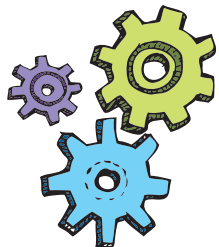


Mathematics



Sampler

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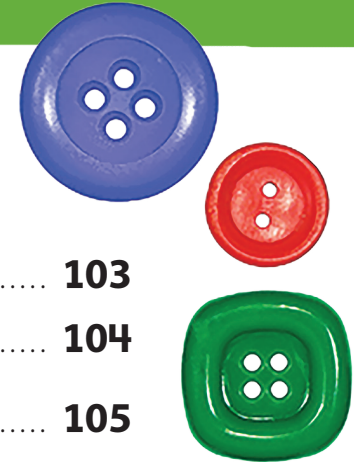


..... UNIT
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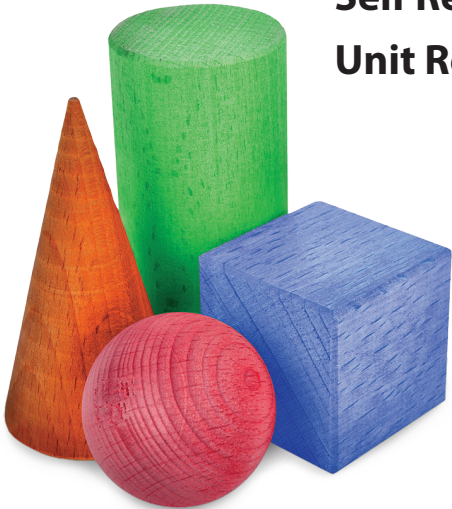


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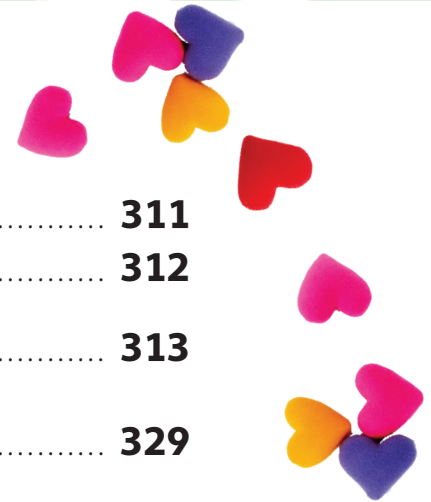
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Bilingual Glossary A1



Student Sample, Lesson 17

Ready Classroom Mathematics lessons begin with a Family Letter that provides activities and instructional supports to foster school, family, and community involvement and partnerships.

Each multiday lesson includes three types of sessions: Explore, Develop, and Refine.

The following pages, 329–348, represent a complete student lesson.

Add Within 5



Dear Family,

This week your child is learning to add within 5.

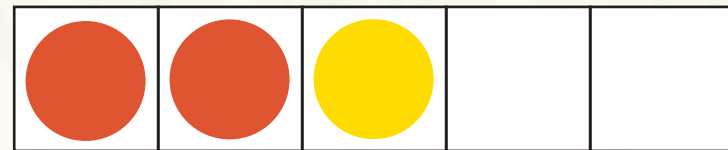
This lesson includes solving addition problems with totals up to 5. It also connects story problems to pictures, objects, 5-frames, and equations. This will provide your child with a strong foundation as he or she eventually moves from solving problems shown with pictures or models to solving problems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

Picture



$$2 + 1 = 3$$

5-Frame



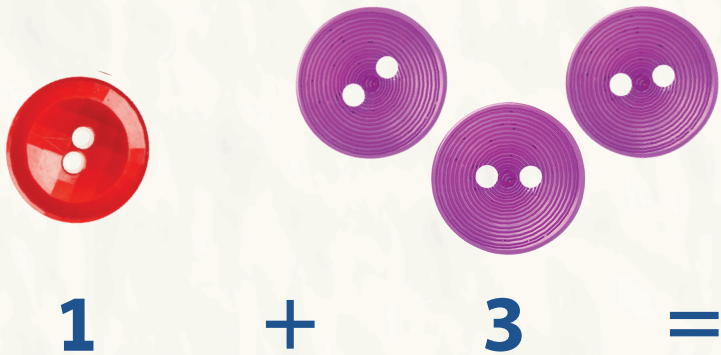
$$2 + 1 = 3$$

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.



Explore Adding Within 5



Try It

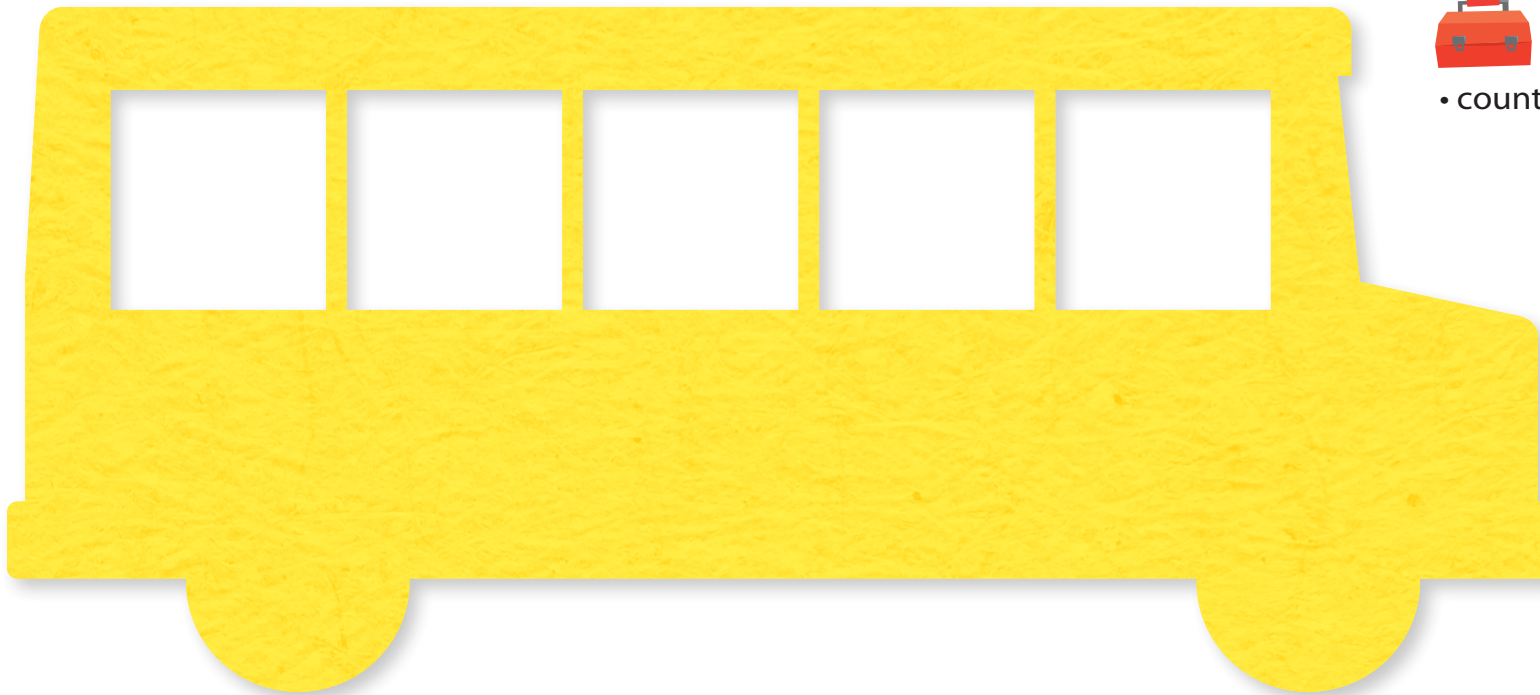
Learning Target

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



Math Toolkit

- counters

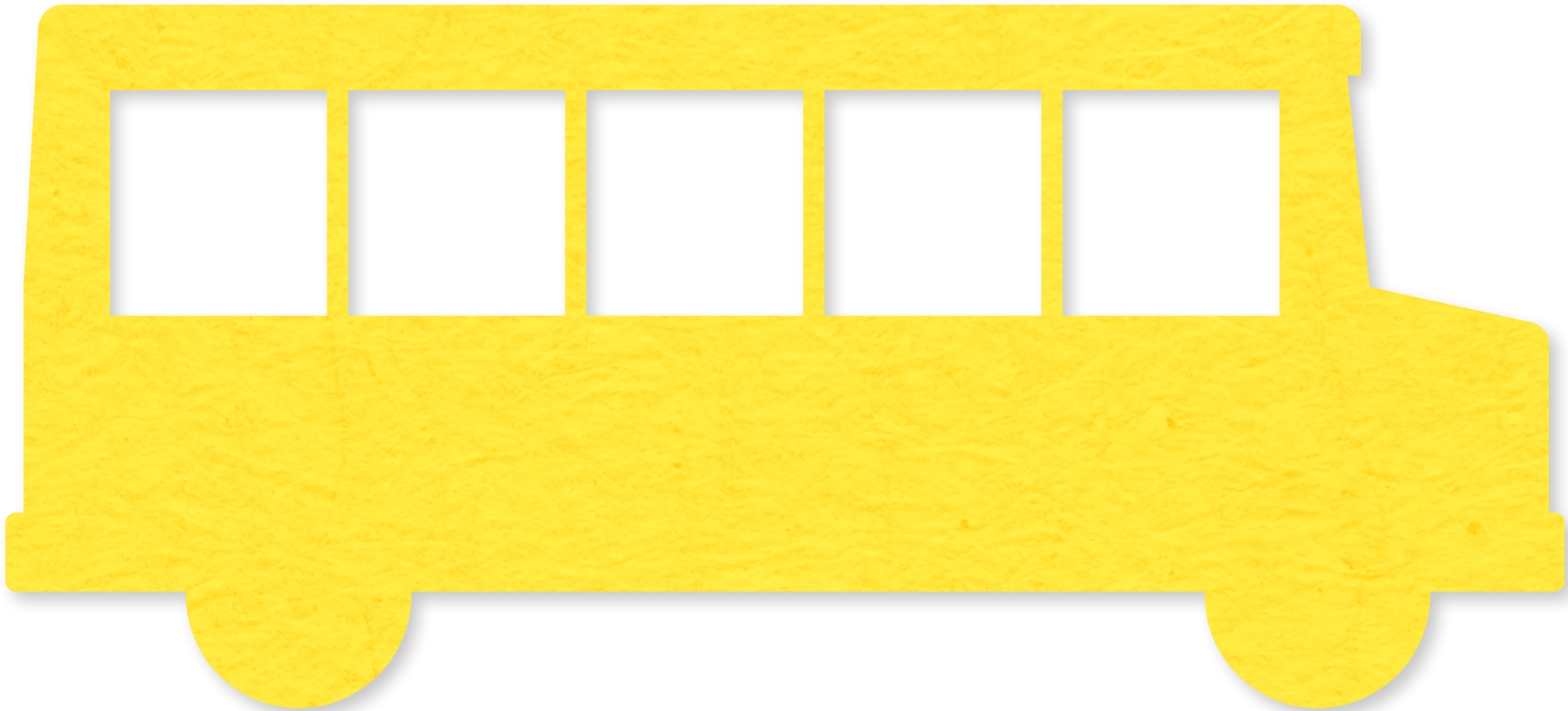


$$\begin{array}{c}
 \text{_____} \\
 \text{-----} \\
 \text{_____}
 \end{array}
 +
 \begin{array}{c}
 \text{_____} \\
 \text{-----} \\
 \text{_____}
 \end{array}
 =
 \begin{array}{c}
 \text{_____} \\
 \text{-----} \\
 \text{_____}
 \end{array}$$

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.

Connect It



$$\begin{array}{c} \text{_____} \\ \text{-----} \\ \text{_____} \end{array} + \begin{array}{c} \text{_____} \\ \text{-----} \\ \text{_____} \end{array} = \begin{array}{c} \text{_____} \\ \text{-----} \\ \text{_____} \end{array}$$

Have children use a 5-frame and counters to act out another addition problem and read a corresponding equation. Say: *There are 3 children on the bus. 1 girl gets on the bus. How many children are on the bus now?*

Have children use counters and the 5-frame to model the problem. Have children help you complete the equation on the board. Then children write the equation. Read the equation aloud together.

Prepare for Adding Within 5

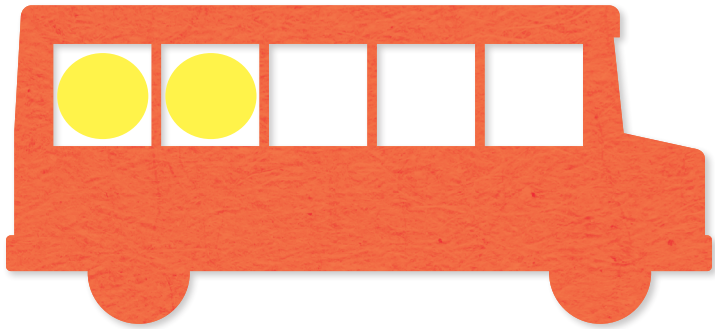
add

Examples

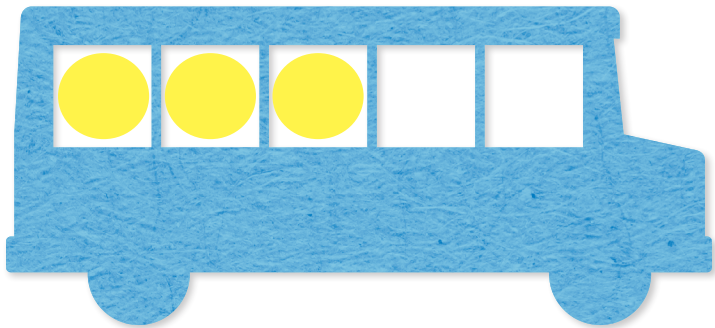
Examples

Examples

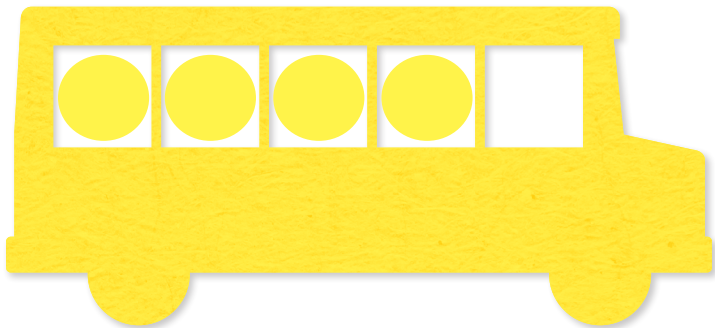
Have children show what it means to add. Have children fill in each of the boxes to show the meaning of addition (joining). Encourage them to use pictures, words, and numbers. Tell children to think of as many different ways as they can.



	+		=	



	+		=	



	+		=	

Have children complete 5-frames to represent addition problems and write the corresponding equations. Pose an addition story problem for the first bus. Say: *There are 2 girls on the bus. 3 boys get on the bus. How many*

children are on the bus now? Have children draw counters to complete the 5-frame. Write $2 + 3 = 5$ and have children write the equation. Repeat for the other two buses.

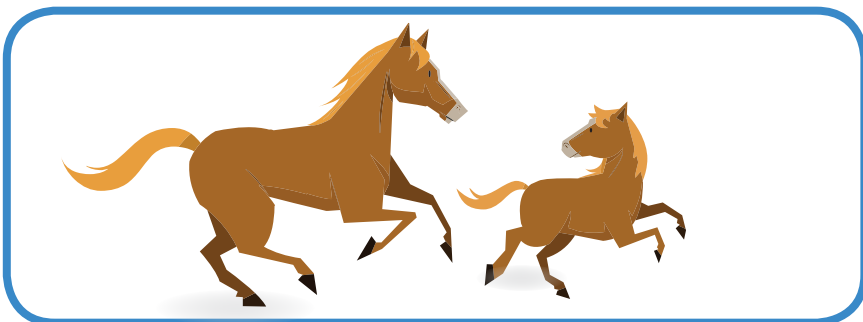
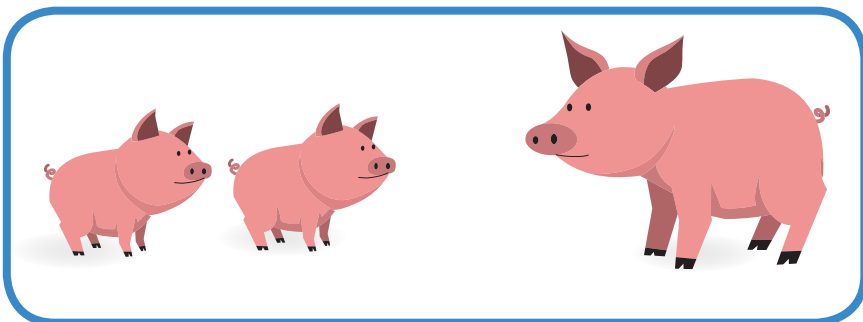
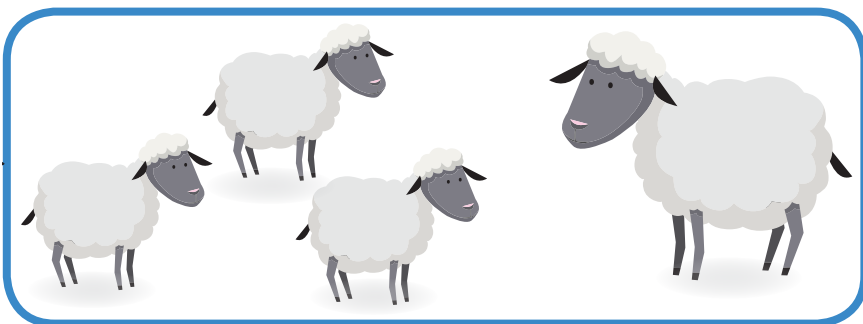
Develop Adding Within 5



Encourage children to describe addition problems for each group of animals. Provide an example, such as *3 little pigs and 1 big pig is 4 pigs*. Have children circle the two groups of animals that show 3 plus 1.

Discuss It How is the group of sheep like the group of pigs?

Connect It



Math Toolkit

• counters

$$2 + 1 = 3$$

$$1 + 1 = 2$$

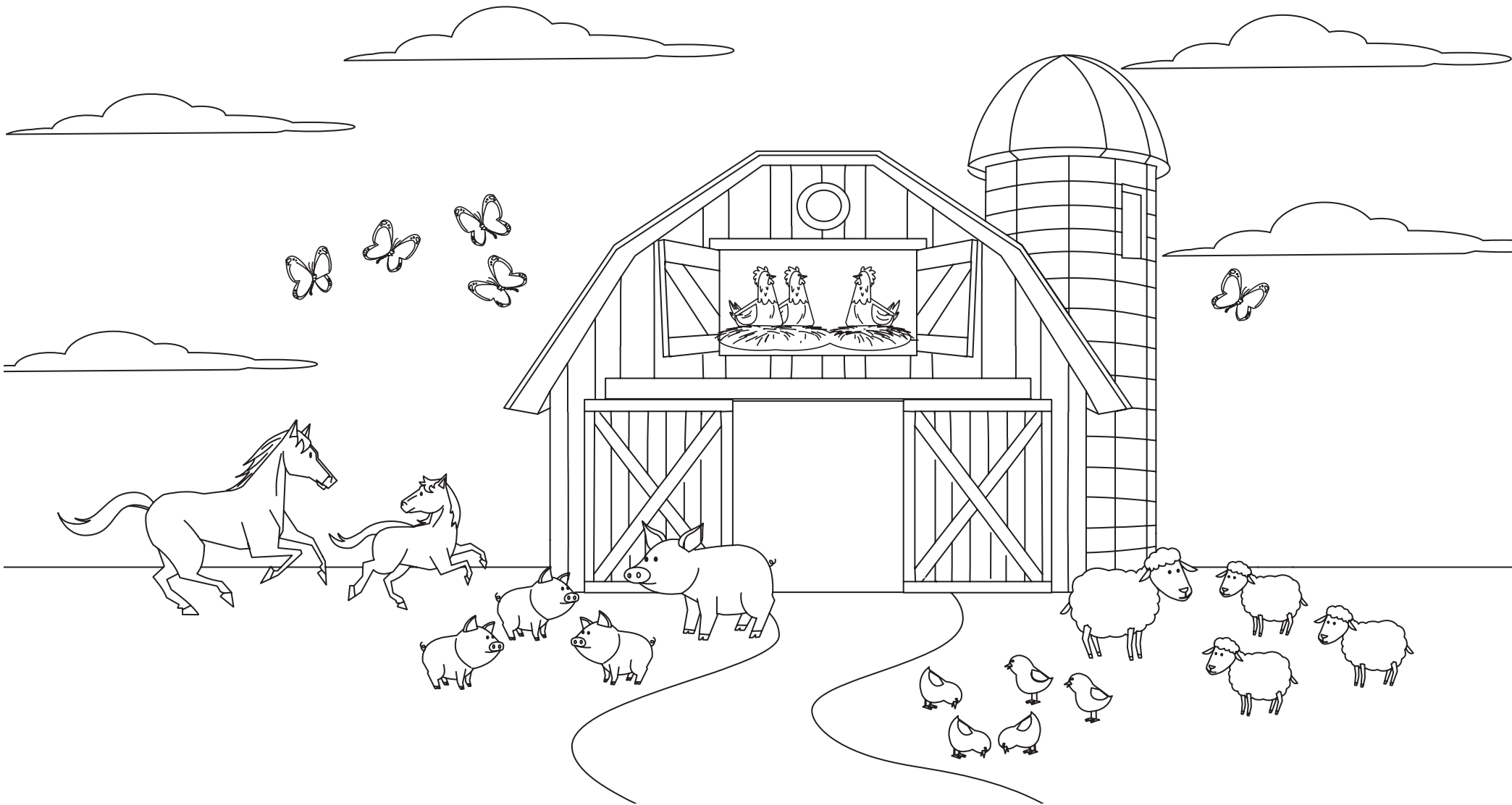
$$3 + 1 = 4$$

Have children match pictures to equations. Have children tell the number of large and small animals and the total in each picture. Then have them say each equation aloud, use counters to model it, and draw a line from the picture to the equation that matches.

Discuss It How are the addition equations alike?
How are they different?

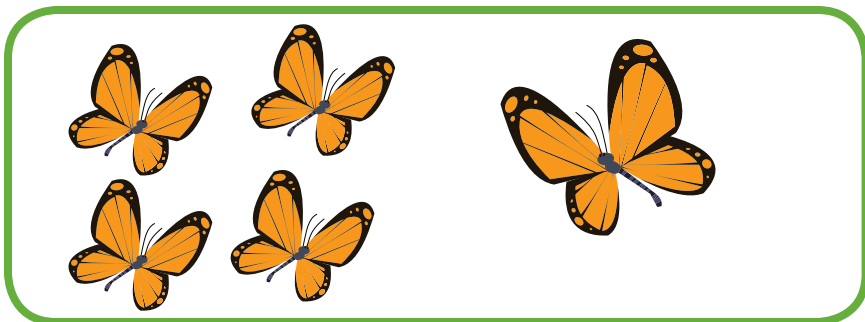
Name: _____

Practice Adding Within 5

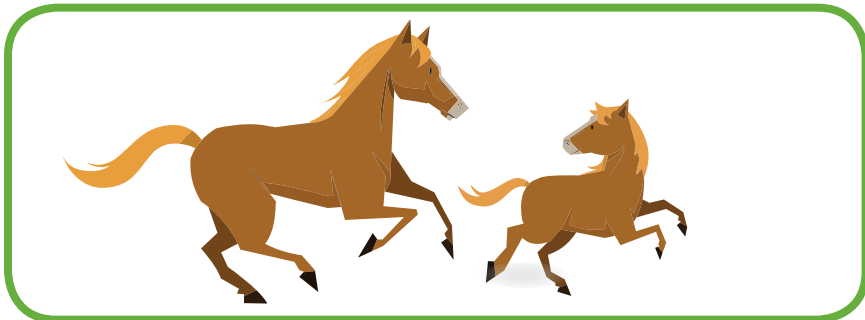


Have children use red and yellow crayons to color a group of animals or objects to show $3 + 1$ and then tell the total. Then have children use two

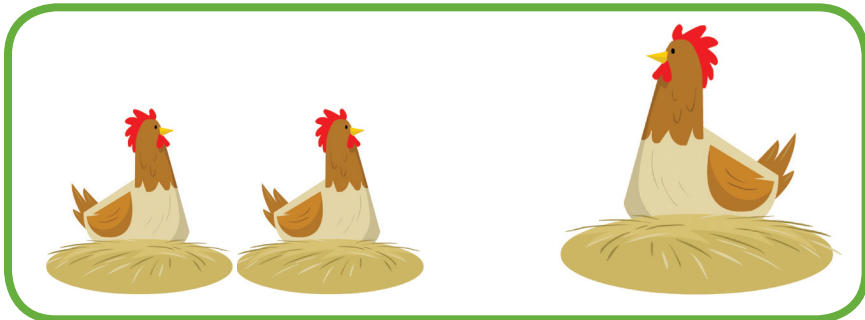
other colors to color a group of animals or objects to show $2 + 2$. Have children color the rest of the picture.



$$2 + 1 = 3$$



$$4 + 1 = 5$$



$$1 + 1 = 2$$

Have children match pictures to addition equations. Have children tell the number of large and small animals, as well as the total, in each picture. Read

each addition equation aloud together. Then have children draw lines to match each picture to its addition equation.

Develop Adding Within 5

Try It



Math Toolkit

• counters

$$2 + 1 = \underline{\hspace{2cm}}$$

$$2 + 1 = \text{-----}$$

$$2 + 1 = \underline{\hspace{2cm}}$$

$$3 + 1 = \underline{\hspace{2cm}}$$

$$3 + 1 = \text{-----}$$

$$3 + 1 = \underline{\hspace{2cm}}$$

$$2 + 2 = \underline{\hspace{2cm}}$$

$$2 + 2 = \text{-----}$$

$$2 + 2 = \underline{\hspace{2cm}}$$

$$2 + 3 = \underline{\hspace{2cm}}$$

$$2 + 3 = \text{-----}$$

$$2 + 3 = \underline{\hspace{2cm}}$$

Have children make up a story for each addition equation and use counters to act out the story. Have them count the counters and write the total. Read the equation aloud and connect it back to the counters and the story.

Discuss It What is $2 + 2$? What is $2 + 3$? How can you tell?

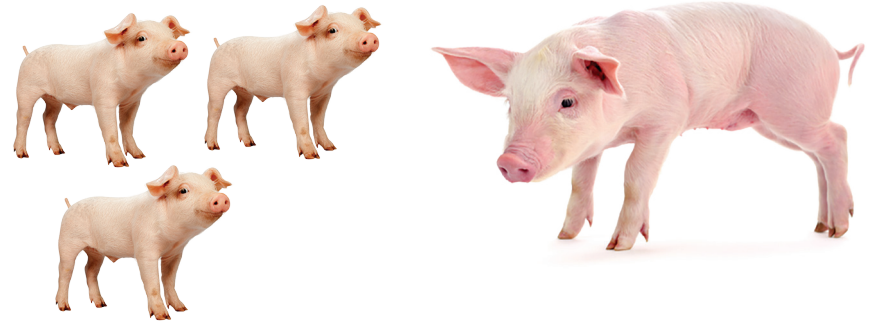
Connect It



$$2 + 1 = \underline{\hspace{2cm}}$$

$$2 + 1 = \text{-----}$$

$$2 + 1 = \underline{\hspace{2cm}}$$



$$3 + 1 = \underline{\hspace{2cm}}$$

$$3 + 1 = \text{-----}$$

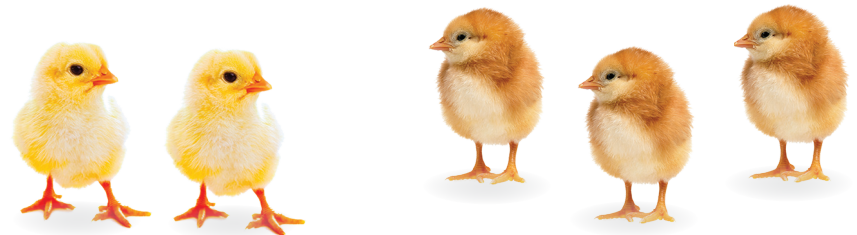
$$3 + 1 = \underline{\hspace{2cm}}$$



$$2 + 2 = \underline{\hspace{2cm}}$$

$$2 + 2 = \text{-----}$$

$$2 + 2 = \underline{\hspace{2cm}}$$



$$2 + 3 = \underline{\hspace{2cm}}$$

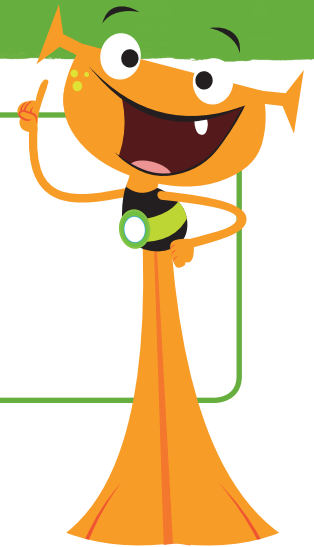
$$2 + 3 = \text{-----}$$

$$2 + 3 = \underline{\hspace{2cm}}$$

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

Discuss It Which is more, 2 + 1 or 3 + 1? How can you tell?

Practice Adding Within 5



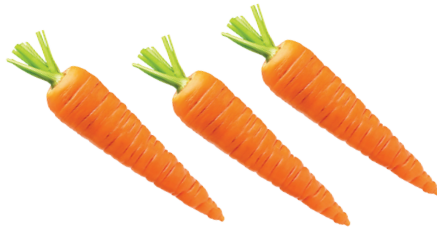
Example



$$1 + 1 =$$



$$1 + 2 =$$



$$1 + 3 =$$



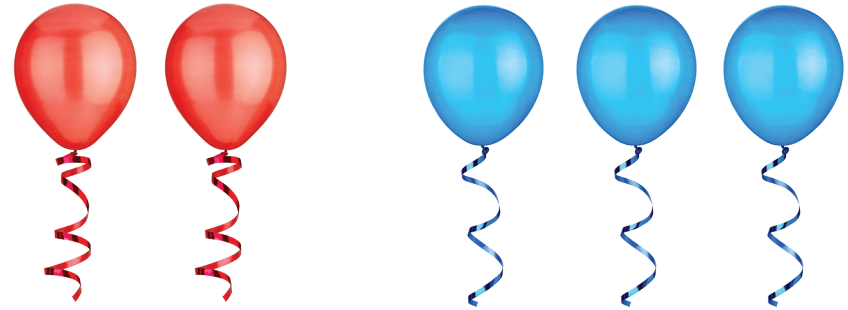
$$1 + 4 =$$

Have children compare each equation to 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.



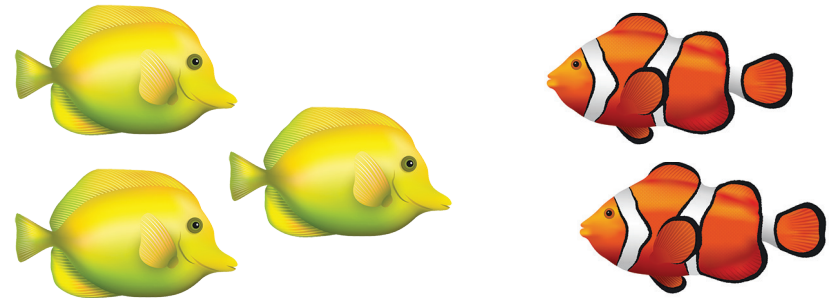
$$2 + 1 = \underline{\hspace{2cm}}$$



$$2 + 3 = \underline{\hspace{2cm}}$$



$$2 + 2 = \underline{\hspace{2cm}}$$



$$3 + 2 = \underline{\hspace{2cm}}$$

Have children compare each equation to the pictured addition problem and then complete the equation. Have children read the completed

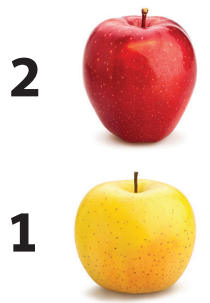
equation aloud. Have them relate the written total to the number of objects shown.

Refine Adding Within 5

Apply It

Math Toolkit

- counters
- crayons



--	--	--	--	--

$$2 + 1 = \underline{\hspace{2cm}}$$

$$2 + 1 = \text{-----}$$

$$2 + 1 = \underline{\hspace{2cm}}$$

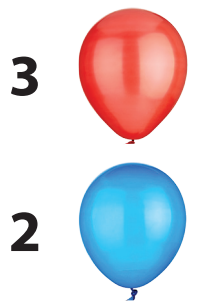


--	--	--	--	--

$$3 + 1 = \underline{\hspace{2cm}}$$

$$3 + 1 = \text{-----}$$

$$3 + 1 = \underline{\hspace{2cm}}$$



--	--	--	--	--

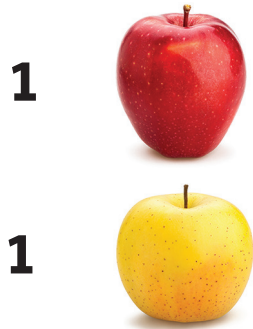
$$3 + 2 = \underline{\hspace{2cm}}$$

$$3 + 2 = \text{-----}$$

$$3 + 2 = \underline{\hspace{2cm}}$$

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?



--	--	--	--	--

$$1 + 1 = \underline{\hspace{2cm}}$$

$$1 + 1 = \text{-----}$$

$$1 + 1 = \underline{\hspace{2cm}}$$

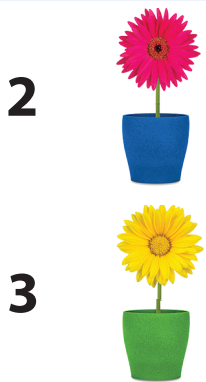


--	--	--	--	--

$$4 + 1 = \underline{\hspace{2cm}}$$

$$4 + 1 = \text{-----}$$

$$4 + 1 = \underline{\hspace{2cm}}$$



--	--	--	--	--

$$2 + 3 = \underline{\hspace{2cm}}$$

$$2 + 3 = \text{-----}$$

$$2 + 3 = \underline{\hspace{2cm}}$$


Have children make up a story problem for each situation, color the 5-frame to model the story, and then count and write the total. Read the completed equation aloud, and connect the written total with the story problem.


Discuss It Which two problems have the same total?

Practice Adding Within 5

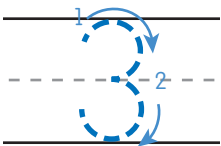



Example


2 

1 

--	--	--	--	--


$2 + 1 =$ 


2 

2 

--	--	--	--	--

$2 + 2 =$ _____

2 


3 

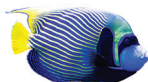
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$2 + 3 =$ _____

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.

3 


1 


--	--	--	--	--

$$3 + 1 = \underline{\hspace{2cm}}$$

$$ = \text{-----}$$

$$ = \underline{\hspace{2cm}}$$

3 


2 


--	--	--	--	--

$$3 + 2 = \underline{\hspace{2cm}}$$

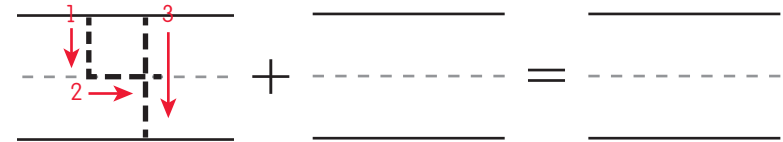
$$ = \text{-----}$$

$$ = \underline{\hspace{2cm}}$$

4 

1 

--	--	--	--	--



$$+ \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

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 complete the equation.

Read the completed equation aloud together and relate it to the story problem.

Refine Adding Within 5

Apply It

--	--	--	--	--



Math Toolkit

- two-color counters
- crayons

$$4 = \overset{\text{?}}{\underline{\quad}} + \overset{\text{?}}{\underline{\quad}}$$

$$4 = \text{---} + \text{---}$$

$$4 = \underline{\quad} + \underline{\quad}$$

$$5 = \overset{\text{?}}{\underline{\quad}} + \overset{\text{?}}{\underline{\quad}}$$

$$5 = \text{---} + \text{---}$$

$$5 = \underline{\quad} + \underline{\quad}$$

$$5 = \overset{\text{?}}{\underline{\quad}} + \overset{\text{?}}{\underline{\quad}}$$

$$5 = \text{---} + \text{---}$$

$$5 = \underline{\quad} + \underline{\quad}$$

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.

--	--	--	--	--

$$3 = \frac{\text{?}}{\text{---}} + \frac{\text{?}}{\text{---}}$$

--	--	--	--	--

$$4 = \frac{\text{?}}{\text{---}} + \frac{\text{?}}{\text{---}}$$

--	--	--	--	--

$$5 = \frac{\text{?}}{\text{---}} + \frac{\text{?}}{\text{---}}$$

Have children choose two numbers to make each total. Have them color the 5-frame with red and yellow crayons to show those numbers and then write the numbers to complete the equation. Explain that there are multiple correct answers.

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

Teacher Sample, Lesson 17

The *Ready Classroom Mathematics* Teacher's Guide includes support for planning, differentiation, and facilitating meaningful mathematical discourse.

The following pages, 329a–348b, represent a complete teacher lesson that corresponds to the student lesson included in this sample.

CCSS Focus

**Domain**

Operations and Algebraic Thinking

Cluster

A. Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

Standards

K.OA.A.2 Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem.

K.OA.A.5 Fluently add and subtract within 5.

Additional Standard

K.OA.A.1 (See Standards Correlations at the end of the book for full text.)

Standards for Mathematical Practice (SMP)

- 1 Make sense of problems and persevere in solving them.
- 2 Reason abstractly and quantitatively.
- 3 Construct viable arguments and critique the reasoning of others.
- 4 Model with mathematics.
- 5 Use appropriate tools strategically.
- 6 Attend to precision.
- 7 Look for and make use of structure.

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.

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

Prerequisite Skills

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

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.

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.

**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

Lesson Pacing Guide

Teacher Toolbox

Whole Class Instruction

SESSION 1 Explore 45–60 min	Adding Within 5 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Add Within 5 Make 5 with Dot Cards
SESSION 3 Develop 45–60 min	Adding Within 5 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> Adding Within 5
SESSION 4 Refine 45–60 min	Adding Within 5 <ul style="list-style-type: none"> Start 5 min Apply It 30 min Close: Exit Ticket 5 min 	Additional Practice Lesson pages 345–346
SESSION 5 Refine 45–60 min	Adding Within 5 <ul style="list-style-type: none"> Start 5 min Apply It 15 min Small Group Differentiation 20 min Close: Exit Ticket 5 min 	Lesson Quiz

Small Group Differentiation

RETEACH Tools for Instruction Grade K <ul style="list-style-type: none"> Lesson 17 Add Within 5
REINFORCE Math Center Activities Grade K <ul style="list-style-type: none"> Lesson 17 Add and Move
EXTEND Enrichment Activity Grade K <ul style="list-style-type: none"> Lesson 17

i-Ready

Independent Learning

PERSONALIZE i-Ready Lessons* Grade K <ul style="list-style-type: none"> Number Partners for 3 Number Partners for 4 and 5 Learning Games <ul style="list-style-type: none"> Hungry Guppy Hungry Fish Match

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

**Used for more than one activity.

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

Teacher pages have been reduced. Actual book size is 10 1/4" X 12".

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

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



$2 + 1 = 3$




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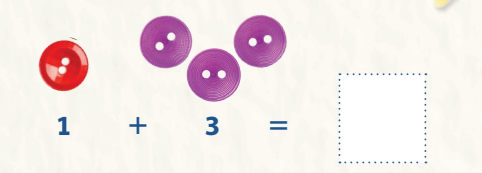
Activity Adding Within 5

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.





$1 + 3 = \square$

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**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

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.



English Language Learners:
Differentiated Instruction

Prepare for Session 1
Use with Connect It.

Levels 1–3

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.

Levels 2–4

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.

Levels 3–5

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?*

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have been reduced.
Actual book size is
10 1/4" X 12".

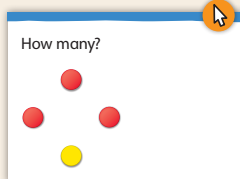
Purpose In this session children act out add-to addition situations and then model the same situation with counters. Then they see the addition situation expressed as a written addition equation.

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.

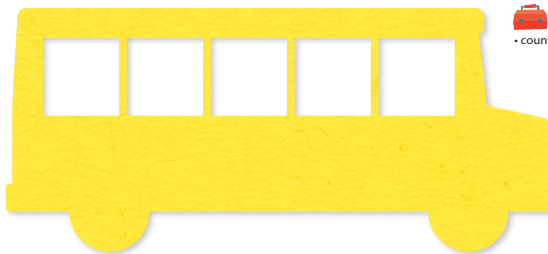
Try It

Check that children correctly write the equation.

Learning Target

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

Math Toolkit
counters



$$\boxed{1} + \boxed{2} = \boxed{3}$$

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.

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Lesson 17 Add Within 5

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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.

**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

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. [$3 + 1 = 4$]

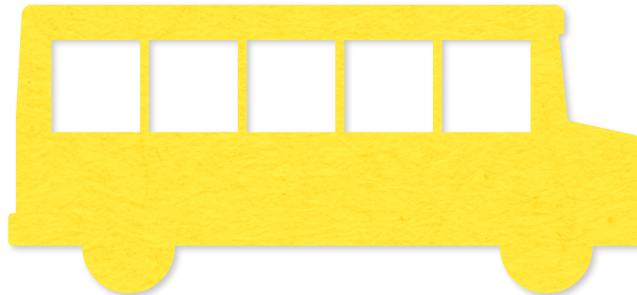
Have children complete the equation on the Student Worktext page.

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.

Connect It

Check that children correctly write the equation.



$$\begin{array}{|c|} \hline 3 \\ \hline \end{array} + \begin{array}{|c|} \hline 1 \\ \hline \end{array} = \begin{array}{|c|} \hline 4 \\ \hline \end{array}$$

Have children use a 5-frame and counters to act out another addition problem and read a corresponding equation. Say: *There are 3 children on the bus. 1 girl gets on the bus. How many children are on the bus now?*


Have children use counters and the 5-frame to model the problem. Have children help you complete the equation on the board. Then children write the equation. Read the equation aloud together.

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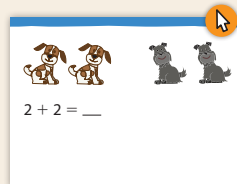
Lesson 17 Add Within 5

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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.

Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".

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

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.

Name: _____ LESSON 17 SESSION 1

Prepare for Adding Within 5

Possible answer:

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.

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Lesson 17 Add Within 5 **333**

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; $2 + 3 = 5$

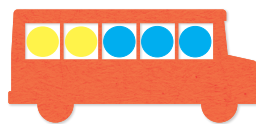
Medium

- Drawing should show 2 counters; $3 + 2 = 5$

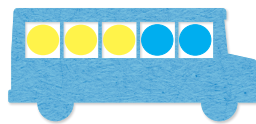
Medium

- Drawing should show 1 counter; $4 + 1 = 5$

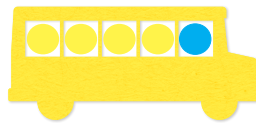
Medium



$$\underline{2} + \underline{3} = \underline{5}$$



$$\underline{3} + \underline{2} = \underline{5}$$



$$\underline{4} + \underline{1} = \underline{5}$$

Have children complete 5-frames to represent addition problems and write the corresponding equations. Pose an addition story problem for the first bus. Say: *There are 2 girls on the bus. 3 boys get on the bus. How many*

children are on the bus now? Have children draw counters to complete the 5-frame. Write $2 + 3 = 5$ and have children write the equation. Repeat for the other two buses.



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.

**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

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?*

Children circle the pigs and the sheep.



Encourage children to describe addition problems for each group of animals. Provide an example, such as 3 little pigs and 1 big pig is 4 pigs. Have children circle the two groups of animals that show 3 plus 1.

Discuss It How is the group of sheep like the group of pigs?

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Lesson 17 Add Within 5

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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.

**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

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

Support Whole Class Discussion

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

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

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.

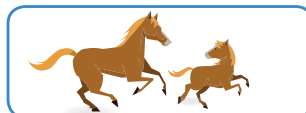
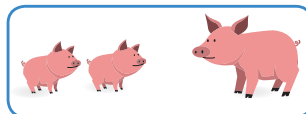
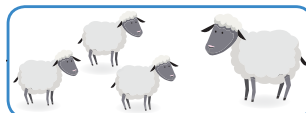
Have children draw a line to match $2 + 1$ to the group of pigs.

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.

Connect It

Math Toolkit
counters



$$2 + 1 = 3$$

$$1 + 1 = 2$$

$$3 + 1 = 4$$

Have children match pictures to equations. Have children tell the number of large and small animals and the total in each picture. Then have them say each equation aloud, use counters to model it, and draw a line from the picture to the equation that matches.

Discuss It How are the addition equations alike? How are they different?

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Lesson 17 Add Within 5

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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.

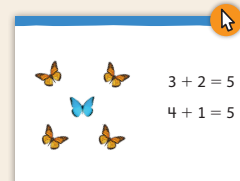
Ask What different stories can you tell for $2 + 1 = 3$?

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.



$$3 + 2 = 5$$

$$4 + 1 = 5$$

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.

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Lesson 17 Add Within 5 **337**

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.

**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

Solutions

Children should find the following matches.

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

LESSON 17 SESSION 2

2 + 1 = 3

4 + 1 = 5

1 + 1 = 2

Have children match pictures to addition equations. Have children tell the number of large and small animals, as well as the total, in each picture. Read

each addition equation aloud together. Then have children draw lines to match each picture to its addition equation.

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Lesson 17 Add Within 5

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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.

**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

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

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

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

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?

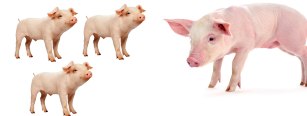
Listen for $2 + 2$ has a total of 4. $2 + 3$ has a total of 5. There are 2 and 2 counters for 4. There are 2 and 3 counters for 5. 3 is 1 more than 2.

Teacher pages have been reduced. Actual book size is 10 1/4" X 12".

Connect It



$$2 + 1 = \underline{\quad 3 \quad}$$



$$3 + 1 = \underline{\quad 4 \quad}$$



$$2 + 2 = \underline{\quad 4 \quad}$$



$$2 + 3 = \underline{\quad 5 \quad}$$

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

Discuss It Which is more, $2 + 1$ or $3 + 1$? How can you tell?

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Lesson 17 Add Within 5

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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 to the pictured addition problem, then count and write 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.

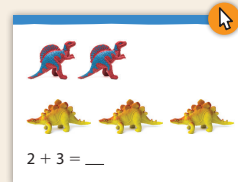
Generalize Prompt children to recognize that there are many ways to compare quantities.

Close: Exit Ticket



Materials none, children use their fingers to count

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



$$2 + 3 = \underline{\quad}$$

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.

Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".

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 to 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.

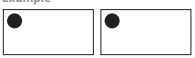
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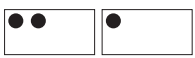
Fluency & Skills Practice **Teacher Toolbox**

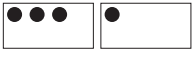
Assign Adding Within 5

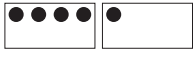
Fluency and Skills Practice
Adding Within 5 Name _____

Example

 $1 + 1 = 2$

 $2 + 1 = \dots$

 $3 + 1 = \dots$

 $4 + 1 = \dots$

Guide children to write number sentences to match the dot cards. Have children write the total in each number sentence.

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**Teacher pages
have been reduced.
Actual book size is
10 1/4" X 12".**

Solutions

• $2 + 1 = 3$

Medium

• $2 + 3 = 5$

Medium

• $2 + 2 = 4$

Medium

• $3 + 2 = 5$

Medium



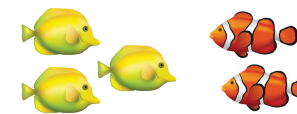
$2 + 1 = 3$



$2 + 3 = 5$



$2 + 2 = 4$



$3 + 2 = 5$

Have children compare each equation to 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.



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.*

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have been reduced.
Actual book size is
10 1/4" X 12".**

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

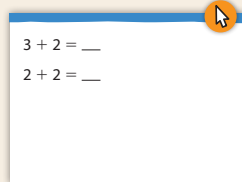
Connect to Prior Knowledge

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.



Solution 5, 4

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

Apply It

2 1
 $2 + 1 = \underline{\quad 3 \quad}$

3 1
 $3 + 1 = \underline{\quad 4 \quad}$

3 2
 $3 + 2 = \underline{\quad 5 \quad}$

Math Toolkit
 • counters
 • crayons

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

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.

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

Discuss It

Support Whole Class Discussion

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.

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.

Teacher pages have been reduced. Actual book size is 10 1/4" X 12".

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.


Rick has 4 apples.
He gets 1 more apple.
How many apples does he have now?
4 + 1 = ___


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.


1 

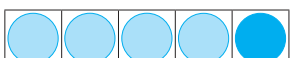
1 




1 + 1 = 2


4 


1 



4 + 1 = 5

2 

3 



2 + 3 = 5

Have children make up a story problem for each situation, color the 5-frame to model the story, and then count and write the total. Read the completed equation aloud, and connect the written total with the story problem.

Discuss It! Which two problems have the same total?

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.

Teacher pages have been reduced. Actual book size is 10 1/4" X 12".

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



$2 + 1 = \underline{\quad 3 \quad}$

1



2



$2 + 2 = \underline{\quad 4 \quad}$

2



2



$2 + 3 = \underline{\quad 5 \quad}$

3



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.

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Lesson 17 Add Within 5

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**Teacher pages
 have been reduced.
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 10 1/4" X 12".**

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;
 $4 + 1 = 5$


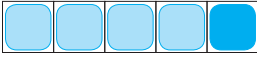
Challenge


3   $3 + 1 = \underline{4}$

1 

3   $3 + 2 = \underline{5}$

2 

4   $4 + 1 = \underline{5}$

1 

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 complete the equation.

Read the completed equation aloud together and relate it to the story problem.

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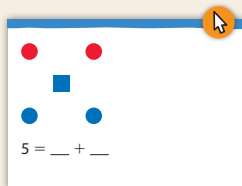
Purpose In this session children work with addition equations where both addends are unknown. They use counters to model various solutions.

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 $5 + 0$.

Apply It

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

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

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.

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

$4 = \frac{?}{3} + \frac{?}{1}$

$5 = \frac{?}{4} + \frac{?}{1}$



$5 = \frac{?}{3} + \frac{?}{2}$

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.

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



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

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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?

$$4 + 1 = \underline{\quad}$$



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.

Pictures will vary. Make sure the colors of the counters children draw on the 5-frame match the numbers they write in the equation.



$$3 = \overset{?}{\underline{2}} + \overset{?}{\underline{1}}$$



$$4 = \overset{?}{\underline{2}} + \overset{?}{\underline{2}}$$



$$5 = \overset{?}{\underline{4}} + \overset{?}{\underline{1}}$$

Have children choose two numbers to make each total. Have them color the 5-frame with red and yellow crayons to show those numbers and then write the numbers to complete the equation. Explain that there are multiple correct answers.

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

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.

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have been reduced.
Actual book size is
10 1/4" X 12".

Tested Skills**Assesses** K.OA.A.2, K.OA.A.5

Problems on this quiz require children to be able to solve addition problems within 5 using pictures and find pairs of addends to make a given total. Children will also need to be familiar with counting up to 5 objects and recognizing the plus (+) and equal (=) signs.

Error Alert Children may:

- not recognize that an addition problem requires joining two quantities together to find a total.
- not correctly associate quantities with their written numbers.
- not realize that different addend pairs can make a given total.
- not keep track while counting objects.

Solutions

- $1 + 2 = 3$
Children write the total, 3.
1 point
DOK 2
- $2 + 2 = 4$
Children write the total, 4.
1 point
DOK 2
- $4 + 1 = 5$
Children write the total, 5.
1 point
DOK 2



$$1 + 2 = \underline{3}$$



$$2 + 2 = \underline{4}$$



$$4 + 1 = \underline{5}$$

Have children compare each picture with the equation to help them solve each addition problem. Tell an addition story for each set of pictures, such as: A mother bird is flying with her 2 baby birds. How many birds are flying in all? Then have children count and write the total to complete the equation.




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have been reduced.
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Answers will vary. Check that the colors of the counters children draw match the numbers they write in the equation. Also, check that children choose numbers that add up to the given total. Possible answers:



$$4 = \overset{?}{\underline{\quad}} + \overset{?}{\underline{\quad}}$$

(The number 3 is written in the first blank, and the number 1 is written in the second blank.)



$$5 = \overset{?}{\underline{\quad}} + \overset{?}{\underline{\quad}}$$

(The number 3 is written in the first blank, and the number 2 is written in the second blank.)

Have children color the first counter blue and the second counter yellow above each equation. Then have children draw blue and yellow counters in each 5-frame to show one way to get the total in the equation. Ask children to write the numbers to match each model and complete the equation.



- Possible answers: $3 + 1$, $1 + 3$, $2 + 2$, $0 + 4$, $4 + 0$; Number of counters drawn should match the addends children write and should match the total in the equation.

5 points

DOK 2

- Possible answers: $3 + 2$, $2 + 3$, $1 + 4$, $4 + 1$, $5 + 0$, $0 + 5$; Number of counters drawn should match the addends children write and should match the total in the equation.

5 points

DOK 2

Differentiated Instruction

Teacher Toolbox

RETEACH

Tools for Instruction

Children who require additional support for prerequisite or on-level skills

Will benefit from activities that provide targeted skills instruction

- Grade K, Lesson 17

REINFORCE

Math Center Activities

Children who require additional practice to reinforce concepts and skills and deepen understanding

Will benefit from small group collaborative games and activities (available in three versions—on-level, below-level, and above-level)

- Grade K, Lesson 17

EXTEND

Enrichment Activities

Children who have achieved proficiency with concepts and skills and are ready for additional challenges

Will benefit from group collaborative games and activities that extend understanding

- Grade K, Lesson 17

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Sampler