Lesson Overview

LESSON 19

Subtract Within 5

Lesson Objectives

Content Objectives

- Solve take-away subtraction word problems within 5 using pictures or objects.
- Recognize take-away situations as subtraction problems.

Language Objectives

- Describe subtraction problems.
- Model take-away subtraction word problems using fingers and counters.
- Count objects and write the number counted.
- Explain what it means to subtract or "take away."

Prerequisite Skills

- Count up to 5 objects.
- Recognize the minus sign (−).
- Recognize the equal sign (=).

Standards for Mathematical Practice (SMP)

SMPs 1, 2, 3, 4, 5, and 6 are integrated in every lesson through the *Try-Discuss-Connect* routine.*

In addition, this lesson particularly emphasizes the following SMPs:

2 Reason abstractly and quantitatively.

4 Model with mathematics.

5 Use appropriate tools strategically.

*See page 311k to see how every lesson includes these SMPs.

Lesson Vocabulary

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

- **equal sign (=)** the symbol that means *is the same as*.
- **equation** a mathematical sentence that uses an equal sign (=) to show that two things are equal.
- **minus sign (−)** the symbol that means *subtract*.
- **subtract** to take apart or take from.

Learning Progression

In Kindergarten children learn about the meaning of addition and subtraction and apply this understanding to add and subtract numbers and solve word problems.

In this lesson children explore real-world or story situations that involve taking away one part of a group and determining how many are left. Children describe subtraction situations shown in a picture, and then learn to represent subtraction more abstractly by crossing out pictures to represent the action of taking away. They connect this with a subtraction equation, and complete that equation to record the result of the subtraction.

In later lessons children will work with subtraction within 10 and practice both addition and subtraction facts together. This work leads to developing fluency with addition and subtraction facts within 5.

In Grade 1 children will use their understanding of the meaning of subtraction to develop strategies to learn addition and subtraction facts and to understand subtraction with larger numbers.

Lesson Pacing Guide

Whole Class Instruction

SESSION 1
Explore
45–60 min

Interactive Tutorial* *(Optional)*
Prerequisite Review: Understand Subtraction

Subtracting Within 5
- Start *5 min*
- Try It *20 min*
- Connect It *15 min*
- Close: Exit Ticket *5 min*

Additional Practice
Lesson pages 369–370

Building Fluency
Use throughout lesson

SESSION 2
Develop
45–60 min

Subtracting Within 5
- Start *5 min*
- Try It *5 min*
- Discuss It *15 min*
- Connect It *15 min*
- Close: Exit Ticket *5 min*

Additional Practice
Lesson pages 373–374

Fluency Practice
Practice Rote Counting
Practice Subtraction Facts Within 5

SESSION 3
Develop
45–60 min

Subtracting Within 5
- Start *5 min*
- Try It *10 min*
- Discuss It *10 min*
- Connect It *15 min*
- Close: Exit Ticket *5 min*

Additional Practice
Lesson pages 377–378

Fluency
Subtracting Within 5

SESSION 4
Refine
45–60 min

Subtracting Within 5
- Start *5 min*
- Apply It *5 min*
- Discuss It *30 min*
- Close: Exit Ticket *5 min*

Additional Practice
Lesson pages 381–382

SESSION 5
Refine
45–60 min

Subtracting Within 5
- Start *5 min*
- Apply It *10 min*
- Discuss It *5 min*
- Small Group Differentiation *20 min*
- Close: Exit Ticket *5 min*

Lesson Quiz or **Digital Comprehension Check**

Lesson Materials

Lesson *(Required)*	*Per child:* 5 counters, 5 connecting cubes, 5 two-color counters, 1 index card, copy of Start Slide (Session 5), copy of Close Slide (Sessions 2–5) *Per group:* 5 counters
Activities	*Per child:* 5 connecting cubes, 5 two-color counters
Math Toolkit	counters, connecting cubes, two-color counters, index cards
Digital Math Tool	Counters and Connecting Cubes

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

Teacher Toolbox

Small Group Differentiation

RETEACH
Tools for Instruction
Grade K
- Lesson 19 Subtract Within 5

REINFORCE
Math Center Activity
Grade K
- Lesson 19 Solve and Color

EXTEND
Enrichment Activity
Grade K
- Lesson 19 Draw It to Solve It

i-Ready

Independent Learning

PERSONALIZE
i-Ready Lessons*
Grade K
- Subtract Within 5
- Practice: Add and Subtract Within 5

Learning Game
- *Hungry Guppy*

Connect to Family, Community, and Language Development

The following activities and instructional supports provide opportunities to foster school, family, and community involvement and partnerships.

Connect to Family

Use the **Family Letter**—which provides background information, math vocabulary, and an activity—to keep families apprised of what their child is learning and to encourage family involvement.

Goal

The goal of the Family Letter is to familiarize children with subtraction facts within 5 and move them beyond pictures to constructing models with counters.

- Subtracting with objects helps children visualize how many objects are left in a group.

Activity

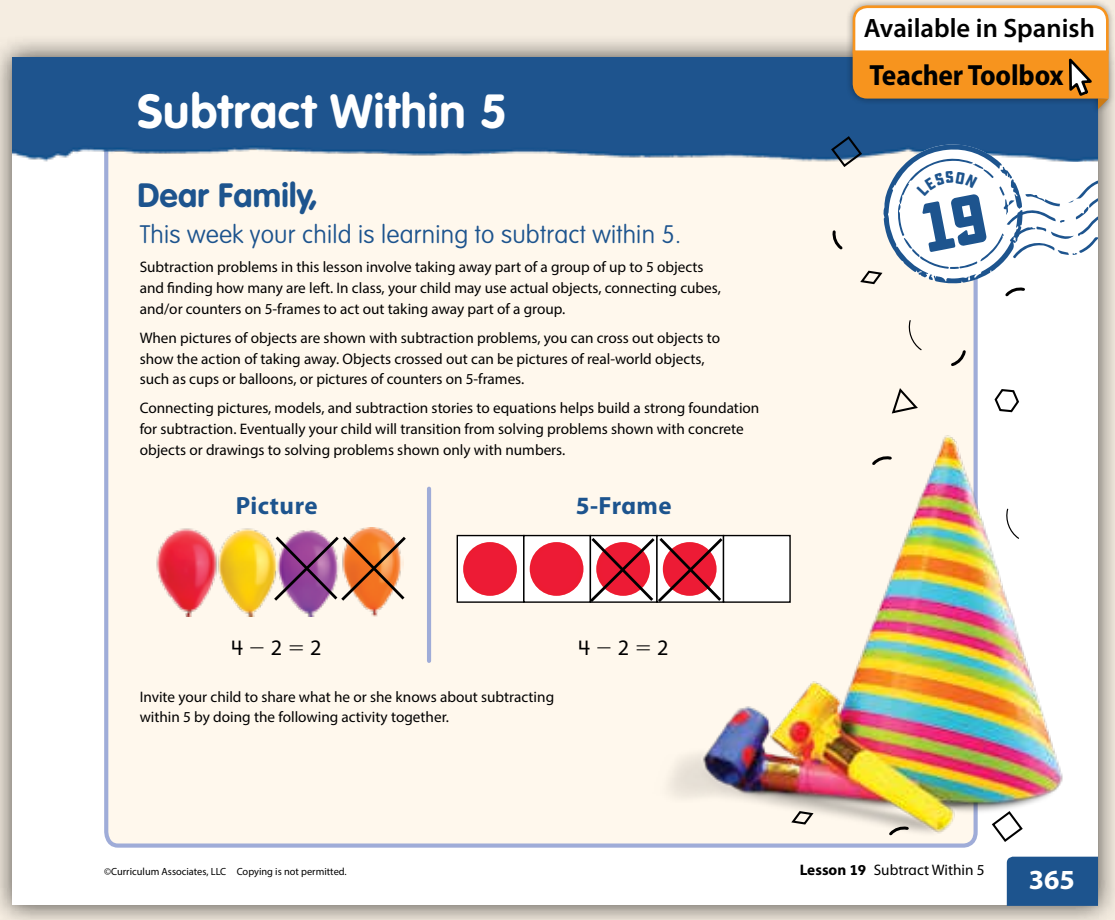
Understanding how to subtract within 5 will help children prepare for subtracting with numbers only. Look at the *Subtracting Within 5* activity and adjust it if necessary to connect with children.

Math Talk at Home

Encourage children to find 5 small household items and a cup. Have them work with family members to write subtraction problems to solve by modeling with equations.

Conversation Starters Below are additional conversation starters children can write in their Family Letter or math journal, with your guidance, to engage family members:

- *How many are there?*
- *How many do we take away?*
- *How many are left?*



Available in Spanish

Teacher Toolbox

Subtract Within 5

LESSON 19

Dear Family,

This week your child is learning to subtract within 5.

Subtraction problems in this lesson involve taking away part of a group of up to 5 objects and finding how many are left. In class, your child may use actual objects, connecting cubes, and/or counters on 5-frames to act out taking away part of a group.

When pictures of objects are shown with subtraction problems, you can cross out objects to show the action of taking away. Objects crossed out can be pictures of real-world objects, such as cups or balloons, or pictures of counters on 5-frames.

Connecting pictures, models, and subtraction stories to equations helps build a strong foundation for subtraction. Eventually your child will transition from solving problems shown with concrete objects or drawings to solving problems shown only with numbers.

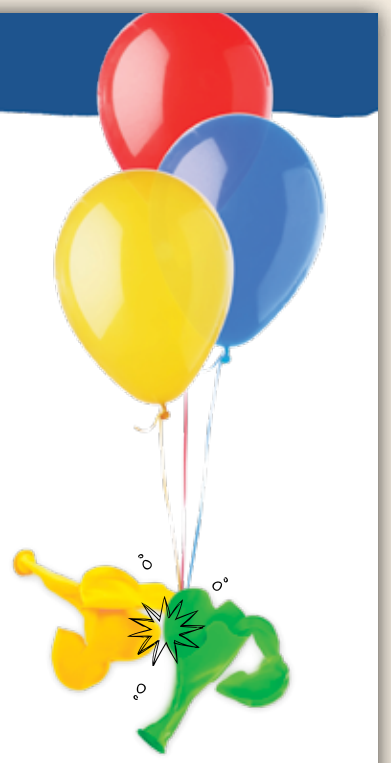
Picture

$4 - 2 = 2$

5-Frame

$4 - 2 = 2$

Invite your child to share what he or she knows about subtracting within 5 by doing the following activity together.

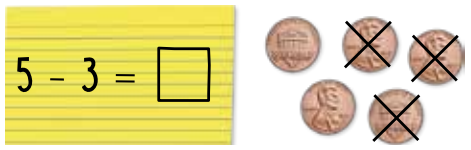


Activity Subtracting Within 5

Do this activity with your child to explore subtracting within 5.

Materials pencil, index cards or paper, 5 small objects (such as pennies, buttons, dried beans, or pasta shapes), cup

- On an index card or paper, write $5 - 3 = \square$.
- Place the subtraction problem and 5 pennies on the table.
- Point to the number 5 and say: *There are 5 pennies. How many do we need to take away?*
- Prompt your child to recognize that the minus sign and number 3 show that you need to take away 3. Have your child remove 3 pennies and place them in a cup.
- Ask: *How many pennies are left?* Have your child count the pennies on the table and write the answer in the box after the equal sign.



Repeat with other subtraction problems within 5, such as $3 - 1$, $5 - 2$, and $4 - 3$.

During your daily routine, encourage your child to use objects to model subtraction whenever you can. For example, when clearing the table, you might say: *There are 4 cups on the table. I am taking away 1. How many cups are left?* Model subtraction with up to 5 crayons, blocks, spoons, raisins, crackers, or other objects.

Connect to Community and Cultural Responsiveness

Use these activities to connect with and leverage the diverse backgrounds and experiences of all children.

Session 1 **Use anytime during the session.**

- Sing the popular children's song "B-I-N-G-O." Write BINGO on the board five times vertically. After singing, point to the first BINGO. Ask: *How many letters are in Bingo's name?* [5] *How many times do we clap in his name the first time?* [1] Write an X to cross out the first letter in the first line. *How many times do we clap in the second verse?* [2] Cross out the first two letters in the second line. Continue to ask about each line, crossing out the letters that are replaced by clapping. Ask: *How is the song "BINGO" like subtraction?* [Possible answer: Because we take away sounds. You cross out the letters and clap them instead of singing.]

Session 2 **Use with *Connect It*.**

- Activate background knowledge by asking children if they have ever attended a party with cake. What kind of party was it? Who was the party for? What other items could be found at a party? Are there any special kinds of parties or decorations that are important to their culture or community? Tell children that today's problems will be about things that are found at a birthday party in the United States.

Session 3 **Use anytime during the session.**

- Reinforce connections between models and equations using the example from the children's song "B-I-N-G-O." Write BINGO on the board again, five times vertically. Divide the class into five groups. Have the first group come up and cross out the letter that will be omitted in the first round of the song. Say: *There are 5 letters in Bingo's name. 1 is crossed out. How many letters are left?* Write the expression $5 - 1$ on the board. Have the group work together to count or use their fingers to determine the answer. [4] Continue with each row until an equation has been written to represent it.

Sessions 4 and 5 **Use anytime during these sessions.**

- Prepare index cards with the following expressions: $5 - 1$, $5 - 2$, $5 - 3$, $5 - 4$, $5 - 5$. Have partners take turns drawing an index card and leading the class in the a corresponding round of "B-I-N-G-O." For example, if a pair selected $5 - 2$, they would lead the group in singing: *There was a farmer had a dog and Bingo was his name-O. (Clap) (Clap) N-G-O. (Clap) (Clap) N-G-O. (Clap) (Clap) N-G-O. and Bingo was his name-O.*

Connect to Language Development

For ELLs, use the Differentiated Instruction chart to plan and prepare for specific activities in every session.

ELL English Language Learners: Differentiated Instruction

Prepare for Session 1
Use with *Try It*.

Levels 1–3	Levels 2–4	Levels 3–5
Speaking/Writing Prepare two symbol cards to use with ***Try It***, one with a minus sign and one with an equal sign. Review the symbols with children. Discuss how each is formed, and have children draw the symbols in the air with their fingers. Display two index cards with the equations for the ***Try It*** problems. Read the first equation aloud, then have children repeat: *5 minus 1 equals 4*. Point to the next equation ($4 - 2 = 2$) and have children read it chorally. Mix up the index cards and choose one randomly. Have children read the equation aloud and write it in their math journal.	**Speaking/Reading** Work through the first ***Try It*** problem with children. Then write the equation for the second problem, $4 - 2 = 2$, on the board. Provide 4 toy cars or pictures of toy cars for partners to use while they take turns retelling the subtraction problem. After each child takes a turn, give each pair two index cards with the terms *minus* and *equal*. Have children randomly choose a card, read the word, and use it in a sentence about the ***Try It*** problem. Provide a sentence frame to help them in their discussions: *There are _____ left.*	**Speaking/Reading** Work through the first ***Try It*** problem with children. Then ask children to explain how each part of the equation $4 - 2 = 2$ connects to the second problem. Pair children and give them four index cards with the terms *subtract, minus, equal,* and *left*. Review the words, then mix the cards up. Have children randomly choose a card, read the word, and use it in a sentence about the ***Try It*** problem.

LESSON 19

SESSION 1 Explore

Purpose In this session children act out and model subtraction problems and connect them to written equations.

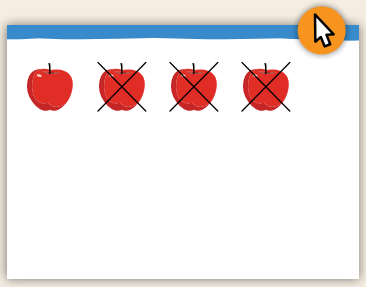
Start

Connect to Prior Knowledge

Materials For each child: 5 counters

Why Reinforce the meaning of subtraction and the term *minus*.

How Have children describe the subtraction problem and then use the counters to show it.



Listen for There are 4 apples minus 3 apples.

Look for Children make a group of 4 counters and then take 3 away.

Try It

Materials For each child: 1 index card

Act Out the Subtraction

Invite 5 children to the front of the class and have them stand in a line.

Say: *In a parking lot, there are 5 cars parked in a row. 1 car leaves. How many cars are still in the row? How can you find out?*

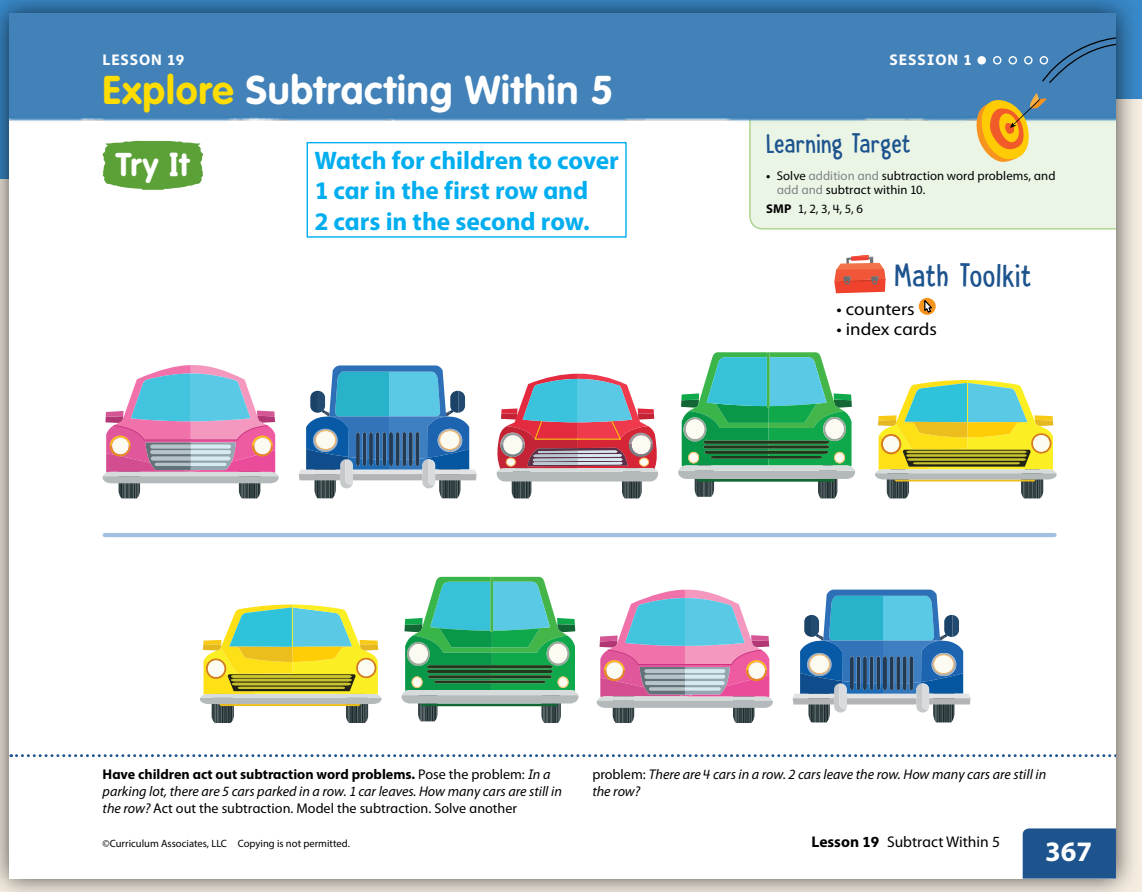
Write the equation "5 − 1 = __" on the board.

Ask *What does each part of this equation mean?*

Listen for 5 is how many cars are parked. The first symbol means *minus* or *take away*. 1 is how many cars leave. The second symbol means *equal* or *the same as*.

Ask *How do you show this subtraction?*

Listen for You have 5 and then take 1 away. There are 5 children and then 1 sits down.


LESSON 19

Explore Subtracting Within 5

SESSION 1 ● ○ ○ ○ ○

Try It

Watch for children to cover 1 car in the first row and 2 cars in the second row.

Learning Target

- Solve addition and subtraction word problems, and add and subtract within 10.

SMP 1, 2, 3, 4, 5, 6

Math Toolkit

- counters
- index cards

Have children act out subtraction word problems. Pose the problem: *In a parking lot, there are 5 cars parked in a row. 1 car leaves. How many cars are still in the row?* Act out the subtraction. Model the subtraction. Solve another problem: *There are 4 cars in a row. 2 cars leave the row. How many cars are still in the row?*

Lesson 19 Subtract Within 5 367

Lead the class in counting the 5 children, ask 1 to sit down, and then have the class count the children still standing. Write the answer in the blank. Say: *5 take away 1 is 4. There are 4 children still in a row.*

Model the Subtraction

Have the 4 children sit down. Repeat the story problem once more and have children count the pictures of the cars in the first row on the Student Worktext page. Then have children cover the picture of 1 car with the index card.

Ask them to count the number of cars remaining. Say: *5 take away 1 is 4.*

Solve Another Problem

Say: *Now there are 4 cars in a row. 2 cars leave the row. How many cars are left in the row?*

Invite children to tell you the equation to write on the board. [4 − 2 = __]

Ask *How do you know this is the correct equation?*

Listen for 4 is for how many cars there are to start. Minus 2 shows how many cars leave. The equal sign and the blank space are for how many are left.

Draw children's attention to the second problem on the Student Worktext page. Repeat the story problem and have children first count the total number of cars in the second row. Then have them cover the pictures of 2 cars with the index card. Ask: *How many cars are left?* [2] Reinforce the result by saying: *4 take away 2 is 2. 2 cars are left in the row.* Write the number 2 on the line to complete the equation.

Common Misconception **If** children struggle to cover the correct number of cars with an index card and cover too many, **then** have them use something smaller, such as a cube or large counter so that they can see how many they have covered.

Connect It

Materials For each child: 5 counters

Pose a New Problem

Say: *Adam has 4 crayons. He gives 1 to his sister. How many crayons does Adam have left for himself?*

Have children use counters on the workmat on the Student Worktext page to solve the problem.

Support Whole Class Discussion

Have several children share how they solved the problem.

Ask *How can you use the counters to solve the problem?*

Listen for I can use 4 counters to show 4 crayons. I can take 1 counter away to show the crayon Adam gives to his sister. I can count how many counters are left to find how many crayons are left in the story.

Write "4 − 1 = 3" on the board.

Pose Another Problem

Say: *Adam has 5 crayons. He gives 2 to his sister. How many crayons does Adam have left for himself?*

Invite children to act out the story problem with their fingers.

Ask *Is this an addition problem or a subtraction problem? How do you know?*

Listen for It is a subtraction problem. Some crayons are taken away so it is a take-away problem.

Ask *How can you show the subtraction problem using your fingers?*

Listen for I can hold up 5 fingers for the 5 crayons. I can put down 2 fingers to show the 2 that Adam gives away. The fingers left will show how many crayons are left.

In Additional Practice, children will spend more time learning about what it means to subtract.

Close: Exit Ticket

Materials none, children use their fingers

Read the subtraction story problem and have children act it out on their fingers to find how many are left.

Clare has 5 stickers.

She gives 4 to her friends.

How many stickers does Clare have left?

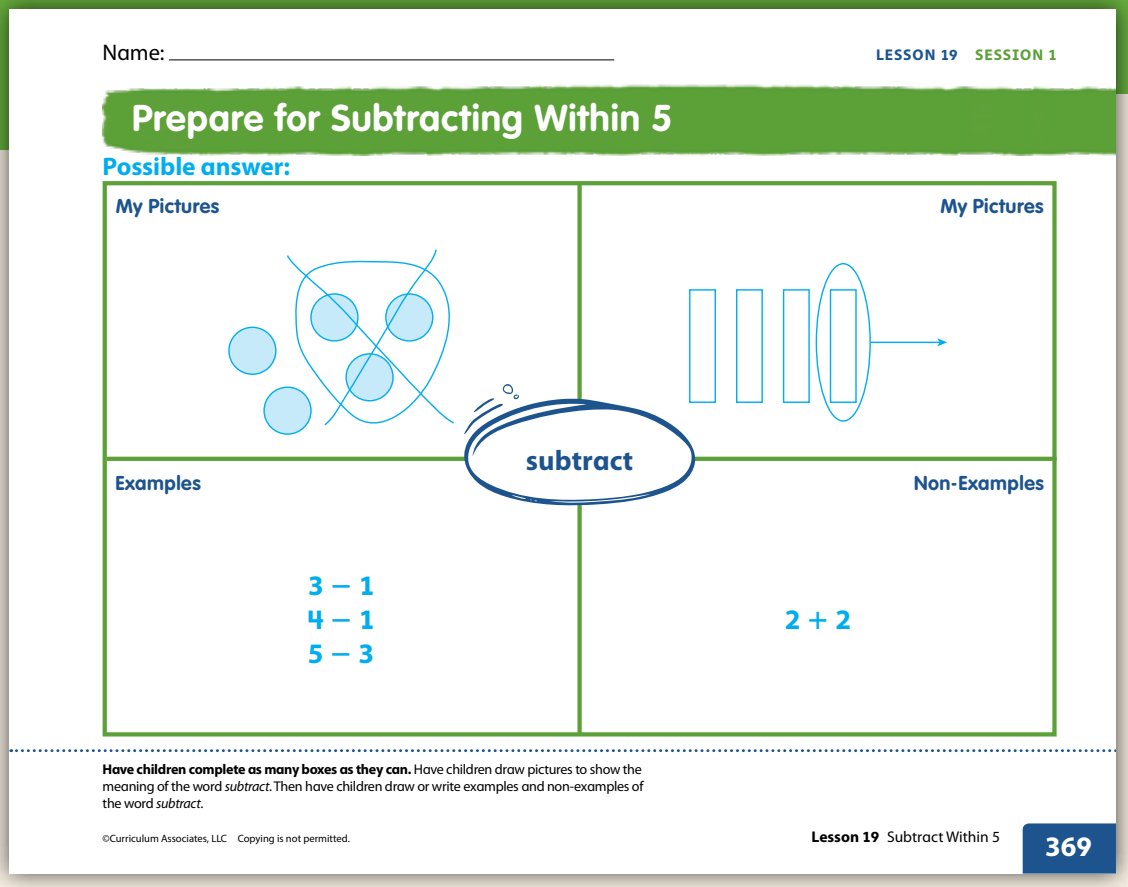
Look for Children show 5 − 4 on their fingers.

Common Misconception **If** children are struggling to use their fingers to act out the story being told, **then** repeat the story, but at a slower pace, even pausing after each part to allow children to count the number of fingers they need to put up or down.

Real-World Connection

Encourage children to think about everyday situations where people might subtract numbers. For example, *There is a packet of 5 crackers, 3 are eaten, how many are left?* or *You have 3 balls to throw, you throw 2, how many are left to throw?*

Point out different situations around the classroom that involve a subtraction problem. For example, *5 pencils in a basket, 2 are taken to be used, how many are left in the basket?*


Name: _____ LESSON 19 SESSION 1

Prepare for Subtracting Within 5

Possible answer:

My Pictures

My Pictures

subtract

Examples

3 − 1
4 − 1
5 − 3

Non-Examples

2 + 2

Have children complete as many boxes as they can. Have children draw pictures to show the meaning of the word *subtract*. Then have children draw or write examples and non-examples of the word *subtract*.

Solutions

Support Vocabulary Development

This activity can be used to informally assess children's understanding of subtracting quantities within 5. Children can show what they know now. You can have them revise their thinking and revisit their responses once they have completed the lesson or unit.

If children need additional support, the following steps provide explicit instructions to guide them.

Have children put their fingers on the term *subtract* and repeat it. Explain that they will draw pictures in the top two boxes to show the meaning of the term. Remind children that subtraction can be shown in pictures by crossing out some of the pictures to show that they have been taken away.

Point to the Examples box and tell children to write examples using the minus sign. Point to the Non-Examples box and explain that they will draw or write ideas that *do not* show subtraction. Provide a non-example such as 2 + 2.

After children have completed the graphic organizer, have them share their ideas with a partner.

Supplemental Math Vocabulary

- *equation*

Building Fluency

Practice one-to-one correspondence counting to 10.

Materials none, children use motions

During daily activities and routines have children count objects, pictures, themselves, and so on. You might also have children do action counting. While they are waiting in line or at circle time, tell them to *jump 5, clap 8, march 10,* etc.

Solutions

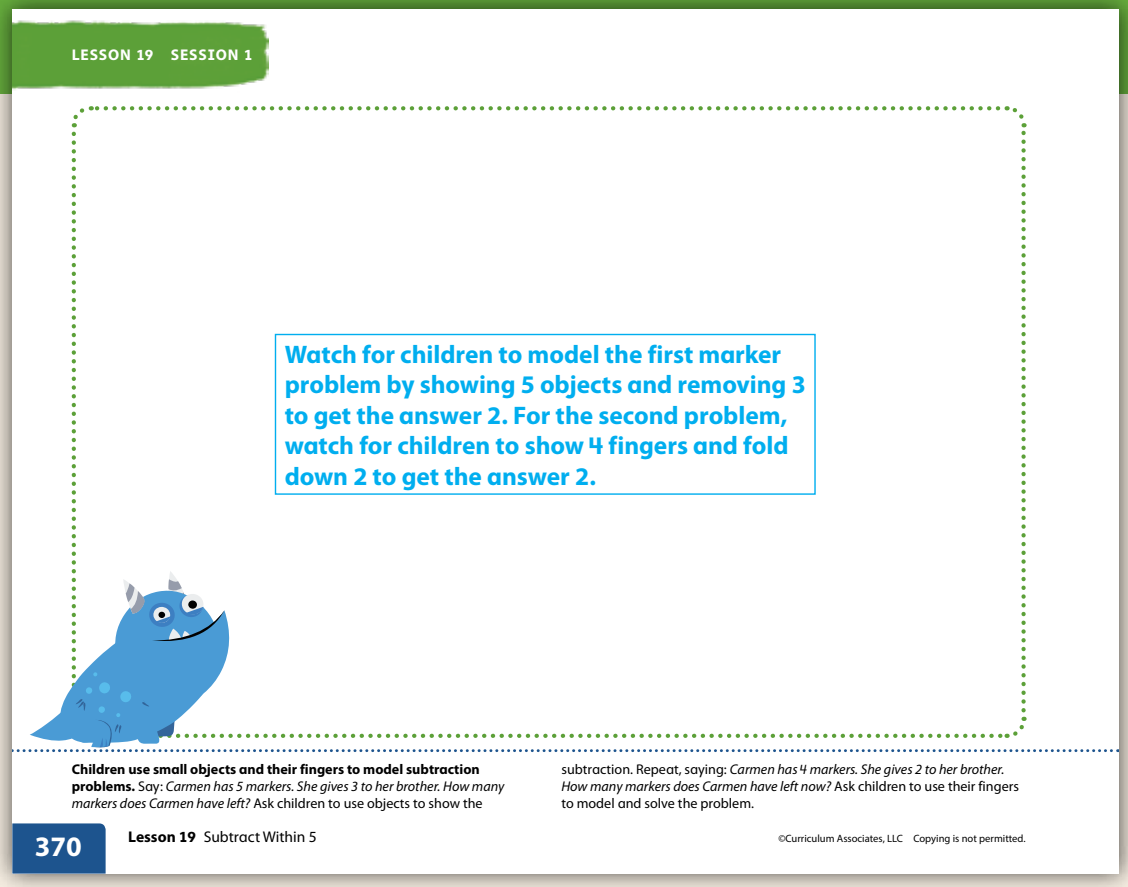
Assign these problems to provide another look at subtracting within 5.

This problem is very similar to the problem in which Adam shares crayons with his sister. In these problems, children use counters and fingers to model a subtraction problem. The question asks for the number of markers Carmen has left after sharing some with her brother.

Children may want to use counters, connecting cubes, paper clips, or their fingers.

- Watch for children to model the first marker problem by showing 5 counters and removing 3 to get the answer 2.
  Medium

- Watch for children to show 4 fingers and fold down 2 to get the answer 2.
  Medium



ELL English Language Learners: Differentiated Instruction

Prepare for Session 2
Use with *Connect It*.

Levels 1–3

Speaking/Reading Choral read the ***Connect It*** problems. Have children work in groups of three. Give each group three sticky notes with the words *hats, plates,* and *cups*. Review the words and the final sounds. For example, explain that the words have the *-s* ending because there is more than one object in each group. Have each child choose a word and place the sticky note next to the corresponding picture in the ***Connect It*** problem. Ask children to find the matching equation. Allow wait time, then have children take turns naming the objects in their pictures and reading the corresponding equation.

Levels 2–4

Speaking/Reading Choral read the ***Connect It*** problems. Have children work in groups of three. Give each group three sticky notes with the words *hats, plates,* and *cups*. Review the words. Then have each child choose a word and place the sticky note next to the corresponding picture. Ask children to think of a number story for the problem. Provide additional support with the phrases *knocked over* and *eaten* as possible reasons for subtracting the pictured objects. Have children tell their story to their group. Combine two groups of children. Have the children who chose the same word compare their number stories.

Levels 3–5

Speaking Choral read the ***Connect It*** problems. After children tell subtraction stories and match the pictures with equations, ask them a series of questions. Encourage them to answer in complete sentences. Ask children to choose any picture and point to it. Point to the first number of the matching equation and ask: *What does this number mean?* Point to the minus sign and ask: *What does this symbol mean?* Continue pointing to the each part of the equation, asking children to make connections to the picture. Encourage children to use the terms *minus*, *subtract*, and *equals*.

LESSON 19

SESSION 2 Develop

Purpose In this session children describe subtraction story problems for groups of objects.

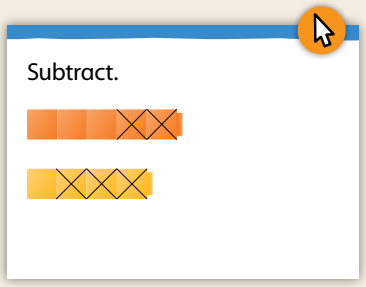
Start

Connect to Prior Knowledge

Materials For each child: 5 connecting cubes

Why Reinforce subtraction facts within 5.

How Have children describe each picture and use the cubes to solve the subtraction problem. Then have them say the equation the subtraction problem is showing.



Solution $5 - 2 = 3$, $4 - 3 = 1$

Develop Language

Why Support production of connected sentences for telling a subtraction story.

How Provide the following framework for a subtraction story: *There were* _____. *Take away* _____. *Now there are* _____. Point out the purpose of each line. The first sentence tells about the total number in the group. The second sentence explains how many are subtracted and why. The last sentence tells how many are left. Remind children of the chant: *Start with a number. Take some away. See how many you have left*

Try It

Present the scene, and engage children by having them look for subtraction problems in the groups of objects. Have children focus on the cake and the candles.

Ask *How many candles are there altogether? How many have been taken off the cake? How many are left?* [5 altogether, 4 taken away, 1 left]

Have children circle two groups that show 5 minus 2.

Discuss It

Support Partner Discussion

Have children talk in pairs about the subtraction problems they have found.

Support as needed with questions such as:

- *Did your partner find different subtraction problems?*
- *Did you and your partner describe groups with the same subtraction equation?*
- *Do you agree with your partner?*

Common Misconception **If** children are unable to connect an equation to the problem, **then** have them tell the subtraction story first and then break the story down, saying the appropriate part of the equation for each part of the story.

Select and Sequence Solutions

Select children to present many different solutions. Choose children who identified:

- $5 - 1$ balloons or banners
- $4 - 1$ cups
- $4 - 2$ hats

Support Whole Class Discussion

Compare and connect children's solutions by having them share the subtraction situations shown in the party scene. Encourage children to tell an equation related to each subtraction situation.

Record the equations on the board and discuss what each number represents.

Ask *If somebody eats another slice of cake, how many will be left?*

Listen for 2 slices will be left. 3 take away 1 is 2. 5 take away 3 is 2.

Ask *How do you know which items show 5 take away 2?*

Listen for I found a group of 5 objects. I looked to see if 2 of the objects were different. Some groups of 5 had only 1 object different, so I only circled the groups with 2 objects that were different.

Connect It

Materials For each child: 5 connecting cubes

Support Whole Class Discussion

Explain to children they will match the pictures to the equations.

Have children describe what is happening in each picture.

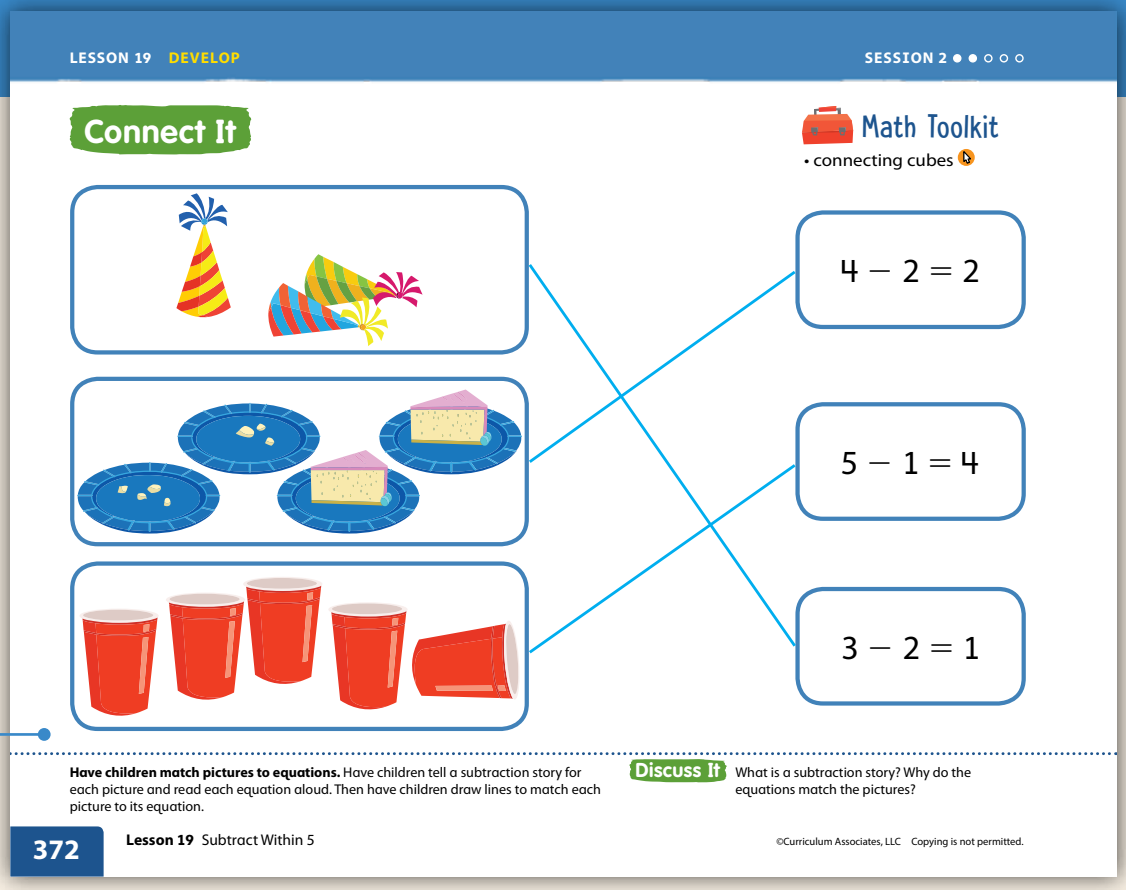
Ask *How can you tell a subtraction story to describe what is happening in each picture?*

Listen for I can count how many objects there are in all. I can see which objects are different in some way. I can tell a story about why the objects are different. I can count how many of the objects are different.

Ask *How do you know which equation matches each picture?*

Listen for I can think about the numbers that are in the subtraction story. I can count the whole group of objects and then the groups of objects that are different.

Have children model each situation using connecting cubes and then draw lines to match the pictures to the equations.



Deepen Understanding

Relationships Between Quantities

SMP 2 Reason abstractly and quantitatively.

When discussing the subtraction situations in the pictures, prompt children to understand that they are making sense of quantities and their relationships.

Ask *How do you know what to count in the group of objects?*

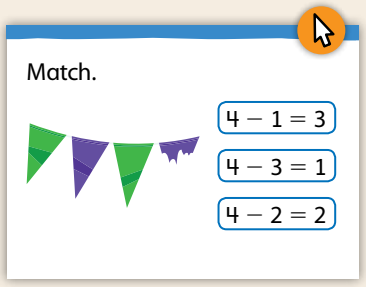
Listen for I count all the objects to find the number I start with. I count the objects that have been knocked over or eaten. I count how many are left.

Generalize *If another cup falls down, how would you describe the subtraction problem?* Listen for children to change the relationships of the groups if one more has been taken away.

Close: Exit Ticket

Materials For each child: 5 connecting cubes, copy of Close slide

Have children look at the picture and tell a story. Then have them draw a line from the picture to the equation that matches the story. Children can use connecting cubes to help.



Listen for Children tell a story about the 4 banners with 1 torn off.

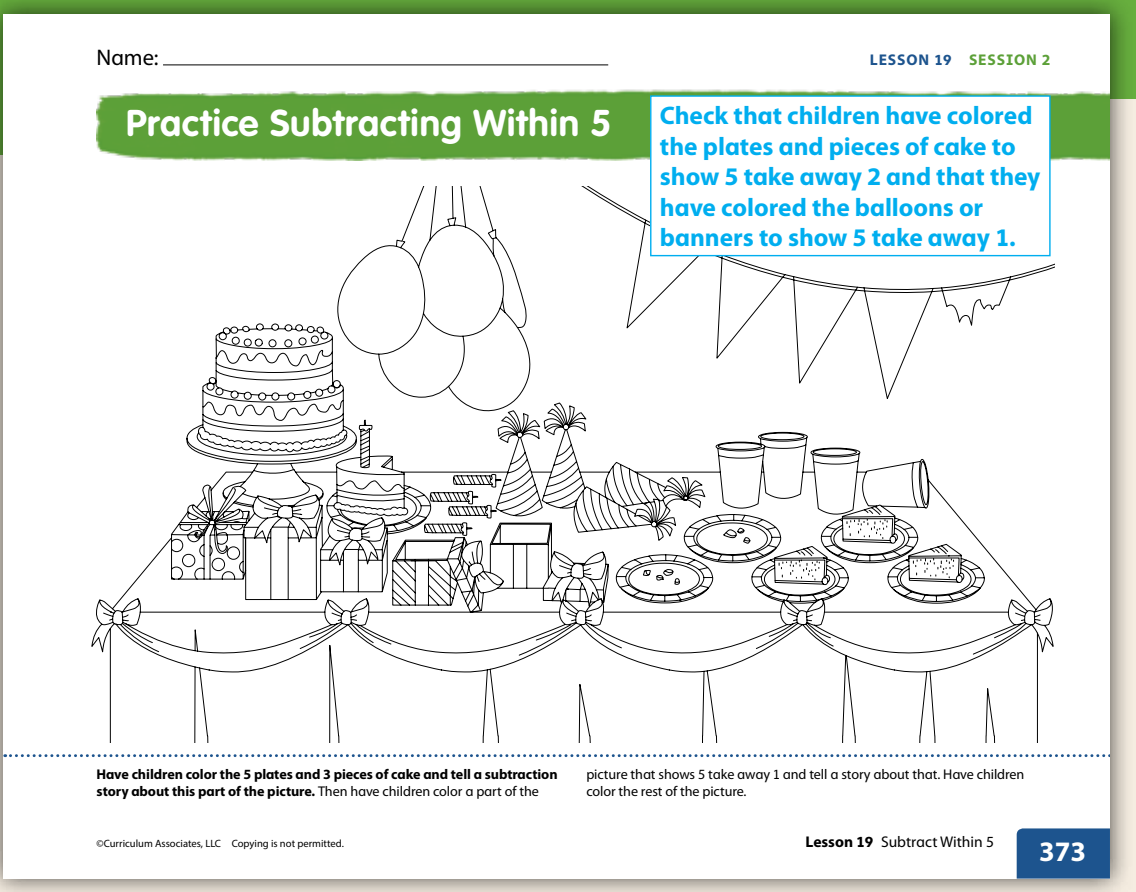
Solution 4 − 1 = 3

Common Misconception **If** children confuse the group that has been taken away with the group that is left, **then** have children tell the subtraction story again and listen for the group that is being taken away.

Solutions

Children's coloring should show the following:

- plates and pieces of cake to show 5 − 2
- balloons or banners to show 5 − 1



Fluency Practice

Practice rote counting.

Have children rote count as they do tasks, such as getting back to their seats, or lining up for recess, etc. Have them count longer tasks to see how far they can count correctly by rote.

Practice subtraction facts within 5.

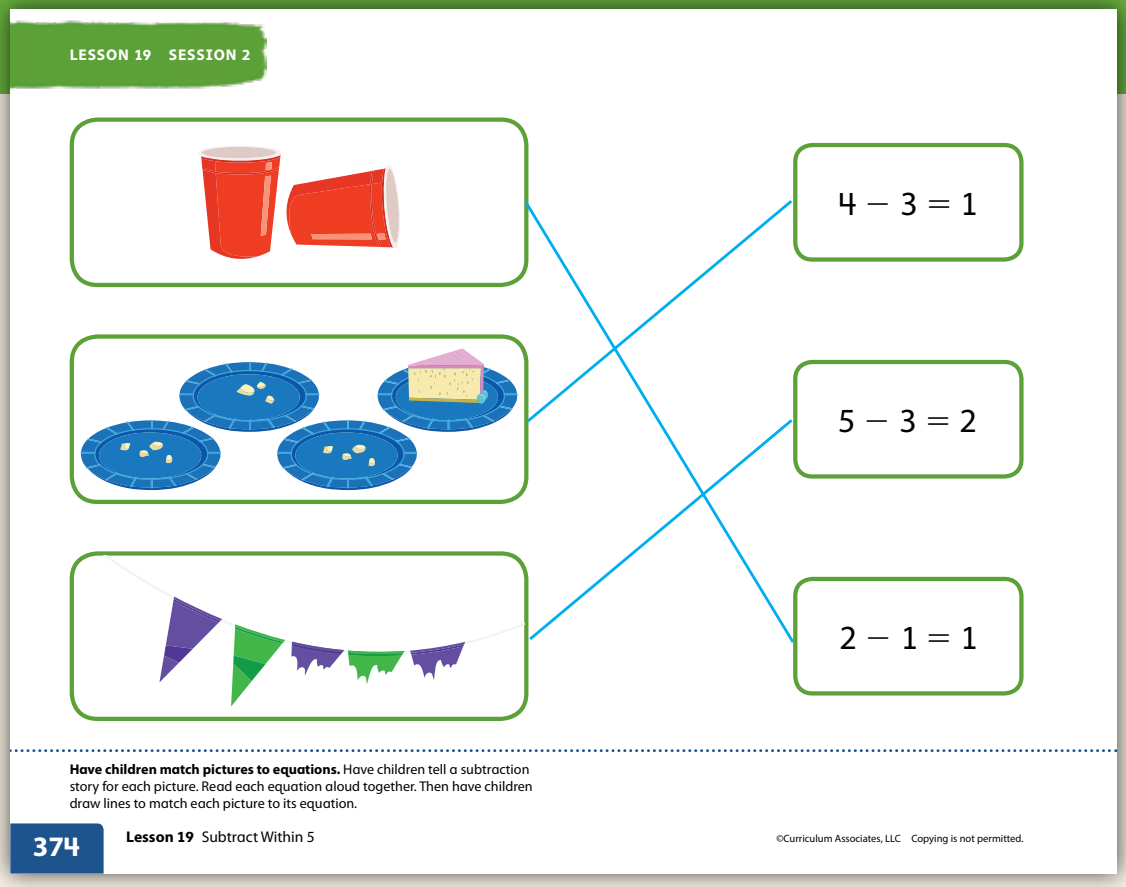
Materials none, children use their fingers

- Have children model subtraction problems with their fingers. Say: *Show me 4 fingers. Take away 1. What is 4 minus 1?* [3]
- Continue with 2 − 1, 3 − 2, 4 − 2, 5 − 1, 5 − 2, 5 − 3, and 5 − 4.

Solutions

Children tell a subtraction story for each picture. Read each equation aloud together. Then children draw lines to match the pictures to the equations.

- Cups: $2 - 1 = 1$
  Medium
- Cake and plates: $4 - 3 = 1$
  Medium
- Banners: $5 - 3 = 2$
  Medium



ELL English Language Learners: Differentiated Instruction

Prepare for Session 3
Use with *Connect It*.

Levels 1–3

Listening/Speaking Read the ***Connect It*** problems aloud with children. After children write the missing numbers in the equations, explain that you will tell a subtraction story. Ask them to listen carefully and point to the picture that matches the story. Say: *There were 3 pieces of cake. My dog ate 2 of the pieces! Now there is only 1 piece left. Put your finger on the picture that matches the story.* Reread the story as children check their answer. Have children turn and tell a partner which picture they chose.

Levels 2–4

Listening/Speaking Read the ***Connect It*** problems aloud with children. After children write the missing numbers in the equations, have them cover the pictures with four sticky notes. Explain that you will tell a subtraction story about one of the pictures. They must listen carefully and choose which equation matches the number story. Say: *There were 3 pieces of cake. My dog ate 2 of the pieces! How many pieces of cake are left? Put your finger on the equation that matches the story.* Have children peel off the sticky note and check the picture. Have children retell the subtraction story to a partner.

Levels 3–5

Writing/Speaking Read the ***Connect It*** problems aloud with children. Display the following story-problem framework using sentence strips in a pocket chart:

- *There were _____.*
- *Take away _____.*
- *Now there are _____.*

Work with children in groups of three or four to choose one of the pictures from ***Connect It*** and write a subtraction story by filling in the blanks. Encourage children to use invented spelling and pictures as needed.

LESSON 19

SESSION 3 Develop

Purpose In this session children create subtraction story problems to match equations. Then they use counters to solve each problem and complete the equation.

Start

Connect to Prior Knowledge

Materials For each child: 5 connecting cubes

Why Reinforce modeling subtraction problems.

How Have children use the cubes to show each of the subtraction equations.

Model.

$4 - 3 = 1$ $4 - 2 = 2$

$5 - 1 = 4$ $3 - 2 = 1$

Look for Children start with the correct number of cubes and take away the correct number of cubes each time.

Develop Language

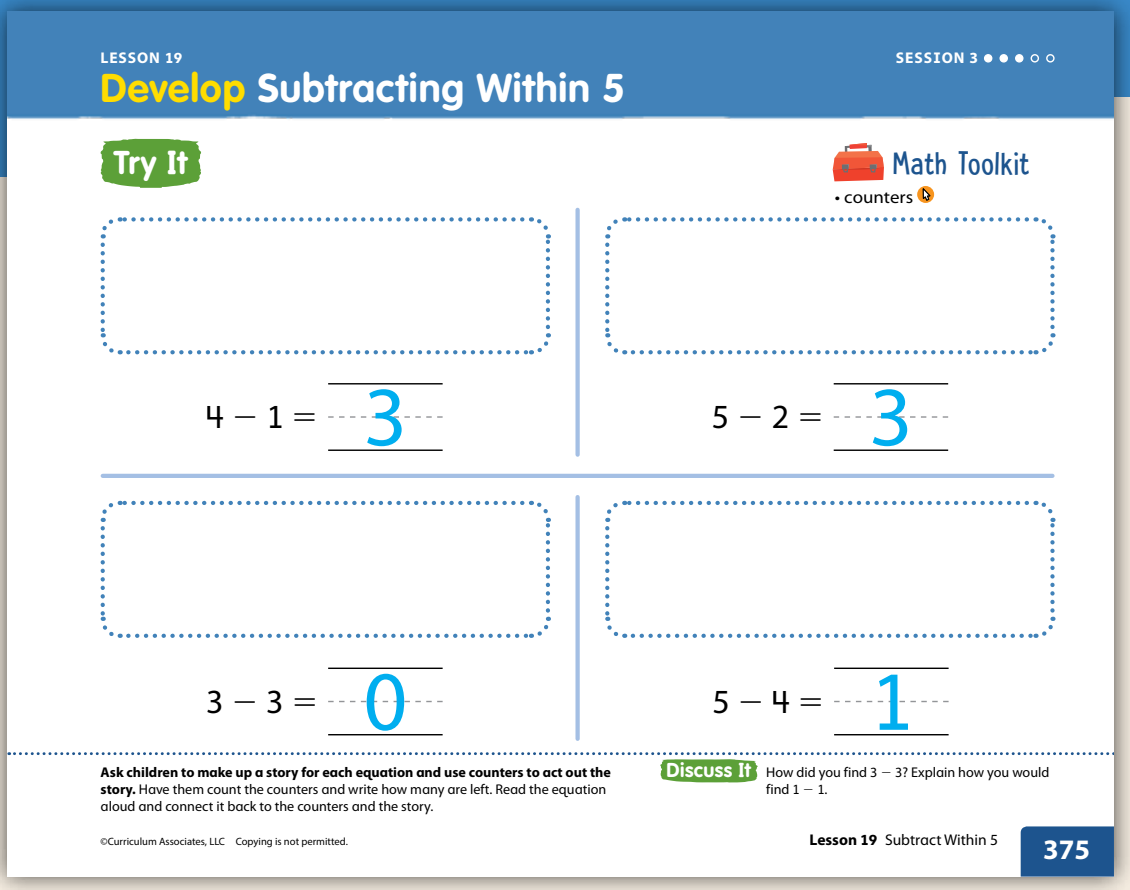
Why Review the concept of plural nouns and the *-s* ending.

How Remind children that when a noun is plural we usually add *-s* to the end. Have children practice making the following words plural by adding *-s*: *counter, balloon, plate, hat*. Ask children to point to groups of items in the book, count, and use a plural noun to name the items.

Try It

Materials For each child: 5 counters

Explain to children that they will make up a story for each of the equations, then act it out with counters, and complete the equation.


LESSON 19

Develop Subtracting Within 5

SESSION 3 ● ● ● ○ ○

Try It

Math Toolkit

• counters

$4 - 1 = 3$

$5 - 2 = 3$

$3 - 3 = 0$

$5 - 4 = 1$

Ask children to make up a story for each equation and use counters to act out the story. Have them count the counters and write how many are left. Read the equation aloud and connect it back to the counters and the story.

Discuss It How did you find $3 - 3$? Explain how you would find $1 - 1$.

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Lesson 19 Subtract Within 5 375

Support Partner Discussion

Have children tell a partner a story for each equation. Then have them act out the story with counters. Children can then count how many counters are left and complete the equation. Have partners compare their equations and talk through any differences they may have, to find any errors.

Have partners also discuss anything they notice about these equations. Support as needed with questions such as:

- *How were your stories alike? How were they different?*

Common Misconception **If** children are unable to create a story about a subtraction situation, **then** give them a context to work with, such as giving away crayons or markers.

Select and Sequence Solutions

Select children to present their subtraction stories and what they noticed about the equations. Choose children who identified:

- the top two equations had the same number of counters left
- the two equations on the right started with the same amount
- the bottom left equation did not have any counters left

Discuss It

Support Whole Class Discussion

Compare and connect children's solutions by having them share how they solved the subtraction problems and what they noticed about the equations.

Ask *How did you find $3 - 3$?*

Listen for I counted 3 counters, then I took 3 counters away, and I was left with no counters. I could see the number I started with and the number I was taking away were the same, so I knew there would not be any left.

Ask *How would you find $1 - 1$?*

Listen for I would count 1 counter and then take 1 counter away and see there are none left. Like $3 - 3$, I am taking away the whole group so I know it is 0.

Hands-On Activity

Break apart cube trains to model subtraction word problems.

If . . . *children are struggling to relate the equation to the subtraction problem*

Then . . . *use the activity below to model the problem.*

Materials For each child: 5 connecting cubes

- Say: *Peter blew up 5 balloons.* Tell children to make a cube train with 5 connecting cubes.
- Then say: *2 balloons popped.* Have children break off 2 cubes from the train. Ask: *How many balloons are left?* Children count 3 cubes that are left.
- Write the equation that shows the subtraction situation on the board. Discuss what each number and symbol represents.
- Present other subtraction story problems for children to model with cube trains.

Connect It

Support Whole Class Discussion

Have children compare each equation with the subtraction picture, then count and write the number left. When all four problems have been completed, have several children share their answers and thinking.

Ask *How are 4 − 2 and 3 − 1 alike?*

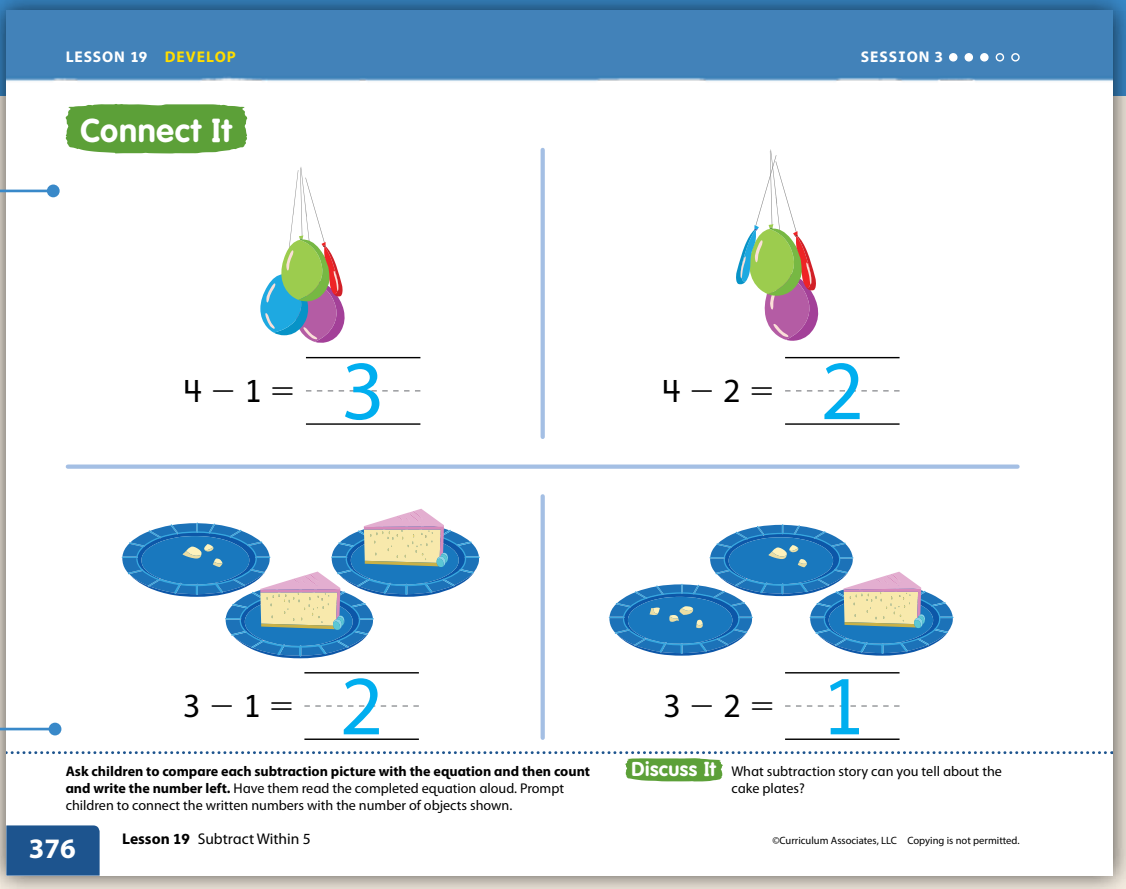
Listen for They both have 2 left. They both show 2 items left.

Ask *How can you find 4 − 2 if you know 4 − 1?*

Listen for 2 is 1 more than 1 so there will be 1 more to take away. The difference of 4 and 2 is 1 less than the difference of 4 and 1.

Ask *What subtraction story can you tell about the cake plates?*

Listen for Children tell a story, such as: Jim puts out 3 pieces of cake. 2 get eaten. How many pieces of cake are left?



Deepen Understanding

Modeling a Subtraction Problem

SMP 4 Model with mathematics.

When all problems have been discussed, prompt children to recognize that the story problems are modeled with objects and equations.

Ask *How do pictures and objects help you solve subtraction problems?*

Listen for I can act out the story. I can count how many are left. I can see the whole story so I know what the equation should say.

Ask *How does an equation show a subtraction problem?*

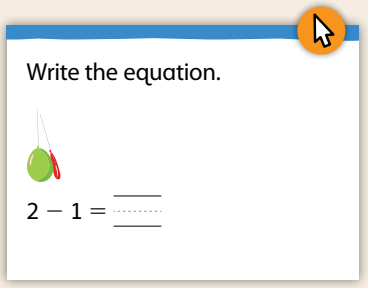
Listen for You can see how many there are to start, how many are taken away, and how many are left.

Generalize *How could you show: 5 balloons are blown up. 3 of them pop. How many are left?* Have children share the equation. [5 − 3 = 2] Prompt children to recognize that they can write an equation for any subtraction story.

Close: Exit Ticket

Materials For each child: 3 counters, copy of Close slide

Have children tell a subtraction story for the picture. Then have them use the counters to solve the problem and complete the equation.



Solution 2 − 1 = 1

Common Misconception **If** children write in the number 3 instead of 1, **then** explain that this is a subtraction problem and not an addition problem. They are taking a number from the total and writing how many are left.

Solutions

For each problem, children:

- compare the subtraction picture with the equation
- count how many are left
- write the number in the equation to show how many are left

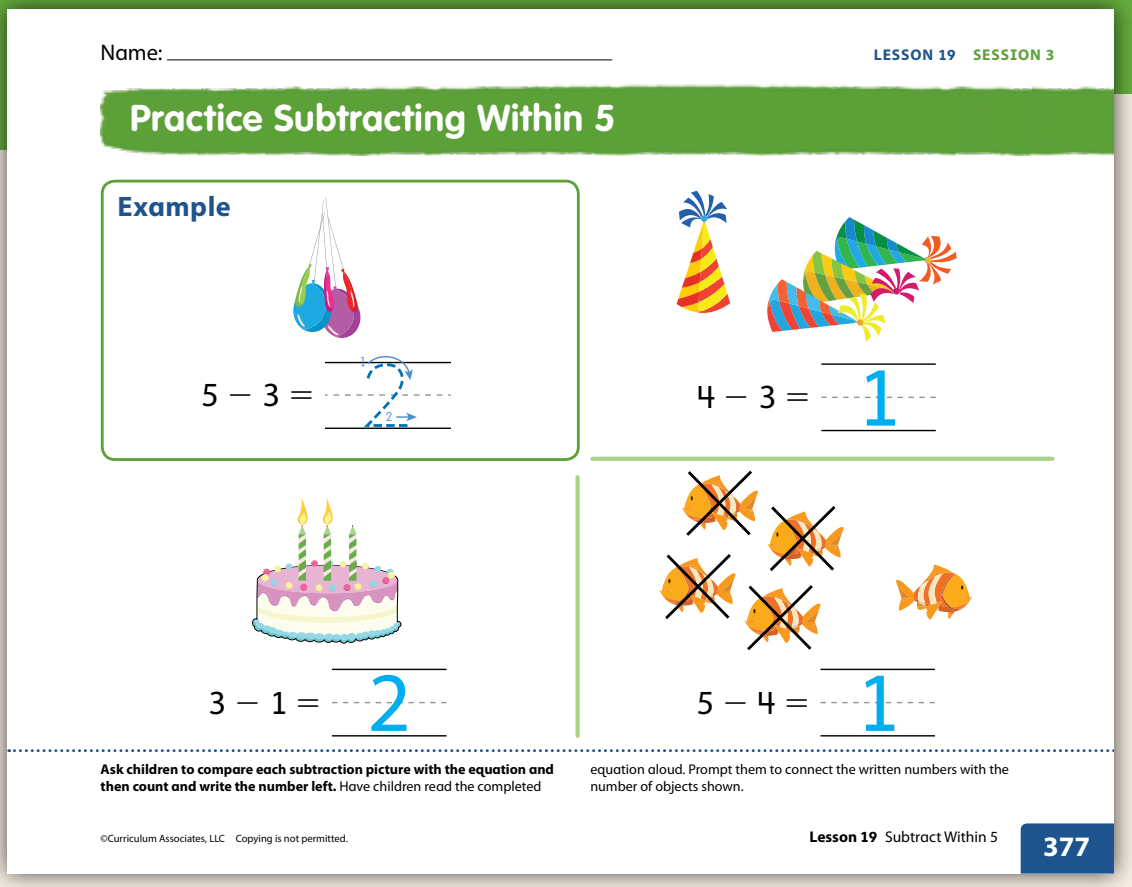
Example

$5 - 3 = 2$

Basic

Problems

- $4 - 3 = 1$
  Medium
- $3 - 1 = 2$
  Basic
- $5 - 4 = 1$
  Medium



Name: _____ LESSON 19 SESSION 3

Practice Subtracting Within 5

Example

$5 - 3 =$ 2

$4 - 3 =$ 1

$3 - 1 =$ 2

$5 - 4 =$ 1

Ask children to compare each subtraction picture with the equation and then count and write the number left. Have children read the completed equation aloud. Prompt them to connect the written numbers with the number of objects shown.

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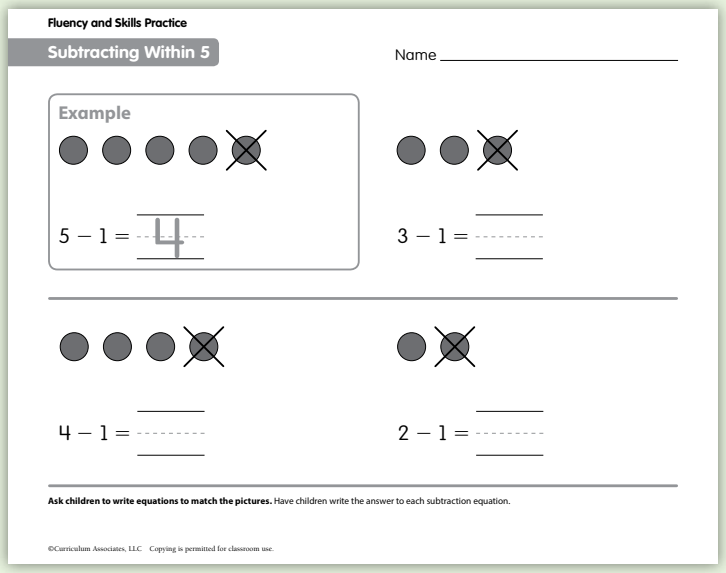
Lesson 19 Subtract Within 5 377

Fluency & Skills Practice

Teacher Toolbox

Assign *Subtracting Within 5*

In this activity children practice subtracting within 5. Children will subtract these numbers in many real-world situations. For example, a child may want to find out how many soccer balls she will have left after kicking some into a goal, how many friends will be left at a party if some have to leave early, or how many treats will be left after a dog eats some.



Fluency and Skills Practice

Subtracting Within 5

Name _____

Example

$5 - 1 =$ 4

$3 - 1 =$ _____

$4 - 1 =$ _____

$2 - 1 =$ _____

Ask children to write equations to match the pictures. Have children write the answer to each subtraction equation.

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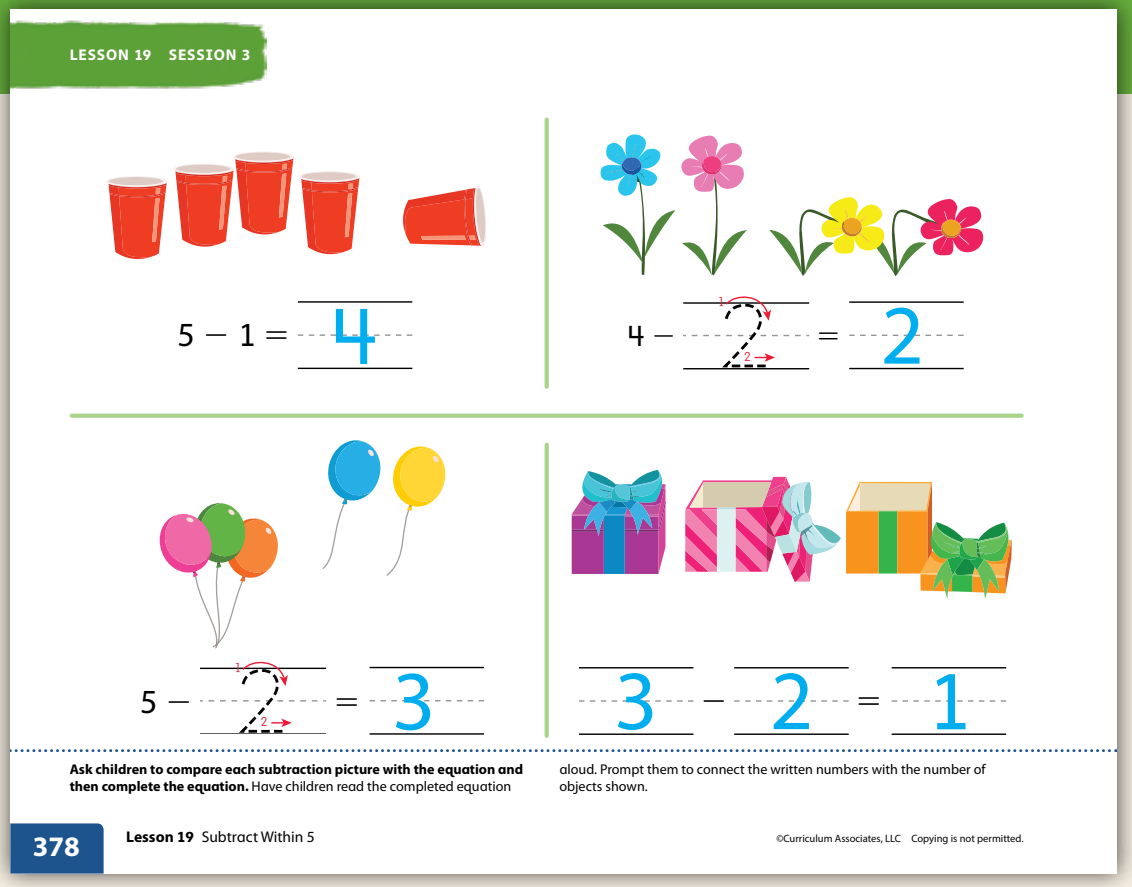
Solutions

- $5 - 1 = 4$
  Basic
- $4 - 2 = 2$
  Medium
- $5 - 2 = 3$
  Medium
- $3 - 2 = 1$
  Challenge



ELL English Language Learners: Differentiated Instruction

Prepare for Session 4
Use with *Apply It*.

Levels 1–3

Listening/Speaking Choral read the first two problems on the second page of ***Apply It***. Reinforce the connection between number stories, pictures, and equations. Remind children that *discover* means to learn something new. Ask: *What have you discovered about pictures and equations?* Point to the picture of the presents and the corresponding equation. Have children tell about each number and symbol in the equation using simple phrases or gestures to indicate which part of the picture is represented by each. If children need support, ask specific questions about the equation such as: *What does the 2 mean? What does the minus sign mean? What does the 1 mean?*

Levels 2–4

Listening/Speaking Choral read the first two problems on the second page of ***Apply It***. For the ***Discuss It*** section, have partners create two different number stories about the balloons. Provide the following framework for a subtraction story:

- *There were _____.*
- _____.
- *Now there are _____.*

Discuss the role of each line of the framework and how it relates to the equation. After children have composed two stories, ask: *What did you discover about the stories? How were they the same? How were they different?*

Levels 3–5

Listening/Speaking Choral read the first two problems on the second page of ***Apply It***. For the ***Discuss It*** section, have partners create two different number stories about the balloons. If children need ideas for the balloons that are subtracted, offer possible suggestions such as they popped, they floated away, they got stuck in a tree. Ask: *Which equation did you use with the first number story?* [$5 - 3 = 2$] *Which equation did you use to show the second number story?* [$5 - 3 = 2$] *What did you discover about using pictures to solve subtraction equations?* [Possible answer: The pictures help me see how many are not crossed out. The ones with the Xs are subtracted, so I counted the rest.]

LESSON 19

SESSION 4 Refine

Purpose In this session children act out a subtraction story problem using counters. Then they make up story problems for given subtraction situations.

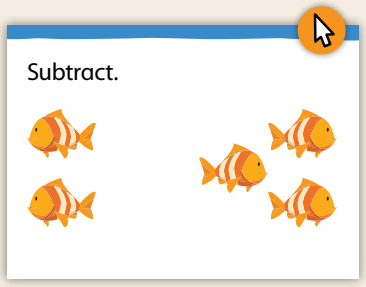
Start

Connect to Prior Knowledge

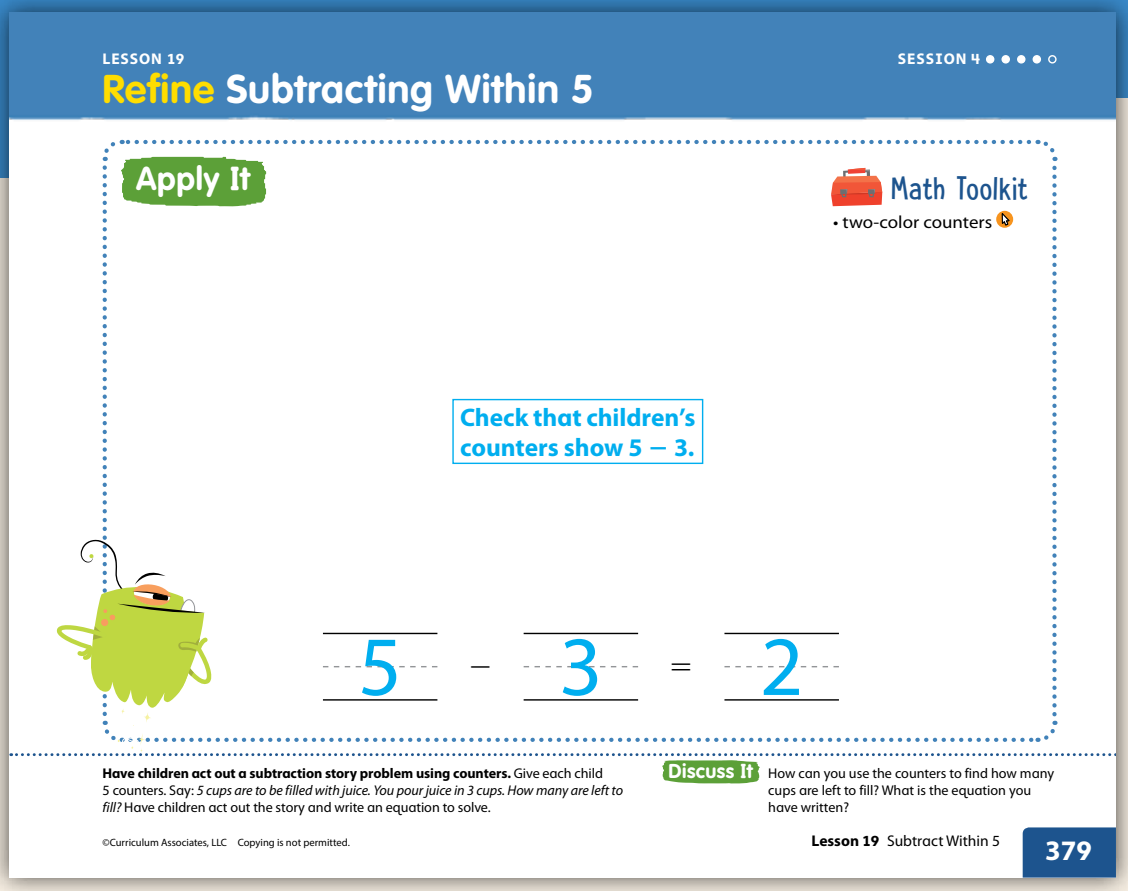
Materials For each group of 3: 5 counters

Why Reinforce modeling subtraction story problems.

How Have children look at the picture and in their groups create two different subtraction stories. Then have them use the counters to solve both problems and say the equations connected to them.



Solution Children tell two stories, one in which 3 fish swim away, the other in which 2 fish swim away, and then say the following equations: $5 - 3 = 2$, $5 - 2 = 3$.



Apply It

For the first page, explain to children that they will use their counters to show and solve a word problem.

Materials For each child: 5 two-color counters

Ask *5 cups are to be filled with juice. You pour juice in 3 cups. How many are left to fill?*

Have children use their counters on the workmat to act out the story. Children should lay down 5 counters of the same color and turn over 3. Then they should write the equation.

Discuss It

Support Whole Class Discussion

Analyze how children's work represents and solves the problem. Children should connect their actions and the equation to the story.

Ask *What does each counter show?*

Listen for Each counter is 1 cup. I am using the counters for the cups in the story. There are 5 cups so I have 5 counters.

Ask *How did you use the counters to show what happens in the problem?*

Listen for In the problem, juice is poured in 3 of the cups. I turned over these 3 counters to show the cups that now have juice.

Ask *How can you use the counters to find how many cups are left to fill?*

Listen for I can look at the counters that I did not turn over. These are the ones that are left to fill. 2 counters did not change, so I know 2 cups are left to fill.

Ask *What is the equation you have written? How does this show the problem?*

Listen for $5 - 3 = 2$. The numbers in the equation match the story. The equation shows 5 cups, 3 with juice, and 2 left to fill. The equation shows 5 cups minus 3 with juice equals 2 left to fill.

Reiterate the connection between the equation, the action, and the story by emphasizing each term. For example, say: *There are 5 cups in the story, we showed 5 counters on the workmat, and we wrote 5 here in the equation.*

For the problems on the second page, tell children they will now make up their own story problems for the pictures they see.

For each problem, have children make up a story, then count and circle or write to complete the equation.

Support Whole Class Discussion

Have children read the completed equation aloud and connect the numbers with the story problem.

Ask *Which two problems have the same answer? What do you notice about these problems?*

Listen for 4 − 2 and 5 − 3. The numbers 5 and 3 are each 1 more than the numbers 4 and 2.

Ask *Work with a partner. What are two different stories you can tell about the balloon problem?*

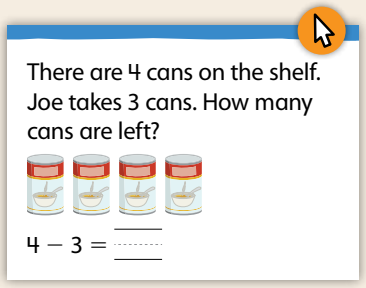
Listen for Children can tell any two stories that fit. They should notice that changing the story does not change the answer.

Close: Exit Ticket

Check for Understanding

Materials For each child: copy of Close slide; For remediation: Activity Sheet *Number Cards 0 to 10: Small*

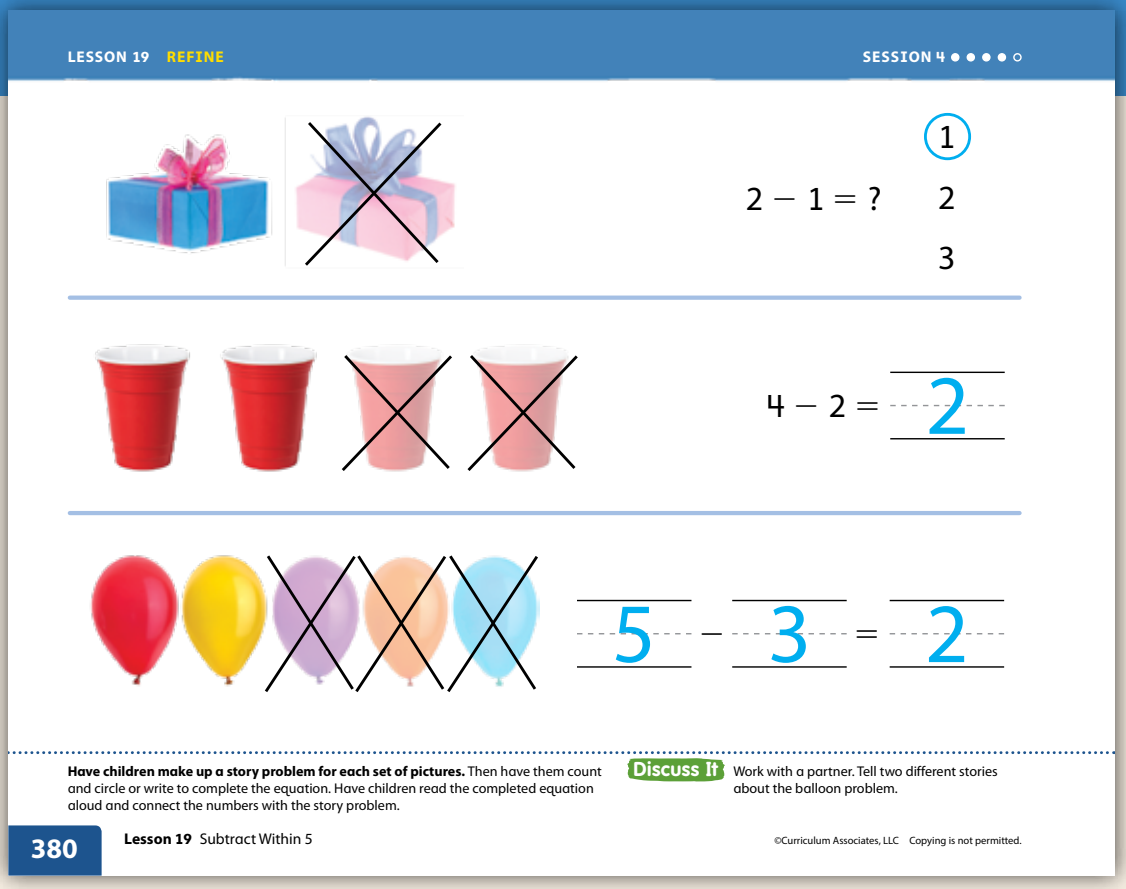
Ask children to solve the problem orally. Then complete the equation.



Solution 1 can, 4 − 3 = 1

Error Alert For children who are still struggling, use the chart to the right to guide remediation.

After providing remediation, check children's understanding by posing another problem. For example, say: *There are 5 cans on the shelf. Joe takes 2 cans. How many cans are left?* [3 cans, 5 − 2 = 3]



Error Alert

If the error is . . .	*Children may . . .*	*To support understanding . . .*
an answer greater than 4	be adding instead of subtracting.	Provide more work with word problems using the language of subtraction and have children act them out with real objects.
3	not understand the relationship between the amount taken away and the result.	Provide practice in linking numbers in an equation to pictorial representations. For example, have the child draw lines from each number in an equation to the quantity it represents in the picture.
saying 1, but writing a different numeral	not know the symbols for numbers or how to write numbers.	Provide practice matching quantities with number cards and writing numerals for quantities named orally.

Solutions

For each problem, children:

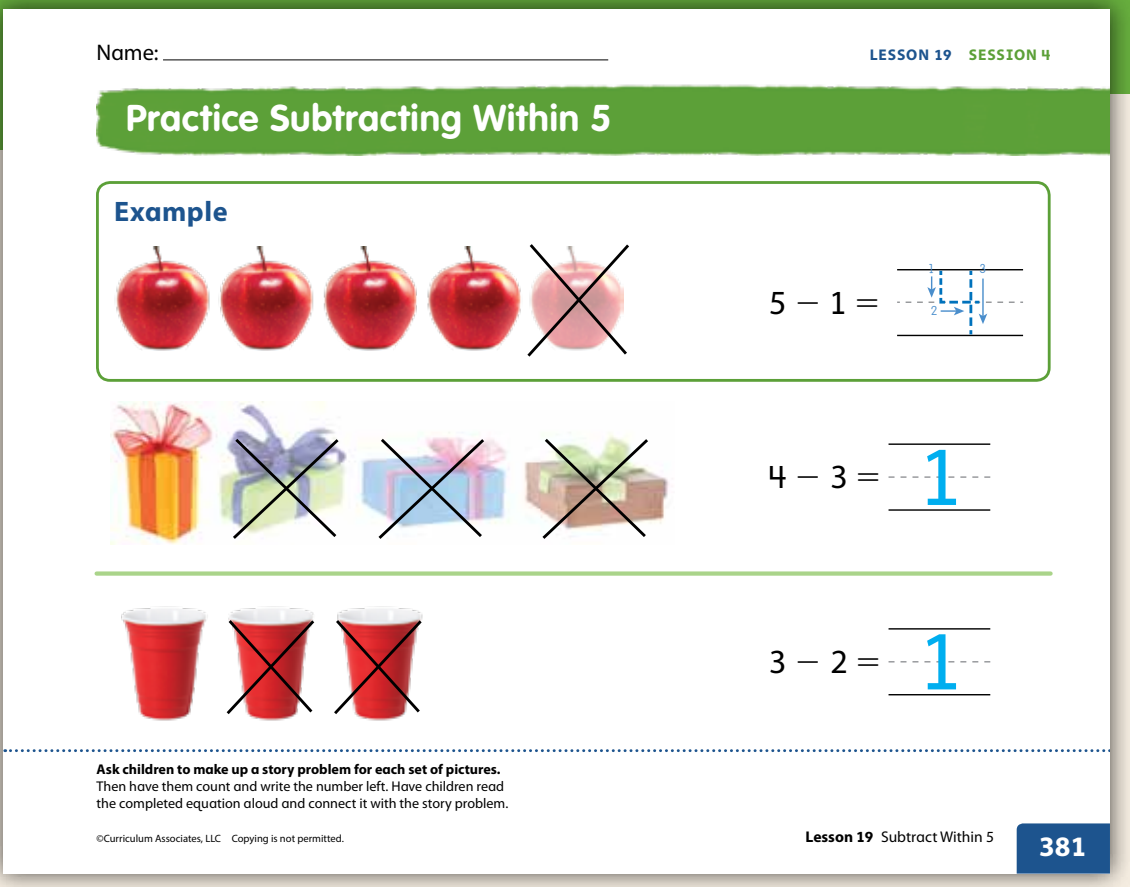
- make up a story problem for the set of pictures
- complete the equation
- read the completed equation aloud and connect it with the story problem

Example

$5 - 1 = 4$
Basic

Problems

- $4 - 3 = 1$
  Basic
- $3 - 2 = 1$
  Basic


Name: _____ LESSON 19 SESSION 4

Practice Subtracting Within 5

Example

$5 - 1 =$

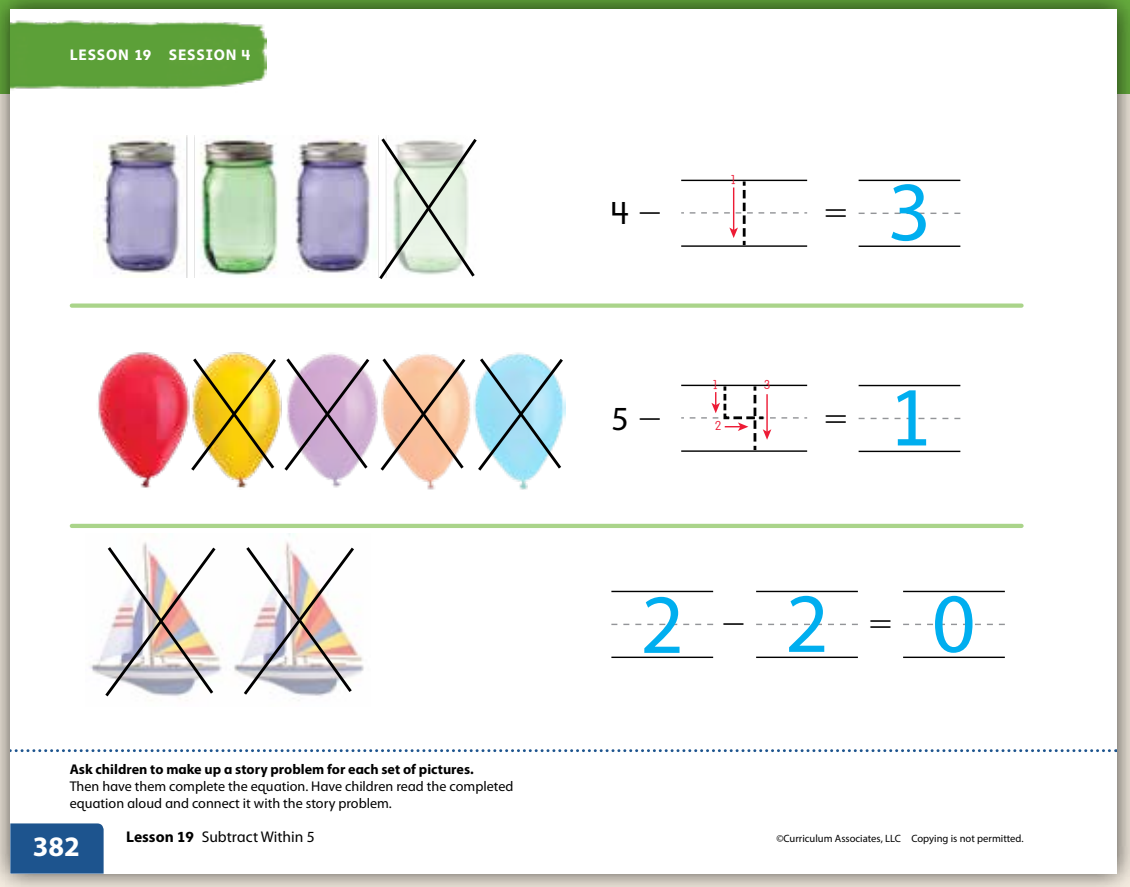
$4 - 3 = 1$

$3 - 2 = 1$

Ask children to make up a story problem for each set of pictures.
Then have them count and write the number left. Have children read the completed equation aloud and connect it with the story problem.

Solutions

- $4 - 1 = 3$
  Medium
- $5 - 4 = 1$
  Medium
- $2 - 2 = 0$
  Challenge



LESSON 19

SESSION 5 Refine

Purpose In this session children use a 5-frame to model subtraction and then complete equations. They explain the strategies they used and identify patterns.

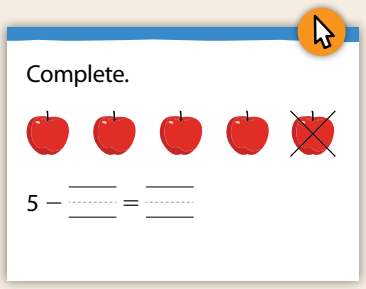
Start

Connect to Prior Knowledge

Materials For each child: copy of Start slide

Why Reinforce writing equations to represent subtraction story problems.

How Have children look at the picture and complete the equation to match the subtraction problem.



Solution $5 - 1 = 4$

Apply It

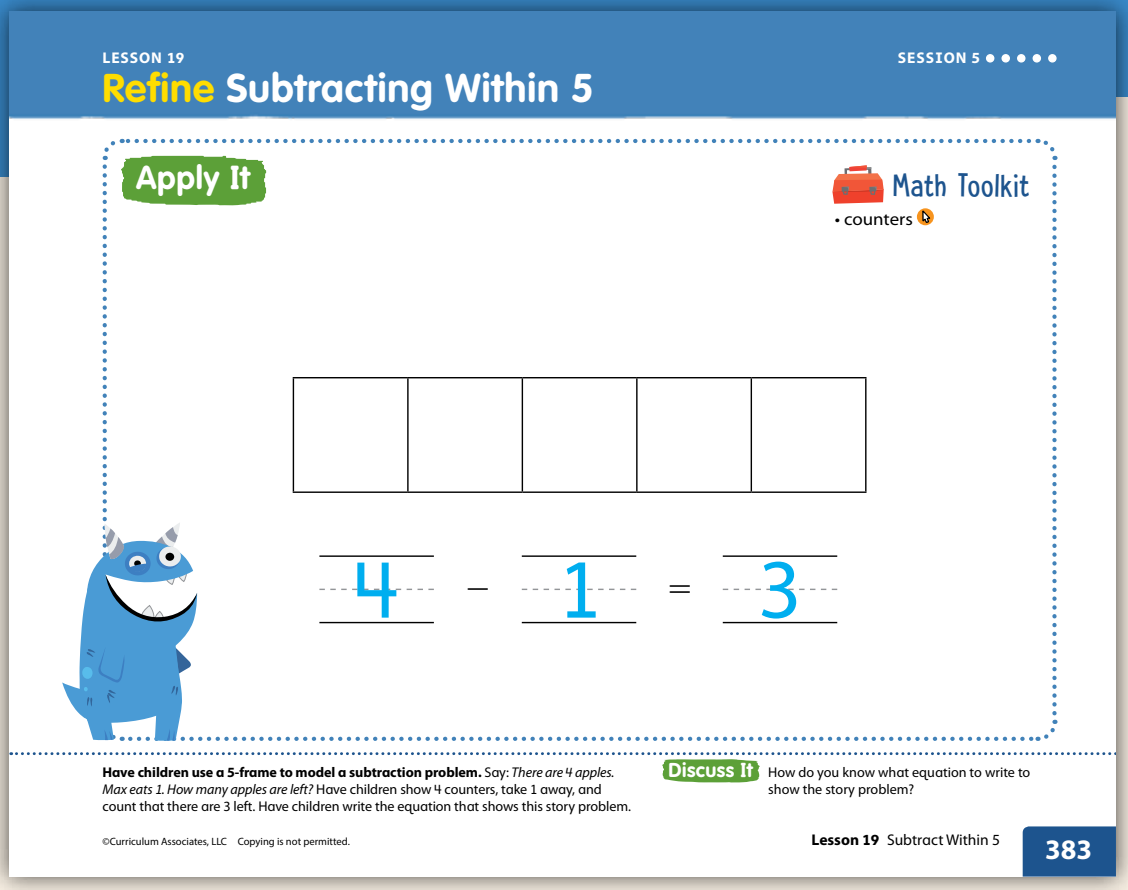
Tell children they will complete subtraction equations for problems modeled on 5-frames.

Materials For each child: 5 counters

For the first page, say: *There are 4 apples. Max eats 1 apple. How many apples are left?*

Have children model the problem with their counters in the 5-frame. They should place 4 counters in the 5-frame, take 1 away, and see that there are 3 left. Children then write the equation that shows this story problem.

For the second page, have children look at the first problem. Ask them to count how many counters there are to start. [3] Have them trace and count the Xs. [3] Explain that this is the number of counters that is taken away. Children then write the subtraction equation for the picture. Repeat for the remaining problems.



Discuss It

Support Whole Class Discussion

When children have all finished the first page, share answers and discuss how their work models the story problem.

Ask *How do you know what equation to write to show the story problem?*

Listen for There were 4 apples and Max eats 1, so 1 apple is gone (or has been taken away). There are 3 apples left, so the equation should show $4 - 1 = 3$.

When children have all finished the second page, invite them to discuss how they found the answers.

Ask *How do the pictures help you write each equation?*

Listen for The pictures show the number of counters to start. The counters that are subtracted have an X on them. The counters that are left are the ones that do not have an X.

Ask *Why are all the counters crossed out in the first problem?*

Listen for There are 3 counters to start and 3 are taken away. All the counters are taken away. 3 counters are taken away, so there are no counters left.

Ask *What pattern do you see when you look at your equations? What pattern do you see when you look at the pictures?*

Listen for 3 is subtracted each time. 3 counters are crossed out each time. The answers are 1 more each time: 0, 1, 2. There is 1 more counter left each time.

Differentiated Instruction

PERSONALIZE

i-Ready

Provide children with opportunities to work on their personalized instruction path with *i-Ready* Online Instruction to:

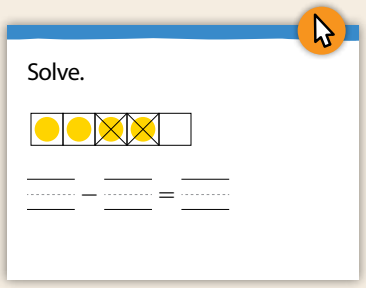
- fill prerequisite gaps
- build up grade-level skills

Close: Exit Ticket

Math Journal

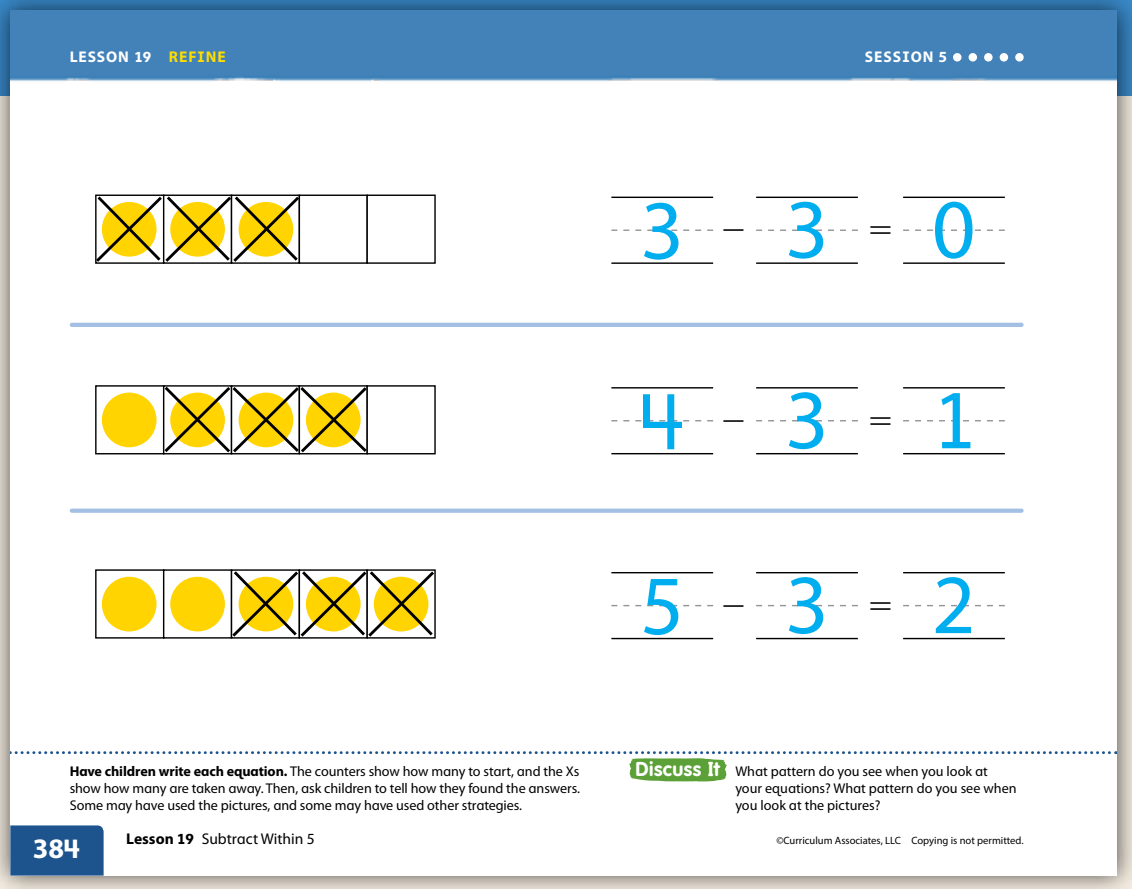
Materials For each child: 5 counters, copy of Close slide

Have children use the picture and counters if needed to complete the equation.



Solution 4 − 2 = 2

Error Alert **If** children have different numbers in their equation, **then** ensure they have counted the counters and not the squares in the frame. Check that they have subtracted the crossed-out counters.



RETEACH

Hands-On Activity

Match counters to equations.

Children struggling to understand the relationship between equations and the quantities they represent

Will benefit from additional work modeling subtraction with concrete materials

Materials For each child: 5 two-color counters

- Write "4 − 1 = __" on the board. Invite children to use their counters to model the subtraction. Ask them to show the red side of 4 counters and then take 1 counter away or flip 1 counter to the yellow side. Ask: *How many are left?* Complete the equation as children suggest.
- Write other subtraction equations on the board. Have children model with counters and complete the equations.

EXTEND

Challenge Activity

Solve subtraction problems where the amount taken away is unknown.

Children who have achieved proficiency subtracting within 5

Will benefit from solving a more complex type of subtraction problem

Materials For each child: 5 connecting cubes

- Say: *Sam had 5 pretzel sticks and now he has 4. How many pretzel sticks did he eat?* Suggest that children can use connecting cubes or counters to help solve the problem if they wish.
- Present children with more story problems in which the starting number and the result are given, but the amount taken away is unknown.