

Unit 9 Number Sense: Addition within 10

Introduction

In this unit, students build on Unit 8 by decomposing and recomposing quantities up to 10 and by adding quantities with a total less than or equal to 10. After becoming familiar with ten-frames, students will follow the sequence of the previous unit. They will act out addition situations. Then, they will represent the numbers 6 to 10 as two parts. Next, they will return to addition situations, representing them first with objects and then with pictures. Situations for adding to and putting together, now familiar to students, are treated together. However, at each new level of abstraction, students will begin by adding two numbers that are both less than 5 and then proceed to addition in which one number may be greater than 5. Finally, students will begin adding within 10 without a context.

In this unit, as in the previous unit, we often engage students through movement and imagination. One way to accomplish the latter is through storytelling. If possible, have students create themed finger puppets (such as animal finger puppets) that can be used throughout the unit for telling addition stories.

Some students will already be familiar with addition notation while other students will not. Lessons NSK-57 to NSK-60 give alternatives for both groups of students.

Meeting Your Curriculum

Alberta—Lessons NSK-55 to NSK-60 on decomposing numbers up to 10 are required. The counting lesson, NSK-54, is recommended. All other lessons in this unit are optional. However, we suggest teaching Lessons NSK-61 and NSK-63 to complete student exposure to addition through the use of manipulatives.

British Columbia—Lessons NSK-55 to NSK-60 on decomposing numbers up to 10 are required, as are Lessons NSK-61 and NSK-63 to complete student exposure to addition through the use of manipulatives. The counting lesson, NSK-54, is recommended. All other lessons in this unit are optional.

Manitoba—Lessons NSK-55 to NSK-60 on decomposing numbers up to 10 are required. The counting lesson, NSK-54, is recommended. All other lessons in this unit are optional. However, we suggest teaching Lessons NSK-61 and NSK-63 to complete student exposure to addition through the use of manipulatives.

Ontario—All lessons in this unit are required except for Lesson NSK-65. However, we suggest teaching this lesson as it completes the formal introduction to addition within 10.

Materials. As an alternative to paper five- and ten-frames, many activities in this unit give students the option to use frames made from egg cartons. To make five-frames, cut out rows of five cups. To make a ten-frame, cut off two cups from one end of the carton.

In addition to the BLMs provided at the end of this unit, the following Generic BLMs, found in section S, are used in Unit 9:

BLM Hundreds Chart (p. S-1)
BLM Number Cards 0 to 5 (p. S-10)
BLM Ten-Frames (p. S-29)
BLM Number Cards 6 to 10 (p. S-11)
BLM Dominoes (pp. S-15–17)
BLM Making a Number (p. S-13)
BLM Pets (pp. S-22–23)
BLM Addition Story Blanks (p. S-21)
BLM Animal Cards (pp. S-18–19)
BLM I Have ___, Who Has ___? (p. S-20)
BLM Addition (p. S-24)
BLM Game Cards (p. S-12)
BLM Additions within 5 (pp. S-25–26)
BLM Adding Three Numbers (pp. S-27–28)
BLM Number Lines (p. S-9)

Recurring activities. The following activities recur several times in the unit, with variations.

Adding with Objects in Frames

Type: Individual

Objective: To find the total in addition stories using frames

Preparation: In advance, fill in **BLM Addition Stories to 10** using numbers from 1 to 5, and cut them into story strips. Make the story strips available at the centre. Provide each student with counters or blocks and **BLM Addition with Five-Frames** or 2 five-frames made from egg cartons. Another option is to provide blank story strips and cards for 1 to 5 from **BLM Number Cards 0 to 5**.

Instructions: Students choose a story strip. They use counters to model the story on a five-frame and write the total on the story strip. As an option, provide blank story strips and number cards for 1 to 5. Students pick two cards to fill in their story strip.

Telling Addition Stories with Frames

Type: Pairs, imaginative

Objective: To make and answer addition stories

Preparation: Give each student pair counters or blocks and **BLM Addition with Five-Frames** or 2 five-frames made from egg cartons. Another option is to give students miniature models of animals (or a set of **BLM Animal Cards**) to illustrate their stories and number cards from **BLM Number Cards 0 to 5** to determine how many.

Explanation: SAY: You can make your own number stories and tell them to each other. To the first student in the pair, ASK: What would you like your story to be about? (sample answer: horses) How many horses are there? Pick a number from 1 to 5. (sample answer: 3) SAY: So, there are three horses. Give the second student in the pair 2 five-frames and SAY: Put three horses in a five-frame. ASK: What can we use for horses? (counters or blocks) Have the second student put three counters or blocks in a five-frame. To the first student, ASK: How many more horses come? (sample answer: 4) To the second student, ASK: How many counters or blocks go in the other five-frame? (4) Have the second student put four counters or blocks in the other five-frame. ASK: How many horses are there in all? (7) Have students take turns telling stories and adding. You may wish to have students record their addition stories using **BLM Addition Story Blanks**.

Adding Jumps in Frames

Type: Pairs, active

Objective: To count and then add the number of jumps

Preparation: Give each student pair counters or blocks and **BLM Addition with Five-Frames** or 2 five-frames made from egg cartons. Another option is to distribute two sets of cards for 1 to 5 from **BLM Number Cards 0 to 5**.

Instructions: Player 1 jumps up to five times. In the first five-frame, Player 2 puts one counter for each jump. Player 1 then jumps again up to five times. In the second five-frame, Player 2 places one counter for each jump. Together, players count the counters. Have players switch roles and repeat. As an option, distribute two sets of cards for 1 to 5 from **BLM Number Cards 0 to 5**. Without showing Player 2, Player 1 selects a card before each set of jumps and jumps that many times. You may wish to have students record their jumps using **BLM Addition Story Blanks**.

Assessment. The assessment checklist for this unit can be found in section T.

NSK-54 Counting to 90

Page 59

CURRICULUM REQUIREMENT

AB: recommended
BC: recommended
MB: recommended
ON: required

VOCABULARY

count
number

Goals

Students will count fluently to 90.

PRIOR KNOWLEDGE REQUIRED

Can count to 80

MATERIALS

number cards for 81 to 90
modelling clay (see Activity Centre 1)
paint, paintbrushes, and large sheets of paper (see Activity Centre 2)
sand table or sandpaper cut into the shape of the number 8
(see Activity Centre 3)
counters, at least 90 per student (see Extension 1)
BLM Hundreds Chart (p. S-1, see Extension 1)

Counting practice. Practise counting to 80 as a class (see Introduction, p. A-23). Play “Let’s Compare” using numbers between 1 and 10.

Learning numbers to 90. ASK: What comes after 30 when we count? (31) PROMPT: We say 27, 28, 29, 30 ...? ASK: What comes after 40? (41) Repeat for 50 (51), 60 (61), and 70 (71). ASK: What do you think comes after 80? (81) What comes after 81? (82) Continue prompting to 89. ASK: What do you think comes after 89? (90) Clearly say “90.” Practise counting from 80 to 90 as a class. Add movement to the counting, such as jumping as each number is spoken.

Counting one at a time. Start at 80. Work through the class and have each student say the next number until you reach 90. Repeat until everyone has had a turn.

Adding 81 to 90 to the number chart. Make enough number cards for 81 to 90 available so that each student has one card and you have a set of cards. Distribute a number card to each student. ASK: Whose number has an 8 and a 1? Direct students who have that number (81) to hold up their card, and have a volunteer place one of these cards on the number chart. Make sure the number is oriented correctly. Continue until all the numbers have been added to the chart. Have the class say the count sequence from 81 to 90 as you point to each numeral on the chart, so that students begin to associate the spoken and written numbers.

Counting 1 to 90. As a class, count from 1 to 90. You may want to have one or more students lead the count, allowing each student to count at least 10 numbers. You may also want to point to the numerals on the number chart as everyone counts.

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ACTIVITY

Play **I Start, You Finish** (see Introduction to Unit 1, p. C-2) for the numbers from 80 to 90 as a class, then in pairs.

Preparing for the AP pages. Most students may be able to practise writing 8s directly on AP Book K.2, Unit 9, p. 59, but students who are still struggling with writing may benefit from other types of practice first, such as the practice provided in one or more of the following activity centres.

Activity Centres

For guidance on selecting and using the activity centres, see Introduction, p. A-17.

1. Clay Numbers

Type: Individual, creative

Objective: To practise making the number 8 using clay

Preparation: Provide modelling clay.

Instructions: Have students make the number 8 in clay.

2. Painting Numbers

Type: Individual, creative

Objective: To practise painting the number 8

Preparation: Provide paint, a paintbrush, and large sheets of paper to each student.

Instructions: Have students paint the number 8 on paper.

3. Numbers in Sand

Type: Individual

Objective: To practise forming or tracing the number 8

Preparation: Provide a sand table or a sandpaper number 8 to each student.

Instructions: Have students write the number 8 in a sand table or gently trace it with their finger on sandpaper.

Extensions

1. Distribute at least 90 counters and **BLM Hundreds Chart** to each student. Have students place one counter per square, counting as they go, until they reach 90.
2. Have students play **I Start, You Finish** (see Introduction to Unit 1, p. C-2) in pairs, starting from a number less than 80 and continuing until 90.
3. **Counting correctly or incorrectly?** Say the count sequence from 80 to 90 but make a mistake; for example, skip a number or repeat a number. Students should raise their hand or say “Stop” when you make a mistake. Ask them to explain your mistake. **NOTE:** This extension can be done in pairs.

Bonus: Say the entire sequence, sometimes correctly and sometimes making a mistake. When you reach 90, have students say if you counted correctly or not.

4. Put the number cards for 81 to 90 on the board in order but with one adjacent pair reversed. Ask a volunteer to come to the board and correct the mistake. This is a great exercise for generating excitement among the class and raising the bar. You can increase the challenge by making two mistakes or rearranging three cards.
5. Remove the number cards from the hundreds chart for the numbers 11 to 20 and 81 to 90. Place them on the board in two rows, as shown below:

11	12	13	14	15	16	17	18	19	20
----	----	----	----	----	----	----	----	----	----

81	82	83	84	85	86	87	88	89	90
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Remove the 14 card and the 84 card. Hold up one of the two cards and ASK: Where does this card belong? Does it belong here (point to the spot for 14)? Does it belong here (point to the spot for 84)? Students signal thumbs up for “yes” or thumbs down for “no.” You might point out that both number cards end with a 4, so students need to look at the other number on the number card (the 1 or the 8). Point out that all the number cards in the top line start with a 1, while all the number cards in the bottom line start with an 8. After placing the 14 and the 84 back in the correct positions, repeat the exercise with another pair of number cards directly on top of each other.

After repeating several times, increase the challenge by using number cards that are not vertically aligned (e.g., 83 and 17) so that both digits are different. (If all students are signalling the correct answers, you might want to try the pair 81 and 18; this could be very challenging for students since these numbers involve the same digits.) Then, remove the number cards from 11 to 20, replace them with the number cards from 21 to 30, and repeat the exercise.

NSK-55 Acting Out Addition to 10

Pages 60–61

CURRICULUM REQUIREMENT

AB: required
BC: required
MB: required
ON: required

VOCABULARY

add
all
equals
in all
more
plus

Goals

Students will act out additions within 10 with their bodies or with puppets.

PRIOR KNOWLEDGE REQUIRED

Can count up to 10 objects
Can count on up to 10

MATERIALS

finger puppets (optional)
scissors, glue, construction paper, and magazine pages with pictures of people
BLM Number Cards 0 to 5 (p. S-10, see Extensions 1, 2)
small toys (see Extension 2)

Counting practice. Practise counting to 90. You may wish to have one or several students lead the count.

Acting out a number story. SAY: I am going to tell a story that has numbers in it. There are three children at a picnic. Then, four more children join the picnic. The end. ASK: At the end of the story, how many children are at the picnic? (let students answer; do not respond to the answers) Are you sure? SAY: Let's act out the story and check. When the story starts, there are three children at a picnic. Ask three volunteers to represent the children and stand in a row in front of the class. SAY: Let's check that there are three children. Stand behind the three volunteers, and have them count as you put your hand above each head. (If you have a counting routine that differs from this, use your routine.) SAY: Then, four more children join the picnic. Have volunteers represent four more children. Repeat by counting the four new volunteers, starting again at one. ASK: How can we find how many children are at the picnic now? (count) Have the volunteers count aloud. (7)

Practise adding and addition language. Repeat acting out number stories with various other scenarios using the terms “plus,” “equals,” “in all,” and “add.” To begin, both numbers should be less than or equal to 5. If finger puppets are available, tell the stories using puppet characters. Include “Put Together” stories, and link them to the cultures of your students when possible. You might invite students to take turns telling similar stories about things that interest them, including their lives outside of school. Examples:

- Five children are making a sand castle. Three children are digging a hole in the sand. How many children are playing in the sand? Five children plus three children equals how many children playing in the sand? (8)
- Four puppies are running. Four kittens are jumping. Four puppies plus four kittens equals how many pets playing in all? (8)

- Two spiders are climbing a wall. (Have students use their hands and pretend they are spiders.) Six more spiders start climbing the wall. How many spiders are climbing the wall in all? (8)
- Sam catches three salmon. Ella catches four salmon. How many salmon did they catch in all?

ACTIVITY

Distribute scissors, glue, construction paper, and magazine pages with pictures of people. Students cut out pictures to create their own addition stories. At the bottom of the page, they write the number of people in all.

Preparing for the AP pages. For **Question 1** on AP Book K.2, Unit 9, p. 60, point to the picture and SAY: The first picture shows how many bunnies are at the start. The second picture shows how many more bunnies come. You need to write how many bunnies in all.

Extensions

1. In large groups, have one student tell an addition story while the others act it out. Students can use two sets of number cards from **BLM Number Cards 0 to 5** to decide how many at the start and how many more. Students decide together how many in all. Students take turns telling a story.
2. In pairs, have students take turns telling addition stories using small toys. Students can use two sets of number cards from **BLM Number Cards 0 to 5** to decide how many at the start and how many more. Either Student 1 tells the whole story or Student 1 might start the addition story by saying, for example, "There are two bunnies eating carrots." Student 2 adds to the story by saying, for example, "And five bunnies are eating celery." Students decide together how many in all.

NSK-56 Counting Out 10

Pages 62–64

CURRICULUM REQUIREMENT

AB: required
BC: required
MB: required
ON: required

VOCABULARY

after
count on
five-frame
next
ten-frame

Goals

Students will count to 10, starting from any number less than 10.
Students will fill in a ten-frame using the reading pattern: from left to right and top to bottom.

PRIOR KNOWLEDGE REQUIRED

Can count to 10 starting from 1
Can count on to 10

MATERIALS

red and yellow chalk or markers
two-sided counters or blocks of two different colours
BLM Ten-Frames (p. S-29) or ten-frames made from egg cartons
BLM Number Cards 0 to 5 (p. S-10)
BLM Number Cards 6 to 10 (p. S-11)
pencil crayons or stickers (optional)
2 yarn circles per student (see Activity Centre 3)
BLM Dominoes (1) and (3) (p. S-15, p. S-17, see Activity Centre 5)
blocks or counters of three different colours, 9 of each colour per student (see Extension 4)

Counting practice. Practise counting to 90. Play **I Start, You Finish** (see introduction to Unit 1, p. C-2) as a class for the numbers from 80 to 90. You may wish to have volunteers lead this part of the class.

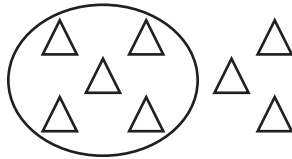
Counting up to 5. Draw three red circles on the board. ASK: How many circles did I draw? (3) SAY: I want to make five circles. ASK: How many more circles should I draw? (answers may vary) SAY: I am going to count the circles I have, and then keep counting as I draw more circles. Count “1, 2, 3” as you point to the three circles, then continue counting “4” and “5” while you draw two more circles in yellow. ASK: Did I do it correctly? Did I draw enough circles to make 5? (yes) How can you check? (count all the circles)

SAY: You can do this on your fingers, too. Show me three fingers. Now, count your fingers, and keep counting fingers on the other hand until you have counted five fingers altogether.

Repeat the board exercise, starting with four circles to make five circles. Have a volunteer draw the additional circle. While the volunteer is working on the board, have the rest of the class count on their fingers. Repeat, starting with two circles to make five circles.

Counting up to 10 by grouping 5s. Draw eight triangles on the board. Do not organize the triangles; however, make sure five of the triangles are arranged somewhat like five dots on a die face. (see below) ASK: Are there

more than five triangles or fewer than five triangles? (more) Ask a volunteer to draw a big circle around exactly five triangles. (see example below)



ASK: How many triangles are outside the circle? (3) To make five triangles outside the circle, how many more triangles do we need to draw? (2) Have a volunteer make five as they did before, by counting the three triangles and then continuing to count while drawing two more triangles. SAY: We have two groups of five triangles: five triangles inside the circle and five triangles outside the circle. Let's count how many we have altogether. As a class, count all 10 triangles. SAY: Five triangles and five triangles make 10 triangles.

Counting up to 10 without a ten-frame. SAY: Let's make 10 this time. Draw seven yellow circles on the board. ASK: How many circles did I draw? (7) Have a volunteer count to verify seven circles. Have the whole class count again and then continue counting as you draw three red circles to make 10. ASK: What are some easier ways to make sure there are 10 circles? (sample answers: draw many circles and erase the extras, write numbers in the circles, draw the circles in a line or rectangle)

Introduce ten-frames. Draw a five-frame on the board. ASK: What do we call this? (a five-frame) Why is it called a five-frame? (it has 5 boxes) SAY: Show me five on your hand. (students should hold up all 5 fingers) How many fingers do you have on both hands together? (10) Have students pair up and count all 10 of each other's fingers. Add a row to the five-frame on the board to make a ten-frame. SAY: I added five more boxes. There are five boxes for your left hand (point to the top row) and five boxes for your right hand (point to the second row). ASK: How many boxes are there in all? (10) SAY: This is a *ten-frame*. Write the numbers 1 through 10 in the boxes, counting as you write, as shown below. Leave the picture on the board for the remainder of the lesson.

1	2	3	4	5
6	7	8	9	10

Filling ten-frames. SAY: When I use a ten-frame to show a number, I fill it in this way: I count across the top first, and then I keep going across the bottom. I want to put seven counters in my ten-frame. This is how to do that. Affix seven counters to the ten-frame, counting each one as you go. Repeat with a number less than 5. Have students call out numbers for volunteers to come up to the board and fill in.

Filling an empty ten-frame. Draw a blank ten-frame on the board and practise filling it in without guiding numbers with the class. When students are comfortable with this, have them count on from the last number filled.

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For example, have a volunteer put six counters into the ten-frame (following the reading pattern). SAY: We can count on from 6 by counting the empty boxes. Point to the last counter and ASK: How many counters do we have in this ten-frame? (6) Point to the last counter and SAY: Six. Pause, and then continue counting to 10 using the reading pattern. Repeat with other examples, and have students count along with you.

Counting out 10 with a ten-frame. Draw a ten-frame on the board. Affix 8 two-sided counters to the ten-frame, all showing the same colour. ASK: How many counters are in the ten-frame? (8) Have a volunteer count if some students are unsure. Have another volunteer fill the two empty boxes with counters that show the other colour. Count all the counters as a class, pausing after 8. Repeat, beginning with three counters in the ten-frame.

ASK: How does the ten-frame help? (there is a box for each counter) How many counters go in each row of the ten-frame? (5) SAY: The ten-frame is really 2 five-frames. ASK: Was it easy to make 5s before? (yes) What is an easier way to make 10 without using a ten-frame? (make 5s twice) SAY: We know how to make 5, and we know how to make 10 by making two 5s.

ACTIVITIES 1–2

1. **Filling ten-frames.** Provide each student with counters or blocks and a ten-frame from **BLM Ten-Frames** or made from an egg carton. Provide each small group of students with number cards from **BLM Number Cards 0 to 5** and **BLM Number Cards 6 to 10**. Have students choose a number card from the pile and put that number of counters in their ten-frame.
2. **Counting out 10 with a ten-frame.** Give each student two colours of blocks (13 of each colour) or at least 15 two-sided counters, number cards for 1 to 9 from **BLM Number Cards 0 to 5** and **BLM Number Cards 6 to 10**, and a ten-frame from **BLM Ten-Frames** (or made from an egg carton). Have students draw a number card at random and fill their ten-frame with that number of blocks or counters of the first colour. Then, they use the blocks or counters of the other colour and continue counting to 10 as they fill in the ten-frame.

Variations

1. Students use two different pencil crayons to colour a ten-frame.
2. Students do not use a ten-frame.
3. Students work in pairs. Both partners draw a number and add that number of blocks or counters to a ten-frame. Partners then exchange their ten-frames. They each first count how many of the first colour are already in the ten-frame, and then continue with the second colour to 10.

Preparing for the AP pages. For AP Book K.2, Unit 9, pp. 62–64, provide pencil crayons or stickers as an alternative to drawing circles.

Activity Centres

1. Making 5

Type: Individual

Objective: To count out five objects in total, starting from a given number of objects

Preparation: Provide students with two colours of blocks (at least four of each colour) or at least 8 two-sided counters, and number cards for 1 to 4 from BLM Number Cards 0 to 5.

Instructions: Have students pick the top card from the pile. They count out that number of blocks or counters of one colour and then enough of the second colour to make 5.

2. Making 10 with a Ten-Frame

Type: Individual

Objective: To count out 10 objects in total, starting from a given number of objects

Preparation: Provide two colours of blocks (at least nine of each colour) or at least 15 two-sided counters, number cards for 1 to 9 from BLM Number Cards 0 to 5 and BLM Number Cards 6 to 10, and a ten-frame from BLM Ten-Frames (or made from an egg carton).

Instructions: Have students pick the top card from the pile. They use the number on the drawn card as the starting point, and put that many blocks or counters of one colour in the ten-frame. Then, they fill the rest of the ten-frame with the second colour of blocks or counters, counting to 10 as they go.

Bonus: Include number cards for 0 and 10.

3. Making 10 as Two Groups of 5

Type: Individual

Objective: To count out 10 objects in total, grouping them as two sets of 5

Preparation: Provide students with two colours of blocks (at least 12 of each colour) or at least 15 two-sided counters, two yarn circles, and number cards for 6 to 9 from BLM Number Cards 6 to 10.

Instructions: Students pick the top card from the pile. Using the number on the drawn card as the starting point, they count out that many blocks or counters of one colour. They place the blocks or counters they counted out into the yarn circles, putting five in the first circle and the remaining blocks or counters in the second circle. Then, students add enough blocks or counters of the other colour to the second yarn circle to make 5 in that circle as well. Finally, they verify that they have 10 blocks or counters altogether by counting.

Bonus: Include number cards for 0 through 10. For cards less than 5, students will need to complete the first circle before moving on to the second circle.

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4. **Jumping Jacks**

Type: Pairs, active

Objective: To jump 10 times in all, counting while jumping

Preparation: Give students number cards for 1 to 9 from BLM Number Cards 0 to 5 and BLM Number Cards 6 to 10.

Instructions: Have Player 1 draw a card from the pile and jump the number of times indicated by the card, while counting out loud. When Player 1 finishes, Player 2 begins to jump and continues the count to 10. Player 1 records on scrap paper how many times Player 2 jumped. Players switch roles and continue.

Bonus: Player 1 counts on fingers how many times Player 2 jumped.

Variation: Players clap instead of jump.

5. **Ten Dominoes**

Type: Individual

Objective: To make dominoes that add to 10

Preparation: In advance, cut out the half dominoes on **BLM Dominoes (1)** and **(3)**. Distribute the dominoes.

Instructions: Have students pick a domino, count the dots, and draw extra dots on the other side to make 10.

Extensions

1. **Beginnings of counting on to subtract.** Have students use their fingers or counters to keep track of how many numbers they say when they count on within 10. For example, when counting on from 6 to 10, students say four numbers (7, 8, 9, and 10). To keep track on their fingers for the given example, students raise a closed fist and say “6,” and then raise one finger for each subsequent number until they reach 10. ASK: How many fingers are you holding up? (4)

2. **Beginnings of counting on to add.** Have students count on by a certain number. For example, tell students to start at 5 and count on three numbers. ASK: What do you get? (8)

NOTE: Encourage students to use their fingers to keep track. For the given example, they raise a closed fist and say “5,” and then raise one finger for each subsequent number until they have raised three fingers.

3. Repeat Activity Centres 1–3, but ask students to use scrap paper and pencils to record how many extra were needed to make 5 or 10, respectively. They might draw a picture of the extra blocks or counters needed and write the number.
4. Repeat Activity Centre 2, but give students three colours of blocks or counters, at least nine of each colour. Have students fill the ten-frame as follows: they use the number on the drawn card as the starting count for the first colour of blocks or counters, they next fill in some more boxes on the ten-frame with the second colour, and then they fill in the remaining boxes with the third colour. Have students count how many of each colour there are.

5. Repeat the bonus from Activity Centre 3, and have students reply verbally when you ask the following questions.
- a) Will one circle always be filled with blocks or counters of the same colour? Why do you think so?
 - b) Will it always be the first circle that is filled with blocks or counters of the same colour? Why do you think so?

Answers

- a) Yes. At least one circle will always have blocks (or counters) of the same colour because I change colours only once.
- b) No. If I start with a number smaller than five, the second circle will be filled with the same colour of blocks or counters.

NSK-57 Adding Numbers to 5

Pages 65–67

CURRICULUM REQUIREMENT

AB: required
BC: required
MB: required
ON: required

VOCABULARY

add
counting

Goals

Students will develop fluency in adding to 5.
Students will explore the 5 and some more ($5 + n$) patterns for the numbers between 5 and 10.

PRIOR KNOWLEDGE REQUIRED

Can count to 10
Can count on within 10

MATERIALS

box
counters
2 dice per student pair (see Activity Centre 1, Extension 1)
dominoes or **BLM Dominoes (1)** (p. S-15, see Activity Centre 2)
BLM Additions within 10 (pp. M-46–47, see Activity Centre 2)

Counting practice. Practise counting to 90. Choose a number from 1 to 10.
ASK: What is one more? What is two more?

NOTE: This lesson was written using mathematical notation. If your students have not yet learned “+” and “=,” substitute the words “plus” or “and” and “is” or “equals,” respectively.

Making 5 to 10 with counters. Place five counters in a box. ASK: How many counters are in the box? (5) Place two counters beside the box. ASK: How many counters do you see in all, inside and outside the box? (7) Count to verify. Change the number of counters outside the box and repeat. Then, turn the box so that students cannot see the counters inside. ASK: How many counters are in the box? (5) Place one counter outside the box. ASK: How many counters in all, inside and outside the box? (6) Can we count to check? (answers may vary) Can we check without looking in the box? (yes) How do you know? (because there are 5 in the box) While pointing to the box, SAY: Five. Then, point to the additional counter and SAY: Six. Repeat with other numbers from 6 to 10.

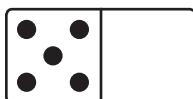
Making 5 to 10 on fingers. Have students hold up all their fingers on one hand. ASK: How many fingers are you holding up? (5) Do you have to count to check? (no) Have students show you 6 on their fingers. SAY: You have five fingers up on one hand. ASK: How many on the other hand? (1) So, 6 is 5 plus what? (1) Write “ $6 = 5 + 1$ ” on the board. ASK: If you show six fingers, do you have to count your fingers? (no, I can hold up one hand and one extra finger) Repeat for 7, and then write the addition for 7 below the addition for 6. Practise holding up six or seven fingers without counting. Repeat for 8, 9, and 10. Then, ASK: 5 plus what is 5? (0) Add the addition to the top of the list, as shown on the next page.

$$\begin{aligned}
 5 &= 5 + 0 \\
 6 &= 5 + 1 \\
 7 &= 5 + 2 \\
 8 &= 5 + 3 \\
 9 &= 5 + 4 \\
 10 &= 5 + 5
 \end{aligned}$$

Point to the numbers down the left side and have students read them out loud from top to bottom. SAY: These numbers show counting. ASK: Do you see any other numbers that show counting? (the numbers being added: 0, 1, 2, 3, 4, 5) Why do you think they both show counting? (answers may vary) SAY: To make a bigger number, we have to add a bigger number.

Practise saying additions for the numbers from 5 to 10. Show each addition on your fingers, and have students repeat the addition and the total.

Making 6 to 10 on dominoes. Draw on the board:



Point to the left side of the domino and ASK: How many dots are on this side? (5) How many dots do we need to add to make 6? (1) Have a volunteer add a dot on the right side to make 6. Repeat for 7 to 10, drawing a new domino for each number.

Making 6 to 10 with dots. SAY: Let's use a different way to show the additions. We can draw dots in lines like on a ten-frame. I will draw five dots. Draw five dots in a line on the board. (see below) SAY: Then, we can draw the extra dots below. I can show 6 by drawing one more dot. Add a dot to the board, as shown below:



Erase the dots. For each of the numbers 6 to 10, have students draw dots the same way as you just did, either from memory, by counting, or by first showing the number on their fingers and then adding as many extra dots as there are extra fingers.

Making 6 to 10 by adding to 5. Write " $6 = 5 + \underline{\quad}$ " on the board. Have a volunteer complete the sentence. Repeat to make numbers from 7 to 10 with 5 as an addend, having a different volunteer complete each number sentence. Erase all the number sentences before moving on.

Adding to 5. SAY: This time, let's start with the addition. Write on the board:

$$5 + 0 = \underline{\quad} \quad 5 + 3 = \underline{\quad} \quad 5 + 1 = \underline{\quad} \quad 5 + 4 = \underline{\quad} \quad 5 + 2 = \underline{\quad}$$

Have students signal the answer for each one, and then have a volunteer write the answer.

NOTE: If students are not familiar with "+" and "=", do not assign **Questions 19–20** on AP Book K.2, p. 67.

Activity Centres

1. Dice

Type: Pairs

Objective: To determine the number shown on two dice

Preparation: Give each student pair two dice.

Instructions: Students place one die so that it shows the 5. Player 1 rolls the second die and says the total. Player 2 verifies. Players switch roles and repeat.

2. Practise Adding to 5

Type: Pairs

Objective: To develop fluency in adding to 5

Preparation: In advance, gather dominoes that have five dots on one side and zero to five dots on the other side (or use dominoes from **BLM Dominoes (1)**).

Instructions: Place the dominoes face down between the two players. Player 1 turns over a domino and says how many in all. If Player 2 agrees with the answer, the domino stays face up. Otherwise, Player 1 turns it face down again. Players switch roles. Play continues until all the dominoes are facing up.

Variation: Instead of dominoes, use cards that have additions including a 5 from **BLM Additions within 10**.

Extensions

1. Repeat Activity Centre 1, but instead of the number 5, students change the number showing on the first die to other numbers to practise other additions and decompositions.
2. Remind students that $6 = 5 + 1$ and $7 = 5 + 2$. ASK: If $6 = 3 + 3$, then $7 = 3 + ?$

Answer: 4

NOTE: Extension 3 is for very advanced students.

3. a) $5 + 5 = 10$ so $5 + 6 = ?$
b) $10 + 10 = 20$ so $10 + 11 = ?$

Answers: a) 11, b) 21

NSK-58 Decomposing 10

Pages 68–70

CURRICULUM REQUIREMENT

AB: required
BC: required
MB: required
ON: required

VOCABULARY

add
addition
all
equal sign (=)
equals
plus
plus sign (+)
ten-frame

Goals

Students will decompose 10 in a variety of ways using objects and pictures, and use those decompositions to answer sharing questions.

PRIOR KNOWLEDGE REQUIRED

Can count to 10
Can read an addition expression
Can use a ten-frame

MATERIALS

yellow and red chalk or markers
2 pencil crayons per student
BLM Addition with Ten-Frames (p. M-48)
BLM Ten-Frames (p. S-29)
BLM Making 10 (p. M-49) or **BLM Making a Number** (p. S-13)
10 two-sided counters or dried beans painted on one side per student
(see Activity Centres 1, 3, Extensions 1–3)
paper cups (see Activity Centre 1)
10 plastic bowling pins or empty plastic water bottles and a soft ball
per student or student pair (see Activity Centre 2)
BLM Additions within 10 (pp. M-46–47, see Activity Centre 3)
ten-frames made from egg cartons (see Activity Centre 3,
Extensions 1, 3)
blocks of two different colours, 10 of each colour per student
(see Activity Centre 3, Extensions 1–3)

Counting practice. Practise counting to 90. Choose a number from 1 to 10.
ASK: What is one more? What is two more?

NOTE: This lesson was written using mathematical notation. If your students have not yet learned “+” and “=,” substitute the words “plus” or “and” and “is” or “equals,” respectively. You can also use **BLM Making a Number** (with the answer, 10, filled in by you) instead of **BLM Making 10**.

Using a ten-frame to take apart 10. Draw a ten-frame on the board.
ASK: What is this called? (a ten-frame) How many boxes are in a ten-frame? (10) How many boxes are in the top of a ten-frame? (5) How many are in the bottom? (5) Count one row to illustrate that there are five boxes. ASK: How many boxes are there in all? (10) Write “10 is” below the ten-frame. SAY: We are going to use the ten-frame to make additions that add to 10. Using the reading pattern, colour six boxes yellow. ASK: How many boxes are yellow? (6) You may wish to count or have a volunteer count to verify. Write “6” below the ten-frame. Colour the rest of the boxes red. ASK: How many boxes are red? (4) Write “and 4” below the ten-frame. SAY: We have six yellow boxes

plus four red boxes. ASK: How many boxes do we have in all? (10) Do you need to count to know that there are 10 in all? (no) SAY: 10 is 6 and 4. The final picture should look like this:



10 is 6 and 4

Draw a new ten-frame, and colour three boxes yellow and the rest red, as shown below. Write “10 is ___ and ___” below the ten-frame. ASK: How many boxes are yellow? (3) Write “3” in the first blank. ASK: How many boxes are red? (7) Have a volunteer count. Write “7” in the second blank. Have a volunteer read the addition sentence. SAY: Ten equals three yellow boxes and seven red boxes, so 10 is 3 and 7. The final picture should look like this:



10 is 3 and 7

Repeat with another ten-frame showing nine yellow boxes and one red box. The final picture should look like this:



10 is 9 plus 1

Showing an addition on a ten-frame. Draw a ten-frame on the board, and write “ $10 = 8 + 2$ ” below the frame. ASK: Can we colour the ten-frame to show this way to make 10? (yes) How many boxes should be yellow? (8) Have a volunteer colour eight boxes yellow. ASK: How many boxes should be red? (2) How many boxes are left to colour? (2) SAY: That’s good. It shows that 10 is equal to 8 plus 2. Colour the remaining boxes red, as shown below:



$10 = 8 + 2$

Using ten-frames without reading order. Draw a ten-frame on the board. As you colour in a random pattern (such as the one below), draw attention to what you are doing and ASK: How is this ten-frame different from the other ten-frames we have seen? (sample answers: the red/yellow squares are not all together, it does not follow the reading pattern)



SAY: I did not colour all the yellow boxes first and then all the red boxes. And I did not colour across the top row and then move to the bottom row.

ASK: How many yellow boxes are there? (6) Have a volunteer count to verify. ASK: Did colouring it this way make it easier or harder to count? (answers may vary) SAY: It is a little harder to count because it is easy to miss some boxes. ASK: Can we write an addition for this ten-frame? (yes) SAY: The 10 boxes are coloured in two colours, so I can still write what makes 10. Have a volunteer write “ $10 = 6 + 4$ ” under the ten-frame.

ACTIVITY

Give each student two pencil crayons and **BLM Addition with Ten-Frames**, or **BLM Ten-Frames** and BLM Making a Number. Have students colour as many boxes as they like in the first colour, and then colour the rest in the second colour. You may wish to encourage students to use the reading pattern but do not insist. Students then exchange ten-frames with a partner and write the addition sentence for each other’s ten-frame on the BLM or to tell each other the addition sentence. Invite students to create a story for the addition, such as “I am picking green beans and yellow beans” or “I am counting cats and dogs.”

Preparing for the AP pages. Students need to use two pencil crayons for **Questions 7–18** on AP Book K.2, Unit 9, pp. 69–70.

Activity Centres

NOTE: You may wish to laminate BLM Making 10 or place it in a protective plastic cover so that it can be wiped off and reused.

1. Ten Counters

Type: Individual

Objective: To model additions that make 10, using two-sided counters

Preparation: Give each student 10 two-sided counters (or 10 dried beans painted on one side), a paper cup, and BLM Making 10.

Instructions: Have students gently tip the counters from the cup onto a table and sort the counters by colour. Have them write the addition on the BLM.

Variations

1. Have students use BLM Addition with Ten-Frames (with the answer, 10, filled in by you) to draw a picture of the counters and complete the addition.
2. Students play in pairs, using fingers. Player 1 holds up a number of fingers on both hands. Player 2 counts how many fingers are up and how many fingers are down and writes the addition on BLM Making 10. Players switch roles and repeat.

2. Bowling for 10

Type: Individual or pairs, active

Objective: To write the addition modelled by 10 bowling pins (some upright, some knocked over)

Preparation: Using plastic bowling pins or empty plastic water bottles, set up one bowling lane per student (or student pair). Provide a soft ball

and BLM Making 10. Since students may knock over either all or none of the pins, make sure they can use a ten-frame to model “ $0 + 10$ ” or “ $10 + 0$ ” before they do the activity.

Instructions: Set up 10 pins. Have students roll the ball once and then use the BLM to write the addition for how many pins were knocked down and how many stayed upright.

3. Showing the Addition

Type: Individual

Objective: Students colour a ten-frame for a given addition

Preparation: In advance, prepare addition cards that add to 10, using **BLM Additions within 10**. Place a set of cards at each work centre. Give each student BLM Addition with Ten-Frames (with the answer, 10, filled in by you) and two pencil crayons. Alternatively, give each student BLM Making a Number (with the answer, 10, filled in by you), a ten-frame made from an egg carton, and 10 two-sided counters, or 10 dried beans painted on one side, or 10 of each of two colours of blocks.

Instructions: Have students choose a card from the pile and model the addition on the ten-frame.

Extensions

1. **Is the addition correct?** Give each student two pencil crayons and BLM Addition with Ten-Frames (with the answer, 10, filled in by you). Alternatively, give each student BLM Making a Number (with the answer, 10, filled in by you), a ten-frame made from an egg carton, and 10 two-sided counters or 10 of each of two colours of blocks. Have students model the addition and say if the addition is correct.

- a) $10 = 3 + 8$ b) $10 = 7 + 4$ c) $10 = 4 + 6$
d) $10 = 2 + 7$ e) $10 = 9 + 1$

Bonus: For each addition that is not correct, is the answer greater than 10 or less than 10?

Answers: a) not correct, b) not correct, c) correct, d) not correct, e) correct; Bonus: a) greater, b) greater, d) less

2. Challenge students to find all the ways to make 10. Provide students with BLM Making 10 and 10 two-sided counters or 10 of each of two colours of blocks. Tell them to start with the counters (or blocks) all showing the same colour. Students write the expression for the first equation ($10 = 10 + 0$) on the BLM. Then, they turn over counters (or replace a block with one of the other colour) one at a time and write the expression for each combination. Allow more advanced students to find their own way to answer the question.

Answers: $10 = 10 + 0$, $10 = 9 + 1$, $10 = 8 + 2$, $10 = 7 + 3$,
 $10 = 6 + 4$, $10 = 5 + 5$, $10 = 4 + 6$, $10 = 3 + 7$, $10 = 2 + 8$,
 $10 = 1 + 9$, $10 = 0 + 10$

3. Give students a ten-frame from BLM Ten-Frames (or made from an egg carton) and 10 two-sided counters or 10 of each of two colours of blocks (e.g., red and yellow). Have students fill the ten-frame so that there are more red counters or blocks than yellow. Then, have students find all the ways to fill the ten-frame so that there are more red than yellow counters or blocks. Students can record their work on BLM Making 10 or use the paper ten-frame for recording.

Answers: 6 red, 4 yellow; 7 red, 3 yellow; 8 red, 2 yellow; 9 red, 1 yellow; 10 red, 0 yellow

NOTE: Extension 4 is for very advanced students.

4. Give students 10 counters, and have them find as many ways as they can to make 10 by adding three numbers (not including zero). Provide blank paper for them to record their work.

Answers: $1 + 1 + 8$, $1 + 2 + 7$, $1 + 3 + 6$, $1 + 4 + 5$, $2 + 2 + 6$, $2 + 3 + 5$, $2 + 4 + 4$, $3 + 3 + 4$ (and any rearrangements of these numbers)

NSK-59 Making 10

Pages 71–73

CURRICULUM REQUIREMENT

AB: required
BC: required
MB: required
ON: required

VOCABULARY

more
ten-frame

Goals

Given a number from 1 to 9, students will find how many more to make 10.

PRIOR KNOWLEDGE REQUIRED

Can count to 10
Can count out up to 10 objects from a larger group
Can add objects to make 10

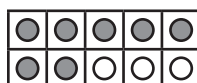
MATERIALS

red and yellow chalk or markers
15 two-sided counters per student
BLM Making 10 (p. M-49) or **BLM Making a Number** (p. S-13)
BLM Ten-Frames (p. S-29, optional)
glue, cardstock, and **BLM Puzzle Pairs** (pp. M-50–51, see Activity Centre 1)
BLM Pets (pp. S-22–23, see Activity Centre 2)
BLM Number Cards 0 to 5 (p. S-10, see Activity Centre 3)
BLM Number Cards 6 to 10 (p. S-11, see Activity Centre 3)

Counting practice. Practise counting to 90. Play **I Start, You Finish** (see introduction to Unit 1, p. C-2) as a class for the numbers from 80 to 90. Choose a number from 1 to 10. ASK: What is one more? What is two more?

NOTE: This lesson was written using mathematical notation. If your students have not yet learned “+” and “=,” substitute the words “plus” or “and” and “is” or “equals,” respectively. You can also use **BLM Making a Number** (with the answer, 10, filled in by you) instead of **BLM Making 10**.

Using a ten-frame to find how many more make 10. Draw a ten-frame on the board and draw seven yellow circles in the frame. ASK: How many circles did I draw? (7) Count to verify. ASK: How many more make 10? (3) How can you tell? (by the number of empty boxes) SAY: Let’s check. Say “7,” then count “8,” “9,” and “10” as you draw three more circles in red. ASK: How many more circles did I draw? (3) Count to verify. ASK: How many circles in all? (10) How do you know? (the ten-frame is full, there are no empty boxes, I know that 7 plus 3 make 10) SAY: Seven and three more make ten. Write “7 + 3 more = 10” on the board under the ten-frame, as shown below:



$$7 + 3 \text{ more} = 10$$

Repeat by having a volunteer suggest a number from 1 to 9 to start with.

Using fingers to find how many more make 10. ASK: How many boxes are in a ten-frame? (10) How many fingers do you have on both hands? (10) SAY: We can find how many more make 10 using our fingers. Have students hold up all 10 fingers. Ask for a number from 1 to 5. Have students put down that many fingers. SAY: To find how many more make 10, count how many fingers are still up. Repeat with several more examples. You may wish to have students work in pairs and have one partner hold up the correct number of fingers as the other one counts.

Finding how many more without a ten-frame. Draw six circles on the board, arranged like the dots on a die. ASK: How many circles did I draw? (6) Count to verify. ASK: How many more make 10? (4, but students may be unable to answer) How can we find out? (draw more circles and count) SAY: We have six circles. I will keep drawing circles until we have 10. We need to count as I draw. Draw four more circles in a line as students count from 7 to 10. ASK: How many more circles did I draw? (4) How does the picture show making 10? (6 and 4 make 10)

ACTIVITY

Give each student 15 two-sided counters and BLM Making 10 (with the first addend filled in by you). Have students turn the counters so that the starting number on the BLM is one colour and all the other counters are the other colour. Students count to find how many more make 10. Students may decide instead to separate the counters into two groups, with one group containing the given number and the other group containing the missing number.

Variation: If students need more support, distribute ten-frames from **BLM Ten-Frames**. Using one colour of counter, students place the number of counters given on BLM Making 10 in the ten-frame. Then, they fill the rest of the ten-frame using the second colour of counters, while counting.

Activity Centres

1. Puzzle Pairs

Type: Individual

Objective: To find pairs that add to 10 by matching puzzle pieces

Preparation: In advance, glue **BLM Puzzle Pairs** to cardstock and cut out the puzzle pieces. Give each student a complete set.

Instructions: Tell students to find the missing piece of each puzzle to make 10.

2. Matching (see introduction to Unit 8, p. L-3)

Variation: Prepare one of each card for 1 to 9 pets from **BLM Pets**, and make an extra card for five pets. Students match a pet card with the card that shows the number of pets needed to make 10. For example, a picture of four pets is a match for a picture of six pets.

3. **Matching** (see introduction to Unit 8, p. L-3)
Variation: Using **BLM Number Cards 0 to 5** and **BLM Number Cards 6 to 10**, prepare one of each card from 1 to 9 and an extra 5. Students take turns matching one card with the card needed to make 10.

4. **Ten Fingers**

Type: Pairs

Objective: To make pairs to 10 using fingers on both hands

Preparation: Distribute BLM Making 10.

Instructions: Player 1 picks a number from 1 to 9 and writes it in the first blank on BLM Making 10. Player 2 holds up all 10 fingers and then puts down the selected number of fingers to find how many more make 10. Player 2 writes this number in the second blank on the BLM. Players switch roles and repeat.

Extensions

1. Give each student about 15 counters and BLM Making 10 (with the first addend filled in by you). Have students count out the given number from the pile of counters. Then, they continue to count out more counters into a separate pile until they reach 10. Students count the counters in the second pile to find the missing number.
2. **Counting on to 10.** Have students use counting on their fingers to complete BLM Making 10 (with the first addend filled in by you). Students say the given number with a closed fist. Then, they continue counting to 10 by putting up one finger for each number. When they reach 10, the number of fingers raised is the missing number.

For example, if the given number is 8:



Since two fingers are raised, $8 + 2 = 10$.

NOTE: Extension 3 is best suited for very advanced students.

3. **More than 10 or less than 10?** Provide students with the following additions, and ask them to think about pairs that make 10. ASK: Will the number in all be more than 10 or less than 10?

a) $8 + 4$ b) $7 + 6$ c) $4 + 3$ d) $1 + 8$ e) $3 + 9$

Answers: a) $8 + 2 = 10$, so $8 + 4$ is more than 10; b) $7 + 3 = 10$, so $7 + 6$ is more than 10; c) $4 + 6 = 10$, so $4 + 3$ is less than 10; d) $1 + 9 = 10$, so $1 + 8$ is less than 10; e) $3 + 7 = 10$, so $3 + 9$ is more than 10

NSK-60 Decomposing up to 10

Pages 74–76

CURRICULUM REQUIREMENT

AB: required
BC: required
MB: required
ON: required

VOCABULARY

add
all
equals
plus
ten-frame

Goals

Students will decompose numbers less than 10 into pairs and record the decompositions with equations.

PRIOR KNOWLEDGE REQUIRED

Can count to 10
Can decompose up to 5 using objects or pictures
Can associate a number sentence for a decomposition of up to 5 (e.g., “4 is 3 and 1”)

MATERIALS

yellow and red chalk or markers
BLM Making a Number (p. S-13)
BLM Ten-Frames (p. S-29)
2 pencil crayons per student
two-sided counters and a paper cup per student (see Activity Centres 1, 3)
dice (see Activity Centres 2, 4)
BLM Addition with Ten-Frames (p. M-48, see Activity Centres 2, 4, 5, Extension)
BLM Number Cards 0 to 5 (p. S-10, see Activity Centres 2, 4)
BLM Number Cards 6 to 10 (p. S-11, see Activity Centres 2, 4)
BLM Additions within 10 (pp. M-46–47, see Extension)

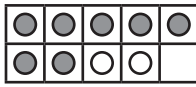
Counting practice. Practise counting to 90. Choose a number from 1 to 10. ASK: What is one more? What is two more? What is three more?

NOTE: This lesson was written using mathematical notation. If your students have not yet learned “+” and “=,” substitute the words “plus” or “and” and “is” or “equals,” respectively.

Decomposing 9. Draw a ten-frame on the board. ASK: What is this? (a ten-frame) Draw circles in nine boxes of the ten-frame. ASK: How many circles are in the ten-frame? (9) Count together or have a volunteer count to verify. Write “9 is” below the ten-frame. Colour three circles yellow. ASK: How many circles are yellow? (3) Colour the rest red. ASK: How many circles are red? (6) Count to verify. Write “3 and 6” below the ten-frame. Ask a volunteer to read the addition sentence. (9 is 3 and 6) ASK: Does 9 equal 3 plus 6? (yes) SAY: Our picture shows nine circles. Three yellow circles plus six red circles make nine circles in all. The final picture should look like this:



9 is 3 and 6

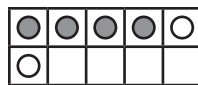


9 is 7 and 2



Repeat with 7 and 2. The final picture is shown in the margin.

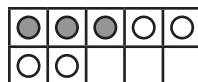
Decomposing 6. Draw a new ten-frame on the board. Draw circles in six boxes of the ten-frame. ASK: How many circles are in the ten-frame? (6) Count together or have a volunteer count to verify. Write “6 is” below the ten-frame. Colour four circles yellow. ASK: How many circles are yellow? (4) Colour the rest in red. ASK: How many circles are red? (2) Count to verify. Write “4 plus 2” below the ten-frame. Ask a volunteer to read the addition sentence. (6 is 4 plus 2) ASK: Does 6 equal 4 plus 2? (yes) SAY: Our picture shows six circles. Four yellow circles plus two red circles make six circles in all. The final picture should look like this:



6 is 4 plus 2

Repeat with 6 = 5 + 1.

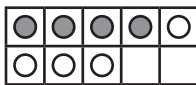
Decomposing other numbers. Draw a new ten-frame on the board. Draw circles in seven boxes of the ten-frame. ASK: How many circles are in the ten-frame? (7) Count together or have a volunteer count to verify. Write “7 is” below the ten-frame. Colour three circles yellow. ASK: How many circles are yellow? (3) Colour the rest in red. ASK: How many circles are red? (4) Count to verify. Write “3 plus 4” below the ten-frame. Ask a volunteer to read the addition sentence. (7 is 3 plus 4) ASK: Does 7 equal 3 plus 4? (yes) SAY: Our picture shows seven circles. Three yellow circles plus four red circles make seven circles in all. The final picture should look like this:



7 is 3 plus 4



Repeat with 8 = 4 + 4. The final picture is shown in the margin.



8 = 4 + 4

ACTIVITY

Divide students into groups of four. For each student, prepare a copy of **BLM Making a Number** by filling in the answers 6, 7, 8, and 9. For each group, prepare 4 ten-frames from **BLM Ten-Frames** by drawing circles in the boxes. Each ten-frame should have a different number of circles, from 6 to 9. Give each student one of the ten-frames. First, students use two pencil crayons to colour the circles in their ten-frame to create an equation. They count how many circles in all and fill in the equation in the correct place on BLM Making a Number. Then, students pass around their coloured ten-frame to the other group members, who fill in the equations on their copies of BLM Making a Number. At the end of the activity, each student’s copy of BLM Making a Number should be complete.

Preparing for the AP pages. Students will need two pencil crayons for **Questions 13–18** on AP Book K.2, Unit 9, p. 76.

Activity Centres

1. Making 6

Type: Individual

Objective: To represent decompositions of 6 with objects and a number sentence

Preparation: In advance, fill in the answer, 6, for each addition on BLM Making a Number. Give each student the BLM, 6 two-sided counters, and a paper cup.

Instructions: Have students gently tip the counters from the cup onto a table and sort the counters by colour. Have them write the addition on the BLM.

2. Colouring Circles

Type: Individual

Objective: To represent decompositions of a number with pictures and an equation

Preparation: In advance, draw seven circles in each ten-frame on BLM Ten-Frames. Give students the BLM, a copy of BLM Making a Number, a die, and two pencil crayons.

Instructions: Have students roll the die to determine how many circles on the BLM they are to colour in the first colour. They colour the rest of the circles in the second colour, and then write the addition.

Variations

1. Have students use **BLM Addition with Ten-Frames** to record the decompositions.
2. Provide number cards for 0 to 7 from **BLM Number Cards 0 to 5** and **BLM Number Cards 6 to 10**. Have students choose a card at random to determine how many circles to colour in the first colour.

3. Making 8

Type: Individual

Objective: To represent decompositions of 8 with objects and a number sentence.

Preparation: In advance, fill in the answer, 8, for each addition on BLM Making a Number. Give each student the BLM, 8 two-sided counters, and a paper cup.

Instructions: Have students gently tip the counters from the cup onto a table and sort the counters by colour. Have them write the addition on the BLM.

4. Repeat Activity Centre 2 (Colouring Circles)

Variations

1. In advance, draw nine circles in each ten-frame on BLM Addition with Ten-Frames. Have students decompose 9.
2. Provide number cards for 0 to 9 from BLM Number Cards 0 to 5 and BLM Number Cards 6 to 10. Have students choose a card at random to determine how many circles to colour in the first colour.

5. Repeat Activity Centre 2 (Colouring Circles)

Variation: In advance, draw either six, seven, eight, or nine circles in each ten-frame on BLM Addition with Ten-Frames. Give each student one of these ten-frames (with the answer filled in by you) and two pencil crayons. Each student colours the circles in their ten-frame, some in one colour and the rest in the other colour. They exchange the ten-frame with a partner and then write the equation for each other's picture.

Extension

Showing the addition. In advance, prepare addition cards for numbers that add to 9, using **BLM Additions within 10**. Give each student two pencil crayons and BLM Addition with Ten-Frames (with nine circles and the answer, 9, filled in by you). Have students choose a card from the pile and model the addition shown on the ten-frame.

Variation: This activity can be done for any number up to 10.

NSK-61 Adding to 10 with Objects (1)

Pages 77–79

CURRICULUM REQUIREMENT

AB: optional
BC: required
MB: optional
ON: required

VOCABULARY

add
all
equal sign (=)
equals
five-frame
more
plus
plus sign (+)

Goals

Students will model addition situations within 10 using objects in five-frames, where both addends are less than or equal to 5.

PRIOR KNOWLEDGE REQUIRED

Can count to 10
Can act out addition within 10
Can use objects to represent animals
Can use fingers to represent numbers
Can use objects to model adding within 5
Knows what a circle is
Knows what zero (0) is

MATERIALS

finger puppets (optional)
counters or blocks
BLM Addition with Five-Frames (p. M-53) or 2 five-frames made from egg cartons per student
nine 1 cm connecting cubes or ones blocks per student
BLM Addition Stories to 10 (p. M-54, see Activity Centres 1, 2)
BLM Number Cards 0 to 5 (p. S-10, see Activity Centres 1–5, Extension 1)
BLM Addition Story Blanks (p. S-21, see Activity Centres 2–5, Extensions 2, 4)
miniature model animals or **BLM Animal Cards** (pp. S-18–19, see Activity Centre 3)
yarn circles (see Extensions 2, 3)

Counting practice. Practise counting to 90. Choose a number from 1 to 5.
ASK: What is one more? What is two more? What is three more?

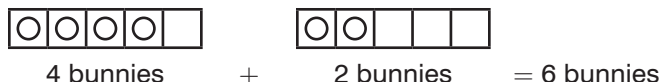
Review acting out addition. SAY: Let's act out a number story. In this story, four bunnies are eating carrots and two bunnies are eating celery. Have volunteers be the four bunnies eating carrots and the two bunnies eating celery, or use finger puppets if available. Have the rest of the class show the two groups of bunnies on their fingers (one hand at a time if necessary). ASK: How many bunnies are eating in all? (6) Have the volunteers count out loud to verify.

Adding with objects instead of people. SAY: Let's do the same story another way. This time, we will show our story using counters. Four bunnies are eating carrots. Two bunnies are eating celery. Draw 2 five-frames side-by-side on the board. SAY: We are going to use five-frames to show how many bunnies are eating. Then, we add to find how many in all. ASK: How many bunnies are eating carrots? (4) Write "4 bunnies"

(or write “4” and draw a bunny) below the first five-frame. ASK: How many bunnies are eating celery? (2) Write “+ 2 bunnies” (or write “+ 2” and draw a bunny) below the second five-frame, as shown below:



Have a volunteer (say, Kyle) affix four counters to the first five-frame to show four bunnies. ASK: Where should Kyle start to fill the frame, here (point to the right side) or here (point to the left side)? SAY: Point to where we start. (students point to left side) While pointing to the left side, SAY: We start here, and we do not skip any boxes. Have a second volunteer fill in the second five-frame, making sure the volunteer knows where to start. ASK: How many bunnies in all? (6) Have a third volunteer count the bunnies. Write “= 6 bunnies” as shown below, and SAY: Four bunnies plus two bunnies equals six bunnies. The final picture should look like this:



Repeat with the following number story: Sara has four raisins. Then she gets three more raisins. (7)

ACTIVITY

Give each student 10 counters or blocks and 2 five-frames from **BLM Addition with Five-Frames** or made from egg cartons. Read each of the following stories. As you read a story, have students show the numbers by putting counters or blocks in their five-frames. After each story, have students find how many in all. Have students use fingers instead of five-frames for some of the stories. To begin, SAY: Pretend that our class goes on a trip to the zoo.

1. Alex counts four tigers. Jen counts three lions. How many animals in all? (7)
2. We see five butterflies. Then we see four more butterflies. How many butterflies in all? (9)
3. There are four penguins in the water. There are two penguins on land. How many penguins in all? (6)
4. Before lunch, we see a camel. After lunch, we see five more camels. How many camels in all? (6)
5. ASK: What two kinds of animals might you see in a zoo? Tell them how many (from 1 to 5) of each they see. Then, ASK: How many of the two kinds of animals in all?

Preparing for the AP pages. Provide each student with nine 1 cm connecting cubes or ones blocks for **Questions 1–9** on AP Book K.2, Unit 9, pp. 77–79. Larger blocks may not fit in the five-frames provided.

Activity Centres

NOTE: For any of the activity centres, students can use fingers instead of five-frames.

1. **Adding with Objects in Frames** (see unit introduction, p. M-2)
2. **Adding with Objects in Frames** (see unit introduction, p. M-2)
Variation: Students add using their fingers as 2 five-frames, one hand per addend.
Bonus: Use **BLM Addition Story Blanks** to write stories, such as “4 cats and 2 more cats” for students. Have students first find and circle the numbers, add, and then write the answer.
3. **Telling Addition Stories with Frames** (see unit introduction, p. M-2)
4. **Adding Jumps in Frames** (see unit introduction, p. M-3)
5. **Adding Jumps in Frames** (see unit introduction, p. M-3)
Variation: Students clap instead of jump.

Extensions

1. **Addition Peace.** Give each pair of students four sets of number cards for 1 to 5 from **BLM Number Cards 0 to 5**. Both players should have two shuffled piles of five cards face down in front of them. Each player turns over the top card from each pile. They add, compare the totals of the pairs, decide which is more, and then discard the cards.
2. Use **BLM Addition Story Blanks** to show students addition stories that include 0. Students can use blocks or counters and two yarn circles to model the addition story and then add.
3. Distribute 10 counters or blocks and three yarn circles to each student. Tell students a story that involves three numbers. Do not exceed a total of 10. For example, SAY: Two children are in the tent. ASK: How many counters (or blocks) go in the first circle? (2) SAY: One more child goes into the tent. ASK: How many counters (or blocks) go in the second circle? (1) SAY: Then, three more children go into the tent after that. Put counters (or blocks) in the third circle to show three more children. ASK: How many children are in the tent now? Count them all. (6) Repeat with more examples.

Bonus: Have students make their own stories.
4. Distribute **BLM Addition Story Blanks** and up to 20 counters or blocks. Give students a starting number—for example, 4. Ask them to write all the number stories they can think of that start with “4 cats and then some more cats come.” Have students use counters or blocks to help find how many in all for each story.

NSK-62 Adding to 10 with Pictures (1)

Pages 80–83

CURRICULUM REQUIREMENT

AB: optional
BC: optional
MB: optional
ON: required

VOCABULARY

add
all
equal sign (=)
equals
five-frame
more
plus
plus sign (+)

Goals

Students will model additions within 10 with pictures, where both addends are less than or equal to 5.

PRIOR KNOWLEDGE REQUIRED

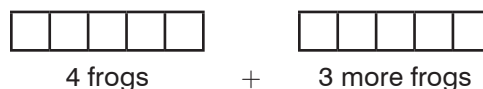
Can count to 10
Can act out addition within 10
Can use objects to represent animals
Can use fingers to represent numbers
Can use objects to model adding within 5
Can use objects to model adding within 10 when both addends are less than or equal to 5
Knows what a circle is
Knows what zero (0) is

MATERIALS

BLM Addition with Five-Frames (p. M-53)
pencil crayons, markers, or stickers (optional)
BLM Addition Stories to 10 (p. M-54, see Activity Centre 1)
miniature model animals or **BLM Animal Cards** (pp. S-18–19, see Activity Centre 2)
BLM Number Cards 0 to 5 (p. S-10, see Activity Centres 1–4, Extension 1)
BLM Addition Story Blanks (p. S-21, see Activity Centres 2–4, Extensions 2, 4)
counters or blocks (see Activity Centres 3, 4, Extensions 2, 3)
yarn circles (see Extensions 2, 3)

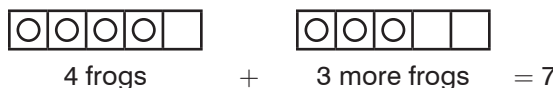
Counting practice. Practise counting to 90. Choose a number from 1 to 5.
ASK: What is one more? What is two more? What is three more?

Adding with pictures. **SAY:** Let's do adding stories about a pond. We will draw to show our stories. Then, we will add to find how many in all. There are four frogs on a log. There are three frogs in the water. Draw 2 five-frames, and write "4 frogs" (or write "4" and draw a frog) under one and "+ 3 more frogs" (or write "+ 3 more" and draw a frog) under the other, as shown below:



Ask a volunteer (say, Sun) to draw four circles in the first five-frame to show four frogs. **ASK:** Where should Sun start to fill in the frame, here (point to the right side) or here (point to the left side)? **SAY:** Point to where we start. (students point to the left side) **SAY:** We start here and we don't skip any

boxes. Have a second volunteer fill in the second five-frame, making sure that the volunteer knows where to start. ASK: How do we find how many frogs in all? (add) How many frogs in all? (7) Have a volunteer count the frogs. Write “= 7” as shown below and SAY: Four frogs plus three more frogs equals seven frogs. The final picture should look like this:



Repeat with the following number story, but colour boxes instead of drawing circles: Ren picks five grapes. Then he picks four more grapes. The final picture should look like this:



ACTIVITY

Give each student **BLM Addition with Five-Frames**. Read each of the following stories. As you read each story, have students show the numbers in the story by filling in their five-frames. They can do this by drawing circles, crossing out boxes, colouring boxes, or placing stickers in the boxes. After each story, have students find how many in all. They can write the answer on the line provided on the BLM. To begin, SAY: I am going to tell you some stories, and you will add to find how many in all. I am growing vegetables in my garden. Examples:

1. I have five tomato plants. I have three cucumber plants. How many plants do I have in all? (8)
2. I had four cherry tomatoes yesterday. Today, I have two more cherry tomatoes. How many cherry tomatoes do I have in all? (6)
3. I am making a salad with tomato and cucumber. I need three big tomatoes and three cucumbers. How many vegetables am I using in all? (6)
4. Jack makes a cucumber salad with four cucumbers. Alice makes sandwiches with five more cucumbers. How many cucumbers do they use in all? (9)
5. I pick beans from my friend's garden. I pick three green beans and two yellow beans. How many beans do I pick in all? (5)

Activity Centres

1. **Adding with Objects in Frames** (see unit introduction, p. M-2)
Variation: Students model additions by drawing circles (or by crossing out or colouring boxes) on five-frames from BLM Addition with Five-Frames.

2. **Telling Addition Stories with Frames** (see unit introduction, p. M-2)
Variation: Students draw circles or use stickers (instead of counters or blocks) and five-frames from BLM Addition with Five-Frames.
3. **Adding Jumps in Frames** (see unit introduction, p. M-3)
4. **Adding Jumps in Frames** (see unit introduction, p. M-3)
Variation: Students clap instead of jump and keep track of claps using five-frames from BLM Addition with Five-Frames.

Extensions

1. **Addition Peace.** Repeat Extension 1 in Lesson NSK-61.
2. Use **BLM Addition Story Blanks** to show students addition stories that include zero. Distribute blocks or counters and two yarn circles to each student. Students model the addition story, and then add.
3. Distribute 10 counters or blocks and three yarn circles to each student. Tell students a story that involves three numbers. Do not exceed a total of 10. For example, SAY: Four children are playing soccer. ASK: How many blocks go in the first circle? (4) SAY: One more child starts to play soccer. ASK: How many blocks go in the second circle? (1) SAY: Then, two more children come to play soccer after that. Put blocks in the third circle to show two more children. ASK: How many children are playing soccer now? Count them all. (7) Repeat with more examples.

Bonus: Have students make their own stories.

4. Distribute BLM Addition Story Blanks and five-frames from BLM Addition with Five-Frames. Give students a starting number—for example, 5. Ask them to write all the number stories they can think of that start with “There are 5 dogs and then some more dogs come.”

NSK-63 Adding to 10 with Objects (2)

Pages 84–86

CURRICULUM REQUIREMENT

AB: optional
BC: required
MB: optional
ON: required

VOCABULARY

add
all
equal sign (=)
five-frame
more
plus sign (+)
ten-frame

Goals

Students will model additions within 10 using objects and ten-frames, where one addend may be greater than 5.

PRIOR KNOWLEDGE REQUIRED

Can count to 10
Can use objects to represent animals
Can use fingers to represent numbers
Can use five-frames to model additions within 10
Knows how to fill in a ten-frame

MATERIALS

two-sided counters or blocks of two different colours
BLM Ten-Frames (p. S-29) or ten-frames made from egg cartons
Animals on Board by Stuart J. Murphy (optional)
1 cm connecting cubes of two different colours, 9 of each colour per student
BLM Addition Stories to 10 (p. M-54, see Activity Centre 1, Extension 1)
BLM Additions within 10 (pp. M-46–47, see Activity Centres 2–4)
BLM Addition Story Blanks (p. S-21, see Activity Centres 2–4, Extension 2)
counters of three different colours (see Extension 3)

Counting practice. Practise counting to 90. Choose a number from 1 to 5.
ASK: What is one more? What is two more? What is three more?

Using a ten-frame to add with objects. SAY: Let's do a number story with counters. This time, six bunnies are eating spinach and three bunnies are eating lettuce. Draw on the board:



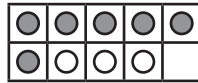
6 bunnies + 3 bunnies

ASK: What are the numbers in our story? (6 and 3) SAY: Let's talk about the number 6. ASK: Is 6 bigger than 5 or smaller than 5? (bigger) When we count, do we say 5 or 6 first? (5) SAY: We know 6 is bigger than 5 because we say 6 after 5 when we count. ASK: Can we show 6 in a five-frame? (no) SAY: We have room only for five counters in the five-frame. Six is too big to fit. ASK: What can we use to show 6? (a ten-frame) Change the five-frame to a ten-frame, as shown below:



6 bunnies + 3 bunnies

ASK: How do we fill in a ten-frame? Should we start to fill in the frame here (point to the top-left corner) or here (point to the top-right corner)? SAY: Point to where we start. (students point to the top left) ASK: Then, where do we go? (across) If we fill the first row, what do we do? (start the next row) Affix six counters to the ten-frame. SAY: These are the six bunnies eating spinach. ASK: How many bunnies are eating lettuce? (3) Affix three more counters of a different colour to the same ten-frame, as shown below:



6 bunnies + 3 bunnies

SAY: I put all the bunnies in the same ten-frame. I put them in one at a time. I did not skip any boxes. Let's add the bunnies. ASK: How many bunnies are there in all? (9) How do you know? (sample answers: I counted from 1, I counted from 6, there is one empty box) Explain the methods mentioned that you think are readily understandable by other students. Count to verify. Write "= 9" to complete the addition sentence.

Repeat with the following number stories: I see eight birds and two squirrels out the window. (10) There are two red flowers and five yellow flowers. (7)

ACTIVITY

Give each student a ten-frame from **BLM Ten-Frames** (or made from an egg carton) and 10 two-sided counters or blocks of two different colours (10 of each colour). Read *Animals on Board* by Stuart J. Murphy. As you read, have students fill in their ten-frame with the numbers in each part of the story in different colours. Have them add how many of each type of animal. Demonstrate some of the additions using your fingers. If the book is not available, read the following stories instead. To begin, SAY: Sharon lives at Friendly Farm. Rick lives at Welcome Farm. Sharon and Rick are counting the animals.

1. Sharon counts six horses at Friendly Farm. Rick counts two horses at Welcome Farm. How many horses do they count in all? (8)
2. Friendly Farm has seven cows. Welcome Farm has three cows. How many cows in all? (10)
3. Sharon counts two sheep. Rick counts seven more sheep. How many sheep do they count in all? (9)
4. There are six chickens at Friendly Farm. There are four chickens at Welcome Farm. How many chickens in all? (10)
5. Friendly Farm has no cats. Welcome Farm has nine cats. How many cats do Sharon and Rick count in all? (9)

Preparing for the AP pages. For **Questions 1–9** on AP Book K.2, Unit 9, pp. 84–86, provide students with 1 cm connecting cubes of two different colours, nine of each colour per student.

Activity Centres

NOTE: Any of the activity centres can be done using fingers instead of ten-frames.

1. **Adding with Objects in Frames** (see unit introduction, p. M-2)
Variation: Students keep track of numbers by using two-sided counters or blocks of two colours and a ten-frame from BLM Ten-Frames or made from an egg carton. The answers to the story strips remain within 10, but additions can include numbers greater than 5, such as $7 + 2$.
2. **Telling Addition Stories with Frames** (see unit introduction, p. M-2)
Variation: In advance, cut out the additions on **BLM Additions within 10**. Instead of picking numbers between 1 and 5, have students use the numbers on the strip to make number stories. Partner 1 tells a story about the addition selected. Partner 2 uses two-sided counters or blocks of two colours and a ten-frame from BLM Ten-Frames (or made from an egg carton) to model the story and add. Students may record the addition stories using **BLM Addition Story Blanks**.
3. **Adding Jumps in Frames** (see unit introduction, p. M-3)
Variation: In advance, cut out the additions on BLM Additions within 10. Partner 1 jumps according to the addition selected. Partner 2 adds using two-sided counters or blocks of two colours and a ten-frame from BLM Ten-Frames (or made from an egg carton). Students may record the addition stories using BLM Addition Story Blanks.
4. **Adding Jumps in Frames** (see unit introduction, p. M-3)
Variation: In advance, cut out the additions on BLM Additions within 10. Partner 1 claps out the addition selected. Partner 2 adds using two-sided counters or blocks of two colours and a ten-frame from BLM Ten-Frames (or made from an egg carton). Students may record the addition stories using BLM Addition Story Blanks.

Extensions

1. **Adding with Objects in Frames** (see unit introduction, p. M-2)
Variation: Students keep track of numbers on their fingers instead of using counters. The answers to the story strips remain within 10, but additions can include numbers greater than 5, such as $6 + 2$. This may be challenging, not only physically, but also because there is no way to distinguish between the two numbers, such as by using different colours of counters.
2. Give each student blocks of two colours, 10 of each colour (or 20 two-sided counters), and two ten-frames from BLM Ten-Frames (or made from egg cartons). Use BLM Addition Story Blanks to give students addition stories involving numbers up to 10 with a total up to 20.
3. Distribute three colours of counters and a ten-frame to each student. Tell students a story that involves three numbers. Do not exceed a total

of 10 (e.g., 2, then 1 more, and then 3 more equals 6). For example, SAY: Two children are in a fort. ASK: How many counters do we put on the ten-frame? (2) SAY: One more child goes into the fort. ASK: How many counters (of a different colour) do we put on the ten-frame now? (1) SAY: Then, three more children go into the fort after that. Put counters (of a third colour) in the ten-frame to show three more children. ASK: How many children are in the fort now? Count them all. (6) Repeat with more examples.

Bonus: Have students make their own stories.

NSK-64 Adding to 10 with Pictures (2)

Pages 87–90

CURRICULUM REQUIREMENT

AB: optional

BC: optional

MB: optional

ON: required

VOCABULARY

add

all

equal sign (=)

five-frame

more

plus sign (+)

ten-frame

Goals

Students model addition situations within 10, using pictures and using ten-frames, where one addend may be greater than 5.

PRIOR KNOWLEDGE REQUIRED

Can count to 10

Can use objects to represent animals

Can use fingers to represent numbers

Can use five-frames to model additions within 10

Can use ten-frames to model additions within 10

MATERIALS

counters or blocks

chalk or markers in two colours

pencil crayons

BLM Addition with Ten-Frames (p. M-48)

BLM Addition Stories to 10 (p. M-54, see Activity Centre 1)

BLM Ten-Frames (p. S-29, see Activity Centre 1)

BLM Additions within 10 (pp. M-46–47, see Activity Centres 2–4)

stickers (see Activity Centre 2, Extension 3)

BLM Addition Story Blanks (p. S-21, see Activity Centres 2–4, Extensions 2, 4)

BLM Number Cards 0 to 5 (p. S-10, see Extension 1)

BLM Number Cards 6 to 10 (p. S-11, see Extension 1)

Counting practice. Practise counting to 90. Choose a number from 1 to 5.
ASK: What is one more? What is two more? What is three more?

Review adding with a five-frame. **SAY:** Let's do a number story. Draw 2 five-frames on the board. **SAY:** In this story, four raccoons are eating corn and two raccoons are eating apples. Have volunteers affix counters to show the raccoons. **ASK:** How many raccoons are eating in all? (6) Have students count to verify.

Using a ten-frame to add with pictures. **SAY:** Let's do another story. This time, six hamsters are playing in a tunnel and two hamsters are climbing a ladder. Draw a five-frame on the board, and write "6 hamsters + 2 hamsters" below it. **ASK:** What are the numbers in our story? (6 and 2) **SAY:** Let's talk about the number 6. **ASK:** Is 6 bigger than 5 or smaller than 5? (bigger) When we count, do we say 5 or 6 first? (5) **SAY:** So, 6 is bigger than 5. **ASK:** Should we use a five-frame or a ten-frame to show 6? (a ten-frame) Change the five-frame to a ten-frame, as shown below:



6 hamsters + 2 hamsters

ASK: How do we fill in a ten-frame? (across the top, then across the bottom) Draw six circles or colour boxes of the same colour in the ten-frame. SAY: These show the six hamsters in the tunnel. ASK: How many hamsters are climbing the ladder? (2) Draw two more circles or colour boxes of a different colour in the same ten-frame, as shown below:



6 hamsters + 2 hamsters

SAY: I put all the hamsters in the same ten-frame. I put them in one at a time. I did not skip any boxes. ASK: How do we find how many hamsters in all? (we add) How many hamsters are there in all? (8) How do you know? How did you find how many in all? (sample answers: I counted from 1, I counted from 6) Verify by counting. Write “= 8” to complete the addition sentence.

Repeat with the following stories:

1. Marko picks seven grapes. Then, he picks three more grapes. (10)
2. There are four tall flowers and three short flowers. (7)

ACTIVITY

Give each student two pencil crayons and ten-frames from **BLM Addition with Ten-Frames**. Read the stories below. As you read, have students fill in a ten-frame with the numbers for each part of each story. They can do this by drawing circles, crossing out boxes, or colouring boxes. Have them add how many children are playing. To begin, SAY: Some children are playing in the playground.

1. Six children are on see-saws. Then, two more children come to play on the see-saws. How many children are playing on see-saws in all? (8)
2. Three children are sliding down slides. Six children are waiting for a turn on the slides. How many children are playing on the slides in all? (9)
3. Seven children are digging holes in the sandbox. Two children are building castles in the sandbox. How many children are playing in the sandbox in all? (9)
4. Some children are playing with a ball. Four children are on one team and six children are on the other team. How many children are playing with a ball in all? (10)
5. One child is playing on the swings. Then, eight more children come to play on the swings. How many children are playing on the swings now? (9)

Preparing for the AP pages. Students need to use two pencil crayons for **Questions 1–9** on AP Book K.2, Unit 9, pp. 87–89.

Activity Centres

1. **Adding with Objects in Frames** (see unit introduction, p. M-2)
Variation: Students record additions by drawing circles (or crossing out or colouring boxes) on ten-frames from **BLM Ten-Frames**. The answers remain within 10, but additions can include numbers greater than 5, such as $7 + 2$.
2. **Telling Addition Stories with Frames** (see unit introduction, p. M-2)
Variation: In advance, cut out the additions on **BLM Additions within 10**. Instead of picking numbers between 1 and 5, have students use the numbers on the strip to make number stories. Partner 1 tells a story about the addition selected. Partner 2 uses two pencil crayons or two kinds of stickers to record the addition on a ten-frame from **BLM Addition with Ten-Frames**. Students may record the additions using **BLM Addition Story Blanks**.
3. **Adding Jumps in Frames** (see unit introduction, p. M-3)
Variation: In advance, cut out the additions on **BLM Additions within 10**. Partner 1 jumps according to the addition selected. Partner 2 uses two pencil crayons to record and add using **BLM Addition with Ten-Frames**. Students may record the jumps using **BLM Addition Story Blanks**.
4. **Adding Jumps in Frames** (see unit introduction, p. M-3)
Variation: In advance, cut out the additions on **BLM Additions within 10**. Partner 1 claps out the addition selected. Partner 2 uses two pencil crayons to record and add using **BLM Addition with Ten-Frames**. Students may record the claps using **BLM Addition Story Blanks**.

Extensions

1. **Addition Peace.** Repeat Extension 1 in Lesson NSK-61.
Bonus: Give very advanced students number cards for 1 to 10 from **BLM Number Cards 0 to 5** and **BLM Number Cards 6 to 10**.
2. Use **BLM Addition Story Blanks** to show students addition stories that include zero. Students can use two pencil crayons and ten-frames (from **BLM Addition with Ten-Frames**) to model the addition story, and then add.
3. Distribute three pencil crayons or three kinds of stickers and a ten-frame (from **BLM Ten-Frames**) to each student. Tell students a story that involves three numbers. Do not exceed a total of 10 (e.g., 2, then 1 more, and then 3 more equals 6).
Bonus: Have students make their own stories.
4. Give each student two pencil crayons, ten-frames from **BLM Addition with Ten-Frames**, and **BLM Addition Story Blanks**. Give students a starting number—for example, 2. Ask students to write all the number stories they can think of that start with “2 cats and then some more cats come.”

NSK-65 Adding within 10

Pages 91–94

CURRICULUM REQUIREMENT

AB: optional

BC: optional

MB: optional

ON: optional

VOCABULARY

add

addition

all

equal sign (=)

equals

plus

plus sign (+)

Goals

Given expressions that show addition, students will add within 10 using objects or pictures.

PRIOR KNOWLEDGE REQUIRED

Can count to 5

Can add using objects or pictures

Can read an addition expression

MATERIALS

red and yellow chalk or markers

BLM Adding to 10 (p. M-55)

blocks of two different colours (10 of each colour) or 10 two-sided counters per student

pencil crayons, markers, or crayons

BLM Ten-Frames (p. S-29) or ten-frames made from egg cartons

BLM I Have __, Who Has __? (p. S-20, see Activity Centre 1)

dominoes or **BLM Dominoes** (pp. S-15–17, see Activity Centre 2)

BLM Addition (p. S-24, see Activity Centre 2)

BLM Game Cards (p. S-12, see Activity Centre 3)

BLM Additions within 10 (pp. M-46–47, see Activity Centre 4)

BLM Additions within 5 (pp. S-25–26, see Activity Centre 4)

BLM Adding Three Numbers (pp. S-27–28, see Extension 1)

BLM Number Lines (p. S-9, see Extension 2)

Counting practice. Practise counting to 90. Choose a number from 1 to 5. ASK: What is one more? What is two more? What is three more?

Adding with pictures. Write on the board:

$$3 \quad + \quad 4$$

ASK: How do we read this? (3 plus 4) Write “=” next to it. ASK: How can we find what it equals? What are some ways that we have learned to add? (sample answers: drawing, using blocks, using ten-frames, using 2 five-frames) SAY: I will draw pictures for this addition. ASK: How many things should I draw first to show the addition? (3) SAY: I will draw circles. The addition is the same no matter what kind of shape I draw. Use red to draw three circles. ASK: How many more circles do I need to draw? (4) SAY: I will switch colours so that it is easy to see four more circles. Use yellow to draw four more circles on the board, as shown below:

$$\begin{array}{ccc} \bigcirc & \bigcirc & \bigcirc \\ 3 & + & 4 \end{array} =$$

ASK: How many circles in all? (7) Count as a class to verify. ASK: What is 3 plus 4? (7) Write “7.”

Adding with ten-frames. Write “ $6 + 3 =$ ” on the board. SAY: We will do this addition using a ten-frame because 6 is a pretty big number. Draw a ten-frame on the board. Have a volunteer draw six circles in the ten-frame. ASK: How many more circles do we need to show the addition? (3) Have a second volunteer draw three more circles in a second colour. ASK: How many in all? (9) Count as a class to verify. Repeat with $4 + 2$.

ACTIVITY

SAY: Today, we will add. You can use blocks to add. You can draw pictures to add. You can use a ten-frame to add. You choose. Show students **BLM Adding to 10**. SAY: This page has addition questions. For each question, use whatever you like to find how many in all. Then, write the answer here (indicate the answer space).

Distribute BLM Adding to 10. Provide blocks of two colours (10 of each colour) or 10 two-sided counters and ten-frames from **BLM Ten-Frames** or made from egg cartons. Alternatively, you can provide scrap paper, and pencil crayons, markers, or crayons. Have students decide how to model the additions, and then record their work on BLM Adding to 10. (1. 8, 2. 8, 3. 7, 4. 7, 5. 9, 6. 9, 7. 9, 8. 9, 9. 10, 10. 7, 11. 8, 12. 10)

Activity Centres

1. **I Have ___, Who Has ___?** (see introduction to Unit 8, p. L-3)
Variation: For “I have,” write an addition expression within 10. For “Who has,” write a number from 2 to 10. Make sure that each number is represented only once.
2. **Dominoes**
Type: Individual
Objective: To write addition expressions represented on a domino and find the answer
Preparation: In advance, gather dominoes that have dots adding to a number less than or equal to 10. Alternatively, use dominoes from **BLM Dominoes**. Give students **BLM Addition** to record their work.
Instructions: Have students choose a domino and record the addition on the BLM. Then, they turn the domino and record the second addition. They may count the dots to find the answer for the addition.
3. **Matching** (see introduction to Unit 8, p. L-3)
Variation: In advance, make four pairs of matching cards using **BLM Game Cards**. Use the boxes to write a number from 1 to 10 and one addition for each number you wrote (e.g., 6, $1 + 5$).
4. **Adding**
Type: Individual
Objective: To solve additions within 10
Preparation: In advance, prepare additions from **BLM Additions within 10** and **BLM Additions within 5** (optional). Provide a variety of

manipulatives (e.g., ten-frames from BLM Ten-Frames or made from egg cartons, two-sided counters, pencil crayons, scrap paper).

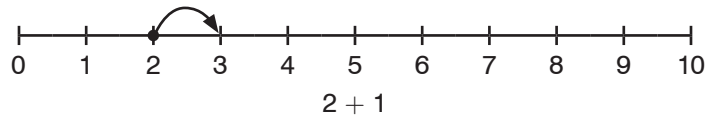
Instructions: Have students choose an addition and use the manipulatives of their choice to find the answer.

Extensions

1. Have students add three numbers that total less than 10. Use **BLM Adding Three Numbers** if students have not used the BLM in Unit 8. Note that the second page of the BLM has zero in the additions.

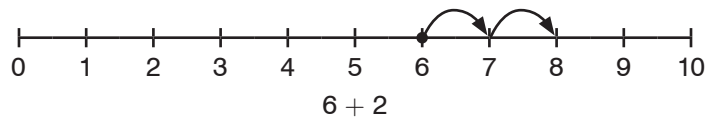
Answers: 1. 5, 2. 6, 3. 6, 4. 8, 5. 7, 6. 9, 7. 9, 8. 8, 9. 3, 10. 5, 11. 4, 12. 7, 13. 5, 14. 6, 15. 5, 16. 6

2. **Adding on a number line.** Distribute **BLM Number Lines** and **BLM Adding to 10**. Have students complete BLM Adding to 10 by adding on the number lines. If students have not yet used a number line to add, provide the following explanation. While pointing to a number line, SAY: This is a number line. The numbers are written in a line. Then, say the numbers on the line to 10, pointing to each one as you go. SAY: A number line is a tool we can use to help us add. Write " $2 + 1$ " below a sample number line. SAY: We can add $2 + 1$. We start by drawing a dot at the first number. ASK: What is the first number? (2) Draw a dot at 2. SAY: Then, we jump plus 1 on the number line, like this. Draw a jump from 2 to 3. ASK: What number did we land on? (3) What is $2 + 1$? (3) SAY: We landed on the answer. The final picture should look like this:



Repeat with $4 + 1$, and have students work on their own number line.

Write " $6 + 2$ " below a number line. ASK: Where do we draw the dot? (at 6) Have students draw a dot at 6 on a new number line. ASK: How many times do we jump to show " $+ 2$ "? (2 times) Demonstrate jumping twice, and have students make the jumps on their own number line. ASK: What number did we land on? (8) What is $6 + 2$? (8) SAY: We landed on the answer. The final picture should look like this:



3. Students choose a favourite book. They count the number of words in two sentences and then add them.
4. Students find the missing addend.

- | | |
|--------------------------------|--------------------------------|
| a) $6 + \underline{\quad} = 8$ | b) $4 + \underline{\quad} = 7$ |
| c) $5 + \underline{\quad} = 6$ | d) $2 + \underline{\quad} = 9$ |

Answers: a) 2, b) 3, c) 1, d) 7

NAME _____ DATE _____

Additions within 10 (I)



$$6 + 1$$

$$6 + 2$$

$$6 + 3$$

$$6 + 4$$

$$7 + 1$$

$$7 + 2$$

$$7 + 3$$

$$8 + 1$$

$$8 + 2$$

$$9 + 1$$

$$5 + 3$$

$$2 + 5$$

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Additions within 10 (2)



$$1 + 6$$

$$2 + 6$$

$$3 + 6$$

$$4 + 6$$

$$1 + 7$$

$$2 + 7$$

$$3 + 7$$

$$1 + 8$$

$$2 + 8$$

$$1 + 9$$

$$5 + 5$$

$$4 + 5$$

Addition with Ten-Frames

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

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

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

Making 10

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

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

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

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

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

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

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

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

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

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

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Puzzle Pairs (I)



1

+

9

2

+

8

3

+

7

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Puzzle Pairs (2)



4

+

6

5

+

5

6

+

4

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Puzzle Pairs (3)



7

+

3

8

+

2

9

+

1

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Addition with Five-Frames

Addition Stories to 10



_____  + _____ more = _____ 

_____  + _____  = _____ pets

_____  + _____  = _____ shapes

_____  + _____ more = _____ 

Adding to 10

1.

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

2.

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

3.

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

4.

$$6 + 1 = \underline{\quad}$$

5.

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

6.

$$7 + 2 = \underline{\quad}$$

7.

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

8.

$$8 + 1 = \underline{\quad}$$

9.

$$1 + 9 = \underline{\quad}$$

10.

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

11.

$$2 + 6 = \underline{\quad}$$

12.

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

Hundreds Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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Number Lines



NAME _____ DATE _____

Number Cards 0 to 5



2

5

1

4

0

3

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NAME _____ DATE _____

Number Cards 6 to 10



8

7

10

6

9

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Game Cards



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Making a Number

_____ is _____ and _____

_____ is _____ and _____

_____ is _____ and _____

_____ is _____ and _____

_____ is _____ and _____

_____ is _____ and _____

_____ is _____ and _____

_____ is _____ and _____

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Dominoes (I)



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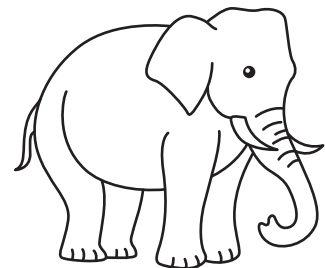
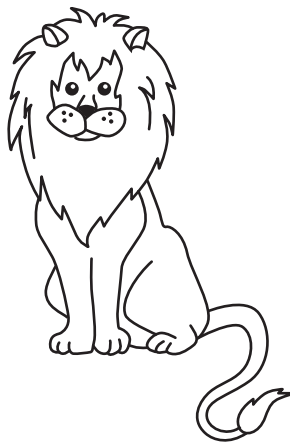
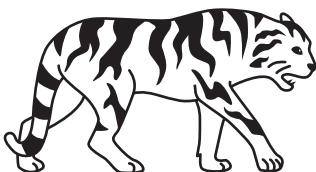
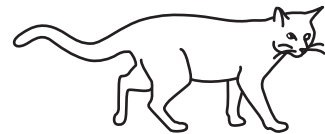
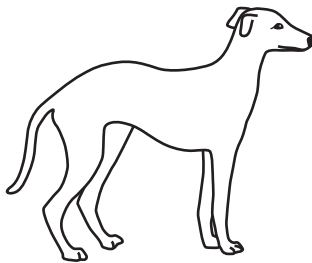
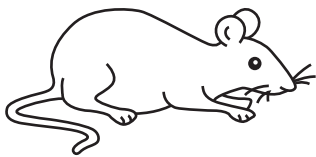
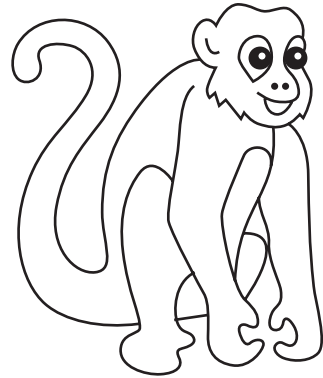
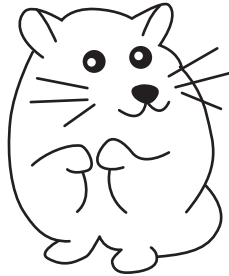
Dominoes (2)



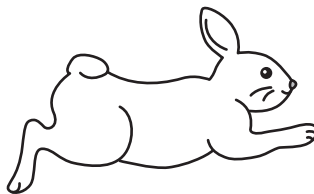
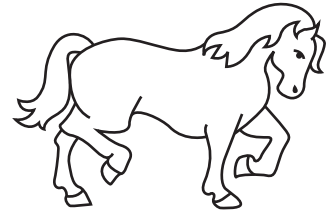
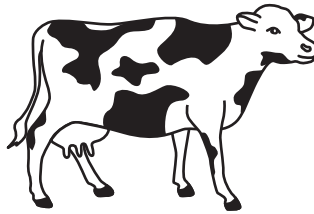
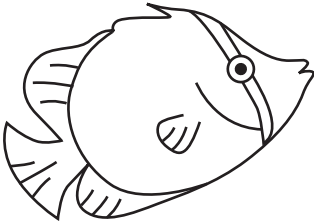
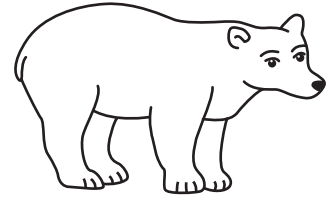
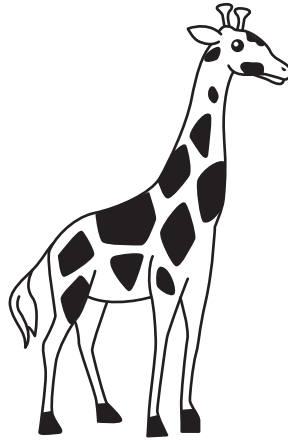
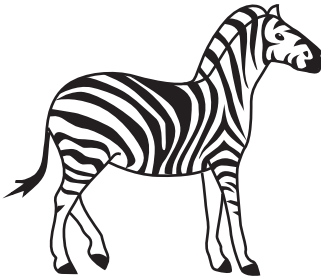
Dominoes (3)



Animal Cards (I)



Animal Cards (2)



NAME _____ DATE _____

I Have _____, Who Has _____?



I have

I have

Who has

Who has

I have

I have

Who has

Who has

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NAME _____ DATE _____

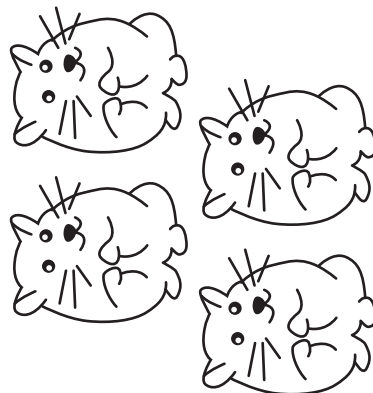
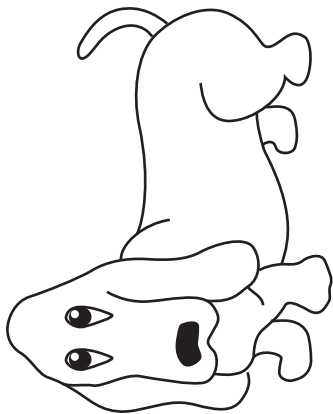
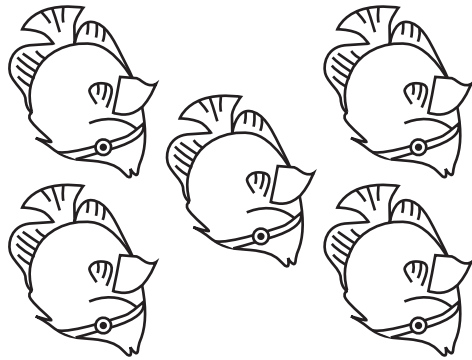
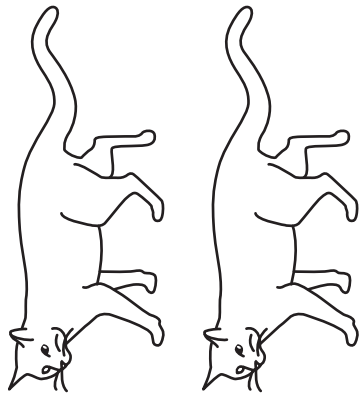
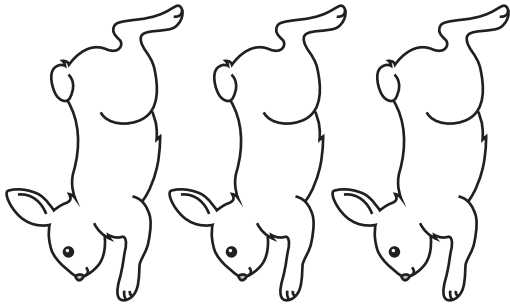
Addition Story Blanks

_____				_____
_____		+		_____
_____	_____			_____
		=	_____	_____

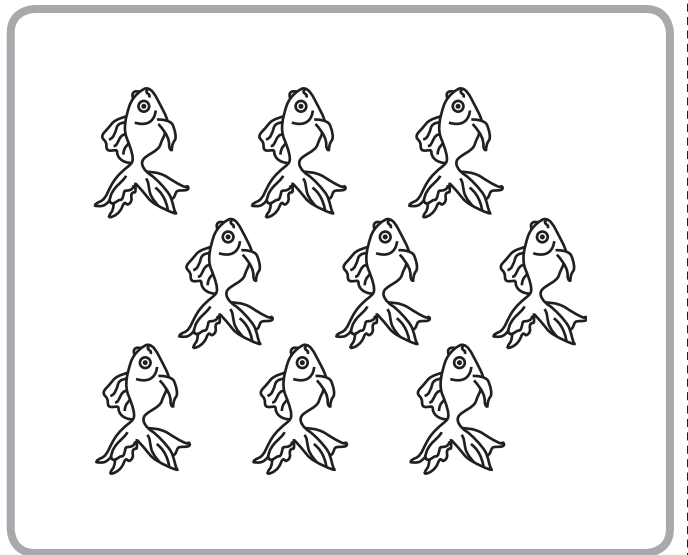
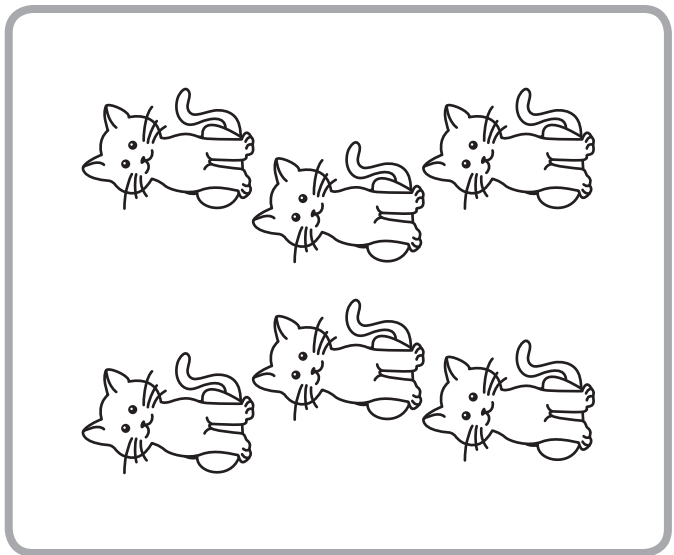
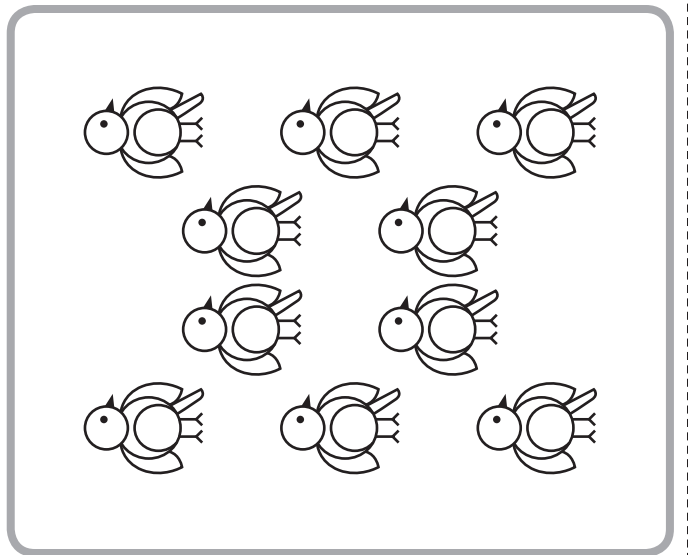
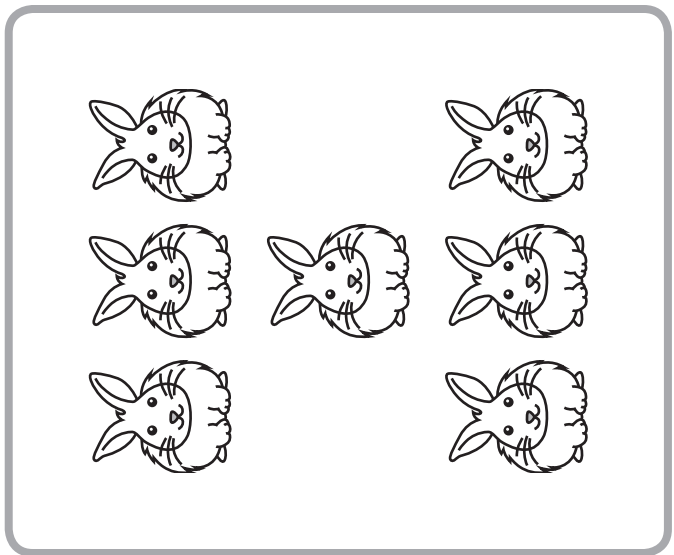
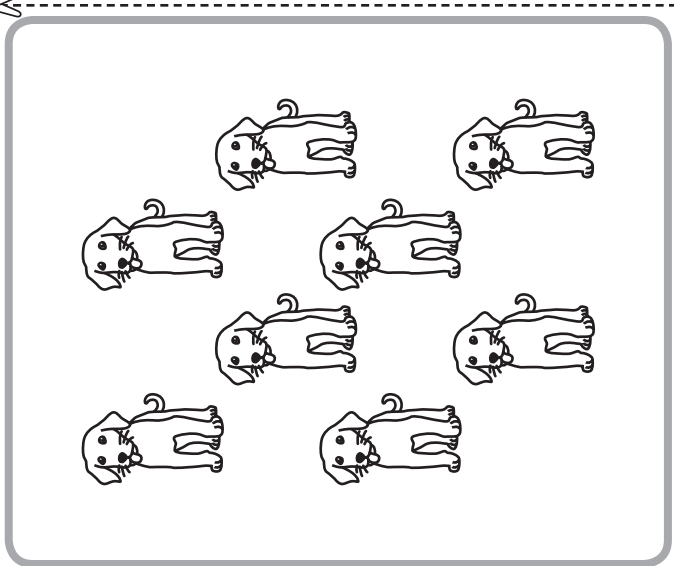
_____				_____
_____		+		_____
_____	_____			_____
		=	_____	_____

_____				_____
_____		+		_____
_____	_____			_____
		=	_____	_____

Pets (I)



Pets (2)



NAME

DATE _____

Addition

[illegible][illegible][illegible][illegible]

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Additions within 5 (I)



$$1 + 1$$

$$1 + 2$$

$$1 + 3$$

$$1 + 4$$

$$2 + 1$$

$$2 + 2$$

$$2 + 3$$

$$3 + 1$$

$$3 + 2$$

$$4 + 1$$

NAME _____ DATE _____

Additions within 5 (2)



$$1 + 0$$

$$2 + 0$$

$$3 + 0$$

$$4 + 0$$

$$5 + 0$$

$$0 + 1$$

$$0 + 2$$

$$0 + 3$$

$$0 + 4$$

$$0 + 5$$

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Adding Three Numbers (I)

1.

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

2.

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

3.

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

4.

$$3 + 4 + 1 = \underline{\hspace{2cm}}$$

5.

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

6.

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

7.

$$2 + 3 + 4 = \underline{\hspace{2cm}}$$

8.

$$1 + 2 + 5 = \underline{\hspace{2cm}}$$

Adding Three Numbers (2)

9.

$$1 + 2 + 0 = \underline{\hspace{2cm}}$$

10.

$$2 + 3 + 0 = \underline{\hspace{2cm}}$$

11.

$$2 + 2 + 0 = \underline{\hspace{2cm}}$$

12.

$$0 + 4 + 3 = \underline{\hspace{2cm}}$$

13.

$$0 + 1 + 4 = \underline{\hspace{2cm}}$$

14.

$$0 + 3 + 3 = \underline{\hspace{2cm}}$$

15.

$$2 + 0 + 3 = \underline{\hspace{2cm}}$$

16.

$$1 + 0 + 5 = \underline{\hspace{2cm}}$$

Ten-Frames

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