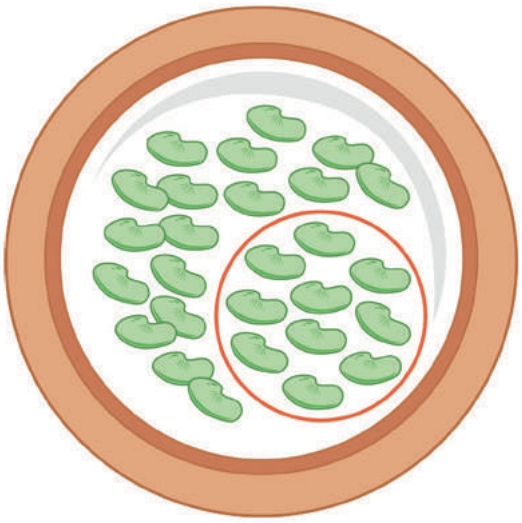
Core Knowledge® MATHEMATICS

Numbers to 99



Teacher Guide

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Numbers to 99

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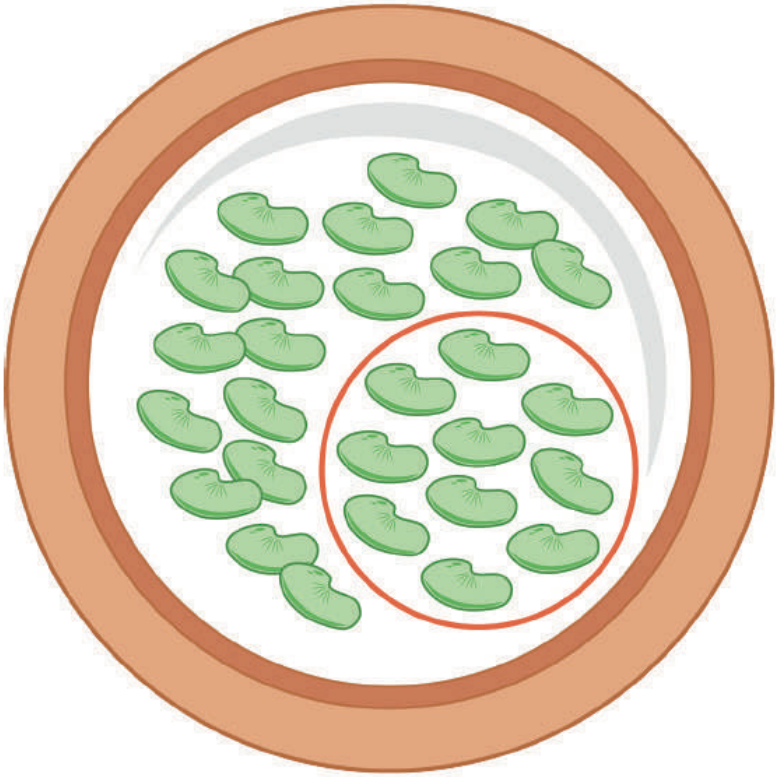


Numbers to 99

Teacher Guide

Core Knowledge Mathematics™

Unit 4: Numbers to 99

At a Glance

Unit 4 is estimated to be completed in 23-25 days including 2 days for assessment.

This unit is divided into four sections including 21 lessons and 2 optional lessons.

- Section A—Units of 10 (Lessons 1-5)
- Section B—Tens and Ones (Lessons 6-13)
- Section C—Compare Numbers to 99 (Lessons 14-18)
- Section D—Different Ways to Make a Number (Lessons 19-23)

On pages 8-10 of this Teacher Guide is a chart that identifies the section each lesson belongs in and the materials needed for each lesson.

This unit uses ten student centers.

- How Close?
- Five in a Row: Addition and Subtraction
- Number Puzzles: Addition and Subtraction
- Check It Off
- Shake and Spill
- Grab and Count
- Write Numbers
- Greatest of Them All
- Get Your Numbers in Order
- Mystery Number

Unit 4: Numbers to 99

Unit Learning Goals

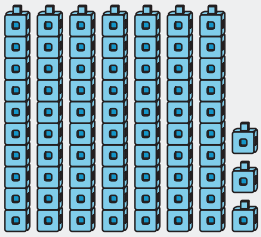
- Students develop an understanding of place value for numbers up to 99.

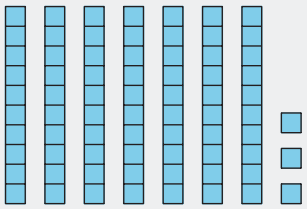
This unit develops students' understanding of the structure of numbers in base ten, allowing them to see that the two digits of a two-digit number represent how many tens and ones there are.

Previously, students counted forward by one and ten within 100 in the Choral Counting routine. They learned that 10 ones make a unit called a ten and that a teen number is a ten and some ones.

Here, as they count and group quantities, students generalize the structure of two-digit numbers in terms of the number of tens and ones. This understanding enables students to transition from counting by one to counting by ten and then counting on. For example, to count to 73, they may count 7 tens and count on—71, 72, 73.

Students interpret and use multiple representations of two-digit numbers: connecting cubes, base-ten diagrams, words, and expressions. Connecting cubes in towers of 10 and singles are used instead of base-ten blocks, which will be used in later grades, so units of ten can be physically composed and decomposed with the cubes. Here are some representations for 73:





7 tens and 3 ones
3 ones and 7 tens

$70 + 3$
$63 + 10$
$60 + 13$

Students also represent two-digit numbers with their own drawings. They may start by drawing towers of ten and show each unit of one within each ten, and later simplify their drawings to show rectangles for tens and small squares for ones. Encourage students to use the drawings that make sense to them, and for those who create the more abstract drawing, to express how many ones each ten represents.

To help students make sense of base-ten representations, give students access to connecting cubes—towers of 10 and singles —in all lessons. Some students may also benefit from access to double 10-frames and two-color counters, however all students should be encouraged to work toward

using connecting cubes in towers of 10 and singles.

Later in the unit, students use the value of the digits to compare two-digit numbers and learn to use comparison symbols (<, >) to record their comparisons. The unit concludes with opportunities for students to explore different ways of using tens and ones to represent two-digit numbers.

Section A: Units of Ten

Standards Alignments

Addressing	1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8
Building Towards	1.NBT.A.1, 1.NBT.B.2.c, 1.NBT.C.5

Section Learning Goals

- Add and subtract multiples of 10.
- Represent the base-ten structure of multiples of 10 up to 90 using towers of 10, drawings, numbers, or words.

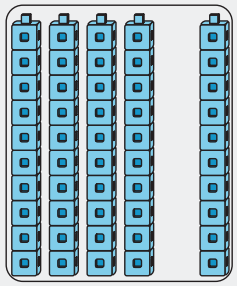
Previously, students used a 10-frame to represent a unit of ten. In this section, they make sense of other representations of units of ten—towers of 10 connecting cubes, base-ten drawings, words, and numbers—to build an intuition for the base-ten system.

Students count collections with a multiple of 10 objects in each. As they represent the quantity in each collection, they see that counting by one and counting by ten yields the same number.

Students learn that each name and numeral used to skip-count by 10 represents an amount of tens, so 30 represents 3 tens, 40 represents 4 tens, and so on. This understanding then helps students see, for instance, that 3 tens and 2 tens is 5 tens, and to add and subtract multiples of tens.

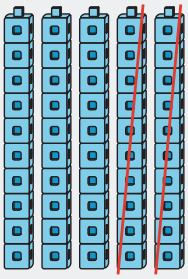
4 tens and 1 ten is 5 tens.

$40 + 10 = 50$



5 tens take away 2 tens is 3 tens.

$50 - 20 = 30$



Because the focus here is on connecting written numbers to their word names and the amounts of tens they represent, terms such as “two-digit number,” “digits,” “multiples,” “tens place,” and “ones place” are not used. “Multiple of 10” is used in teacher-facing text, but is not a term that students use until grade 3. Students should be encouraged to use any language that makes sense to them.

PLC: Lesson 4, Activity 1, How Many Are in the Bag?

Section B: Tens and Ones

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.a, 1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

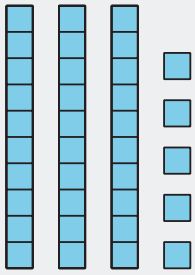
Section Learning Goals

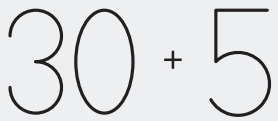
- Add and subtract multiples of 10.
- Represent the base-ten structure of numbers up to 99 using drawings, numbers, and words.
- Understand that the two digits of a two-digit number represent amounts of tens and ones.

In this section, students learn that the two digits in a two-digit number represent amounts of tens and ones. They begin by counting collections of objects that do not contain a multiple of 10 and express the quantity in a way that makes sense to them. Their understanding of teen numbers helps them see the collections in terms of tens and ones.

To make sense of the digits in two-digit numbers, students continue to use familiar representations such as connecting cubes and base-ten drawings, including drawings that use long rectangles to represent the tens and smaller squares to represent the ones. Students also begin to use words such as "___ tens ___ ones."

Students then interpret addition expressions that show the value of each digit in two-digit numbers. To highlight the meaning of the digits, the expressions are shown in expanded form (30 + 5) and with the value of the ones before the tens (5 + 30).





Later in the section, students use their understanding of two-digit numbers to add multiples of ten to any two-digit number and mentally find 10 more or 10 less than any number.

PLC: Lesson 8, Activity 1, Compare Representations of a Collection

Section C: Compare Numbers to 99

Standards Alignments

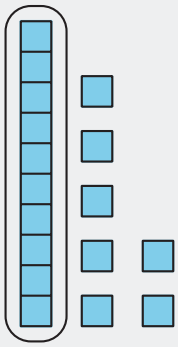
Addressing	1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7
Building Towards	1.NBT.C.5

Section Learning Goals

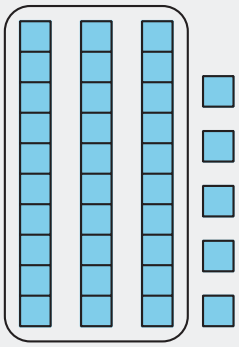
- Compare 2 two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

In this section, students use their understanding of the base-ten structure to compare and order numbers to 99. They notice that if a two-digit number has more tens it will be greater than another number with fewer tens, no matter how many ones there are. They then generalize this insight to compare numbers based on the digits.

The < and > symbols are introduced here. Before using the symbols to write true comparison statements, students gain familiarity by reading and interpreting statements with these symbols. They have opportunities to work with the symbols throughout the section.



1 ten



3 tens

$17 < 35$
17 is less than 35.

$35 > 17$
35 is greater than 17.

The lesson activities intentionally use mathematical language to support students in recalling how to read or write the symbols. For example, initially students are encouraged to notice that the side of the symbol with the greater amount of space between the top and the bottom segments faces the greater number. Avoid using non-mathematical or imaginative language that may distract from the focus of the unit and delay fluency with reading and writing the symbols.

PLC: Lesson 16, Activity 2, Make the Statement True

Section D: Different Ways to Make a Number

Standards Alignments

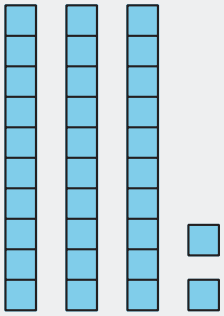
Addressing	1.NBT.A.1, 1.NBT.B, 1.NBT.B.2, 1.NBT.B.2.a, 1.NBT.B.2.b, 1.NBT.B.3, 1.NBT.C.4
Building Towards	1.NBT.C.4

Section Learning Goals

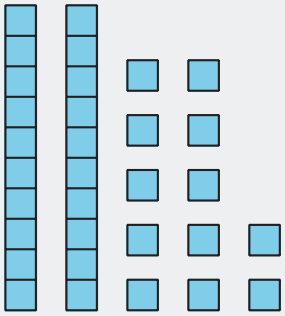
- Represent two-digit numbers in different ways, using different amounts of tens and ones.

In this section, students deepen their understanding of the base-ten structure by representing two-digit numbers with different amounts of tens and ones. They also extend their comparison work by comparing numbers expressed in different ways.

Students begin by making a number with towers of 10 and singles, using more than 9 single cubes. This prompts students to consider how to represent numbers in different ways, for instance, by composing a ten from 10 ones, or decomposing a ten into 10 ones.



3 tens 2 ones



2 tens 12 ones

Next, students use the symbols <, >, or = to compare numbers that are represented with different compositions of tens and ones.

Write a number to match each representation. Then, write a comparison statement using <, >, or =.

7 tens 29 ones $\qquad$ $50 + 39$

The reasoning here helps prepare students to use their understanding of place value and the properties of operations as methods to add within 100.

PLC: Lesson 20, Activity 2, Mystery Bags

Throughout the Unit

Throughout the unit, Number Talks and How Many Do You See warm-ups allow students to continue developing their ability to use method flexibility to add and subtract within 20.

A new routine, Estimation Exploration, is introduced to students in this unit. In this routine, students practice making reasonable estimates of quantities seen in images.

Students are introduced to new centers that support the work of this unit. Centers to revisit from previous units are also suggested in each section. Feel free to incorporate other centers that have been previously introduced based on student need and interest.

Materials Needed

LESSON	GATHER	COPY
A.1	• Bags • Collections of objects • Cups • Double 10-frames • Materials from a previous activity • Materials from previous centers • Paper plates	• Counting Collections Stages 1 and 2 Recording Sheet (groups of 1)
A.2	• Connecting cubes	• Representations of Tens (groups of 27) • It's a Match (10-90) words, numbers, pictures (groups of 1)
A.3	• Connecting cubes in towers of 10 and singles • Materials from previous centers • Two-color counters	• Five in a Row Addition and Subtraction Stage 4 Gameboard (groups of 2) • Number Cards, Multiples of 10 (0-90) (groups of 2)
A.4	• Connecting cubes in towers of 10 and singles • Double 10-frames	• none
A.5	• Connecting cubes in towers of 10 and singles • Materials from previous centers	• Check It Off Stage 3 Recording Sheet (groups of 1) • Number Cards, Multiples of 10 (0-90) (groups of 2)

B.6	• Bags • Connecting cubes • Connecting cubes in towers of 10 and singles • Cups • Double 10-frames • Materials from previous centers • Paper plates	• Counting Collections Stages 1 and 2 Recording Sheet (groups of 1)
B.7	• Connecting cubes in towers of 10 and singles • Materials from previous centers • Number cards 0–10	• Make It, Two-Digit Numbers Recording Sheet Number, Drawing, Words (groups of 1)
B.8	• Base-ten blocks • Connecting cubes in towers of 10 and singles	• Representations of Tens and Ones (groups of 2) • Grab and Count Stage 2 Recording Sheet (groups of 1)
B.9	• Connecting cubes in towers of 10 and singles • Materials from a previous activity • Materials from previous centers • Number cards 0–10	• none
B.10	• Connecting cubes in towers of 10 and singles • Dry erase markers • Sheet protectors	• Write the Number Stage 1 Gameboard (groups of 2)
B.11	• Connecting cubes in towers of 10 and singles	• none
B.12	• Dry erase markers • Sheet protectors	• Write the Number Stage 2 Gameboard (groups of 2)
B.13	• Materials from previous centers	• none

C.14	• Connecting cubes in towers of 10 and singles • Materials from previous centers • Paper clips	• none
C.15	• Connecting cubes in towers of 10 and singles	• none
C.16	• Connecting cubes in towers of 10 and singles • Number cards 0–10	• Greatest of Them All Stage 1 Recording Sheet (groups of 1)
C.17	• Connecting cubes in towers of 10 and singles	• Ordering Cards: Tens and Ones (groups of 2)
C.18	• Dry erase markers • Materials from previous centers • Number cards 0–10 • Sheet protectors	• Get Your Numbers in Order Stage 1 Gameboard (groups of 2)
D.19	• Bags • Connecting cubes in towers of 10 and singles • Materials from previous centers	• none
D.20	• Connecting cubes in towers of 10 and singles	• none
D.21	• Connecting cubes in towers of 10 and singles	• none
D.22	• Materials from previous centers • Number cards 0–10	• Mystery Number Stage 1 Directions (groups of 2)
D.23	• Bags • Collections of objects	• Estimating Quantities Card Sort (groups of 2)

Center: How Close? (1–5)

Stage 1: Add to 20

Activities

- Grade1.4.A1.3 (supporting)
- Grade1.4.A3.3 (supporting)
- Grade1.4.A5.2 (supporting)
- Grade1.4.B7.3 (supporting)
- Grade1.4.B13.2 (supporting)

Stage Narrative

Before playing, students remove the cards that show 10 and set them aside.

Each student picks 5 cards and chooses 3 of them to write an addition expression with 3 addends. The student whose sum is closest to 20 wins a point for the round. Students pick new cards so that they have 5 cards in their hand and then start the next round.

Standards Alignments

Addressing 1.OA.C.6, 2.OA.B.2

Materials to Gather

Number cards 0–10

Materials to Copy

How Close? Stage 1 Recording Sheet (groups of 1)

Stage 2: Subtract from 20

Activities

- Grade1.4.A1.3 (supporting)
- Grade1.4.A3.3 (supporting)
- Grade1.4.A5.2 (supporting)
- Grade1.4.B7.3 (supporting)
- Grade1.4.B13.2 (supporting)

Stage Narrative

Before playing, students remove the cards that show the number 10 and set them aside.

Each student picks 4 cards and chooses 2 or 3 to subtract from 20 to get close to 0. The student whose difference is closest to 0 wins a point for the round. Students pick new cards so that they have 4 cards in their hand and then start the next round.

Standards Alignments

Addressing 1.OA.C.6, 2.OA.B.2

Materials to Gather

Number cards 0–10

Materials to Copy

How Close? Stage 2 Recording Sheet (groups of 1)

Center: Five in a Row: Addition and Subtraction (1–2)

Stage 1: Add 1 or 2

Activities

- Grade1.4.A1.3 (supporting)
- Grade1.4.A3.3 (supporting)
- Grade1.4.A5.2 (supporting)
- Grade1.4.B6.3 (supporting)
- Grade1.4.B13.1 (supporting)
- Grade1.4.C14.3 (supporting)

Stage Narrative

Students choose a number card 0-10 and choose to add 1 or 2 to the number on their card and then place their counter on the sum.

Standards Alignments

Addressing 1.OA.C.5

Materials to Gather

Number cards 0–10, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Stage 2: Subtract 1 or 2

Activities

- Grade1.4.A1.3 (supporting)
- Grade1.4.A3.3 (supporting)
- Grade1.4.A5.2 (supporting)
- Grade1.4.B6.3 (supporting)
- Grade1.4.B13.1 (supporting)
- Grade1.4.C14.3 (supporting)

Stage Narrative

Students choose a number card 0-10 and choose to subtract 1 or 2 from the number on their card and then place their counter on the difference.

Variation:

Students can choose to add or subtract 1 or 2.

Standards Alignments

Addressing 1.OA.C.5

Materials to Gather

Number cards 0–10, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Stage 3: Add 7, 8, or 9

Activities

- Grade1.4.A1.3 (supporting)
- Grade1.4.A3.3 (supporting)
- Grade1.4.A5.2 (supporting)
- Grade1.4.B6.3 (supporting)
- Grade1.4.B13.1 (supporting)
- Grade1.4.C14.3 (supporting)

Stage Narrative

Students choose a number card 0-10 and choose to add 7, 8, or 9 to the number on their card and then place their counter on the sum.

Standards Alignments

Addressing 1.OA.C.5, 1.OA.C.6

Materials to Gather

Number cards 0–10, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stage 3 Gameboard (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Stage 4: Add or Subtract 10

Activities

- Grade1.4.A3.2 (addressing)
- Grade1.4.A3.3 (addressing)
- Grade1.4.A5.2 (addressing)
- Grade1.4.B6.3 (addressing)
- Grade1.4.B13.1 (addressing)

Stage Narrative

Students choose a card that shows a multiple of 10. They choose whether to add or subtract 10 from the number on their card and then place their counter on the sum or difference.

Standards Alignments

Addressing 1.NBT.C.5

Materials to Gather

10-frames, Connecting cubes in towers of 10 and singles, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stage 4 Gameboard (groups of 2), Number Cards, Multiples of 10 (0-90) (groups of 2)

Additional Information

Each group of 2 needs 25 counters.

Center: Number Puzzles: Addition and Subtraction (1–4)

Stage 1: Within 10

Activities

- Grade1.4.A1.3 (supporting)
- Grade1.4.A3.3 (supporting)
- Grade1.4.A5.2 (supporting)
- Grade1.4.B6.3 (supporting)
- Grade1.4.B13.2 (supporting)

Stage Narrative

Students work together to use digit cards to make addition and subtraction equations within 10 true. Each digit card may only be used one time on a page.

Standards Alignments

Addressing 1.OA.D.8

Materials to Copy

Number Puzzles Addition and Subtraction Stage 1 Gameboard (groups of 2), Number Puzzles Digit Cards (groups of 2)

Stage 2: Within 20

Activities

- Grade1.4.A1.3 (supporting)
- Grade1.4.A3.3 (supporting)
- Grade1.4.A5.2 (supporting)
- Grade1.4.B6.3 (supporting)
- Grade1.4.B13.2 (supporting)

Stage Narrative

Students work together to use digit cards to make addition and subtraction equations within 20 true. Each digit card may only be used one time on a page.

Standards Alignments

Addressing 1.OA.C.6, 1.OA.D.8, 2.OA.B.2

Materials to Copy

Number Puzzles Addition and Subtraction Stage 2 Gameboard (groups of 1), Number Puzzles Digit Cards (groups of 2)

Center: Check It Off (K–1)

Stage 1: Add within 10

Activities

- Grade1.4.B6.3 (supporting)
- Grade1.4.B7.3 (supporting)
- Grade1.4.B9.3 (supporting)
- Grade1.4.B13.1 (supporting)

Stage Narrative

Students take turns picking two number cards (0–5) to make and find the value of an addition expression. Students check off the number that represents the value of the sum (0–10) and then write the addition expression on the recording sheet.

This stage has two different recording sheets, one for kindergarten and another for grade 1. On the kindergarten recording sheet, students fill in blanks to record the expression. On the grade 1 recording sheet, students write in the full expression. Be sure to use the appropriate recording sheet with students.

Variation:

Students can roll two cubes (and treat 6 as a wild card) to provide visual support for each quantity.

Standards Alignments

Addressing 1.OA.C.5, 1.OA.C.6, K.OA.A.2

Materials to Gather

Number cards 0–10

Materials to Copy

Check It Off Stage 1 Recording Sheet Grade 1 (groups of 1), Check It Off Stage 1 Recording Sheet Grade K (groups of 1)

Stage 2: Subtract within 10

Activities

- Grade1.4.B6.3 (supporting)
- Grade1.4.B7.3 (supporting)
- Grade1.4.B9.3 (supporting)
- Grade1.4.B13.1 (supporting)

Stage Narrative

Students take turns picking two number cards (0–10) to make and find the value of a subtraction expression. Students check off the number that represents the value of the difference (0–10) and then write the subtraction expression on the recording sheet.

Variation:

Students can choose whether to add or subtract after picking two number cards.

Standards Alignments

Addressing 1.OA.C.5, 1.OA.C.6, K.OA.A.2

Materials to Gather

Number cards 0–10

Materials to Copy

Check It Off Stage 2 Recording Sheet (groups of 1)

Stage 3: Add or Subtract Tens

Activities

- Grade1.4.A5.1 (addressing)
- Grade1.4.B6.3 (addressing)
- Grade1.4.B7.3 (addressing)
- Grade1.4.B9.3 (addressing)
- Grade1.4.B13.1 (addressing)

Stage Narrative

Students take turns picking two number cards that are multiples of 10 (0–90) and choose whether to make an addition or subtraction expression. Students check off the value of the sum or difference (0–90) and then write the addition or subtraction expression on the recording sheet.

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.6

Materials to Gather

Connecting cubes in towers of 10 and singles

Materials to Copy

Check It Off Stage 3 Recording Sheet (groups of 1), Number Cards, Multiples of 10 (0-90) (groups of 2)

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.5.A

Center: Shake and Spill (K–2)

Stage 3: Represent

Activities

- Grade1.4.B7.3 (supporting)
- Grade1.4.B9.3 (supporting)
- Grade1.4.B13.2 (supporting)

Stage Narrative

Students decide together how many counters to use (up to 10). One partner spills the counters. Both partners represent the red and yellow counters on the recording sheet.

This stage has two different recording sheets, one for kindergarten and another for grade 1. Be sure to use the appropriate recording sheet with students.

Standards Alignments

Addressing 1.OA.C.6, K.CC.A.3, K.OA.A.1, K.OA.A.2

Materials to Gather

Crayons, Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 3 Recording Sheet Grade 1 (groups of 1), Shake and Spill Stage 3 Recording Sheet Kindergarten (groups of 1)

Additional Information

Each group of 2 needs a cup and 10 two-color counters.

Stage 4: Cover (up to 10)

Activities

- Grade1.4.B7.3 (supporting)
- Grade1.4.B9.3 (supporting)
- Grade1.4.B13.2 (supporting)

Stage Narrative

Students decide together how many counters to use (up to 10). Partner A closes their eyes while Partner B shakes, spills, and covers up the yellow counters with a cup. Partner A determines how many counters are under the cup and explains how they know. Both partners record the round. Switch roles and repeat.

This stage has two different recording sheets, one for kindergarten and another for grade 1. Be sure to use the appropriate recording sheet with students.

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6, K.OA.A.5

Materials to Gather

Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2) (groups of 1), Shake and Spill Stage 4 Recording Sheet Kindergarten (groups of 1)

Additional Information

Each group of 2 needs a cup and 10 two-color counters.

Stage 5: Cover (up to 20)

Activities

- Grade1.4.B7.3 (supporting)
- Grade1.4.B9.3 (supporting)
- Grade1.4.B13.2 (supporting)

Stage Narrative

Students decide together how many counters, between 11–20, to use. Partner A closes their eyes while Partner B shakes, spills, and covers up the yellow counters with a cup. Partner A determines how many counters are under the cup and explains how they know. Both partners record the round. Switch roles and repeat.

Standards Alignments

Addressing 1.OA.C.6, 2.OA.B.2

Materials to Gather

Cups, Two-color counters

Materials to Copy

Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2) (groups of 1)

Additional Information

Each group of 2 needs a cup and 20 two-color counters.

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.2.A

Supporting

- Kindergarten.3.A
- Kindergarten.4.C
- Kindergarten.5.A
- Kindergarten.5.C
- Kindergarten.7.B

Stage 2

Addressing

- Kindergarten.2.A

Supporting

- Kindergarten.3.A
- Kindergarten.4.C
- Kindergarten.5.A
- Kindergarten.5.C
- Kindergarten.7.B

Stage 3

Addressing

- Kindergarten.4.C
- Kindergarten.7.B

Supporting

- Kindergarten.5.A
- Kindergarten.5.C

Stage 4

Addressing

- Kindergarten.7.A
- Kindergarten.7.B

Center: Grab and Count (K–1)

Stage 2: Ones Cubes

Activities

- Grade1.4.B8.3 (addressing)
- Grade1.4.B9.3 (addressing)
- Grade1.4.B13.1 (addressing)
- Grade1.4.C14.3 (addressing)
- Grade1.4.C18.2 (addressing)
- Grade1.4.D19.3 (addressing)

Stage Narrative

Each student grabs a handful of ones cubes and puts them together with their partner's. They estimate how many cubes there are and then count the cubes. Students record their estimate and the actual number of cubes on the recording sheet.

Variation:

Students can count their own group of cubes first and record an equation to represent the total number of cubes.

Standards Alignments

Addressing 1.NBT.A.1

Materials to Gather

Base-ten blocks

Materials to Copy

Grab and Count Stage 2 Recording Sheet (groups of 1)

Additional Information

Each group of 2 needs around 80 ones cubes from the base-ten block set.

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.6.B

Supporting

- Kindergarten.7.A

Center: Write Numbers (1–2)

Stage 1: Numbers to 99 by 1

Activities

- Grade1.4.B10.2 (addressing)
- Grade1.4.C14.3 (addressing)
- Grade1.4.C18.2 (addressing)

Stage Narrative

Students count by 1 and choose whether to count forward or backward. Gameboards go from 39–60, 69–90, and 78–99.

Standards Alignments

Addressing 1.NBT.A.1

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 1 Gameboard (groups of 2)

Stage 2: Numbers to 99 by 10

Activities

- Grade1.4.B12.1 (addressing)
- Grade1.4.C14.3 (addressing)
- Grade1.4.C18.2 (addressing)

Stage Narrative

Students count by 10 and choose whether to count forward or backward. Gameboards go from 3–93, 5–95, and 8–98.

Standards Alignments

Addressing 1.NBT.A.1

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 2 Gameboard (groups of 2)

Center: Greatest of Them All (1–5)

Stage 1: Two-digit Numbers

Activities

- Grade1.4.C16.1 (addressing)
- Grade1.4.C18.2 (addressing)
- Grade1.4.D19.3 (addressing)
- Grade1.4.D22.2 (addressing)

Stage Narrative

Students make two-digit numbers.

Variation:

Students try to make the number with the least value.

Standards Alignments

Addressing 1.NBT.B.3

Materials to Gather

Number cards 0–10

Materials to Copy

Greatest of Them All Stage 1 Recording Sheet (groups of 1)

Center: Get Your Numbers in Order (1–5)

Stage 1: Two-digit Numbers

Activities

- Grade1.4.C18.1 (addressing)
- Grade1.4.D19.3 (addressing)
- Grade1.4.D22.2 (addressing)

Stage Narrative

Students remove the cards that show 10 before they start. Then they choose two number cards and make a two-digit number. Students write their number in any space on the board, as long as the numbers from left to right go from least to greatest. If students cannot place their number, they get a point. The player with the fewest points when the board is filled is the winner.

Standards Alignments

Addressing 1.NBT.B.3

Materials to Gather

Dry erase markers, Number cards 0–10, Sheet protectors

Materials to Copy

Get Your Numbers in Order Stage 1 Gameboard (groups of 2)

Center: Mystery Number (1–4)

Stage 1: Two-digit Numbers

Activities

- Grade1.4.D22.1 (addressing)
- Grade1.4.D22.2 (addressing)

Stage Narrative

Students pick two cards and make a mystery two-digit number. Students give clues based on the sentence starters.

Standards Alignments

Addressing 1.NBT.B

Materials to Gather

Number cards 0–10

Materials to Copy

Mystery Number Stage 1 Directions (groups of 2)

Section A: Units of Ten

Lesson 1: Count Large Collections

Standards Alignments

Addressing	1.NBT.A.1, 1.NBT.B.2, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8
Building Towards	1.NBT.A.1, 1.NBT.B.2.c, 1.NBT.C.5

Teacher-facing Learning Goals

- Count up to 60 objects (multiples of 10) in a way that makes sense to them.

Student-facing Learning Goals

- Let's count objects.

Lesson Purpose

The purpose of this lesson is for students to count groups of multiples of 10 objects in a way that makes sense to them.

In the previous unit, students learned that a ten is a unit made up of 10 ones. Students learned that teen numbers are made up of 1 ten and some more ones, using 10-frames, drawings, and expressions ($10 + n$). In kindergarten, students learned the counting sequence by ones and tens up to 100.

The purpose of this lesson is for teachers to formatively assess how students count objects up to 60 through two counting activities. In the first activity, students count objects and represent how many in a way that makes sense to them, then compare the ways they counted. In the second activity, students count bags of different quantities that are multiples of 10, and begin to make sense of grouping objects into tens. Suggested objects include pennies, paper clips, buttons, connecting cubes, inch tiles, counters, or any other objects around the classroom. Students should also be given access to cups, paper plates and double 10-frames to help them organize their collections if they would like.

A Instructional master of the recording sheet is provided. Students use this sheet multiple times throughout the unit. Consider making 10–12 copies per student.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR2 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Bags: Activity 1, Activity 2
- Collections of objects: Activity 1, Activity 2
- Cups: Activity 1, Activity 2
- Double 10-frames: Activity 1, Activity 2
- Materials from a previous activity: Activity 2
- Materials from previous centers: Activity 3
- Paper plates: Activity 1, Activity 2

Materials to Copy

- Counting Collections Stages 1 and 2 Recording Sheet (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Identify who has been sharing their ideas in class lately. Make a note of students whose ideas have not been shared and look for an opportunity for them to share their thinking in tomorrow's lesson.

Cool-down (to be completed at the end of the lesson)

0 min

Unit 4, Section A Checkpoint

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

Student-facing Task Statement

Lesson observations

Student Responses

- Organize and count objects by tens.

- Represent a number in more than one way (drawings, numbers, words, expressions).

Begin Lesson

Warm-up

10 min

Choral Count: Count by 10

Standards Alignments

Building Towards 1.NBT.A.1, 1.NBT.B.2.c, 1.NBT.C.5

The purpose of this Choral Count is to invite students to practice counting by 10 and notice patterns in the count. These understandings help students develop fluency and will be helpful later in this lesson when students count collections with a number of objects that is a multiple of 10.

In this warm-up, students begin to look for and make use of structure (MP7) when they connect counting by 10 to the patterns they see in the digits of the two-digit numbers.

Instructional Routines

Choral Count

Student-facing Task Statement

Student Responses

Record the count in a column, lining up the tens and ones digits.

Sample responses:

Launch

- "Count by 10, starting at 30."
- Record as students count.
- Stop counting and recording at 100, then count back down to 30.

Activity

- "What patterns do you see?"
- 1–2 minutes: quiet think time
- Record responses.

- There are all zeros on the right side of the numbers.
- On the left, the numbers count up: 3, 4, 5, 6…
- We're counting by 10.
- It goes in reverse once you get to 100.

Synthesis

- "Who can restate the pattern in different words?"
- "What do you notice about how the numbers change or stay the same as we look down the column?"

Activity 1

10 min

Count a Collection

Standards Alignments

Addressing	1.NBT.A.1
Building Towards	1.NBT.B.2.c

The purpose of this activity is for students to organize and count a collection of 40 objects. Students should have access to double 10-frames, cups, paper plates, or other tools that may help them organize as they count. Students choose how to count their collection and determine how to represent their count. They may:

- count by one.
- count by one, using double 10-frames or other tools to keep track of tens (MP5).
- organize objects into groups of ten and count by ten.
- count by ten and then by one, depending on their comfort with larger numbers.

During the synthesis, students discuss different ways they counted and organized their collections.

Access for English Learners

MLR2 Collect and Display. Circulate, listen for, and collect the language students use as they work with their partners. On a visible display, record words and phrases such as: count, represent, representation, my representation shows . . . . Invite students to borrow language from the display as needed, and update it throughout the lesson.
Advances: Conversing, Reading

Materials to Gather

Bags, Collections of objects, Cups, Double 10-frames, Paper plates

Materials to Copy

Counting Collections Stages 1 and 2 Recording Sheet (groups of 1)

Required Preparation

- Each group of 2 students needs one bag of 40 objects.

Student Responses

Sample responses:

- Draws 40 objects, labeled 1, 2, 3...
- Draws 4 tens by grouping single objects with circles, labeled 10, 20, 30, 40.

Launch

- Groups of 2
- Give each group a bag of objects and access to double 10-frames, cups, paper plates, or other tools to help organize a count.
- "You and your partner will get a bag of objects. Your job is to figure out how many are in the bag."
- Consider asking:
    - "How can we make sure both partners are counting?"
    - "What might it look like to count together? What might it sound like?"
    - "How can we make decisions together about how we count?"
    - "How can you be a good math partner?"
- "Work with your partner to count the collection. Each partner will show on paper how many there are and how you counted them."

Activity

- 5 minutes: partner work time
- As students work, consider asking:
    - "How did you count? How many are there?"
    - "How can you represent this so someone can see exactly how you counted?"

    - "Tell me about what you have written here. How many does it show?"
    - "Does your representation match how you counted?"
- Monitor for students who:
    - count all, one object at a time.
    - group into tens using an organizational tool, then count.

Synthesis

- Invite previously identified students to share.
- "How are the ways they organized the same and different?" (One student moved the ones they had counted to one side of the space. The other student put groups of ten on each plate to help them count.)

Activity 2

15 min

Count More Than One Collection

Standards Alignments

Addressing	1.NBT.A.1
Building Towards	1.NBT.B.2.c

The purpose of this activity is for students to practice counting and representing collections with multiples of 10 objects. Students count one bag with their partner. When students have finished counting and recording, they trade bags with a different group and count a new collection. During the launch, teachers may choose to provide time for students to reflect on how they worked together in the previous activity. During the synthesis, students discuss using a tool that organizes the objects in groups of ten, and how that is helpful when counting a collection.

Bags B–D will be used again in a future lesson in this unit.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method with their partners, including the tools they will use, for counting the collection of objects.
Supports accessibility for: Organization, Attention

Materials to Gather

Bags, Collections of objects, Cups, Double 10-frames, Materials from a previous activity, Paper plates

Required Preparation

- Each student will need the Instructional master from the previous activity.
- Create 1 set of the following 6 bags of objects for each group of 12 students:
  - Bag A: 20 objects
  - Bag B: 40 objects
  - Bag C: 50 objects
  - Bag D: 60 objects
  - Bag E: 30 objects
  - Bag F: 10 objects

Student Responses

Sample responses:

- Draws 20 objects, labeled 1, 2, 3...
- Draws 4 tens by grouping single objects with circles, labeled 10, 20, 30, 40.
- Draws 8 tens without drawing each individual object.

Launch

- Groups of 2
- Give each group a bag of objects. Give students access to double 10-frames, cups, paper plates, or other tools to help organize a count.
- "Now you will work with your partner to count more collections. Each partner will show on paper how many there are and show how you counted."

Activity

- 5 minutes: partner work time
- "Switch bags with another group. Work with your partner to count the collection.

Each partner will show on paper how many there are and show how you counted them."

- 5 minutes: partner work time
- As students work, consider asking:
  - "How can you use what we learned in the last activity to help you organize your count?"
  - "Tell me about what you have written here. How many does it show?"
  - "Does your representation match how you counted?"
- Monitor for students who:
  - organize objects into groups of ten using cups, paper plates, or other tools.
  - group using double 10-frames.

Synthesis

- Invite previously identified students to share.
- "How did they use tools to help them count?" (With tools you don't need to count every object, you can just use the 10-frame to organize 10 and then count how many tens there are.)

Advancing Student Thinking

If students count each collection by one, consider asking:

- "Can you explain how you counted your collection?"
- "How can the double 10-frame help you count the collection?"

Activity 3

15 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 20. Students choose from any stage of previously introduced centers.

- How Close?
- Five in a Row
- Number Puzzles

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - How Close, Stages 1 and 2
  - Five in a Row, Stages 1-3
  - Number Puzzles, Stages 1 and 2

Student-facing Task Statement

Choose a center.

How Close?

Five in a Row

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of

Number Puzzles

$14 = 8 + \square$

their choice.

- 10 minutes: center work time

Synthesis

- Display 4, 8, 5, 9.
- "Diego is playing How Close, Subtract from 20. Should he choose two or three of these numbers to subtract? Which numbers should he choose?"

Lesson Synthesis

10 min

"Today we counted different collections of objects. Each collection had a lot of objects. What are some different ways we organized the objects to help us count?"

Lesson 2: Match Representations of Tens

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.c

Teacher-facing Learning Goals

- Interpet different base-ten representations of multiples of 10.

Student-facing Learning Goals

- Let's match different representations of numbers.

Lesson Purpose

The purpose of this lesson is for students to interpret different base-ten representations of multiples of 10.

Students make connections between different representations of multiples of 10. In the first activity, students work together to find the three representations (a number, ___ tens, and drawings of towers of 10) that show the same value and prove how they know the values are equivalent. In the second activity, students use what they have learned to match numbers to towers of 10. Throughout the lesson, when students explain how they know different representations match based on the their understanding of tens, the count sequence, or connections they make to the digits in the numerical representations, they look for and make use of structure and express regularity in repeated reasoning (MP7, MP8).

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Estimation Exploration (Warm-up)

Materials to Gather

- Connecting cubes: Activity 2

Materials to Copy

- Representations of Tens (groups of 27): Activity 1
- It's a Match (10-90) words, numbers, pictures (groups of 1): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Reflect on how readily students work with the unit ten, rather than ten ones. Are students counting the connecting cubes in each tower to confirm there are ten? How can you provide opportunities for students to develop an understanding of the unit ten at their own pace?

Cool-down (to be completed at the end of the lesson)

5 min

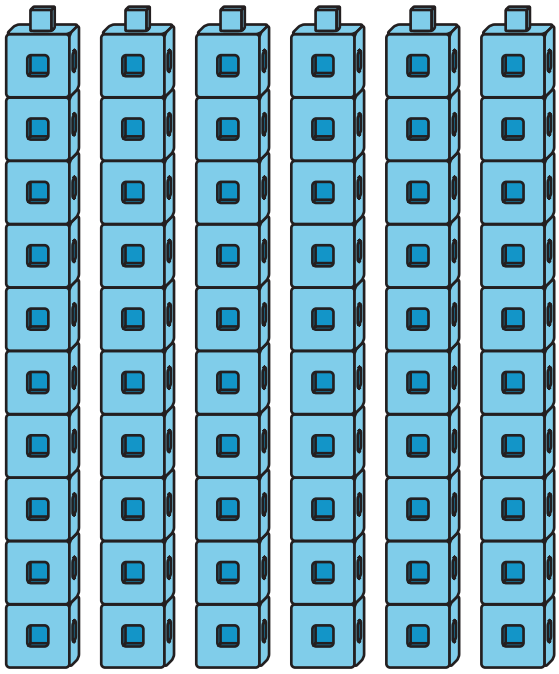
How Many Are There?

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2.c

Student-facing Task Statement

How many cubes are there?
Show your thinking using drawings, numbers, or words.



I know there are _____ cubes because

Student Responses

Sample responses:

- I know there are 60 cubes because I counted 6 tens.
- I know there are 60 cubes because I counted 10, 20, 30, 40, 50, 60.

Begin Lesson

Warm-up

10 min

Estimation Exploration: Cubes and Towers

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of an Estimation Exploration is to practice the skill of estimating a reasonable answer

based on experience and known information. When students notice that they can make a more accurate estimate more readily when the connecting cubes are grouped in towers of 10 they make use of base-ten structure (MP7).

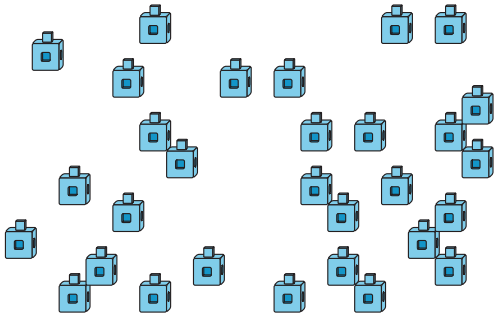
This is the first time students participate in this routine in grade 1. The teacher can begin by saying, "Today we are doing a new warm-up called Estimation Exploration. In this activity we are going to see a collection of objects. Your job is to look at the image and think about how many objects there are." Let students know that they should **estimate,** or find a value that is close to the correct value, without counting each one. As needed, clarify that the number they come up with is called an estimate.

Instructional Routines

Estimation Exploration

Student-facing Task Statement

Round 1: How many cubes?



Record an estimate that is:

too low	about right	too high

Round 2: How many cubes?

Launch

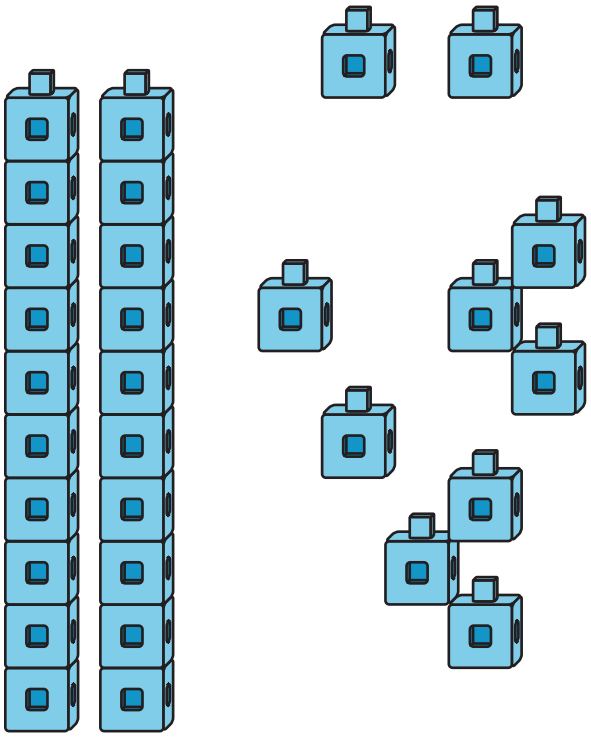
- Groups of 2
- Display the first image.
- "What is an estimate that's too high?" "Too low?" "About right?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- "Let's look at another image of the same collection."
- Display the second image.
- "Based on the second image, do you want to revise or change your estimates?"

Synthesis

- "Let's look at our revised estimates. Why were these estimates more accurate the second time?" (Some of the cubes are organized. We could see there were more than 2 tens.)
- "There are 30 cubes."



Record an estimate that is:

too low	about right	too high

Student Responses

1. Sample responses:
   - Too low: 1–20
   - About right: 21–40
   - Too high: 41–100
2. Sample responses:
   a. Too low: 20–25
   b. About right: 26–40
   c. Too high: 41–100

Activity 1

20 min

Representations of Tens

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2.c

The purpose of this activity is for students to make connections between representations of multiples of 10. Students match cards that show multiples of 10 with pictures, numbers, and words. Each student is given a card and then moves around the room to find the other two students whose cards have the same value.

During the synthesis, the teacher and students create a chart to display the matches. Students discuss the direct connection between the number, the written number of tens, and the representation of towers of 10. When students notice and describe that the first digit in each number matches the written number of tens and the number of towers of 10, they look for and make sense of the base-ten structure (MP7).

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Differentiate the degree of difficulty or complexity. Some students may benefit from starting with more accessible values. For example, cards with a value of 10 or 20.
Supports accessibility for: Social-Emotional Functioning, Visual-Spatial Processing

Materials to Copy

Representations of Tens (groups of 27)

Required Preparation

- Create a set of cards from the Instructional master for the class. Each student will only need one card.
- Create a large chart titled “Representations of Tens” at the top. Draw three columns. Label columns “Number,” “Number of Tens,” and “Drawing.”

Student Responses

- A, J, S
- B, K, T
- C, L, U
- D, M, V
- E, N, W
- F, O, X
- G, P, Y

Launch

- Groups of 2
- Give each student a card.
- “Today you will play a game in which you try to find cards that match.”
- “To play this game, each of you will get one card. Find the other two students who have cards with the same value. Each time you compare cards with another student,

- H, Q, Z
- I, R, AA

discuss whether or not your cards have the same value and how you know."

Activity

- 5 minutes: partner work time
- If time: Shuffle the cards and have students repeat the activity with new groups.
- As students work, consider asking
  - "How do you know these cards match?"
  - "How many tens does this card have?"

Synthesis

- "Let's look at the matches we saw during the game today."
- Write 10 in the first column of the chart.
- "Who has 10? How do you know?"
- Repeat for all multiples of 10, discussing how students know their cards match for each multiple of 10.

Activity 2

15 min

It's a Match!

Standards Alignments

Addressing 1.NBT.B.2.c

The purpose of this activity is for students to connect written multiples of 10 to base-ten representations. Students notice a connection between how the numbers are said, written, and represented with tens. For example, "70" has the word "seven" as it is said, the digit "7" when it is written, and is represented with seven tens. Each number name is written under the number in this activity. Students are not expected to spell number names.

Access for English Learners

MLR8 Discussion Supports. Invite students to begin partner interactions by repeating the question, "How did you match the towers of 10 to the written numbers?" This gives both students an opportunity to produce language.
Advances: Conversing

Materials to Gather

Connecting cubes

Materials to Copy

It's a Match (10-90) words, numbers, pictures (groups of 1)

Student Responses

Students match:

- 30, 3 towers of 10, 3 tens
- 50, 5 towers of 10, 5 tens
- 20, 2 towers of 10, 2 tens
- 60, 6 towers of 10, 6 tens
- 10, 1 tower of 10, 1 ten
- 80, 8 towers of 10, 8 tens
- 40, 4 towers of 10, 4 tens
- 70, 7 towers of 10, 7 tens
- 90, 9 towers of 10, 9 tens

Launch

- Groups of 2
- Give each student a Instructional master and access to connecting cubes.

Activity

- Read the task statement from the Instructional master.
- 5 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students who count the number of towers, match correctly, and can explain how they knew.

Synthesis

- Invite previously identified students to share.
- "How did you know which representations matched?" (I counted by ten and found the number. I said 10, 20, 30, 40, 50, and found 50.)

Lesson Synthesis

10 min

"Today we thought about how to count things that are arranged in groups of 10 and looked at the numbers that represent them."

Display one row of the chart made during the activity 1 synthesis; for example: 30, 3 towers of 10, 3 tens
"What do you notice about the towers of 10 and the number that represents them?" (30 has a 3 in it, there are 3 towers of 10 or 3 tens.)
"The 3 in the number 30 tells us how many tens there are."

Display another row on the chart.
"How many towers are there?" (7)
"How many tens are there?" (7 tens because each tower is 10.)
"How many cubes are there?" (70)

Complete Cool-Down

Response to Student Thinking

Students count by one to determine how many cubes.

Next Day Support

- During the warm-up, have students practice counting the cubes towers by ten.

Lesson 3: Addition and Subtraction with Tens

Standards Alignments

Addressing	1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8
Building Towards	1.NBT.B.2.c, 1.NBT.C.5

Teacher-facing Learning Goals

- Add and subtract 10 from multiples of 10.

Student-facing Learning Goals

- Let's add and subtract 10.

Lesson Purpose

The purpose of this lesson is for students to add and subtract 10 from multiples of 10.

In this lesson, students build on their understanding of tens as they add 10 to and subtract 10 from multiples of 10. Students learn that they can think of adding or subtracting 10 as adding or subtracting a ten from a number of other tens. In the first activity, students use towers of 10 to physically add or subtract a ten from a multiple of 10. In the second activity, students learn a new stage of the Five in a Row center, where they choose a card with a multiple of 10 and decide whether to add or subtract 10 in order to cover five spaces in a row on their gameboard. They may choose to continue to use towers of 10 if helpful.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

How Many Do You See? (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2
- Materials from previous centers: Activity 3
- Two-color counters: Activity 2

Materials to Copy

- Five in a Row Addition and Subtraction Stage 4 Gameboard (groups of 2): Activity 2
- Number Cards, Multiples of 10 (0-90) (groups of 2): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Reflect on times you observed students listening to one another's ideas today in class. What norms would help each student better attend to their classmates' ideas in future lessons?

Cool-down (to be completed at the end of the lesson)

0 min

Unit 4, Section A Checkpoint

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.C.4, 1.NBT.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Organize and count objects by ten.
- Add and subtract multiples of 10 from other multiples of 10.
- Write multiples of 10 accurately.
- Represent a number in more than one way (drawings, numbers, words, expressions).

Begin Lesson

Warm-up

10 min

How Many Do You See: Groups of 10

Standards Alignments

Building Towards 1.NBT.B.2.c

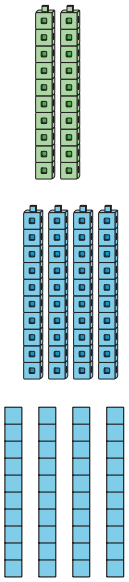
The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see. This leads into the next activity, in which students add or subtract 10 from multiples of 10. The third image introduces a base-ten drawing, which students will see throughout the rest of the unit.

Instructional Routines

How Many Do You See?

Student-facing Task Statement

How many do you see?
How do you see them?



Student Responses

Sample responses:

- 20: I see 2 cube towers of 10.
- 40: I counted 10, 20, 30, 40.
- 40: It's the same as the last one—4 towers of 10.

Launch

- Groups of 2
- "How many do you see? How do you see them?"
- Flash the image.
- 30 seconds: quiet think time

Activity

- Display the image.
- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- Repeat for each image.

Synthesis

- "How are the cube towers of 10 the same as the drawing in the last image? How are they different?" (They both show 4 tens in different ways. One looks like cubes and one looks like a drawing.)

Activity 1

10 min

How Many Tens Now?

Standards Alignments

Addressing	1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.6
Building Towards	1.NBT.C.5

The purpose of this activity is for students to use towers of 10 to physically add or subtract a ten from a multiple of 10. The structure of this task encourages students to notice patterns in the count of tens and the numbers used to represent the count. Students connect adding and subtracting a ten to skip-counting forward or backward by ten and what they've learned about counting groups of tens from previous lessons (MP7, MP8).

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

1. a. Show 1 ten.
   Add a ten.
   How many do you have now?
   b. Add another ten.
   How many do you have now?
   Show your thinking using drawings, numbers, or words.
   c. Add another ten.
   How many do you have now?
   Show your thinking using drawings, numbers, or words.
   d. Add another ten.
   How many do you have now?
   Show your thinking using drawings, numbers, or words.
   e. Add another ten.
   How many do you have now?
   Show your thinking using drawings,

Launch

- Groups of 3
- Give each group 9 towers of 10 connecting cubes.
- "Show 1 ten."
- "Add a ten. How many do you have now?"
- 30 seconds: partner discussion
- Share responses.
- "Now that we have answered the first one together, you and your partner will keep adding 1 ten and record how many you have each time. As you work, talk to your partner about what you notice about the numbers."

Activity

- 5 minutes: partner work time
- Monitor for students who represent the

numbers, or words.

f. Add another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

g. Add another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

h. Add another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

2. a. Show 9 tens
Take away a ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

b. Take away another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

c. Take away another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

d. Take away another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

e. Take away another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

f. Take away another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

g. Take away another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

value with:

- base-ten drawings
- __ tens
- two-digit number
- addition equations

Synthesis

- Display 7 towers of 10.
- "I have 7 tens, which is 70 cubes. How many will I have if I add one more ten? How can I represent it?"
- Invite selected students to share their representations.
- "How are these representations related?" (They all show the same value.)
- "What did you notice each time you added a ten?" (The number was the next number you say when you count by ten. The number of tens was 1 more. One of the digits changed. It went up by 1.)
- "What did you notice each time you subtracted a ten?" (The number was the number you say when you count back by 10. The number of tens was 1 less. One of the digits changed. It was 1 less.)

h. Take away another ten.
How many do you have now?
Show your thinking using drawings, numbers, or words.

Student Responses

1. a. 20. Sample response: 1 ten and 1 ten is 2 tens.
   b. 30. Sample response: $20 + 10 = 30$
   c. Sample response: 4 tens = 40
   d. Sample response: Drawing of 5 towers of 10, labeled 10, 20, 30, 40, 50
   e. Sample response: 6 tens = 60
   f. Sample response: 6 tens and 1 ten is 7 tens.
   g. Sample response: $70 + 10 = 80$
   h. Sample response: 9 tens = 90
2. a. 80. Sample response: 9 tens take away 1 ten is 8 tens.
   b. Sample response: $80 - 10 = 70$
   c. Sample response: 6 tens = 60
   d. Sample response: 6 tens - 1 ten = 5 tens
   e. Sample response: Drawing of 40 in base-ten drawing labeled 10, 20, 30, 40
   f. Sample response: 4 tens take away 1 ten is 3 tens.
   g. Sample response: $30 - 10 = 20$
   h. Sample response: 1 ten = 10

Activity 2

15 min

Introduce Five in a Row, Add or Subtract 10

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.5

The purpose of this activity is for students to learn stage 4 of the Five in a Row center. Students choose a card that shows a multiple of 10. They choose whether to add or subtract 10 from the number on the card to cover a number on their gameboard.

Access for English Learners

MLR8 Discussion Supports. Display sentence frames to encourage partner discussion during the game: "I will add 10. The sum is _____." and "I will subtract 10. The difference is _____."
Advances: Speaking, Conversing, Representing

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. To support working memory, provide students with access to sticky notes or mini whiteboards to keep track of solutions for adding 10 or subtracting 10 before making a choice of where to place the counter on the gameboard.
Supports accessibility for: Memory, Organization

Materials to Gather

Connecting cubes in towers of 10 and singles, Two-color counters

Materials to Copy

Five in a Row Addition and Subtraction Stage 4 Gameboard (groups of 2), Number Cards, Multiples of 10 (0-90) (groups of 2)

Required Preparation

- Create a set of cards from the Instructional master for each group of 2.

Student-facing Task Statement

Record your favorite round.

Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give each group a set of cards and a gameboard. Give students access to connecting cubes in towers of 10 and two-color counters.
- "We are going to learn a new way to play Five in a Row. It is called Five in a Row, Add or Subtract 10."
- Display the gameboard and pile of cards.

Student Responses

Sample responses:

- $40 + 10 = 50$
- I counted by tens. 10, 20, 30, 40, 50.
- I drew 4 towers of 10 and added one more tower.

- "I am going to flip one card over. Now I will decide if I want to add 10 to the number or subtract 10 from the number. I am going to choose to add 10. What is the sum? How do you know?"
- 30 seconds: quiet think time
- Share responses.
- "Now, I put a counter on the sum on my gameboard. Now it's my partner's turn."
- "Start by deciding who will use the yellow side and who will use the red side of the counters. Then, take turns flipping one card over, choosing to add 10 to or subtract 10 from the number, and placing your counter on the gameboard to cover the sum or difference. The first person to cover five numbers in a row is the winner."

Activity

- 8 minutes: partner work time
- "Now choose your favorite round. Record how you added or subtracted 10."
- 2 minutes: independent work time
- Monitor for students who:
    - draw towers of 10
    - count on or back by 10
    - say or write "2 tens and 1 ten is 3 tens"
    - record with expressions or equations

Synthesis

- Invite 2-3 previously identified students to share how they added or subtracted 10.
- Display gameboard with some numbers covered by counters.
- Display a card.
- "Would you add or subtract 10 from this number? Why?" (I would add 10 because

then I could cover _____. I would subtract 10 because then I could cover _____.)

- Repeat as time allows.

Activity 3

15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting. Students choose from any stage of previously introduced centers.

- Five in a Row
- How Close?
- Number Puzzles

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Five in a Row, Stages 1–4
  - How Close, Stages 1 and 2
  - Number Puzzles, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Five in a Row

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student

How Close?

Number Puzzles

14 = 8 + ☐

book.

- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- "Han is playing Five in a Row, Add or Subtract 10. He picks a card with the number 60. What are the two numbers he could cover on his gameboard? How do you know?"

Lesson Synthesis

10 min

"Today we added and subtracted 10. Tell your partner how you add 10 to a number." (I count by ten until I get to the number and then I count one more number. I look at the number to see how many tens are in it and I add one more.)

Lesson 4: More Addition and Subtraction with Tens

Standards Alignments

Addressing 1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6

Teacher-facing Learning Goals

- Add and subtract multiples of 10 from multiples of 10.

Student-facing Learning Goals

- Let's add and subtract tens.

Lesson Purpose

The purpose of this lesson is for students to add and subtract multiples of 10 from multiples of 10.

In the last lesson, students added and subtracted 10 from multiples of 10. In this lesson, students strengthen their understanding of place value by adding and subtracting multiples of 10 from multiples of 10 represented in various ways. In the first activity, students solve story problems in familiar contexts and represent their thinking in a way that makes sense to them. They make connections between different representations. In the second activity, students play a familiar game in which they choose two cards and decide whether to add or subtract the numbers. In the lesson synthesis, students connect addition and subtraction of tens to basic addition and subtraction facts.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR6 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2
- Double 10-frames: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

In future lessons, students will add two-digit numbers to other two-digit numbers by adding tens to tens and ones to ones. How did the work of today's lesson help transition students from methods based on counting on or counting back by one to methods based on place value?

Cool-down (to be completed at the end of the lesson)

5 min

Add or Subtract Tens

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.6

Student-facing Task Statement

Find the value of the expressions.

1. $50 + 20$
2. $70 - 50$
3. $60 - 30$

Student Responses

1. 70
2. 20
3. 30

Begin Lesson

Warm-up

10 min

Number Talk: Plus or Minus 10

Standards Alignments

Addressing 1.NBT.C.5

The purpose of this Number Talk is to elicit strategies and understandings students have for adding and subtracting 10. These understandings help students develop fluency and will be helpful later in this lesson when students add or subtract multiples of 10.

When students share strategies based on adding or subtracting the digits in the tens place and explain why this method works, they are looking for and making use of the base-ten system and expressing regularity in repeated reasoning (MP7, MP8).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $30 + 10$
- $40 + 10$
- $80 - 10$
- $70 - 10$

Student Responses

- 40: 3 tens and 1 ten is 4 tens, which is 40.
- 50: It's like skip-counting by 10.
- 70: 8 tens minus 1 ten is 7 tens, which is 70.
- 60: I know $60 + 10$ is 70, so $70 - 10$ is 60.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Did anyone use the same method but would explain it differently?"
- "Did anyone approach the problem in a different way?"

Activity 1

20 min

How Many Are in the Bag?

PLC Activity

Standards Alignments

Addressing 1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.6

The purpose of this activity is for students to solve two story problems involving adding or subtracting multiples of 10. Students are presented with a familiar context from a previous lesson in which students counted cubes in different bags. The quantities of cubes are described using representations that students are familiar with, and students add or subtract in a way that makes sense to them. The familiar context and representations are used to help students make sense of adding and subtracting tens. In the synthesis, students compare and connect the different representations used for each problem (MP2).

Access for English Learners

MLR6 Three Reads. Keep books or devices closed. To launch this activity, display only the problem stem, without revealing the question. "We are going to read this story problem three times." After the 1st Read: "Tell your partner what happened in the story." After the 2nd Read: "What are all the things we can count in this story?" Reveal the question. After the 3rd Read: "What are different ways we can solve this problem?"
Advances: Reading, Representing

Materials to Gather

Connecting cubes in towers of 10 and singles,
Double 10-frames

Student-facing Task Statement

1. Jada is counting collections of cubes.
   In Bag A there are 30 cubes.
   In Bag B there are 2 towers of 10.
   How many cubes are in the two bags all together?
   Show your thinking using drawings, numbers, or words.
2. Tyler is counting a collection of cubes.
   In Bag C there are 7 towers of 10.
   He takes 40 cubes out of the bag.
   How many cubes does he have left in the bag?
   Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles and double 10-frames.

Activity

- Read the task statement.
- 7 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students who show:
  - towers of 10
  - base-ten drawings

Student Responses

1. 50. Sample response: 2 towers of 10 is 20. $30 + 20 = 50$
2. 30. Sample response: Drawing of 7 towers of 10 with 4 towers crossed off, with the remaining 3 towers of 10 circled.

- __ tens and __ tens
- expressions or equations

Synthesis

- Invite previously identified students to share their representations.
- "How are these representations the same? How are they different?"

Advancing Student Thinking

If students attempt to add or subtract using single cubes (or representations of single cubes), consider asking:

- "How are you planning to find out how many cubes there are now?"
- "How could you use what we've learned about tens to solve this problem?"

Activity 2

15 min

Add and Subtract Tens

Standards Alignments

Addressing 1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.6

The purpose of this activity is for students to practice adding and subtracting multiples of 10 from multiples of 10. Students may use any method that makes sense to them, such as using connecting cubes in towers of 10, making base-ten drawings, or adding or subtracting the single-digit number of tens. When students notice they can add tens to tens just like they add single-digit numbers, they look for and make use of the base-ten structure of numbers (MP7).

Access for Students with Disabilities

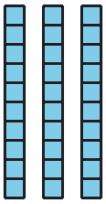
Action and Expression: Develop Expression and Communication. Identify connections between the different methods students used and the way in which students showed adding or subtracting tens.
Supports accessibility for: Conceptual Processing, Organization

Materials to Gather

Connecting cubes in towers of 10 and singles

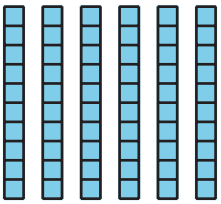
Student-facing Task Statement

1. Add 20:



Equation: _____

2. Subtract 20:



Equation: _____

3. 4 tens and 5 tens is _____

Equation: _____

4. 8 tens take away 3 tens is _____

Equation: _____

5. $20 + 60 =$ ☐
6. $70 - 20 =$ ☐
7. $90 - 70 =$ ☐
8. $40 + 40 =$ ☐

Student Responses

1. $30 + 20 = 50$

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10.
- "Now you will practice adding and subtracting with tens."

Activity

- 5 minutes: independent work time
- 5 minutes: partner work time

Synthesis

- Share responses and different methods used for each problem.

2. $60 - 20 = 40$
3. 9 tens, $40 + 50 = 90$
4. 5 tens, $80 - 30 = 50$
5. 80
6. 50
7. 20
8. 80

Advancing Student Thinking

If students count on by one or do not find the numbers that make each equation true, but are able to complete the base-ten drawings and addition and subtraction statements, consider asking:

- "How did you find the number to make this equation true? How can you prove that the equation is true?"
- "How could you think about this equation as adding (or subtracting) tens?"

Lesson Synthesis

10 min

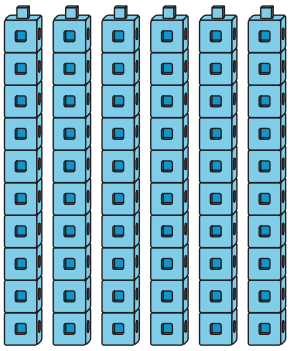
Display $4 + 3$ and $40 + 30$.
"Today we practiced adding and subtracting tens. How are these expressions the same? How are they different?" (They are both adding 4 + 3. The first one is adding ones and the second is adding tens. You can use 4 tens + 3 tens for the second expression.)

Student Section Summary

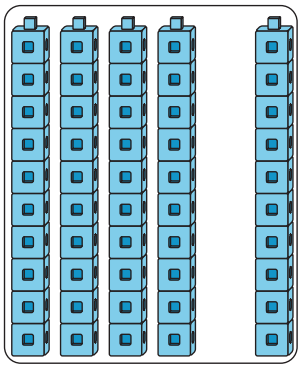
We learned how to show tens in different ways.

6 tens

60

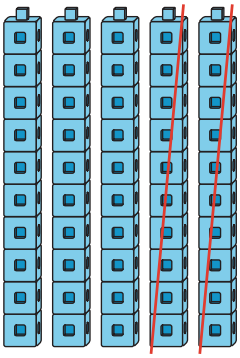


We learned how to add and subtract tens from other tens.



4 tens and 1 ten is 5 tens

$$40 + 10 = 50$$



5 tens take away 2 tens is 3 tens

$$50 - 20 = 30$$

Complete Cool-Down

Response to Student Thinking

Students count each cube in the tower to confirm it is ten.

Next Day Support

- During center time, encourage students to count collections with towers of ten.

Lesson 5: Center Day 1

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.C.4, 1.NBT.C.6, 1.OA.C.6, 1.OA.D.8

Teacher-facing Learning Goals

- Add and subtract multiples of 10 from multiples of 10.
- Add and subtract within 20.

Student-facing Learning Goals

- Let's add and subtract.

Lesson Purpose

The purpose of this lesson is for students to practice adding and subtracting a multiple of 10 from a multiple of 10 and to practice adding and subtracting within 20.

In Activity 1, students learn stage 3 of the Check It Off center. In this new stage, called Add or Subtract Tens, students pick two number cards that are multiples of 10 (0–90) and choose whether to make an addition or subtraction expression. In Activity 2, students choose from previously introduced centers that also focus on adding and subtracting.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1
- Materials from previous centers: Activity 2

Materials to Copy

- Check It Off Stage 3 Recording Sheet (groups of 1): Activity 1
- Number Cards, Multiples of 10 (0-90) (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	25 min
Lesson Synthesis	10 min

Teacher Reflection Question

What do your students think it means to be good at math? How are you helping them change negative impressions they might have about their ability to reason mathematically?

Begin Lesson

Warm-up

10 min

Which One Doesn't Belong: Tens

Standards Alignments

Addressing 1.NBT.B.2

This warm-up prompts students to compare four images focusing on groups of 10. It gives the teacher an opportunity to hear how students use terminology and talk about characteristics of the items in comparison to one another (MP6). During the synthesis, ask students to explain the meaning of any terminology they use, such as groups of 10.

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?

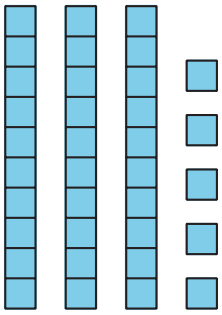
A

B

Launch

- Groups of 2
- Display the image.
- "Pick one that doesn't belong. Be ready to share why it doesn't belong."
- 1 minute: quiet think time

C



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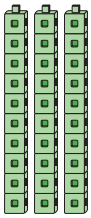


30

Student Responses

- A doesn't belong because it's the only one with an addition sign.
- B doesn't belong because it's the only one that shows cubes.
- C doesn't belong because it's the only one that doesn't show 30.
- D doesn't belong because it's the only one that doesn't show each ten.

Activity

- "Discuss your thinking with your partner."
- 2–3 minutes: partner discussion
- Share and record responses.

Synthesis

- "Let's find at least one reason why each one doesn't belong."
- "How are A and B alike?" (They both show three groups of 10.)

Activity 1

15 min

Introduce Check It Off, Add or Subtract Tens

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.6

The purpose of this activity is for students to learn stage 2 of the Check It Off center. Students take turns picking two number cards that are multiples of 10 (0–90) and choose whether to make an addition or subtraction expression. Students check off the value of the sum or difference

(0–90) and then write the addition or subtraction expression on the recording sheet.

Materials to Gather

Connecting cubes in towers of 10 and singles

Materials to Copy

Check It Off Stage 3 Recording Sheet (groups of 1), Number Cards, Multiples of 10 (0-90) (groups of 2)

Required Preparation

- Create a set of cards from the Instructional master for each group of 2.

Launch

- Groups of 2
- Give each group a set of cards, two recording sheets, and access to connecting cubes in towers of 10.
- "We are going to learn a new way to do the Check It Off center. It is called Check It Off, Add or Subtract Tens."
- "Choose two cards and decide whether you want to add or subtract. After you find the sum or difference, check it off on the recording sheet and write the expression. Take turns with your partner. At the end of the game the partner who checks off the most numbers wins."

Activity

- 10 minutes: partner work time

Synthesis

- Display a recording sheet with 90 checked off and 10 not checked off.
- Display cards 40 and 50.
- "Should we add or subtract these numbers? Why?" (We should subtract because $50 - 40 = 10$ and we haven't checked off 10 yet, but $40 + 50 = 90$ and 90 is already

checked off.)

Activity 2

25 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.C.6, 1.OA.D.8

The purpose of this activity is for students to choose an activity to work on that focuses on addition and subtraction. Students choose from any stage of previously introduced centers.

- Five in a Row
- How Close?
- Number Puzzles

Access for English Learners

MLR8 Discussion Supports. Synthesis: For each reflection that is shared, invite students to turn to a partner and restate what they heard using precise mathematical language.
Advances: Listening, Speaking

Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Give students access to manipulatives such as connecting cubes, counters, or double 10-frames.
Supports accessibility for: Conceptual Processing, Memory

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Five in a Row, Stages 1–4
  - How Close, Stages 1 and 2

- Number Puzzles, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Five in a Row

How Close?

Number Puzzles

14 = 8 + ☐

Launch

- Groups of 2
- "Now you will choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do first."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time
- "Choose what you would like to do next."
- 10 minutes: center work time

Synthesis

- "What is one thing you learned or got better at by working on the activity you chose?"

Lesson Synthesis

10 min

"How did you and your partner work together during centers? What went well? What can we continue to work on?"

Section B: Tens and Ones

Lesson 6: Count Larger Collections

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.a, 1.NBT.B.2.c, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

Teacher-facing Learning Goals

- Count up to 60 objects in a way that makes sense to them.

Student-facing Learning Goals

- Let's organize, count, and show collections.

Lesson Purpose

The purpose of this lesson is for students to organize, count, and represent a group of objects.

In the previous section, students organized and counted groups of ten and represented the base-ten structure of multiples of 10 using drawings, words, and numbers. In this lesson, students learn that a number can be grouped into tens and ones. As students group and count collections of objects, they consider how to organize the objects into groups of 10 and count the leftover objects that do not make a group of 10. Just as students reason that teen numbers are a ten and some ones, students use the collections to reason that you can have an amount of tens and some ones. At this time, students are not expected to write two-digit numbers, but some students may attempt to do so. Students read and write numbers in later lessons.

The same Instructional master is used in both activities and again in centers, so teachers may want to make multiple copies for each student.

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Bags: Activity 1
- Connecting cubes in towers of 10 and singles: Activity 2
- Connecting cubes: Activity 1
- Cups: Activity 1
- Double 10-frames: Activity 1
- Materials from previous centers: Activity 3
- Paper plates: Activity 1

Materials to Copy

- Counting Collections Stages 1 and 2 Recording Sheet (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

How effective were your questions in supporting students' thinking about units of ten today? What did students say or do that showed they were effective?

Cool-down (to be completed at the end of the lesson)

0 min

Unit 4, Section B Checkpoint

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

Student-facing Task Statement

Lesson observations

Student Responses

- Describe a two-digit number as made up of _____ tens _____ ones.
- Represent a number in more than one way (drawings, numbers, words, expressions).

Begin Lesson

Warm-up

10 min

Choral Count: Count to 81

Standards Alignments

Addressing 1.NBT.B.2

The purpose of this Choral Count is to invite students to practice counting by 1 and notice patterns in the count. This will be helpful later in this lesson when students count up to 80 objects.

Instructional Routines

Choral Count

Student Responses

Record the count in columns with 50, 60, 70, 80 at the top of each column.

Sample responses:

- 0–9 are repeated in each column.
- In the first column they all have 50.
- In the second column they all have 60.

Launch

- "Count by 1, starting at 50."
- Record as students count.
- Stop counting and recording at 81.

Activity:

- "What patterns do you see?"
- 1–2 minutes: quiet think time
- Record responses.

Synthesis

- "What do you notice about the numbers as we count?"

Activity 1

15 min

Count Another Collection

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2.a, 1.NBT.B.2.c

The purpose of this activity is for students to organize, count, and represent a collection of 52 objects. Students should have access to double 10-frames, cups, paper plates, or other tools that can help them organize.

Students choose how to count their collection and determine how to represent their count. Some students may count by one as they do not yet trust that counting by ten yields the same result. Other students may apply what they learned in previous lessons and create groups of ten using double-ten frames or other tools (MP5). Some students may continue to count by one after they have organized the cubes into tens while others may count by ten, then one. Regardless of how they count, students need to be careful and organized to make sure they count accurately (MP6).

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. To support working memory, provide students with access to sticky notes or mini whiteboards.
Supports accessibility for: Memory, Organization

Materials to Gather

Bags, Connecting cubes, Cups, Double 10-frames, Paper plates

Materials to Copy

Counting Collections Stages 1 and 2 Recording Sheet (groups of 1)

Required Preparation

- Each group of 2 needs 1 bag of 52 single connecting cubes.

Student Responses

Sample responses:

- draws 52 single cubes
- draws 5 groups of 10 and 2 leftovers, counts 10, 20, 30, 40, 50, 51, 52
- draws 5 groups of 10 and 2 leftovers, writes 5 tens or 50, 51, 52

Launch

- Groups of 2
- Give each group a collection of objects and access to double 10-frames, cups, paper plates, or other tools to help organize their count.
- "You and your partner will get a bag of objects. Your job is to figure out how many are in the bag. Work with your partner to count the collection. Each partner will show on paper how many there are and show how you counted

them."

Activity

- 10 minutes: partner work time
- As students work, consider asking:
  - "How did you count? How many are there?"
  - "How can you show this so someone can see exactly how you counted?"
  - "Tell me about what you have written here. How many does it show?"
  - "Does your representation match how you counted?"

Synthesis

- Invite students to share how many objects they counted in the collection.
- "How was this collection different from the collections that you counted before?" (Those collections only had tens and this one has tens and some ones.)
- "Some collections of objects can be organized into groups of ten objects with no leftovers. Some collections of objects have groups of ten and some leftover objects. They have some tens and some ones. We say that this collection has 5 tens and 2 ones."

Activity 2

10 min

Noah Counts a Collection

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2.a, 1.NBT.B.2.c

The purpose of this activity is for students to analyze a collection of connecting cubes that is arranged in towers of 10. Students analyze another student's thinking about a representation of 48 cubes in towers of 10. When students explain that they disagree with Noah because a ten must include 10 ones, they show their understanding of a ten and the foundations of the base-ten system (MP3, MP7).

Access for English Learners

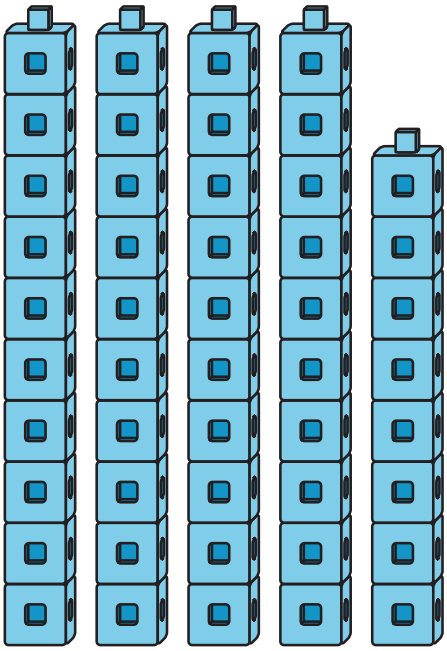
MLR8 Discussion Supports. Synthesis: At the appropriate time, give students 2–3 minutes to make sure that everyone in their group can explain why they agree or disagree with Noah. Invite groups to rehearse what they will say when they share with the whole class.
Advances: Speaking, Conversing, Representing

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Noah organized his collection of connecting cubes.



He counts and says there are 50 cubes.
Do you agree or disagree?
Explain how you know:

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- "Noah counted a collection of connecting cubes. He says there are 50 cubes. Do you agree or disagree? Explain how you know. You will have a chance to think about it on your own and talk to your partner about Noah's thinking before you write your response."

Activity

- 1 minute: quiet think time
- "Share your thinking with your partner."
- 2 minutes: partner discussion
- "Explain why you agree or disagree with Noah. Write the word 'agree' or 'disagree' in the first blank. Then write why you agree or disagree."
- 3 minutes: independent work time

I _____ with Noah because

Student Responses

Disagree. Sample responses:

- There aren't 5 tens.
- There are 2 cubes missing.
- There are 4 tens and 8 ones.

Synthesis

- Invite students to share whether they agree or disagree, and their reasons.
- If needed, ask "How do you know there are not 50 cubes?" (50 is 5 tens. There are only 4 tens here. The last tower isn't 10. There are 4 tens and 8 ones.)

Advancing Student Thinking

If students attempt to check Noah's count by counting all the cubes by one, consider asking:

- "How are you checking to see if there are 50 cubes?"
- "How could you use what you know about groups of ten to check Noah's thinking?"

Activity 3

15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting. Students choose from any stage of previously introduced centers.

- Check It Off
- Five in a Row
- Number Puzzles

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Check It Off, Stages 1–3
  - Five in a Row, Stages 1–4
  - Number Puzzles, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Check It Off

Five in a Row

Number Puzzles

$14 = 8 + \square$

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- "Jada is playing Check It Off. She still needs to check off 30. What numbers could Jada pick to get a sum or difference of 30?" (20 and 10, 90 and 60, 80 and 50, 70 and 40, 60 and 30, 50 and 20, 40 and 10)

Lesson Synthesis

10 min

"Today we learned that a collection can be made up of tens and ones. Knowing how many tens and how many ones can help us determine how many are in a collection."

Display 3 towers of 10 and 7 singles.
"How many tens are in this collection?" (3 tens)
"How many ones are there?" (7 ones)

Record 3 tens 7 ones and 37.

"How can knowing that this representation has 3 tens and 7 ones help us read the number?" (The 3 is the number of tens, so that is 30. The 7 is the ones so that is 7. So it is thirty-seven.)

Lesson 7: Numbers With Tens and Ones

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.C.4, 1.NBT.C.6, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6

Teacher-facing Learning Goals

- Read two-digit numbers.
- Understand any two-digit number as composed of tens and ones.

Student-facing Learning Goals

- Let's learn more about tens and ones.

Lesson Purpose

The purpose of this lesson is for students to understand that two-digit numbers are composed of tens and ones.

In the previous lesson, students considered different ways to organize, count, and represent a collection of 52 objects.

In this lesson, students generalize the base-ten structure to all two-digit numbers. They read these numbers and consider how they are made up of tens and ones. At this time, students do not need to write two-digit numbers because they will do so in a later lesson.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2
- Materials from previous centers: Activity 3
- Number cards 0–10: Activity 1

Materials to Copy

- Make It, Two-Digit Numbers Recording Sheet Number, Drawing, Words (groups of 1): Activity 1

Required Preparation

- Create a poster with the number 6 in the tens place and a sticky note to the right of the 6 for the Lesson Synthesis.

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

What opportunities are you giving students to reflect on their understanding of the mathematical content?

Cool-down (to be completed at the end of the lesson) 0 min

Unit 4, Section B Checkpoint

Standards Alignments

Addressing 1.NBT.B.2

Student-facing Task Statement

Lesson observations

Student Responses

- Describe a two-digit number as made up of _____ tens _____ ones.
- Represent a number in more than one way (drawings, numbers, words, expressions).

Begin Lesson

Warm-up 10 min

Notice and Wonder: One-and Two-digit Numbers

Standards Alignments

Addressing 1.NBT.B.2

The purpose of this warm-up is for students to notice how numbers are alike and different, which will be useful when students connect the number of tens and ones to how two-digit numbers are read and written in a later activity. In the synthesis, students are introduced to the term **two-digit number.** While students may notice and wonder many things about these numbers, the differences between one-digit numbers and two-digit numbers are the important discussion points.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

Set A	Set B
0	10
1	23
2	45
3	76
4	89
5	
6	
7	
8	
9	

Student Responses

Students may notice:

- There are more numbers in Set A.
- The numbers in Set B are made up of the numbers in Set A.
- The numbers in Set A are made up of one number and the numbers in Set B are made

Launch

- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "The numbers in Set B are called **two-digit numbers**."
- Display 89.
- "This is one number, the number eighty-nine. This number has two digits, an 8 and a 9."
- "In the number 89, the 8 tells us how many tens are in the number and the 9 tells us how many ones are in the number."
- "Today you will work on making two-digit numbers."

up of two numbers.

Students may wonder:

- Are there more numbers that can go in Set B?

Activity 1

15 min

Make It: Tens and Ones

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of this activity is for students to extend their understanding of teen numbers as a ten and some ones to an understanding of all two-digit numbers as some tens and some ones. Students choose two number cards and create a two-digit number. As they build the two-digit numbers with towers of 10 and singles, students see that each two-digit number is composed of a number of tens and a number of ones (MP8). Some students may read the two-digit number and count out towers of 10 and singles until they have made the number. For example, they may read 82 as eighty-two and count by 10 to 80 and count on by one to 82. Some students may begin to think about the meaning of each digit and take that many tens and ones to make the number. For example, they show they know the digit 8 in 82 means 8 tens and the 2 means 2 ones, so they grab 8 towers of 10 and 2 singles.

During the launch the teacher demonstrates how to make a two-digit number using number cards and explains how students record their thinking. However, the teacher should not demonstrate making the number using the connecting cubes, drawings, or _____ tens _____ ones. It is important for students to explore these representations during the activity.

Materials to Gather

Connecting cubes in towers of 10 and singles, Number cards 0–10

Materials to Copy

Make It, Two-Digit Numbers Recording Sheet Number, Drawing, Words (groups of 1)

Student-facing Task Statement

- Partner 1 draws 2 number cards and uses them to make a two-digit number.
- Each partner says the number.
- Partner 2 builds the number using cubes.

Launch

- Groups of 2
- Give each group a set of number cards, connecting cubes in towers of 10 and singles, and recording sheets.

- Partner 1 checks to see if they agree.
- Each partner makes a drawing of the number and records how many tens and ones.
- Switch roles and repeat.

Student Responses

Samples responses:

two-digit number	drawing	__ tens _ ones
63	base-ten drawing of 6 tens 3 ones	6 tens 3 ones
29	base-ten drawing of 2 tens 9 ones	2 tens 9 ones

- Ask students to take out the cards with 10 on them.
- "We are going to play a game called Make It. You will work with your partner to make a two-digit number and represent the number in different ways."
- Display two number cards and the recording sheet.
- "First, one partner picks two number cards and makes a two-digit number. I picked a [3] and a [5]. What two-digit numbers can I make?" (35 or 53)
- Demonstrate writing one of the numbers on the recording sheet.
- "Now both partners say the number."
- "Then, the partner who made the number watches the other partner build the number with connecting cubes. Make sure you both agree on how to build the number. Then both partners complete the recording sheet with a drawing and the number of tens and ones."

Activity

- 10 minutes: partner work time
- As students work, consider asking:
  - "How do you say this two-digit number?"
  - "What is your plan for building the number?"
  - "How many tens does this number have?"
  - "How many ones does this number have?"

Synthesis

- Display the number 24 and a base-ten drawing of 4 tens and 2 ones.
- "Tyler made a drawing of 24. Do you agree with how he showed 24? Why or why not?"

(No, because he drew 4 tens and 2 ones instead of 2 tens and 4 ones. He made the number 42 instead of 24.)

- "Tyler's drawing shows 42, not 24. They both have the digits 2 and 4, but they are in different places, which makes them different numbers."

Advancing Student Thinking

If students build the numbers with single connecting cubes, consider asking:

- "How did you use cubes to build the number?"
- "How could you use towers of 10 to build this number? How many towers would you need?"

Activity 2

10 min

Who Do You Agree With?

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of this activity is for students to think about the value of tens and ones and consider a representation where the tens are not presented to the left of the ones. In the previous activity, students saw that the order of the digits matters when writing a two-digit number. In this activity, students see that although the order matters when writing a number, the position of tens or ones in a drawing or diagram does not change their value. Students have access to connecting cubes in towers of 10 and singles if needed and should be encouraged to use them if they have difficulty making meaning of the base-ten diagram in their workbook.

During the activity synthesis, the teacher emphasizes the value of the units in the diagram and the digits and connects them to the commutative property.

When students decide who they agree with and explain their reasoning, they critique the reasoning of others (MP3).

Access for English Learners

MLR8 Discussion Supports. Prior to solving the problems, invite students to make sense of the situations and take turns sharing their understanding with their partner. Listen for and clarify any questions about the context.
Advances: Reading, Representing

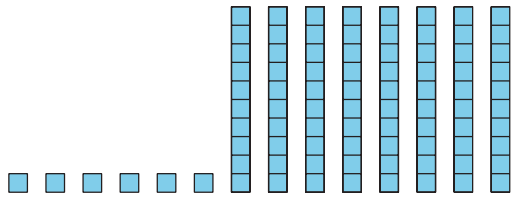
Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Provide students with alternatives to writing on paper. Students can share their learning verbally or through pictures.
Supports accessibility for: Language, Conceptual Processing

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement



Clare says this shows 68 (sixty-eight).
Diego says this shows 86 (eighty-six).
Who do you agree with?
How do you know they are correct?

I agree with _____ because

Student Responses

Diego. Sample responses:

- If you count the squares by ones you get 86.
- There are 10 squares in each tower, which means I count by ten. There are 10, 20, 30, 40, 50, 60, 70, 80. Then I have to count the singles. That is 81, 82, 83, 84, 85, 86.
- Clare didn't pay attention to which showed tens and which showed ones. The 6 single

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

Activity

- Read the task statement.
- 1 minute: quiet think time
- "Share your thinking with your partner."
- 2 minutes: partner discussion
- "Now show your thinking in your book."
- 3 minutes: independent work time
- Monitor for a student who explains that the order of the representation doesn't change the value of the digits in the number and justifies that the representation shows:
    - 10, 20, 30, 40, 50, 60, 70, 80, 81, 82, 83, 84, 85, 86
    - 1, 2, 3, 4, 5, 6, 16, 26, 36, 46, 56, 66, 76, 86
    - 8 tens as 80, count on 81, 82, 83, 84,

squares show ones, and the towers of 10 show 8 tens. That's 80 and 6.

85, 86

Synthesis

- Invite previously identified students to share.
- Display 68 and 86.
- "When I look at these two-digit numbers, the order of the digits matters. The order helps me say the number. However, when showing two-digit numbers with drawings, it doesn't matter whether the tens or the ones come first. There are still 8 tens and 6 ones."

Activity 3

15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.6, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 20, or with multiples of 10. Students choose from any stage of previously introduced centers.

- Shake and Spill
- How Close
- Check It Off

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:

- Shake and Spill, Stages 3–5
- How Close, Stages 1 and 2
- Check It Off, Stages 1–3

Student-facing Task Statement

Choose a center.

Shake and Spill

How Close

Check It Off

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- Display nine red counters and put eight yellow counters under a cup.
- "Mai is playing Shake and Spill with 17 counters. How many yellow counters are under the cup? How do you know?"

Lesson Synthesis

10 min

Display a poster with the number 6 and a sticky note to the right of the 6.
"Today we worked with different representations of two-digit numbers. This is a two-digit number. This sticky note is covering one of the digits in the number. Could the number be 26? Why or why not?" (No, because the 6 is showing how many tens are in the number, not ones.)

"What number could this be? How do you know?" (It could be any number from 60 to 69 because the number has 6 tens and we don't know how many ones.)

Lesson 8: Different Representations of Tens and Ones

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.a

Teacher-facing Learning Goals

- Interpret different base-ten representations of two-digit numbers (drawings, words, and addition expressions).

Student-facing Learning Goals

- Let's think about how two-digit numbers can be shown.

Lesson Purpose

The purpose of this lesson is for students to interpret base-ten representations of two-digit numbers.

In previous lessons, students learned that the digit on the left of a two-digit number tells the number of tens and the digit on the right tells the number of ones.

In this lesson, students interpret three different base-ten representations: base-ten diagrams, _____ tens _____ ones, and addition expressions that represent the value of each digit. This is the first time students see expressions representing two-digit numbers other than 10 + n expressions representing teen numbers. Students match representations that show the same value.

At this time, students are not expected to write two-digit numbers, but continue to make sense of how to read and say them based on their base-ten structure. The teacher should record two-digit numbers when students say them.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR7 (Activity 1)

Instructional Routines

Estimation Exploration (Warm-up)

Materials to Gather

- Base-ten blocks: Activity 3

Materials to Copy

- Representations of Tens and Ones (groups of 2): Activity 2

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2
- Grab and Count Stage 2 Recording Sheet (groups of 1): Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

What was the best question you asked students today? Why would you consider it the best one based on what students said or did?

Cool-down (to be completed at the end of the lesson) 0 min

Unit 4, Section B Checkpoint

Standards Alignments

Addressing 1.NBT.B.2

Student-facing Task Statement

Lesson observations

Student Responses

- Recognize different base-ten representations of the same number.

Begin Lesson

Warm-up 10 min

Estimation Exploration: How Many?

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2.a

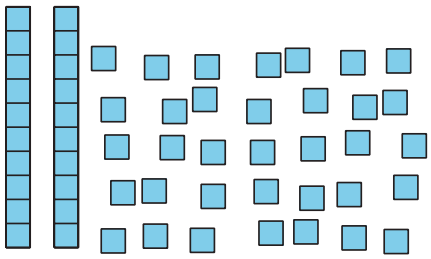
The purpose of an Estimation Exploration is to practice the skill of estimating a reasonable answer based on experience and known information. When students make estimates based on the number of tens they see and mentally organize the ones into groups of 10, they look for and make use of structure (MP7).

Instructional Routines

Estimation Exploration

Student-facing Task Statement

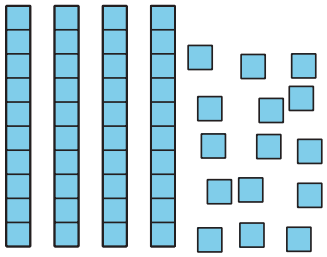
1. How many do you see?



Record an estimate that is:

too low	about right	too high

2. How many do you see?



Record an estimate that is:

Launch

- Groups of 2
- Display the image.
- "This diagram shows a collection of connecting cubes."
- "What is an estimate that's too high? Too low? About right?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- "Let's look at another image of the same collection."
- Display the image.
- "Based on the second image, do you want to change your estimates?"

Synthesis

- "Did anyone change their original 'about right' estimate? Why did you change it?" (I changed it because I see there are at least 40 cubes because there are 4 towers.)
- "Let's look at our revised estimates. Why were these estimates more accurate the second

too low	about right	too high

time?" (Some of the cubes are organized.)

Student Responses

1. Sample responses
   - too low: 20–30
   - about right: 31–60
   - too high: 61–100
2. Sample responses
   - too low: 40–50
   - about right: 51–70
   - too high: 71–100

Activity 1

10 min

Compare Representations of a Collection

PLC Activity

Standards Alignments

Addressing 1.NBT.B.2

The purpose of this activity is for students to interpret different base-ten representations of a two-digit number. Students compare drawings to words (_____ tens _____ ones) and an expression showing the value of the tens and ones digits as a sum. One of the representations shows the ones to the left of the tens so that students think about the value of the units. One of the representations shows a base-ten diagram with the towers of ten labeled "10" rather than representing all ten cubes in each tower. It is important that students who use this type of drawing can explain that the unit of ten contains 10 ones.

Access for English Learners

MLR7 Compare and Connect. Synthesis: Lead a discussion comparing, contrasting, and connecting the different representations. Ask, "How are the representations the same? How are they different?" and "How do tens and ones show up in each representation?"
Advances: Representing, Conversing

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Each student counted and showed a collection.

- Clare drew

- Han drew

- Kiran wrote 3 ones and 7 tens.
- Priya wrote $70 + 3$.

Did the students count the same number of objects?
How do you know?
Show your thinking using drawings, numbers, or words.

Student Responses

Yes. Sample responses:

- I drew diagrams to show Kiran's and Priya's work. Each is 7 tens and 3 ones.
- I thought of each representation as an expression of tens and ones. They all are 7 tens and 3 ones, even Priya's; she wrote the

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

Activity

- Read the task statement.
- 5 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students who:
  - draw each representation as tens and ones
  - use numbers and words to connect each representation

Synthesis

- Invite previously identified students to share.
- "What connections do you see between the representations?" (Each representation shows the same amount. Each representation shows tens and ones.)
- "How is Han's representation the same as Clare's? How is it different?" (They both show 73. Han's shows tens and ones, but the tens don't show all the ones. Instead he labels it as 10 or 1.)
- "Han's representation is a new representation that you may want to try using to show your thinking."

ones first.

Activity 2

15 min

Card Sort: Base-ten Representations

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of this activity is for students to match cards that show different base-ten representations. The representations are base-ten diagrams, ___ tens ___ ones, and addition expressions that show the value of the tens and ones digits. Some cards represent the ones to the left of the tens to encourage students to focus on the units and the meaning of any digits (MP2, MP7). As students work, encourage them to refine their descriptions of representations and how they match using more precise language and mathematical terms (MP6).

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Chunk this task into more manageable parts. Give students a subset of the cards to start with and introduce the remaining cards once students have completed their initial set of matches.
Supports accessibility for: Organization, Attention

Materials to Gather

Connecting cubes in towers of 10 and singles

Materials to Copy

Representations of Tens and Ones (groups of 2)

Required Preparation

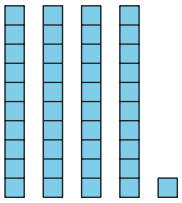
- Create a set of cards from the Instructional master for each group of 2–4.

Student-facing Task Statement

Your teacher will give you a set of cards that show different representations of a two-digit number. Find the cards that match. Be ready to explain your reasoning.

Launch

- Groups of 2-4
- Give each group a set of cards and access to connecting cubes in towers of 10 and



40 + 1

1 ten 4 ones

Student Responses

- A, E, Q
- B, M, R
- C, J, S
- D, P, T
- F, O, U
- G, K, V
- H, L, W
- I, N, X

singles.

- Display the student workbook page.
- "Today we are going to sort cards into groups that show the same two-digit number. For example, look at these three cards. Which two representations show the same two-digit number? Why doesn't the other one belong?" (The first two cards both show 4 tens and 1 one or 41. The last card isn't the same because it only shows 1 ten. It has the same digits, but they mean something different.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- "This set of cards includes base-ten diagrams, words that show ___ tens and ___ones, expressions, and two-digit numbers. Find all the cards that show the same number. Each group should have three cards that match, but they might be different kinds of representations."
- "Work with your partner to explain how the cards match or why some cards don't belong with a group."
- 8 minutes: partner work time
- As students work, consider asking:
    - "Why did you match these cards together? How do they match?"
    - "Would Card __ match with this group of cards? Why or why not?"
    - "How could you explain how your cards match using the words tens and ones?"
    - "How are the cards in this group the same? How are they different?"

Synthesis

- Invite students to share the matches they made and how they know those cards go together.
- Attend to the language that students use to describe their matches and the representations, giving them opportunities to describe the representations more precisely with attention to how they show amounts of tens and ones.
- Highlight the use of terms like tens, ones, and digits.

Activity 3

15 min

Introduce Grab and Count, Ones Cubes

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this activity is for students to learn a new center called Grab and Count. Students grab a handful of ones cubes and put them together with their partner's. They estimate how many cubes there are and then count the cubes. Students record their estimate and the actual number of cubes on the recording sheet. Since students have not written two-digit numbers yet, students may attempt to record the two-digit number or use other, more familiar, representations to show the amount of cubes.

Materials to Gather

Base-ten blocks

Materials to Copy

Grab and Count Stage 2 Recording Sheet (groups of 1)

Launch

- Groups of 2
- Give each group two recording sheets and

access to ones cubes.

- "We are going to learn a new center called Grab and Count."
- "Both partners grab a handful of cubes. Put your cubes together. Then estimate how many cubes you have and record your estimate on your recording sheet. Then count the cubes in any way that makes sense to you. Record the number of cubes you counted."

Activity

- 10 minutes: partner work time

Synthesis

- "How did you keep track of the cubes as you counted?" (We made groups of ten. We moved the cubes as we counted them.)

Lesson Synthesis

10 min

Display cards J, E, and S from Activity 2.
"Today we found different representations of the same number. Do all of these cards show the same number? Why or why not?" (No, J and S match because they show 3 tens and 2 ones. E shows 3 ones and twenty or 3 ones and 2 tens.)

Display card V or write 95.
"What would you look for on other cards to know if it matched this number?" (I'd look for a diagram that showed 9 towers of ten and 5 singles. I'd look for something that said 9 tens and 5 ones.)

Lesson 9: Show Me Your Number

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.C.4, 1.NBT.C.6, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6

Teacher-facing Learning Goals

- Represent the base-ten structure of two-digit numbers with drawings, words, and addition expressions.

Student-facing Learning Goals

- Let's show numbers in different ways.

Lesson Purpose

The purpose of this lesson is for students to represent the base-ten structure of two-digit numbers with drawings, words, and addition expressions that show the value of the tens and ones.

In previous lessons, students interpreted different ways to represent a two-digit number as some tens and some ones. In this lesson, students create a collection with connecting cubes to represent a two-digit number and use what they have learned in previous lessons to represent the collection in as many ways as they can. They participate in a gallery walk in which they observe other collections, represent the collections in as many ways as they can, and compare their representations with their partner.

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

Instructional Routines

MLR7 Compare and Connect (Activity 2), Which One Doesn't Belong? (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1
- Materials from a previous activity: Activity 2
- Materials from previous centers: Activity 3
- Number cards 0–10: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	15 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

What unfinished learning or misunderstandings do your students have about representing tens and ones? How did you leverage those misconceptions in a positive way to further the understanding of the class?

Cool-down (to be completed at the end of the lesson)

0 min

Unit 4, Section B Checkpoint

Standards Alignments

Addressing 1.NBT.B.2

Student-facing Task Statement

Lesson observations

Student Responses

- Describe a two-digit number as made up of _____ tens _____ ones.
- Represent a number in more than one way (drawings, numbers, words, expressions).
- Recognize different base-ten representations of the same number.

Begin Lesson

Warm-up

10 min

Which One Doesn't Belong: Tens and Ones

Standards Alignments

Addressing 1.NBT.B.2

This warm-up prompts students to compare four representations of a quantity. It gives students a reason to use language precisely (MP6). It gives the teacher an opportunity to hear how students use terminology and talk about characteristics of the items in comparison to one another. During the synthesis, ask students to explain the meaning of any terminology they use, such as tens, ones, number, and digit.

Instructional Routines

Which One Doesn't Belong?

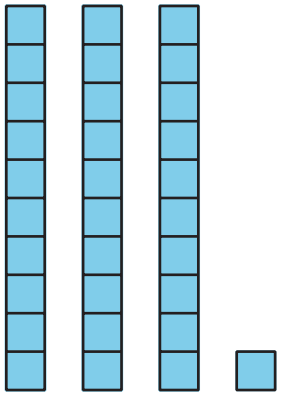
Student-facing Task Statement

Which one doesn't belong?

A

35

B



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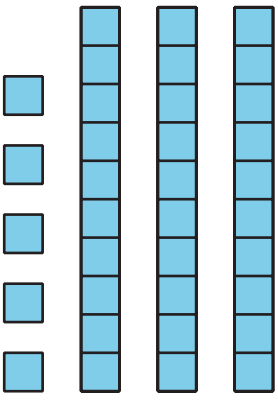


D

30 + 5

Student Responses

Sample responses:

- A is the only one that doesn't show the tens

Launch

- Groups of 2
- Display the image.
- "Pick one that doesn't belong. Be ready to share why it doesn't belong."
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 2–3 minutes: partner discussion
- Share and record responses.

Synthesis

- "How are C and D the same? How are they different?" (In both of them you can see the three groups of 10 and five ones. They are different because in C the ones are first and in D the tens are first.)

and ones as two parts.

- B is the only one that is not 35.
- C is the only one that doesn't show tens first (on the left).
- D is the only one that has an expression with a plus sign.

Activity 1

10 min

Create a Collection

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of this activity is for students to represent a two-digit number in as many ways as they can. Students are given two number cards and use them to make a two-digit number. Students then create a collection with connecting cubes in towers of 10 and singles to represent their number. Then, students represent their number in as many different ways as they can on paper. Representations may include base-ten diagrams, _____ tens _____ones, and expressions that show the tens and ones.

The collections students make are used in the next activity.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for representing their number in multiple ways. If time allows, invite students to share their plan with a partner before they begin.
Supports accessibility for: Organization, Attention

Materials to Gather

Connecting cubes in towers of 10 and singles,
Number cards 0–10

Student-facing Task Statement

Show your number in as many ways as you can.

Launch

- Groups of 2

Our number: _____

Student Responses

Sample response: 68. 6 towers of 10, 8 single cubes. Draws 6 towers and 8 single cubes. Writes 6 tens and 8 ones.

- Give each group two number cards and connecting cubes in towers of 10 and singles.
- "Use your number cards to make a two-digit number and write the number in the blank."
- 30 seconds: partner work time

Activity

- "Work with your partner to create a collection of cubes that shows the number you wrote. Then each partner will show your number in as many ways as they can in your book."
- 8 minutes: partner work time

Synthesis

- "How did you use the digits in the two-digit number you created to figure how to make the collection of connecting cubes?" (I know the digit on the left shows how many tens, so we got that many towers of ten. The digit on the right shows how many ones, so we got that many single cubes.)
- "How did you use the digits to create other representations?" (I used the digits to see how many tens and ones to draw. I know the digit on the left means tens and the other digits is ones, so I wrote it like __ tens and __ ones.)
- "Now you will do a gallery walk, observe other collections, and show them in as many ways as you can."

Activity 2

15 min

Show Collections In Many Ways

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of this activity is for students to represent a collection of tens and ones in as many ways as they can. Students participate in a gallery walk in which they visit at least four collections, represent them in different ways, and then compare their representations with their partner. Students may represent in any ways they choose, which may include base-ten drawings with and without showing all the ones within each ten, _____ tens _____ ones, expressions that show the tens and ones, or another way that makes sense to them, including writing the two-digit number.

Students may choose which collections they would like to visit or the teacher may assign the collections. During the activity synthesis, students make connections between representations.

This activity uses *MLR7 Compare and Connect.* Advances: R*epresenting, Conversing.*

Instructional Routines

MLR7 Compare and Connect

Materials to Gather

Materials from a previous activity

Required Preparation

- Students' collections from the previous activity are needed for the gallery walk.

Student-facing Task Statement

Show each collection in as many ways as you can.
Visit at least 4 collections.

Collection 1

Collection 2

Collection 3

Collection 4

Student Responses

Sample response:

Launch

- Groups of 2
- Make student collections from the previous activity accessible for the gallery walk.

Activity

- Read the task statement.
- 10 minutes: gallery walk

Synthesis

MLR7 Compare and Connect

- Find a new partner and share the

- $40 + 6$, 6 ones and 4 tens, 46, draws 4 tens and 6 ones

representations you made.

- Discuss how your representations are the same and how they are different.
- Invite 2–3 groups to share what they discussed.

Advancing Student Thinking

If students only use one type of representation, consider asking:

- "What's another way you could show this collection?"
- "How could you use words to describe this collection? How could you use numbers and symbols?"

Activity 3

15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.C.4, 1.NBT.C.6, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 20, or estimating, counting and representing quantities. Students choose from any stage of previously introduced centers.

- Grab and Count
- Shake and Spill
- Check It Off

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Grab and Count, Stage 2
  - Shake and Spill, Stages 3–5
  - Check It Off, Stages 1–3

Student-facing Task Statement

Choose a center.

Grab and Count

Shake and Spill

Check It Off

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- "Kiran is playing Grab and Count. He organized his cubes into 3 groups of ten and 1 one. How many cubes does he have?"

Lesson Synthesis

10 min

Display 7 towers of 10 and 3 single cubes.
"Today we represented collections in different ways. What are all the ways I can represent this collection?" (draw 7 tens and 3 ones, 7 tens 3 ones, $70 + 3$, 73)

"Where do you see 70 in each representation? How does the 7 in 73 represent 70?"

Lesson 10: Write Two-digit Numbers

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

Teacher-facing Learning Goals

- Write numbers to represent different base-ten representations.

Student-facing Learning Goals

- Let's write two-digit numbers.

Lesson Purpose

The purpose of this lesson is for students to write numbers to represent different base-ten representations including base-ten diagrams, _____ tens _____ ones, and expressions that show the value of the tens and ones digits.

In previous lessons, students read two-digit numbers and interpreted and created representations of those numbers. In this lesson, students write two-digit numbers to match different base-ten representations. Students also learn a new center that provides practice counting and writing numbers up to 99.

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1
- Dry erase markers: Activity 2
- Sheet protectors: Activity 2

Materials to Copy

- Write the Number Stage 1 Gameboard (groups of 2): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Reflect on how you can reinforce number writing outside of math class. When can you ask students to write two-digit numbers that represent quantities around them? What questions can you ask to help them see the tens and ones in these quantities?

Cool-down (to be completed at the end of the lesson)

5 min

Write Numbers

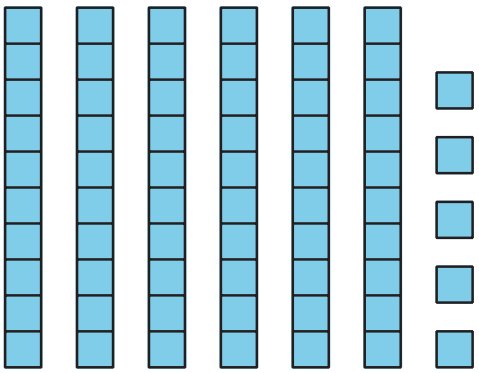
Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

Student-facing Task Statement

Write the number that matches each representation.

1. $30 + 9$ _____

2.  _____

3. 7 ones 9 tens _____

Student Responses

1. 39
2. 65
3. 97

Begin Lesson

Warm-up

10 min

Notice and Wonder: Same Digit, Different Place

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of this activity is for students to see the connection between base-ten diagrams and written numbers. In the synthesis, students consider the relationship between numbers with the same digit in different places. Students also observe that the single-digit number has no tens.

Instructional Routines

Notice and Wonder

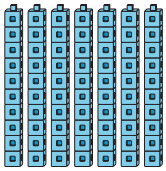
Student-facing Task Statement

What do you notice?
What do you wonder?

A

7

B



70

C

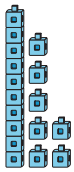
D

Launch

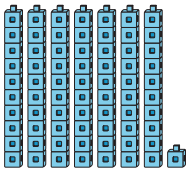
- Groups of 2
- Display the image.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.



17



71

Student Responses

Students may notice:

- There are towers of 10 and ones.
- The numbers all have a 7 in them.
- 17 has 1 ten 7 ones and 71 has 7 tens 1 one.

Students may wonder:

- What other numbers have 7 in them?
- Where are the tens in 7?

Synthesis

- "How are 7 and 17 the same and different?" (They both use the digit 7 but only 17 has 1 ten. Seven has no tens.)
- "How are 7 and 70 the same and different?" (7 is a one-digit number and 70 is a two-digit number. They both have a 7 as a digit. 70 has 7 tens. 7 has 7 ones.)
- "How are 70 and 71 the same and different?" (Both have 7 tens, but 71 has 1 one instead of 0 ones.)

Activity 1

15 min

Write Numbers to Match Base-Ten Representations

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this activity is for students to produce written numbers for a given quantity represented in different ways. Some representations show the tens on the left and others show the ones on the left. Students must attend to the units in each representation and the meaning of the digits in a two-digit number, rather than always writing the number they see on the left in a representation in the tens place and the number they see on the right in a representation in the ones place (MP6).

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Chunk this task into more manageable parts. Check in with students to provide feedback and encouragement after each chunk.
Supports accessibility for: Attention, Social-Emotional Functioning

Materials to Gather

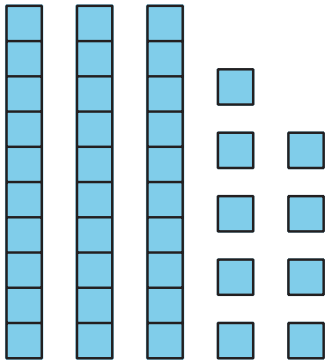
Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Write the number that matches each representation.

1. 1 ten 4 ones

   Number: _____

2. 

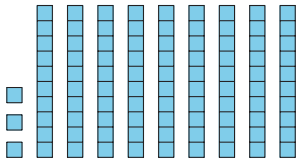
   Number: _____

3. 9 tens

   Number: _____

4. $20 + 5$

   Number: _____

5. 

   Number: _____

6. $7 + 40$

   Number: _____

7. 2 ones 8 tens

   Number: _____

8.

   Number:

Launch

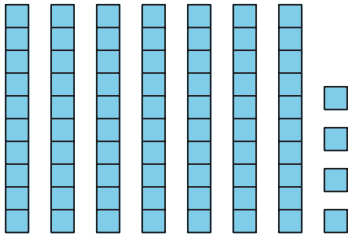
- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

Activity

- Read the task statement.
- "You will work on your own to start. When you and your partner are finished, compare your work."
- 5 minutes: independent think time
- 3 minutes: partner discussion

Synthesis

- Invite students to share the two-digit number that matches each representation and explain how it matches.

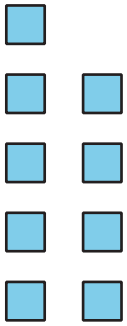


_____

9. $1 + 40$

Number: _____

10.



Number: _____

Student Responses

1. 14
2. 39
3. 90
4. 25
5. 93
6. 47
7. 82
8. 74
9. 41
10. 9

Activity 2

20 min

Introduce Write Numbers, Numbers to 99 by 1

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this activity is for students to learn a new center called Write Numbers. Students write a two-digit number in each space on a gameboard. They take turns writing the next one, two, or three numbers in the sequence. The player who writes the last number on the board wins. Students may choose to count forward or backward.

Access for English Learners

MLR8 Discussion Supports. Synthesis: Provide students with the opportunity to rehearse with a partner what they will say about the patterns they saw before they share with the whole class. *Advances: Speaking*

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 1 Gameboard (groups of 2)

Required Preparation

- Put each gameboard in a sheet protector.

Launch

- Groups of 2
- Give each group a gameboard and a dry erase marker.
- "We are going to learn a new center called Write Numbers."
- Display the gameboard.
- "You and your partner will practice writing numbers. You will fill in the number path on the gameboard. You can decide to start with the smaller number and count forward, or start with the larger number and count backward. On each turn, you can decide whether you would like to write one, two, or three numbers on the gameboard. The person who writes the last number on the board is the winner."

- Demonstrate playing one round with the students.
- "Now you will play with your partner."

Activity

- 10 minutes: partner work time

Synthesis

- "What patterns did you see as you wrote numbers?" (The ones place goes up by one each time until you get to 9. Then the tens place changes by one, and the 0–9 pattern repeats.)

Lesson Synthesis

10 min

Display 702.
"Today we wrote two-digit numbers. Clare counted a collection of seventy-two objects. This is the number she wrote. Give a thumbs up if you agree and a thumbs down if you disagree."
"What advice do you have for Clare about writing numbers that have tens and ones?" (When writing tens and ones there are only 2 digits. The first digit tells the number of tens and the second digit tells the number of ones. There is no 0 in 72, even if it sounds like there should be.)

Complete Cool-Down

Response to Student Thinking

Students write 79 instead of 97.

Next Day Support

- Create a poster with a diagram that represents the 7 ones and 9 tens. Discuss why this number is written 97 instead of 79.

Lesson 11: Add Tens to Two-digit Numbers

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.2.c, 1.NBT.C.4

Teacher-facing Learning Goals

- Add a two-digit number and a multiple of 10.

Student-facing Learning Goals

- Let's add tens to two-digit numbers.

Lesson Purpose

The purpose of this lesson is for students to add a two-digit number and a multiple of 10.

In previous lessons, students added and subtracted multiples of 10 from other multiples of 10. In this lesson, students reason about the value of expressions where both addends are two-digit numbers; one addend is a multiple of 10 and the other is not. Students use and explain methods that make sense to them and show what they understand about what the two digits in a two-digit number represent (MP3, MP7).

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

True or False (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min

Teacher Reflection Question

What methods did your students use to add tens to two-digit numbers? Which methods surprised you, and which did you expect?

Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Cool-down (to be completed at the end of the lesson)

5 min

Add Tens

Standards Alignments

Addressing 1.NBT.C.4

Student-facing Task Statement

Find the value of each sum.

1. $34 + 40$
2. $50 + 41$
3. $62 + 20$
4. Pick an expression from above.
   Show how you found the value using drawings, numbers, or words.

Student Responses

1. 74
2. 91
3. 82
4. Sample response: I counted on 2 tens from 62. I said 72, 82. I know only the tens place changes.

Begin Lesson

Warm-up

10 min

True or False: Tens and Ones

Standards Alignments

Addressing 1.NBT.B.2

The purpose of this True or False is to elicit insights students have about adding two-digit numbers using place value understanding. This will be helpful later when students add a two-digit number and a multiple of 10.

Instructional Routines

True or False

Student-facing Task Statement

Decide if each statement is true or false.
Be prepared to explain your reasoning.

- $80 + 5 = 5 + 80$
- $70 + 1 = 80 + 1$
- $20 + 6 = 6 + 30$

Student Responses

- True: We can change the order and the sum is still the same.
- False: There are 7 tens on one side and 8 tens on the other side and they both have the same number of ones, so they are not the same.
- False: One side has 2 tens and the other side has 3 tens and they both have the same number of ones, so they are not the same.

Launch

- Display one statement.
- "Give me a signal when you know whether the statement is true and can explain how you know."
- 1 minute: quiet think time

Activity

- Share and record answers and strategy.
- Repeat with each equation.

Synthesis

- "How can you use what you know about tens and ones to reason about the equations?" (Two numbers are not equal if the number of ones is the same but the tens is different.)

Activity 1

20 min

Add Two-digit Numbers and Tens

Standards Alignments

Addressing 1.NBT.B.2.c, 1.NBT.C.4

The purpose of this activity is for students to add multiples of 10 and two-digit numbers in a way that makes sense to them. Students may use connecting cubes in towers of 10 and singles. They represent their thinking using drawings, numbers, or words. Some students may make base-ten drawings to show the addition, while others may find the sum mentally, applying what they have learned about place value in previous lessons. Some students may use both methods, depending on the numbers in the problem.

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Find the number that makes each equation true. Show your thinking using drawings, numbers, or words.

1. $37 + 20 = \square$
2. $60 + 23 = \square$
3. $48 + 50 = \square$
4. $\square = 54 + 20$
5. $30 + 65 = \square$

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

Activity

- Read the task statement.
- 10 minutes: partner work time
- Monitor for students who find the sum of 30 + 65 by:
  - drawing and counting by ten, then one
  - count on from 65 by ten: 75, 85, 95
  - combine 3 tens and 6 tens, then add 5 ones

Synthesis

- Invite previously identified students to share.
- "How are these methods the same? How are they different?" (They all added tens to tens. Some people started with the first number and other people started with the

Student Responses

1. 57. Sample response: I showed 37 with 3 towers of 10 and 7 ones. I counted on 2 more tens: 47, 57.
2. 83. Sample response: I thought of 23 as 2 tens + 3 ones. I knew I had to add 6 tens, so I thought 2 tens + 6 tens = 8 tens. 8 tens + 3 ones is 83.
3. 98. Sample response: I showed 48 then counted on by tens: 58, 68, 78, 98.
4. 74. Sample response: I thought of 54 as $50 + 4$. $50 + 20 = 70$. $70 + 4 = 74$.
5. 95. Sample response: I started with 65 and then counted on 3 tens.

second number.)

Activity 2

15 min

The Missing Digit

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.C.4

The purpose of this activity is for students to use their understanding of place value to make an equation true when a digit in a two-digit number is "missing." Students consider the values of the digits in order to justify their thinking. Students may use connecting cubes in towers of 10 and singles, create drawings, or write about their reasoning.

Access for English Learners

MLR8 Discussion Supports. Prior to solving the problems, invite students to make sense of the situations and take turns sharing their understanding with their partner. Listen for and clarify any questions about the context.
Advances: Reading, Representing

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to decide with their partners what tools they will use to find the missing digit. Allow time for students to organize tools.
Supports accessibility for: Organization, Attention

Materials to Gather

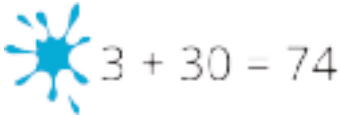
Connecting cubes in towers of 10 and singles

Student-facing Task Statement

1. This equation is true.

What digit is under the smudge? Show your thinking using drawings, numbers, or words.

2. This equation is not true.



Show why it is not true using drawings, numbers, or words.

Student Responses

1. 4. Sample response: The answer has 9 tens. 5 tens and 4 tens is 9 tens. The 6 ones stay the same since we aren't adding any ones.
2. Sample response: There are 3 ones in the first number and 0 ones in the second

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

Activity

- Read the task statement.
- 10 minutes: partner work time

Synthesis

- Invite students to share how they determined the missing digit in the first equation.
- Invite students to share how they know the second equation cannot be true.

number, so there can't be 4 ones in the answer.

Lesson Synthesis

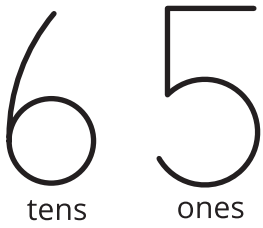
10 min

Display $34 + 40$.

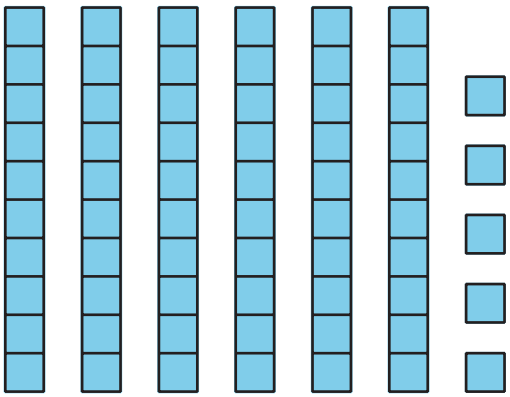
"Today we added tens to two-digit numbers. What do we know about adding these numbers?" (It's like counting on by tens. You can think of it as 34 and 4 more tens. You can just add the number of tens in each number. For example, 3 tens + 4 tens is 7 tens.)

Student Section Summary

We learned that two-digit numbers are made up of tens and ones.



We represented two-digit numbers in many different ways.



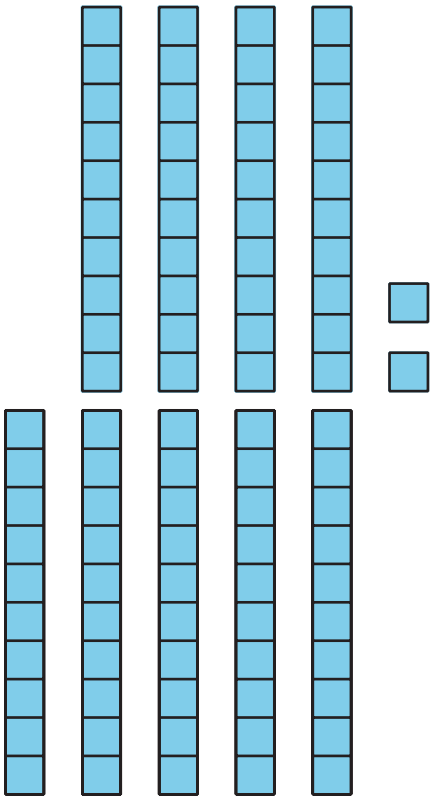
6 tens and 5 ones

$60 + 5$

65

We added two-digit numbers by thinking about counting on by 10 or adding more tens.

$42 + 50 = \boxed{92}$



Complete Cool-Down

Response to Student Thinking

Students count all.

Next Day Support

- Launch Activity 1 by having students practice counting by tens starting at numbers other than 10. For example, starting at 32, count 42, 52, 62 . . .

Lesson 12: Mentally Add and Subtract Tens (Optional)

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.6

Teacher-facing Learning Goals

- Mentally find 10 more or 10 less than a number.

Student-facing Learning Goals

- Let's add and subtract tens in our heads.

Lesson Purpose

The purpose of this lesson is for students to use base-ten understanding to mentally determine 10 more or 10 less than a two-digit number.

In previous lessons, students added and subtracted multiples of 10 from other multiples of 10 and added two-digit numbers and tens using connecting cubes in towers of 10 and singles, base-ten drawings, numbers, words, and expressions.

This lesson is optional as students may not need more practice developing fluency with adding or subtracting 10. In the first activity, students learn stage 2 of the Write Numbers center. In this stage, students count by ten forward or backward and write each number as they count. In the second activity, students notice patterns when adding and subtracting ten from any two-digit number.

Access for:

Students with Disabilities

- Representation (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Dry erase markers: Activity 1
- Sheet protectors: Activity 1

Materials to Copy

- Write the Number Stage 2 Gameboard (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

Why is a strong understanding of the unit ten necessary in order to add or subtract 10 mentally?

Cool-down (to be completed at the end of the lesson)

0 min

Unit 4, Section B Checkpoint

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Add and subtract 10 and multiples of 10.

Begin Lesson

Warm-up

10 min

Number Talk: Add and Subtract 10

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for adding and subtracting 10. These understandings help students develop fluency and will be helpful later in

this lesson when students mentally add and subtract 10 from larger two-digit numbers.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $3 + 10$
- $10 + 5$
- $13 - 10$
- $15 - 10$

Student Responses

- 13: I counted on . . . 11, 12, 13.
- 15: There is 1 ten and 5 ones, so that's 15.
- 3: I know that $3 + 10$ is 13, so $13 - 10$ is 3.
- 5: If I take 1 ten away I am left with 5.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Did anyone approach the problem in a different way?"

Activity 1

20 min

Introduce Write Numbers, Numbers to 99 by 10

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this activity is for students to learn stage 2 of the Write Numbers center. Like the last stage of this center, students take turns writing the next one, two, or three numbers. The player who writes the last number on the board wins. Students may choose to count forward or backward. In this stage, students count by 10 starting at numbers other than 10.

Access for English Learners

MLR8 Discussion Supports. Revoice student ideas to demonstrate and amplify mathematical language use. For example, revoice the student statement "the first number changes" as "the number in the tens place increases by one."
Advances: Speaking

Materials to Gather

Dry erase markers, Sheet protectors

Materials to Copy

Write the Number Stage 2 Gameboard (groups of 2)

Required Preparation

- Put each gameboard in a sheet protector.

Launch

- Groups of 2
- Give each group a gameboard and a dry erase marker.
- "We are going to learn a new way to do the Write Numbers center."
- Display the gameboard.
- "You and your partner will practice writing numbers. Just like the last time we played this game, you will fill in the number path on the gameboard. You can decide to start with the smaller number and count forward, or start with the larger number and count backward. On each turn, you can decide whether you would like to write one, two, or three numbers on the gameboard. The person who writes the last number on the board is the winner."
- "Today you will not write every number in the sequence. You will count by ten and write each number you say."
- Demonstrate playing one round with the students.
- "Now you will play with your partner."

Activity

- 10 minutes: partner work time

Synthesis

- "What do you notice about each number on the gameboard?" (They all have the same amount of ones. The tens go up by one in each number.)

Activity 2

20 min

Add and Subtract 10

Standards Alignments

Addressing 1.NBT.C.5

The purpose of this activity is for students to practice adding and subtracting 10 mentally from any two-digit number. The problems are organized into two sets. In the first set, students add and subtract 10 from the same number. Students may notice a pattern and generalize that when you add or subtract 10, the number of tens increases by one or decreases by one and that the ones place does not change (MP7). In the second set, students work with a range of numbers including adding or subtracting multiple tens to develop fluency.

Access for Students with Disabilities

Representation: Internalize Comprehension. Synthesis: Invite students to identify which details were the most useful when adding or subtracting by 10. Display the sentence frame, "The next time I add or subtract by 10, I will pay attention to . . . ."
Supports accessibility for: Conceptual Processing, Memory

Student-facing Task Statement

1. Find the number that makes each equation true.
   Then tell what you notice.

Launch

- Groups of 2
- "Today you will add or subtract 10 from two-digit numbers and find the value that

a. $67 + 10 =$ ☐

$67 - 10 =$ ☐

b. $39 + 10 =$ ☐

$39 - 10 =$ ☐

c. $52 + 10 =$ ☐

$52 - 10 =$ ☐

d. $75 + 10 =$ ☐

$75 - 10 =$ ☐

e. Talk to your partner. What patterns do you notice?

I notice that when I add 10,

I notice that when I subtract 10,

2. Find the number that makes each equation true.
After each set of equations, tell what pattern you notice.

a. $67 + 10 =$ ☐

$67 + 10 + 10 =$ ☐

$67 + 10 + 10 + 10 =$ ☐

I notice that

b. $99 - 10 =$ ☐

$99 - 10 - 10 =$ ☐

makes each equation true. First, you will complete some equations. When you finish all of the equations, you will talk with your partner about the patterns you noticed, then each partner will write about it."

- "Then, you will complete some more equations, but after each set of equations you will talk with your partner about what you notice then write about it."

Activity

- 15 minutes: partner work time

Synthesis

- "What patterns did you notice as you added or subtracted 10?" (Only the tens place changes. In some of the equations I was adding 2 tens or 3 tens so it was like adding tens from before. I can skip count to add or subtract tens quickly.)

$99 - 10 - 10 - 10 =$ ☐

I notice that

c. $45 + 10 + 10 =$ ☐

$45 - 10 - 10 =$ ☐

$45 + 10 - 10 =$ ☐

I notice that

Student Responses

1. a. 77, 57
   b. 49, 29
   c. 62, 42
   d. 85, 65
   e. Sample response: The ones always stay the same. When I add 10, the digit in the tens place gets bigger by 1. When I subtract 10, the digit in the tens place gets smaller by 1.
2. a. 77, 87, 97. Sample response: If I add 10 twice, the tens place gets bigger by 2. It's like adding $67 + 20$ and $67 + 30$.
   b. 89, 79, 69. Sample response: If I subtract 10 twice, the tens place gets smaller by 2 tens. I can skip count back 10 twice. Then I can skip count back 1 more ten.
   c. 65, 25, 45. Sample response: When I add 10 and then subtract 10, the number doesn't change. It's like they cancel each other out. $10 - 10 = 0$. So $45 + 0 = 45$.

Advancing Student Thinking

If students find the values of the expressions by counting on or counting back by one, consider asking:

- "How did you find the number to make this equation true?"
- "How could you use what you know about tens and ones to find the number that makes the equation true?"

Lesson Synthesis

10 min

Display 67 and 77.

"Today we added and subtracted 10 from other numbers in our head. What statements can you make about these two numbers?" (77 is more than 67. It is 10 more than 67. 67 is 10 less than 77. They both have 7 ones.)
If needed, ask, "How much more is 77 than 67?"

Display 82 and 62.

"What statements can you make about these two numbers?" (82 is more than 62. It is 20 more than 62. 62 is less than 82. It is 20 less than 82.)

Lesson 13: Center Day 2

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.A.1, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

Teacher-facing Learning Goals

- Add and subtract within 20.
- Add tens to two-digit numbers.
- Count and represent a collection.

Student-facing Learning Goals

- Let's add and subtract and work with tens and ones.

Lesson Purpose

The purpose of this lesson is for students to add and subtract within 20 and work with two-digit numbers.

In the first activity, students choose between activities that offer practice working with two-digit numbers. In the second activity, students choose an activity to work on adding and subtracting within 20.

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

As students worked together today, where did you see evidence of the mathematical community established over the course of the school year?

Begin Lesson

Warm-up

10 min

Number Talk: Within 20

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit understandings students have for adding and subtracting within 20 using the strategy of making a ten.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $10 + 4$
- $9 + 4$
- $9 + 6$
- $15 - 6$

Student Responses

Sample responses:

- 14: I know that a ten and 4 make 14.
- 13: It's like the last one except it's 9 instead of 10. Since 9 is one less than 10, then the answer must be 1 less $10 + 4$.
- 15: I can give one from the 6 to the 9 to make a ten. Then I can add $10 + 5$.
- 9: I know that $9 + 6$ is 15, so $15 - 6$ is 9.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Did anyone approach the problem in a different way?"

Activity 1

20 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice working with tens and ones. Students choose from any stage of previously introduced centers.

- Grab and Count
- Five in a Row
- Check It Off

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Grab and Count, Stage 2
  - Five in a Row, Stages 1–4
  - Check It Off, Stages 1–3

Student-facing Task Statement

Choose a center.

Grab and Count

Five in a Row

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do first."
- 30 seconds: quiet think time

Check It Off

Activity

- Invite students to work at the center of their choice.
- 8 minutes: center work time
- "Choose what you would like to do next."
- 8 minutes: center work time

Synthesis

- "Han is playing Check It Off. He picks the numbers 70 and 20. What numbers could he check off?" (50 or 90)

Activity 2

20 min

Centers Choice Time

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6, 1.OA.D.8

The purpose of this activity is for students to choose from activities that offer practice adding and subtracting within 20. Students choose from any stage of previously introduced centers.

- How Close?
- Number Puzzles
- Shake and Spill

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - How Close, Stages 1 and 2

- Number Puzzles, Stages 1 and 2
- Shake and Spill, Stages 3–5

Student-facing Task Statement

Choose a center.

How Close?

Number Puzzles

14 = 8 + ☐

Shake and Spill

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do first."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 8 minutes: center work time
- "Choose what you would like to do next."
- 8 minutes: center work time

Synthesis

- Display 8, 4, 1, 7, 5.
- "Priya is playing How Close. Which three numbers should she choose to get close to 20?"

Lesson Synthesis

10 min

"How did you and your partner work together during centers? What went well? What can we continue to work on?"

Section C: Compare Numbers to 99

Lesson 14: Let's Compare

Standards Alignments

Addressing	1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6
Building Towards	1.NBT.C.5

Teacher-facing Learning Goals

- Compare two-digit numbers based on the value of the tens and ones digits.
- Use "greater than" and "less than" to describe comparisons.

Student-facing Learning Goals

- Let's compare numbers.

Lesson Purpose

The purpose of this lesson is for students to compare two-digit numbers based on the value of the tens and ones digits and use "greater than" and "less than" to describe comparisons.

In this lesson, students use what they have learned about place value to compare numbers. In kindergarten, students used the terms "more than," "less than," and "fewer than" to compare groups of objects and numbers. In this lesson, students compare numbers using the language "greater than" and "less than." In the first activity, students represent two-digit numbers and then compare them. In the second activity, students make sense of and critique the way others use the digits in two-digit numbers to compare values.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Choral Count (Warm-up), MLR2 Collect and Display (Activity 1)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2
- Materials from previous centers: Activity 3
- Paper clips: Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

Today students used the value of the digits in the tens and ones place to compare numbers. Why is it important to encourage students to be precise when explaining how they use the digits in the numbers to compare?

Cool-down (to be completed at the end of the lesson)

0 min

Unit 4, Section C Checkpoint

Standards Alignments

Addressing 1.NBT.B.3

Student-facing Task Statement

Lesson observations

Student Responses

- Connect different place value representations.
- Determine which two-digit number is greater or less.

Begin Lesson

Warm-up

10 min

Choral Count: Plus 10

Standards Alignments

Building Towards 1.NBT.C.5

The purpose of this Choral Count is to invite students to practice counting by 10 and notice patterns in the count. In this warm-up, students have an opportunity to look for and make use of structure (MP7) of whole numbers and the base-ten system because they notice that as they count, the ones place stays the same, and the tens place changes. These understandings help students develop fluency and will be helpful later in this lesson when students compare numbers by looking at the tens place.

Instructional Routines

Choral Count

Student Responses

Record the forward count in one column, and the backward count in a new column next to the first.

Sample responses:

- Every number has 3 ones.
- The tens place goes up 1 each time.
- The same numbers are in both columns, just in reverse.

Launch

- "Count by 10, starting at 3."
- Record as students count.
- Stop counting and recording at 93, then count back by 10.

Activity

- "What patterns do you see?"
- 1–2 minutes: quiet think time
- Record responses.

Synthesis

- "Who can restate the pattern in different words?"
- "Does anyone want to add an observation to explain why that pattern is happening here?"

Activity 1

15 min

Which is More?

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to determine which number is greater. Students represent their number in any way they choose. Listen for the way students use place value understanding to compare the numbers and the language they use to explain how they know one number is more than the other (MP3, MP6). In the synthesis, students are introduced to the terms **greater than** and **less than**.

This activity uses MLR2 Collect and Display. Advances: conversing, reading, writing

Access for Students with Disabilities

Representation: Internalize Comprehension. Synthesis: Invite students to identify which details were the most important in comparing the numbers. Display the sentence frame: "The next time I compare numbers, I will pay attention to . . . ."
Supports accessibility for: Conceptual Processing, Memory

Instructional Routines

MLR2 Collect and Display

Materials to Gather

Connecting cubes in towers of 10 and singles,
Paper clips

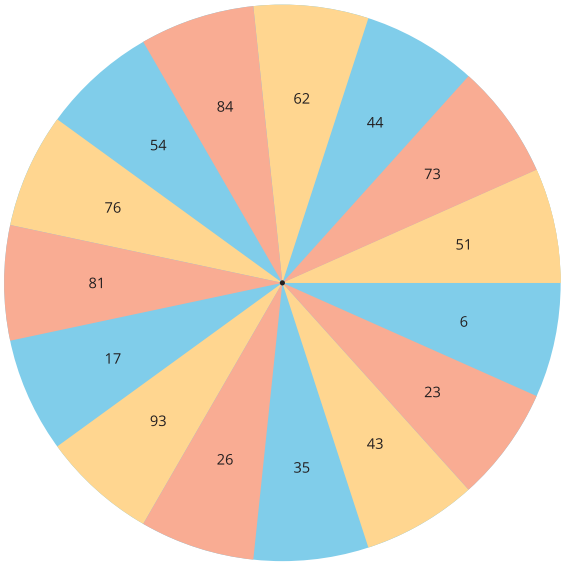
Student-facing Task Statement

- Each partner spins a spinner.
- Each partner shows the number any way they choose.
- Compare with your partner.
- Which number is more?

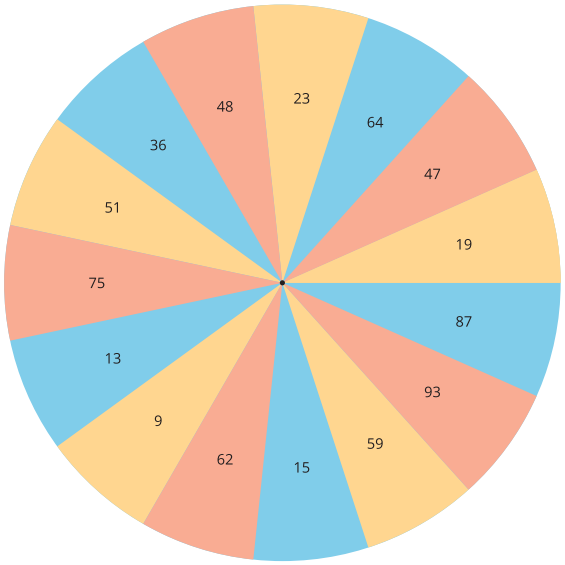
Spinner A:

Launch

- Groups of 2
- Give each group two paper clips and access to connecting cubes in towers of 10 and singles.
- Display 35 and 52.
- "Which number is more? Show your thinking using math tools. Be ready to



Spinner B:



Student Responses

Sample response:

- 59 is more than 49 because 5 tens is more than 4 tens.
- 93 is more than 9. 9 has no tens and 93 has 9 tens. 9 tens is more than 0 tens.

explain your thinking to your partner."

- 2 minutes: independent work time
- 2 minutes: partner discussion
- "Which is more and how do you know?" (53 is more because it has more tens than 35.)

Activity

- Read the task statement.
- "Each partner can choose to use Spinner A or B for each turn."
- 10 minutes: partner work time

MLR2 Collect and Display

- Circulate, listen for, and collect the language students use to build numbers with connecting cubes, decompose numbers into tens and ones, and compare numbers. Listen for: bigger, smaller, more, fewer, greater than, less than, ___ tens, ___ ones, tens place, ones place.
- Record students' words and phrases on a visual display and update it throughout the lesson.

Synthesis

- "Are there any other words or phrases that are important to include on our display?"
- As students share responses, update the display by adding (or replacing) language, diagrams, or annotations.
- Remind students to borrow language from the display as needed.
- Display 93 and 26.
- "Which is more? How do you know?" (93 is more because 9 tens is more than 2 tens.)
- "We can say, '93 is **greater than** 26.' We can also say, '26 is **less than** 93.'"
- Display 62 and 64.
- "Which number is more? How do you

know?" (64 is more. They both have 6 tens but 64 has 4 ones and that is more than the 2 ones in 62.)

- "We can say that 64 is **greater than** 62. We can also say 62 is **less than** 64."

Activity 2

10 min

Elena and Noah Compare Numbers

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to attend to the value of the digits when comparing two-digit numbers. Students evaluate and critique comparison statements and the thinking behind them (MP3). They attend to the way other students reason about digits and the language they use to compare, and make revisions to help make arguments more precise and clear (MP3, MP6).

Access for English Learners

MLR8 Discussion Supports. Synthesis: Some students may benefit from the opportunity to rehearse what they will say with a partner before they share with the whole class.
Advances: Speaking

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

1. Elena says 75 is greater than 65 because 7 is greater than 6.
   What do you think Elena means?
   How could Elena be more clear?

2. Noah says 39 is greater than 41 because it

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

has a 9 and 9 is the greatest number.
Do you agree with Noah?
What could you tell Noah to help him compare these numbers?

Student Responses

1. Sample response: Elena compared the tens. She could have said 7 tens is more than 6 tens, or 70 is more than 60.
2. Disagree. Sample response: I could tell Noah that he has to pay attention to what place the digits are in. 9 is the greatest digit, but it is in the ones place. 41 has 4 tens so that is more than 39 because 39 only has 3 tens.)

Activity

- Read the task statement.
- 6 minutes: partner work time
- Monitor for students who show their thinking using:
  - connecting cubes
  - drawings
  - words

Synthesis

- Invite previously identified students to share.
- "When we compare numbers, it is important to pay attention to what place each digit is in and what value the digit has."

Advancing Student Thinking

If students agree with Elena, but cannot yet articulate how she could revise her thinking, consider asking:

- "Do you agree with Elena? Why?"
- "Can you show the numbers with base-ten blocks? What does Elena mean when she says 7 is greater than 6 for these two numbers?"
- "Would Elena's statement be true if she were comparing 7 and 65? Why or why not?"

Activity 3

15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.C.5, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to choose from activities that offer practice working with two-digit numbers. Students choose from any stage of previously introduced centers.

- Write Numbers
- Grab and Count
- Five in a Row

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Write Numbers, Stages 1 and 2
  - Grab and count, Stage 2
  - Five in a Row, Stages 1–3

Student-facing Task Statement

Choose a center.

Write Numbers

Grab and Count

Five in a Row

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- "Mai is playing Grab and Count with her partner. She organized her cubes into 4 towers of 10 and 3 ones. Her partner organized her cubes into 2 towers of 10. How many cubes do they have together?"

Lesson Synthesis

10 min

Display 44 and 64.

"Today we compared two-digit numbers. Which is greater? How do you know?" (64. 64 has 6 tens and 44 has only 4 tens.)

Display 59 and 54.

"Which is less? How do you know?" (Each has 5 tens, so I have to look at the ones place. 4 ones is less than 9 ones.)

Lesson 15: Greater Than, Less Than

Standards Alignments

Addressing 1.NBT.B.3, 1.NBT.C.5, 1.OA.D.7

Teacher-facing Learning Goals

- Interpret comparison statements that use <, >, or =.
- Understand that the > symbol means greater than and the < symbol means less than.

Student-facing Learning Goals

- Let's make sense of comparisons and decide if they're true.

Lesson Purpose

The purpose of this lesson is for students to learn the meaning of the symbols < and >. Students interpret comparison statements that use these symbols and the equal sign.

This lesson introduces students to the symbolic notation for greater than and less than. In the first activity, students are introduced to the < and > symbols, and invited to make meaning out of them in context. Students observe that the larger open space of the symbol faces the greater value. It is important for students to relate each symbol to the language "greater than" or "less than". Avoid using any non-mathematical language or representations to supplement this lesson or future lessons where students interpret and use comparison symbols. In the second activity, students read comparison statements aloud to determine which statements are true and which are false. By reading statements aloud, students have an opportunity to practice using the language represented by each symbol. Learning the meaning of the < and > symbols and how to evaluate statements involving these symbols is the first step toward using them fluently and accurately (MP6).

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR7 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Think about who volunteered to share their thinking with the class today. Are the same students always volunteering, while some students never offer to share? What can you do to help the class understand the value of hearing the ideas of every mathematician?

Cool-down (to be completed at the end of the lesson)

5 min

True Comparisons

Standards Alignments

Addressing 1.NBT.B.3, 1.OA.D.7

Student-facing Task Statement

Circle **2** statements that are true.

- $43 > 47$
- $12 < 52$
- $78 = 7$
- $68 > 64$

Student Responses

$12 < 52$ and $68 > 64$

Begin Lesson

Warm-up

10 min

Number Talk: Add or Subtract 10

Standards Alignments

Addressing 1.NBT.C.5

The purpose of this Number Talk is to elicit strategies and understandings students have for adding and subtracting 10 from a two-digit number.

When students notice how the tens place changes while the ones place doesn't, they are making sense of the base-ten structure of numbers (MP7).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $35 + 10$
- $52 + 10$
- $52 - 10$
- $83 - 10$

Student Responses

- 45: There are 3 tens already in 35, and 1 more ten makes 4 tens plus 5 ones.
- 62: I know that $50 + 10$ is 60. Then I added 2 more to get 62.
- 42: There are 5 tens in 52. If I take 1 ten away I have 42.
- 73: I know that $80 - 10$ is 70. Since it was 83 instead of 80, I have 73.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Which expression has a greater value $52 + 10$ or $52 - 10$? Can you compare without finding the value of the expressions?" ($52 + 10$ will be greater than $52 - 10$ because it is getting larger rather than having something taken away.)

Activity 1

20 min

Which is Greater, Which is Less?

Standards Alignments

Addressing 1.NBT.B.3

The purpose of this activity is for students to interpret comparison symbols and compare two-digit numbers based on the value of the digits using drawings, numbers, or words. During the launch, students notice and wonder about two related comparison statements that use symbols rather than words. The teacher creates a chart with the comparison statements and what the symbols mean in words for students to refer to during the activity. Students may use connecting cubes to build each number, use the value of each number's tens or ones place, or use expressions that show the value of tens and ones to justify their reasoning. Students then circle the true comparison statement.

Access for English Learners

MLR7 Compare and Connect. Synthesis: After both examples have been presented and discussed, lead a discussion comparing, contrasting, and connecting the different approaches. Ask, "How were your approaches similar when comparing 21 and 12 and when comparing 74 and 78? How were they different?"
Advances: Representing, Conversing

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Chunk this task into more manageable parts. Check in with students to provide feedback and encouragement after each chunk.
Supports accessibility for: Attention, Social-Emotional Functioning

Materials to Gather

Connecting cubes in towers of 10 and singles

Required Preparation

- Write $78 > 45$ and $45 < 78$ on a piece of chart paper.

Student-facing Task Statement

Circle the statement that is true in each pair. Be ready to explain how you know so that others will understand.

$27 < 17$	$17 < 27$
$34 < 36$	$36 < 34$
$25 < 52$	$52 < 25$
$24 > 54$	$54 > 24$
$21 > 29$	$29 > 21$
$85 > 58$	$58 > 85$
$45 < 54$	$45 > 54$
$74 < 78$	$74 > 78$
$21 < 12$	$21 > 12$

Student Responses

- $17 < 27$
- $34 < 36$
- $25 < 52$
- $54 > 24$
- $29 > 21$
- $85 > 58$
- $45 < 54$
- $74 < 78$
- $21 > 12$

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- Display $78 > 45$ and $45 < 78$.
- "What do you notice? What do you wonder?" (The wider part of the symbol points toward the larger number. The point is toward the smaller number. Is this always true? Does the order you write the comparison matter? Does the order of the numbers matter?)
- 1 minute: quiet think time
- 2 minutes: partner discussion
- Record responses.
- "These are comparison symbols. We can use them to show that one value is greater than or less than another without writing the words. The open side, or the side of the symbol with the greater amount of space between the top and bottom, always faces the greater number."
- Record "78 is greater than 45" under $78 > 45$. Consider writing "greater than" in a different color.
- "The pointy side, or side of the symbol with less space between the lines, always faces the lesser number."
- Record "45 is less than 78" under $45 < 78$. Consider writing "less than" in a different color.

Activity

- Read the task statement.
- 10 minutes: partner work time
- Monitor for students who:
    - verbally describe the relationship between two numbers using "greater than" and "less than"

- compare numbers using their place value understanding

Synthesis

- Display $21 < 12$ and $21 > 12$.
- Invite previously identified students to share.
- "We know that 21 is greater than 12. How do you remember which symbol represents greater than?" (I think about the part of the symbol with a greater amount of space being next to the greater number.)
- Display $74 < 78$ and $74 > 78$.
- Invite students to share their thinking.
- "74 is less than 78. How do you know which symbols show this?" (The side of the symbols with less space between the lines needs to be closer to 74.)

Activity 2

15 min

True or False Comparisons

Standards Alignments

Addressing 1.NBT.B.3, 1.OA.D.7

The purpose of this activity is for students to determine if comparison statements are true or false and explain why. In the previous activity, students focused on using their understanding of place value to determine if the symbols were facing the appropriate numbers. In this activity, students are encouraged to read the statements from left to right before determining whether the statement is true or false. Encourage students to use the display created in the previous activity to help them interpret the symbols and read the statements.

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Read each statement.
Determine whether each statement is true or false.
Be ready to explain how you know so that others will understand.

1. $17 < 47$
2. $58 = 53$
3. $45 > 63$
4. $39 < 93$
5. $4 = 46$

If you have time, rewrite each false statement to make it true.

Student Responses

1. True
2. False
3. False
4. True
5. False

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.
- Display $45 < 54$.
- "In the last activity, we decided that this statement is true. How would we read this statement?" (45 is less than 54.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- Display $21 > 12$.
- "We also decided this statement was true. How would we read this statement?" (21 is greater than 12.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- Read the task statement.
- "You are going to work with your partner on this activity. Make sure that each partner has time to think on their own and make sense of the problem before sharing your thinking."
- 10 minutes: partner work time
- Monitor for students who determined $58 = 53$ is false using the values of the tens or ones place to share during the synthesis.

Synthesis

- Display answers for students to check their work.

- Invite selected students to share their explanations for $58 = 53$.
- "How can we change this statement so it is true?" ($58 > 53$)
- Read the new comparison statement.

Advancing Student Thinking

If students discuss whether each statement is true or false, but do not read the statements, consider asking:

- "How could you use the display we made to help you read the statement?"
- "Read the statement. What did you notice about the symbol that could help you remember how to say it the next time you read it?"

Lesson Synthesis

10 min

Display 43 and 48.
"Today we learned symbols that mean 'greater than' and 'less than' and compared more two-digit numbers. Use the words 'greater than' to compare the numbers." (48 is greater than 43.)
"How might I write this using the greater than symbol?" ($48 > 43$)

Display 85 and 65.
"Use the words 'less than' to compare the numbers." (65 is less than 85.)
"How might I write this using the less than symbol?" ($65 < 85$)

"Read each comparison statement to your partner."

Complete Cool-Down

Response to Student Thinking

Students circle statements that are not true.

Next Day Support

- Launch the warm-up by reviewing the meaning of the > and < symbols and the display created in the lesson.

Lesson 16: Write Comparisons with Symbols

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

Teacher-facing Learning Goals

- Read and write comparisons using $$, or $=$.

Student-facing Learning Goals

- Let's use symbols to write comparisons.

Lesson Purpose

The purpose of this lesson is for students to compare numbers based on the value of the tens and ones digits and read and write comparisons using <, >, or =.

In this lesson, students use the symbols they learned in the previous lesson to write comparison statements. In the first activity, students play a game in which they make the greatest number possible by strategically placing digits in the tens place or ones place. In the second activity, students make comparison statements true using <, >, or =. Students are encouraged to read each comparison statement that they write. As students create and compare two-digit numbers and use symbols to record the results of their comparisons, they look for and make use of the structure of two-digit numbers and attend to precision (MP6, MP7).

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 2
- Number cards 0–10: Activity 1

Materials to Copy

- Greatest of Them All Stage 1 Recording Sheet (groups of 1): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

What evidence have students given that they understand the value of tens and ones in two-digit numbers?

Cool-down (to be completed at the end of the lesson)

5 min

Make Comparison Statements

Standards Alignments

Addressing 1.NBT.B.3

Student-facing Task Statement

Compare each number. Write <, >, or = in each blank.

1. 35 _____ 38
2. 67 _____ 67
3. 52 _____ 42
4. 8 _____ 28

Student Responses

1. <
2. =
3. >
4. <

Begin Lesson

Warm-up

10 min

Notice and Wonder: 49 and 45

Standards Alignments

Addressing 1.NBT.B.3

The purpose of this warm-up is to elicit the idea that two true comparison statements can be used to describe the relationship between two values, which will be useful when students write statements using <, >, and = in a later activity.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

- $49 > 45$
- $45 < 49$

Student Responses

Students may notice:

- Both statements are true.
- Both statements have 45 and 49.
- The symbol in the middle is different.
- The 45 and 49 are flipped.

Students may wonder:

- Why is the symbol switched?
- Why did someone write the same information twice?
- Is there another way to write it?

Launch

- Groups of 2
- Display the inequalities.
- "What do you notice? What do you wonder?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Share and record responses.

Synthesis

- "Even though these comparison statements are written differently, they tell us the same information. How can that be?" (One symbol means "greater than" and one means "less than.")

Activity 1

20 min

Introduce Greatest of Them All, Two-digit Numbers

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to learn a new center called Greatest of Them All. Students use digit cards to create the greatest possible number. As each student draws a card, they choose where to write it on the recording sheet. Once a digit is placed, it can't be moved. Students compare their numbers using <, >, or =. The player with the greater number in each round gets a point. Students think strategically about place value when they decide how to use the first of the 2 cards they draw (MP7).
Students should remove cards that show 10 from their deck.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Check for understanding by inviting students to rephrase directions in their own words.
Supports accessibility for: Memory, Organization

Materials to Gather

Number cards 0–10

Materials to Copy

Greatest of Them All Stage 1 Recording Sheet (groups of 1)

Launch

- Groups of 2
- Give each group a set of number cards and two recording sheets.
- Ask students to remove the cards with the number 10.
- "We are going to learn a new center called Greatest of Them All. You and your partner both make a two-digit number. Try to make the greatest number you can because the player with the greater number wins. Let's play one round together."

- Display the number cards and recording sheet.
- Invite a student to act as your partner.
- Choose a number card.
- "I can decide where to place this digit on the recording sheet. This digit can be my ones or my tens, but once I place it, it cannot be moved."
- "Where would you place this number on the recording sheet? Why would you place it there?" (I would put it in the tens place because 6 is a high number and I want to have a lot of tens. I would put this number in the ones place because I want to try to get a greater number for my tens.)
- "After you place one number, your partner chooses a card and places the number on their recording sheet."
- Invite your partner to choose a card and decide where they will place the number.
- Repeat until each of you has a two-digit number.
- "Now we compare our numbers. Who has the greater number? How do you know?"
- "Finally, we write a comparison using <, >, or =."
- Demonstrate writing the comparison statement on the recording sheet.
- "The player with the greater number gets a point. Continue playing until someone reaches 5 points."

Activity

- 10 minutes: partner work time

Synthesis

- Display a recording sheet with a 5 in the tens place for one partner and the rest blank.
- "My partner has a 5 in the tens place. I choose a card and see that it is a 6. Where should I

place the 6? Why would you place it there?" (Place it in the tens place because 6 tens is more than 5 tens so the number in the ones place won't matter. You will have the greater number.)

Activity 2

15 min

Make the Statement True

PLC Activity

Standards Alignments

Addressing 1.NBT.B.3

The purpose of this activity is for students to write the symbol or number that makes a comparison statement true. Students then read the comparison statement. This activity has two parts. In the first part, students are given two numbers with a blank space in which to write a comparison symbol that makes the statement true. After students write the symbol, they read the comparison statement. Reading the statement encourages students to relate the language of comparison to the symbols (MP6). In the second part of the activity, students are given a comparison symbol and either one number or neither number. Students determine a number or numbers that will make the comparison true.

Access for English Learners

MLR8 Discussion Supports. Before pairs begin working together, remind students to use phrases such as greater than and less than. Model how to use these phrases when comparing two numbers. Invite students to chorally repeat the phrases in context.
Advances: Speaking, Conversing

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

1. Compare the numbers.
   Write <, >, or = in each blank.

Launch

- Groups of 2
- Give students access to connecting cubes

Then read the comparison statement.

a. 56 _____ 26
b. 72 _____ 78
c. 6 _____ 55
d. 92 _____ 29
e. 23 _____ 23

2. Fill in each box with a number to make each statement true.

a. $\square > 78$
b. $39 < \square$
c. $13 = \square$
d. $\square < \square$
e. $\square > \square$

Student Responses

1. a. >
   b. <
   c. <
   d. >
   e. =
2. a. Answers vary, any number greater than 78.
   b. Answers vary, any number greater than 39.
   c. 13

in towers of 10 and singles.

Activity

- Read the task statement.
- 8 minutes: partner work time

Synthesis

- Display $\square > 78$.
- "How did you know what number would make the statement true?" (I knew it had to be greater than 78 because I read the statement 'blank is greater than 78'. I put in a number and read the statement out loud to see if it was true. I chose a number with more than 7 tens so I knew it would be greater than 78.)
- Display $39 < \square$.
- "How did you know what number would make the statement true?" (I knew it had to be greater than 39 because I read the statement '39 is less than blank'. I put in a number and read the statement out loud to see if it was true. I chose a number with more than 3 tens so I knew that it would be greater than 39.)
- Invite students to share comparisons they made for $\square < \square$ and $\square > \square$. For each comparison shared, have the class decide if it is true or not.

d. Answers vary.
e. Answers vary.

Advancing Student Thinking

If students create statements that are not true, consider asking:

- "Read your statement. How could you prove that it is a true statement?"
- "What other numbers could you use to make this a true statement? Explain how you know."

Lesson Synthesis

10 min

Display $\square < 35$.
"Today we used symbols to make comparison statements true. We also filled in numbers to make true statements. What is the greatest number that would make this statement true? What other numbers would make it true?" (34 is the greatest number that would make this true. We could put any number from 0–34 in the box to make the statement true.)

Complete Cool-Down

Response to Student Thinking

Students reverse the symbols and write statements that are not true.

Next Day Support

- Refer students to the visual created in the previous lesson.

Lesson 17: Compare and Order Numbers

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

Teacher-facing Learning Goals

- Compare and order numbers based on the value of the tens and ones digits.

Student-facing Learning Goals

- Let's compare and order numbers.

Lesson Purpose

The purpose of this lesson is for students to compare and order numbers based on the value of the tens and ones digits.

In this lesson, students compare and order numbers up to 99. Ordering numbers requires students to apply what they have learned about comparing two numbers, and allows them to see that a number can be greater than one number, while less than another. As students reason about how to place numbers and explain how they order numbers, they deepen their understanding of the structure of whole numbers and the base-ten system (MP7). In the first activity, students begin comparing and ordering familiar representations such as base-ten diagrams, words (_____ tens and _____ ones), and expressions that show the value of tens and ones. These representations allow students to use the value of the digit in the tens and ones places to help them put the quantities in order. In the second activity, students compare numbers less than 99 to the benchmark numbers 5, 10, 50, and 99.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR2 (Activity 1)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1

Materials to Copy

- Ordering Cards: Tens and Ones (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

If you were to teach this lesson over again, what activity would you redo? How would your proposed changes support student learning?

Cool-down (to be completed at the end of the lesson)

5 min

Which Numbers Belong

Standards Alignments

Addressing 1.NBT.B.3

Student-facing Task Statement

1. Circle **3** numbers that are greater than 75 and less than 95.

   8 92 74 99 81 78

2. Write a number that makes each comparison statement true.

   a. $\square > 75$

   b. $\square < 95$

   c. $75 < \square$

Student Responses

1. 92, 81, 78
2. a. Sample response: $78 > 75$
   b. Sample response: $81 < 95$
   c. Sample response: $75 < 78$

Begin Lesson

Warm-up

10 min

Which One Doesn't Belong: Comparison Statements

Standards Alignments

Addressing 1.NBT.B.3

This warm-up prompts students to compare four comparison statements. It gives the teacher an opportunity to hear how students use terminology and talk about characteristics of the items in comparison. During the synthesis, ask students to explain the meaning of any terminology they use, such as comparing, greater than, and less than.

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?

A

$5 < 30$

B

$25 < 35$

C

$35 < 20$

D

$30 > 20$

Student Responses

Sample responses:

- A doesn't belong because it has a number without any tens.
- B doesn't belong because there isn't a number with 0 in the ones place.
- C doesn't belong because it's the only one that isn't true.
- D doesn't belong because it is the only one that uses the > than symbol.

Launch

- Groups of 2
- Display the image.
- "Pick one that doesn't belong. Be ready to share why it doesn't belong."
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 2–3 minutes: partner discussion
- Share and record responses.

Synthesis

- "How do you know that C is false?" (35 isn't less than 20 because 35 has 3 tens and 20 only has 2 tens.)
- "What could you change about C to make it true?" (Use the greater than symbol or switch the symbol around.)

Activity 1

20 min

Compare and Order Quantities

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to compare numbers represented in different ways. Students place the numbers in order from least to greatest. Students may create alternate representations for each number in order to compare them. For example, students may represent each number with a drawing, or write the two-digit number that matches each card (MP2).

Access for English Learners

MLR2 Collect and Display. Circulate, listen for, and collect the language students use as they order the numbers. On a visible display, record words and phrases such as: *greater than, less than, more, less, first, second, third, fourth, order*. Invite students to borrow language from the display as needed, and update it throughout the lesson.
Advances: Conversing, Speaking

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. To support working memory, provide students with access to sticky notes or mini whiteboards to keep track of the value of each card in the set.
Supports accessibility for: Memory, Organization

Materials to Gather

Connecting cubes in towers of 10 and singles

Materials to Copy

Ordering Cards: Tens and Ones (groups of 2)

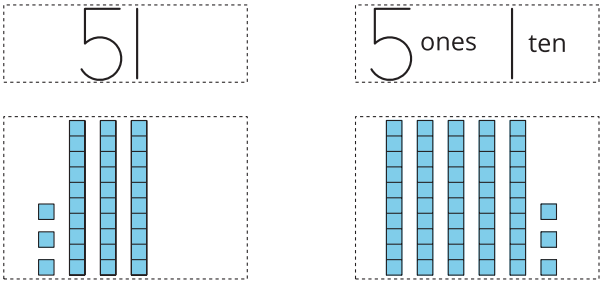
Required Preparation

- Create a set of cards from the Instructional master for each group of 2.

Student-facing Task Statement

Launch

- Groups of 2
- Give each group a set of cards and access



Pick a set of cards.
Put the cards in order from least to greatest.
Be ready to explain how you ordered your cards.

Write the numbers in order from least to greatest.

Set A:

_____

Set B:

_____

Set C:

_____

Set D:

_____

If you have time:
Mix two sets of cards together.
Put them in order from least to greatest.

Student Responses

Set A: Cards 3, 1, 4, 2
Set B: Cards 2, 1, 4, 3
Set C: Cards 3, 4, 1, 2
Set D: Cards 2, 1, 3, 4

to connecting cubes in towers of 10 and singles.

- Display the image in the student book.
- "Talk with your partner and decide how to order these cards from least to greatest."
- 2 minutes: partner discussion
- Share and record responses.

Activity

- "You will compare numbers and put them in order from least to greatest. Each set has 4 numbers. Start by finding all the cards that have an A on them. Once you have them in order, write them in order on your recording sheet. Then look for the cards that have a B on them and do the same thing. Be ready to share your thinking."
- 10 minutes: partner discussion
- Monitor for students who:
  - make a base-ten drawing for each number and compare the tens, then ones if needed
  - write each two-digit number and compare the tens, then ones if needed

Synthesis

- Display set A.
- Invite previously identified students to share.
- "How are these methods the same?" (They both showed the tens and ones. They both compared tens first.)

Activity 2

15 min

Order Numbers

Standards Alignments

Addressing 1.NBT.B.3

The purpose of this activity is for students to compare numbers less than 99 to the benchmark numbers 5, 10, 50, and 99.

Students may use a variety of methods, including considering the relative magnitude of numbers (for example, 49 is one away from 50), the value of the tens and ones (for example, 22 goes after 10 because 2 tens is more than 1 ten), and counting (for example, I know 97, 98, 99) to put the numbers in order. The emphasis is on the order of the numbers rather than the exact placement since this is not a number line. During the synthesis, students share how they ordered the numbers.

Student-facing Task Statement

1. Here are some numbers in order:

   1 5 10 50 99

   Add these numbers to the list:

   - 49
   - 8
   - 25
   - 98
   - 13

   Make sure all the numbers are in order from least to greatest.

2. Choose 2 numbers. Explain how you knew where to place them.

   - I knew where to place ☐ because

Launch

- Groups of 2
- Display the list of numbers in order from the student workbook.
- "What do you notice? What do you wonder?" (I notice that the numbers go in order. The number 1 is smallest and 99 is the largest. Why are these numbers in this list? Will we add numbers to this list?)
- 1 minute: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- Read the task statement.
- 10 minutes: partner work time

- I knew where to place $\square$ because

3. Write a number that makes each comparison statement true.

$25 < \square$

$25 > \square$

Student Responses

1. 1, 5, **8**, 10, **13**, **25**, **49**, 50, **98**, 99
2. Sample responses:
   - 49 goes between 10 and 50 because it is 1 less than 50, and definitely more than 10.
   - 8 goes between 5 and 10. 10 has 1 ten, and 8 has no tens. 8 is more than 5.
   - 25 goes between 10 and 49 because it has 2 tens. 10 has 1 ten and 49 has 4 tens.
3. Sample responses: $25 < 50$, $25 < 26$ and $25 > 10$, $25 > 20$

Synthesis

- Display the list of given numbers.
- Invite students to share different methods for determining where to place each number.
- As students share, fill in each number in the correct order.

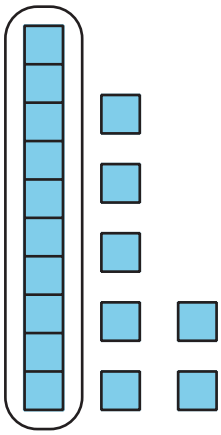
Lesson Synthesis

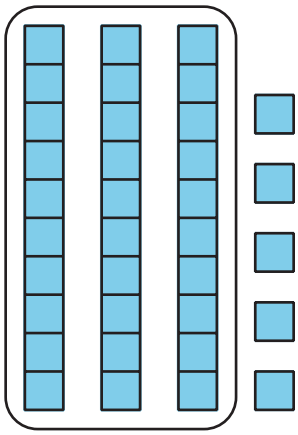
10 min

"In this section, we compared and ordered two-digit numbers. What are some things that can help us order numbers?" (Compare the digits in the tens place first. If the numbers have the same amount of tens, compare the digits in the ones place. Think about numbers they are close to. Think about the counting sequence.)

Student Section Summary

We compared numbers using the number of tens and ones.


1 ten


3 tens

17 has 1 ten and 35 has 3 tens so 17 is less than 35.

$17 < 35$
17 is **less than** 35.

$35 > 17$
35 is **greater than** 17.

$35 = 35$
35 is **equal to** 35.

Complete Cool-Down

Response to Student Thinking

Students circle 8, 74, or 99.

Next Day Support

- Before the warm-up, display the list of numbers from the cool down. "Which numbers are more than 75?" Erase all that are less than 75. “Which of these numbers are less than 95?” Erase all that are more than 95. “These numbers are more than 75 but less than 95.”

Lesson 18: Center Day 3

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3, 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6

Teacher-facing Learning Goals

- Count objects in a collection and record the count.
- Create, compare, and order two-digit numbers.
- Write numbers up to 99.

Student-facing Learning Goals

- Let's play games about tens and ones.

Lesson Purpose

The purpose of this lesson is for students to count, compare, and write two-digit numbers.

In the first activity, students learn a new center called Get Your Numbers In Order. In the second activity, students organize, count, and represent collections, and write numbers.

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Dry erase markers: Activity 1
- Materials from previous centers: Activity 2
- Number cards 0–10: Activity 1
- Sheet protectors: Activity 1

Materials to Copy

- Get Your Numbers in Order Stage 1 Gameboard (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

When do your students feel successful in math? How do you know?

Begin Lesson

Warm-up

10 min

Number Talk: Start with 32

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for adding and subtracting multiples of ten.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $32 + 10$
- $32 + 10 + 10$
- $32 + 20$
- $32 - 20$

Student Responses

- 42: There are three tens in 32 and one more ten is 42.
- 52: I added 10 more to 42. 42 was the answer in the last one when I just added 1 ten.
- 52: I knew it was 52 because in the last one, I added ten 2 times, which is the same as 20.
- 12: 32 has three tens. When I subtract 20, I take 2 tens away, so I have 1 ten left.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "How are $32 + 10 + 10$ and $32 + 20$ the same and different?" (Both equal 52. Both expressions have 32 as an addend. In one expression, the tens are separate and in the other, it shows 20.)

Activity 1

20 min

Introduce Get Your Numbers In Order, Two-digit Numbers

Standards Alignments

Addressing 1.NBT.B.3

The purpose of this activity is for students to learn a new center called Get Your Numbers In Order. Students use their understanding of relative magnitude to order numbers. They take turns placing two-digit numbers on the board and must make sure that the numbers across the board go from least to greatest. If a number cannot be placed on the gameboard, students say "pass" and get 1 point. Then it is their partner's turn. The player with the fewest points when all the boxes on the board are filled is the winner. Students should remove the cards that show 10 before they start.

Materials to Gather

Dry erase markers, Number cards 0–10, Sheet protectors

Materials to Copy

Get Your Numbers in Order Stage 1 Gameboard (groups of 2)

Required Preparation

- Put each gameboard in a sheet protector.

Launch

- Groups of 2
- Give each group a set of cards, a gameboard, and a dry erase marker.
- "We are going to learn a new center called Get Your Numbers In Order."
- Display the gameboard and number cards.
- "When it is your turn, choose two cards and make a two-digit number. The first person writes their number on the gameboard, anywhere they would like. The next person chooses two cards and makes a two-digit number. That number can be written on the board if there is a space where it fits. All of

the numbers across the board must be in order from least to greatest. If you cannot write your number on the board, you get one point. The person with the fewest points when the board is filled is the winner."

- Demonstrate playing a couple rounds with the class.
- "Now you will play with your partner."

Activity

- 10 minutes: partner work time

Synthesis

- Display a gameboard with all but one space filled in.
- "What numbers could we put in this space that would keep the numbers in order?"

Activity 2

20 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to choose from activities that focus on counting, comparing, and writing two-digit numbers.

Students choose from any stage of previously introduced centers.

- Greatest of Them All
- Grab and Count
- Write Numbers

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Greatest of Them All, Stage 1
  - Grab and Count, Stage 2
  - Write Numbers, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Greatest of Them All

Grab and Count

Write Numbers

Launch

- Groups of 2
- "Now you will choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do first."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 8 minutes: center work time
- "Choose what you would like to do next."
- 8 minutes: center work time

Synthesis

- "What is one thing you learned or got better at by working on the activity you chose?"

Lesson Synthesis

10 min

"How did you and your partner work together during centers? What went well? What can we continue

to work on?”

Section D: Different Ways to Make a Number

Lesson 19: Make Two-digit Numbers

Standards Alignments

Addressing	1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2.a, 1.NBT.B.3
Building Towards	1.NBT.C.4

Teacher-facing Learning Goals

- Understand that a two-digit number can be represented in different ways using tens and ones.

Student-facing Learning Goals

- Let's make two-digit numbers with tens and ones in different ways.

Lesson Purpose

The purpose of this lesson is for students to represent a two-digit number in more than one way, using tens and ones.

In a previous unit, students decomposed numbers to 20 in different ways. In previous lessons, students learned about the meaning of the digits in a two-digit number. They interpreted, used, and connected different base-ten representations for two-digit numbers including connecting cubes in towers of 10 and singles, base-ten diagrams, addition expressions, and written numbers.

In this lesson, students represent two-digit numbers in more than one way based on place value. Students learn that there are different ways to represent a two-digit number with tens and ones which will be important in a later unit when they compose a ten to add within 100.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR7 (Activity 2)

Instructional Routines

Which One Doesn't Belong? (Warm-up)

Materials to Gather

- Bags: Activity 1
- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2
- Materials from previous centers: Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	15 min
Lesson Synthesis	10 min

Teacher Reflection Question

In the next unit, students add within 100, including adding numbers that require composing a new ten when adding by place. How will the work of this section prepare students for the upcoming work with addition?

Cool-down (to be completed at the end of the lesson) 0 min

Unit 4, Section D Checkpoint

Standards Alignments

Addressing 1.NBT.B.2

Student-facing Task Statement

Lesson observations

Student Responses

- Represent a number with tens and ones in more than one way.
- Use base-ten representations to represent numbers in different ways.

Begin Lesson

Warm-up

10 min

Which One Doesn't Belong: Different Ways to Show a Number

Standards Alignments

Addressing 1.NBT.B.2

This warm-up prompts students to compare four different base-ten representations. It gives students a reason to use language precisely. It gives the teacher an opportunity to hear how students use terminology and talk about characteristics of the items in comparison to one another. During the synthesis, ask students to explain the meaning of any terminology they use, especially as it relates to tens, ones, and the value of digits.

Instructional Routines

Which One Doesn't Belong?

Student-facing Task Statement

Which one doesn't belong?

A

5 tens 3 ones

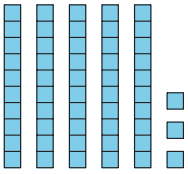
B

30 + 5

C

3 + 50

D



Student Responses

Sample responses:

- A is the only one that has words.
- B is the only one that is not 53.
- C is the only one that doesn't have the tens to the left of the ones.
- D is the only one that doesn't use digits to show the numbers.

Launch

- Groups of 2
- Display the image.
- "Pick one that doesn't belong. Be ready to share why it doesn't belong."
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 2–3 minutes: partner discussion
- Share and record responses.

Synthesis

- "Let's find at least one reason why each one doesn't belong."

Activity 1

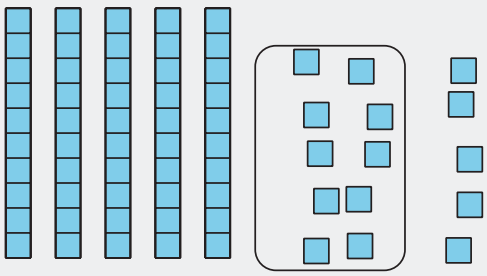
15 min

Make 65 Using Tens and Ones

Standards Alignments

Addressing	1.NBT.B.2.a
Building Towards	1.NBT.C.4

The purpose of this activity is for students to create a collection of 65 using only 5 towers of 10 and single cubes. Students are told that they cannot physically create any new towers or take apart any towers. As students work, they recognize that there are only 5 tens and consider how many ones are needed to get to 65. Some students may count on from 50 to 65 and other students may apply what they have learned in previous lessons to determine they need 1 more ten and 5 more ones, or 15 (MP2). As students represent their collection, they may show the number of towers of 10 they used and how many ones, including 5 tens and 15 ones, or that they grouped 10 of the ones in some way. This includes clearly marking a group of 10 ones.



Students may label their drawings using numbers, a combination of numbers and words, or expressions (MP6).

Materials to Gather

Bags, Connecting cubes in towers of 10 and singles

Required Preparation

- Each group of 3-4 needs a bag of connecting cubes in 5 towers of 10 and 4 or 5 handfuls of singles.

Student-facing Task Statement

Create a collection of 65.
You may not break apart any towers.
You may not make any new towers.

Show your collection in a way that others will understand.

If you have time, think of another way to make 65 using the cubes in the bag.

Student Responses

Sample responses:

- 5 tens and 15 ones, labeled 50 and 15.
- 5 tens, 10 ones circled, and 5 ones, labeled $50 + 10 + 5$.

Launch

- Groups of 3–4
- Give each group one bag of connecting cubes.

Activity

- Read the task statement.
- 10 minutes: partner work time
- As students work, consider asking:
  - "How did you organize your count?"
  - "How will you show how you organized and counted?"
- Monitor for students who represent the count as 5 tens and 15 ones in different ways.

Synthesis

- Invite previously identified students to share.
- "How do each of these representations show 65? How are these representations the same? How are they different?" (They all show some tens and some ones. One shows 15 ones and the other shows 10 ones in a group and then 5 more ones. One shows an expression and the others don't.)

Advancing Student Thinking

If students start counting the ones and are not sure what to do when they do not have enough, consider asking:

- "Tell me more about how you are planning to make 65."
- "How can we use the towers of 10 to help us make 65?"

Activity 2

10 min

Make 37 in Different Ways

Standards Alignments

Addressing	1.NBT.B.2
Building Towards	1.NBT.C.4

The purpose of this activity is for students to represent 37 with tens and ones in different ways. It is not necessary that students find all the ways to represent 37, rather that they see that the number can be represented with different amounts of tens and ones. Students are given connecting cubes in towers of 10 and singles, and they represent their thinking on paper using drawings, numbers, or words. Some students may initially represent 37 using 3 tens and 7 ones and then notice that they can decompose a tower of 10 into 10 singles and have 2 tens and 17 ones and use this structure to find other ways. Students may represent 37 as $36 + 1$, $35 + 2$, etc., which are all valid ways to represent the number. The lesson synthesis focuses on representing 37 with different groups of tens and ones.

Access for English Learners

MLR7 Compare and Connect. Synthesis: After all methods have been presented, lead a discussion comparing, contrasting, and connecting the different approaches. Ask, "How are representations the same? How are they different? How do they each show tens and ones?"
Advances: Representing, Conversing

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method with their partners, including the tools they will use, for decomposing 37 in multiple ways.
Supports accessibility for: Organization, Attention

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

How many ways can you make 37?
Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give each group connecting cubes in towers of 10 and singles.

Student Responses

Sample responses:

- Shows 3 tens 7 ones, decomposing the tens into further ones. Representation shows 3 tens 7 ones, 2 tens 17 ones, 1 ten 27 ones, 37 ones.
- Student shows 37 ones, composes tens. Representation shows 37 ones, 1 ten 27 ones, 2 tens 17 ones, 3 tens 7 ones.

- "We just saw that we can make 65 without using six tens. Now you are going to find different ways to make the number 37. Find as many different ways as you can with the connecting cubes. Then show each different way with drawings, numbers, or words."

Activity

- 2 minutes: quiet think time
- 5–6 minutes: partner work time
- Monitor for students who strategically find different ways to compose 37 using towers of 10 and singles including:
    - Start with 3 tens and 7 ones, and decompose each tower of 10 into singles.
    - Start with 37 ones and then compose towers of 10.

Synthesis

- Invite previously identified students to share.
- Record each way students made 37.
- "What do you notice about the ways they made 37?" (They both made 37 in the same ways. One student started with all ones and made one ten at a time. The other student started with 3 tens and broke one ten apart at a time. Each time a ten was made, there were 10 fewer ones. Each time a 10 was broken apart, there were 10 more ones.)

Activity 3

15 min

Centers: Choice Time

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.3

The purpose of this activity is for students to choose from activities that offer practice working with two-digit numbers.

- Greatest of Them All
- Get Your Numbers in Order
- Grab and Count

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Greatest of Them All, Stage 1
  - Get Your Numbers in Order, Stage 1
  - Grab and Count, Stage 2

Student-facing Task Statement

Choose a center.

Greatest of Them All

Get Your Numbers in Order

Grab and Count

Launch

- Groups of 2
- "Now you are going to choose from centers we have already learned."
- Display the center choices in the student book.
- "Think about what you would like to do."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- "How did you work with two-digit numbers during center time?"

Lesson Synthesis

10 min

"Today we made two-digit numbers in different ways. We used different amounts of tens and ones to make the same number."

- Display 3 tens and 7 ones, 2 tens and 17 ones, 1 ten and 27 ones, 37 ones.
- "Which do you think best matches the two-digit number 37? Why do you think it matches the number best?" (3 tens and 7 ones matches best because the digits in the number tell us that there are 3 tens and 7 ones. 37 ones matches best because the number is read 'thirty-seven.')

Lesson 20: Make Two-Digit Numbers in Different Ways

Standards Alignments

Addressing	1.NBT.B.2, 1.NBT.B.2.a, 1.NBT.B.2.b
Building Towards	1.NBT.C.4

Teacher-facing Learning Goals

- Identify two-digit numbers represented in different ways.
- Represent two-digit numbers in different ways using tens and ones.

Student-facing Learning Goals

- Let's make two-digit numbers in different ways.

Lesson Purpose

The purpose of this lesson is for students to represent two-digit numbers in different ways and identify two-digit numbers represented with different amounts of tens and ones.

In the previous lesson, students explored representing a two-digit number with tens and ones. The purpose of this lesson is for students to represent two-digit numbers with tens and ones in different ways and identify two-digit numbers when they are represented with different combinations of tens and ones. As students reason about different ways to compose or decompose tens, they look for and make use of the base-ten structure of two-digit numbers (MP7). In the first activity, students represent 94 with tens and ones in as many ways as they can and discuss how they know that they have found all of the ways. In the second activity, students determine how many connecting cubes are in each mystery bag and how they are grouped, given clues based the number of tens and ones in each bag.

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Estimation Exploration (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

What question do you wish you had asked today? When and why should you have asked it?

Cool-down (to be completed at the end of the lesson)

5 min

68 Three Different Ways

Standards Alignments

Addressing 1.NBT.B.2

Student-facing Task Statement

Show 3 different ways to make 68 using tens and ones.
Each one should have a different number of tens.
Show your thinking using drawings, numbers, or words.

Student Responses

Sample responses:

- 6 tens 8 ones, 4 tens 28 ones, 3 tens 38 ones
- base-ten diagrams of 6 tens 8 ones, 4 tens 28 ones, 1 ten 58 ones

Begin Lesson

Warm-up

10 min

Estimation Exploration: Tens and Ones

Standards Alignments

Addressing	1.NBT.B.2.b
Building Towards	1.NBT.C.4

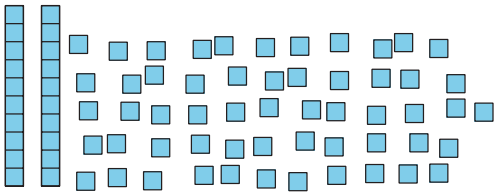
The purpose of an Estimation Exploration is to practice the skill of making a reasonable estimate based on experience and known information. When students notice that they can make a more accurate estimate when the single cubes are grouped into 10s they make use of base-ten structure (MP7).

Instructional Routines

Estimation Exploration

Student-facing Task Statement

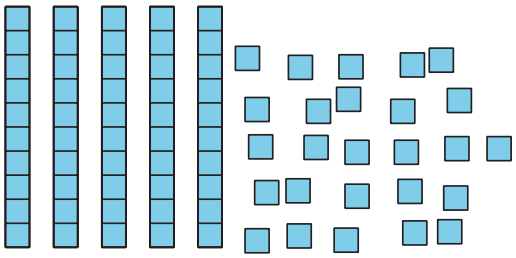
1. How many do you see?



Record an estimate that is:

too low	about right	too high

2. How many do you see?



Record an estimate that is:

too low	about right	too high

Launch

- Groups of 2
- Display the image.
- "What is an estimate that's too high?" "Too low?" "About right?"
- 1 minute: quiet think time

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.
- "Let's look at another image of the same collection."
- Display the image.
- "Based on the second image, do you want to revise, or change, your estimates?"

Synthesis

- "Did anyone change their original 'about right' estimate? Why did you change it?" (I changed it because I see there are at least 50 cubes in the 5 towers.)
- "Let's look at our revised estimates. Why were our estimates more accurate the second time?" (Some of the cubes are organized.)
- "There are 76 cubes."

Student Responses

Round 1: Sample responses:

- Too low: 20–40
- About right: 41–80
- Too high: 81–100

Round 2: Sample responses:

- Too low: 50–65
- About right: 66–80
- Too high: 81–100

Activity 1

20 min

All The Ways to Make 94

Standards Alignments

Addressing	1.NBT.B.2.a
Building Towards	1.NBT.C.4

The purpose of this activity is for students to represent a two-digit number in multiple ways. Students do not need to come up with every way, but they may find a method that results in them doing so. Students may choose to use connecting cubes as they work and then show their thinking with drawings, numbers, or words. If students use expressions to represent to 94 as tens and ones (for example, 90 + 4, 80 + 14, 70 + 24), ask them to explain which addend represents the value of an amount of tens and which represents a value of ones. During the activity synthesis, students discuss whether all of the different ways to represent 94 have been found and how they know. When students explain that when the number of tens decreases by 1, the number of ones increases by 10 because a ten is the same as 10 ones, they are using the base-ten structure of the numbers to express regularity in repeated reasoning (MP7, MP8).

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan and verbalize a method for making 94 using tens and ones before they begin. Students can speak quietly to themselves, or share with a partner.
Supports accessibility for: Organization, Conceptual Processing, Language

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

How many ways can you make 94 using tens and ones?
Show your thinking using drawings, numbers, or words.

Student Responses

Sample response:

- 9 tens 4 ones, 8 tens 14 ones, 7 tens 24 ones, 6 tens 34 ones, 5 tens 44 ones, 4 tens 54 ones, 3 tens 64 ones, 2 tens 74 ones, 1 ten 84 ones, 94 ones
- $90 + 4$, $80 + 14$, $70 + 24$, $60 + 34$, $50 + 44$, $40 + 54$, $30 + 64$, $20 + 74$, $10 + 84$, $0 + 94$

Launch

- Groups of 2
- Give each group access to connecting cubes in towers of 10 and singles.

Activity

- "Today's challenge is to find as many ways as you can to make 94 using tens and ones. You can use cubes if they will help you. Each way you make 94 should have a different number of tens."
- 10 minutes: independent work time
- 4 minutes: partner discussion
- Monitor for students who:
    - use connecting cubes to physically break apart a ten at a time to move between representations
    - use tens and ones notation
    - use addition expressions

Synthesis

- Invite previously identified students to share.
- "Do you think we found all the ways? Why or why not?"
- If needed, ask "What do all of these have in common? What patterns do you notice?" (Every time I break apart a ten into ones, the number of ones increases by 10.)
- "Which representation of 94 would you like to work with the most? Which would you like to work with the least? Why?" (I would like to work with 9 tens and 4 ones because it is the easiest. You can easily count 9 tens and you can just see there are 4 ones. I

would like to work with 94 ones the least. It is really hard to know how many you have when there are so many.)

Advancing Student Thinking

If students believe that they have found all the ways to make 94 with tens and ones, consider asking:

- "How do you know you've found all the different ways?"
- "How could you list the different ways you made 94 with tens and ones to prove you found all the ways?"

Activity 2

15 min

Mystery Bags

PLC Activity

Standards Alignments

Addressing 1.NBT.B.2

The purpose of this activity is for students to identify two-digit numbers or a part of a number represented in different ways, with different amounts of tens and ones. Students determine how many connecting cubes are in each bag, given clues about how many tens and ones are in the bag. Students also determine how many tens or ones are in a bag, given the total number of cubes and either the number of tens or ones. Students may use connecting cubes to make sense of the problems, and show their thinking using drawings, numbers, or words.

Access for English Learners

MLR8 Discussion Supports. During partner work, invite students to take turns sharing their responses. Ask students to restate what they heard using precise mathematical language and their own words. Display the sentence frame: "I heard you say . . . ." Original speakers can agree or clarify for their partner.
Advances: Listening, Speaking

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

1. Bag A has 2 ones and 5 tens.
   How many cubes are in Bag A?
   Show your thinking using drawings, numbers, or words.
2. Bag B has 4 tens and 25 ones.
   How many cubes are in Bag B?
   Show your thinking using drawings, numbers, or words.
3. Bag C has 49 cubes.
   If there are 29 ones, how many tens are in the bag?
   Show your thinking using drawings, numbers, or words.
4. Bag D has 36 cubes.
   If there are only 2 tens, how many ones are in the bag?
   Show your thinking using drawings, numbers, or words.

If you have time: Write a mystery bag problem about tens and ones.
Switch with your partner.
Solve.

Student Responses

1. 52. Sample response: I showed 5 tens 2 ones and counted 10, 20, 30, 40, 50, 51, 52.
2. 65. Sample response: I know that 25 has 2 tens 5 ones. I combined the tens, 4 tens and 2 tens is 6 tens. 6 tens and 5 ones is 65.
3. 2 tens. Sample response: I showed the number 49 using 4 tens 9 ones. Since the number has 29 ones, I took 2 tens and moved them over to the ones. I saw that I have 2 tens left.
4. 16 ones. Sample response: I showed 3 tens

Launch

- Groups of 4
- Give students access to connecting cubes in towers of 10 and singles.

Activity

- "You are going to solve problems about connecting cubes in mystery bags. You can use connecting cubes if they will help you. Show your thinking using drawings, numbers, or words."
- "You will begin by working on your own. Then you will share your thinking with a partner at your table."
- 6 minutes: independent work time
- "Share your thinking for problem 1 with a partner at your table."
- 1 minute: partner discussion
- "Share your thinking for problem 2 with a different partner at your table."
- 1 minute: partner discussion
- Repeat for problems 3 and 4.
- Monitor for students who use connecting cubes in these ways to solve for mystery bag C:
  - Shows 49 as 4 tens 9 ones and moves 2 tens over to the ones cubes to have 29, shows 2 tens left.
  - Shows 29 ones, adds towers of 10 to get to 49.

Synthesis

- Invite previously identified students to share.

6 ones. I took 2 tens from the 3 tens and moved them over. I saw I had 1 ten and 6 ones left which is 16 ones.

- "How are these ways for finding the mystery number of tens the same? How are they different?" (They both used tens and ones. One person started with 29 ones and added the tens, the other person started with 4 tens 9 ones and broke apart tens until there were 29 ones.)

Advancing Student Thinking

If students show they are adding the total number of cubes and the known tens or ones for Bag C or Bag D, consider asking:

- "How could you act out this problem?"
- "What do you know? What don't you know?"
- "How could you use what we've learned about making numbers with different amounts of tens and ones to solve the problem?"

Lesson Synthesis

10 min

"Today we figured out how many tens, ones, or total number of cubes were in mystery bags. Which mystery bag was easiest to solve? Why was it the easiest? Which mystery bag was the hardest to solve? Why was it harder?" (Sample responses: Bag A was easiest because it told you how many tens and ones. It matches the two-digit number it was just in a different order. Bag C was the hardest. It was a lot of ones and I had to stop and think about how to figure out the tens.)

Complete Cool-Down

Response to Student Thinking

Students represent a number other than 68.

Next Day Support

- Before the warm-up, have students work in partners to discuss correct responses to this cool-down.

Lesson 21: Compare Two-Digit Numbers Shown in Different Ways

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3, 1.NBT.C.4

Teacher-facing Learning Goals

- Compare two-digit numbers represented in different ways.

Student-facing Learning Goals

- Let's compare numbers.

Lesson Purpose

The purpose of this lesson is for students to compare two-digit numbers that are represented in different ways.

In previous lessons, students compared numbers and used the symbols <, >, and =. Students also represented two-digit numbers with different amounts of tens and ones.

In this lesson, students compare two-digit numbers that are represented in different ways. Students use what they have learned about tens and the structure of two-digit numbers to compose or decompose tens to make sense of representations and compare (MP7). In the first activity, students consider two collections that are represented in different ways and determine which has more. In the second activity, students compare numbers shown as different base-ten representations and write comparison statements using the symbols <, >, and =.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR7 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes in towers of 10 and singles: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Think about a recent time from class when your students were confused. What did you do to support them in reasoning about their confusion together as a community of learners?

Cool-down (to be completed at the end of the lesson)

5 min

Compare 2 Collections

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3, 1.NBT.C.4

Student-facing Task Statement

1. Circle the number that is less:

   4 tens 14 ones $20 + 24$

2. Write the numbers above as two-digit numbers and use <, >, or = to write a comparison statement.

Student Responses

1. Circle $20 + 24$
2. Sample responses: $44 < 54$, $54 > 44$

Begin Lesson

Warm-up

10 min

Number Talk: Addition Within 20

Standards Alignments

Addressing 1.NBT.C.4

The purpose of this Number Talk is to elicit strategies and understandings students have for adding within 20, in which one of the addends is close to 10. These understandings help students develop fluency with addition within 20.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $10 + 6$
- $9 + 6$
- $10 + 7$
- $8 + 7$

Student Responses

- 16: I just know this one.
- 15: $10 + 6 = 16$, $16 - 1 = 15$. I subtracted 1 because 9 is 1 less than 10.
- 17: $10 + 7 = 17$
- 15: I can take 2 from the 7 and add that to 8. That gives me $10 + 5$.

Launch

- Display one expression.
- "Give me a signal when you have an answer and can explain how you got it."
- 1 minute: quiet think time

Activity

- Record answers and strategy.
- Keep expressions and work displayed.
- Repeat with each expression.

Synthesis

- "Did anyone approach the problem in a different way?"
- "How did you use $10 + 6$ to help you solve $9 + 6$?" (I know that $10 + 6$ is 16. Since 9 is one less than 10, and the six stays the same, the sum is one less.)
- "How did you use $10 + 7$ to help you solve $8 + 7$?" (I know that $10 + 7 = 17$, so I subtracted 2 from 17 because 8 is 2 less than

10.)

Activity 1

15 min

Elena and Kiran Compare Collections

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to compare two collections represented with tens and ones in different ways. Students are given access to connecting cubes in towers of 10 and singles to make sense of the problem and compare the quantities. In the activity synthesis, students discuss methods for comparing the collections.

Access for English Learners

MLR7 Compare and Connect. Synthesis: After all representations have been presented, lead a discussion comparing, contrasting, and connecting the different approaches. Ask, "How are the representations the same? How are they different? How do the different representations show tens and ones?"
Advances: Representing, Conversing

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

Elena and Kiran are comparing their collections.
Elena says, "I have 5 tens 32 ones."
Kiran says, "I have 7 tens 2 ones."
Who has more in their collection?
Show your thinking using drawings, numbers, words, or expressions.

Student Responses

Elena has more. Sample responses:

- Elena has 82. I combined 5 tens and 3 tens.

Launch

- Groups of 2
- Give students access to connecting cubes in towers of 10 and singles.

Activity

- Read the task statement.
- 7 minutes: partner work time
- Monitor for a student who:
  - uses towers of 10 and singles, puts

Kiran only has 7 tens.

- Drawing of 5 tens and 32 ones grouped into 3 tens 2 ones. Elena has 50, 60, 70, 80. 81, 82. Kiran has 70, 71, 72.
- Elena has $50 + 30 + 2$ or $80 + 2$, Kiran and $70 + 2$. I know that 80 is more than 70.

the singles together to make new tens

  - writes addition equations such as $50 + 32 = 82$ and $70 + 2 = 72$

Synthesis

- Invite previously identified students to share.
- "How do these representations help us compare the collections?" (Making as many tens as possible helps because then we can compare the tens to see who has more. Writing an equation helps because then we can just compare the totals.)
- "Why might Kiran think he has more?" (He has 7 tens. He didn't think about Elena's ones and how many tens those could make.)

Advancing Student Thinking

If students compare the tens and determine that Kiran has more than Elena, consider asking:

- "How did you figure out that Kiran has more than Elena?"
- "Could you use connecting cubes to show both collections?"

Activity 2

20 min

Base-Ten Representation Compare

Standards Alignments

Addressing 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to compare two-digit numbers represented with different amounts of tens and ones, and shown with base-ten diagrams, ___ tens _____ ones, and

addition expressions. Students apply what they have learned about representing numbers with tens and ones to compare each representation. Some students may find the total number of each representation and compare using the numbers. Other students may consider the number of tens in each representation to compare. Students record each comparison using the symbols <, >, or =. Students reason abstractly and quantitatively when they move fluently between different representations in order to make comparisons (MP2).

Access for Students with Disabilities

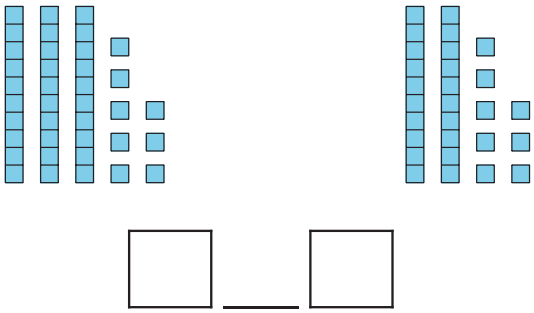
Engagement: Provide Access by Recruiting Interest. Leverage choice around perceived challenge. Invite students to select at least 4 of the 6 problems to complete.
Supports accessibility for: Organization, Attention, Social-Emotional Functioning

Materials to Gather

Connecting cubes in towers of 10 and singles

Student-facing Task Statement

1. What do you notice?



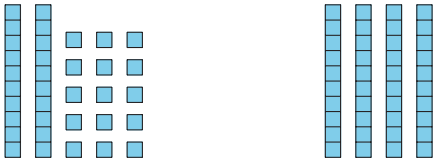
2. Circle the representation that shows the greater number.
   Write a number to match each representation.
   Then write a comparison statement using <, >, or =.

   a.

Launch

- Groups of 2
- Display the base-ten diagrams to compare 3 tens 8 ones to 2 tens 8 ones.
- "What do you notice?" (One has 3 tens and the other has 2 tens. They both have 8 ones. One is 38 and the other is 28.)
- Share responses.
- "You are going to look at different representations of two-digit numbers and circle the representation that is greater. Then you write them as two-digit numbers and write a comparison. Let's do this one together."
- "Which is greater? How do you know?" (The first one is greater because there are more tens and they have the same number of ones. 38 is greater than 28.)
- 30 seconds: quiet think time
- Share responses.
- "Since the first representation is greater, we circle that representation. Then we write the comparison below."

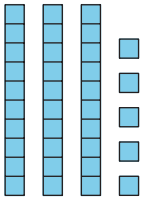
b.



c. 5 tens 2 ones

12 ones 3 tens

d. 1 ten 25 ones



e. 7 tens 29 ones

$50 + 39$

Student Responses

1. $38 > 28$
2. a. $32 = 32$
   b. $35 < 40$ or $40 > 35$
   c. $42 < 52$ or $52 > 42$
   d. $35 = 35$
   e. $89 < 99$ or $99 > 89$

- Demonstrate circling the representation of 38 and writing $38 > 28$.

Activity

- "First you will compare on your own. Then you will work with a partner."
- 6 minutes: independent work time
- 6 minutes: partner discussion

Synthesis

- Display 3 towers of ten and 2 ones, and 2 towers of ten and 12 ones.
- "How can we compare without finding the value of each representation?" (I can see that I can make one more 10 with 10 ones in the second representation. That tells me they are equal because they both have 3 tens and 2 ones.)
- Display 2 towers of ten and 15 ones, and 4 tens.
- "How can we compare without finding the value of each representation?" (I see that they both have 2 tens. Then one only has ones left and I can tell there are not 20 ones so that representation is less than the other. I imagine circling two columns of ones and that makes another 10. So that representation has 3 tens and the other has 4 so I know the other is greater.)

Lesson Synthesis

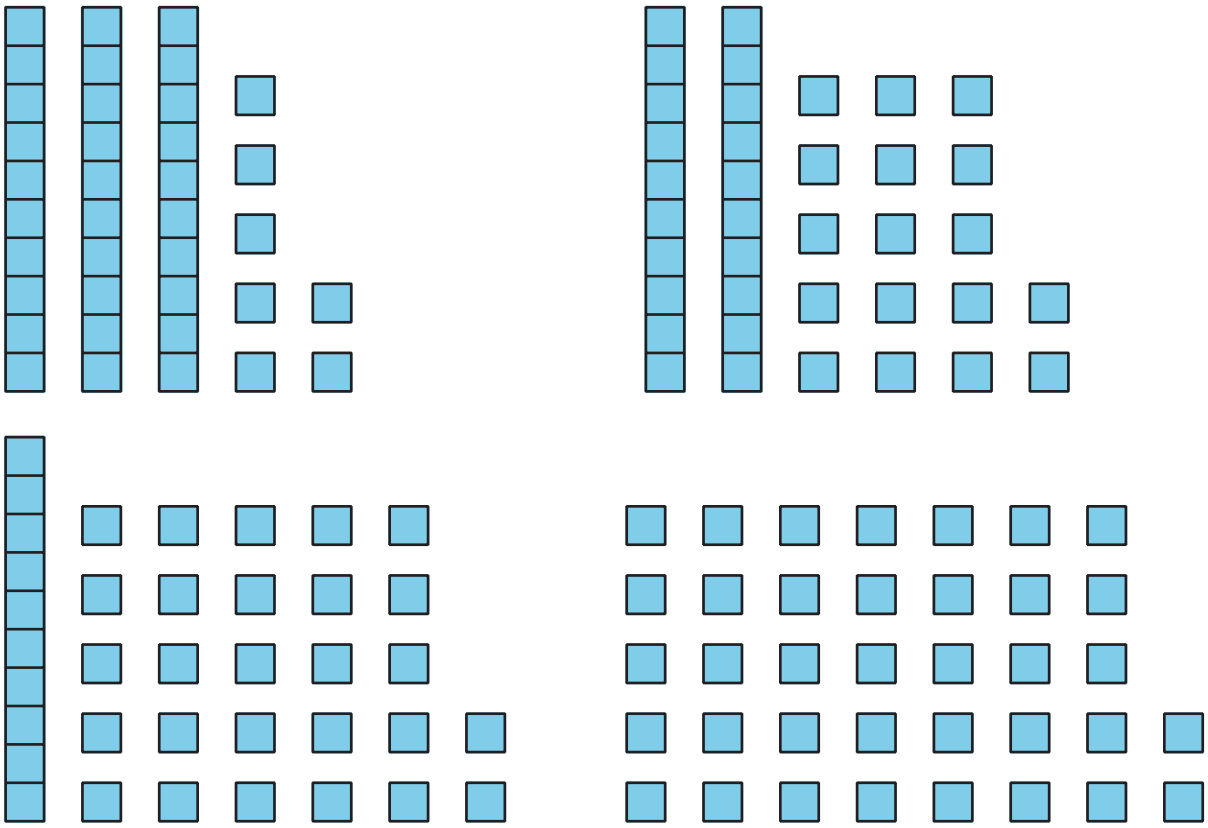
10 min

"We have done a lot of work with two-digit numbers in this unit. What have you learned about two-digit numbers?" (They have tens and ones. You can make a number with different amounts of tens and ones. When you write a two-digit number the first digit tells how many tens and the second digit tells how many ones. You can compare two-digit numbers by comparing the tens, but if they have the same number of tens then you need to look at the ones. When you add 10 to a two-digit number, the tens digit changes and the ones digits stays the same.)

Student Section Summary

We made two-digit numbers with different amounts of tens and ones.

Each of these representations shows 37.



We compared two-digit numbers that were made with tens and ones in different ways.

5 tens 2 ones and 12 ones 3 tens

$52 > 42$

Complete Cool-Down

Response to Student Thinking

Students write a comparison statement that is not true.

Next Day Support

- During the warm-up, review the meaning of the symbols, > and <.>

Lesson 22: Center Day 4

Standards Alignments

Addressing 1.NBT.B, 1.NBT.B.2, 1.NBT.B.3

Teacher-facing Learning Goals

- Compare numbers within 99.
- Use place value understanding to identify two-digit numbers.

Student-facing Learning Goals

- Let's play games about tens and ones.

Lesson Purpose

The purpose of this lesson is for students to use place value understanding to compare and write numbers.

In the first activity, students learn a new center called Mystery Number. In this center, students give clues to help their partner guess a two-digit number. In the second activity, students choose between center activities introduced earlier in the unit.

Instructional Routines

True or False (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 2
- Number cards 0–10: Activity 1

Materials to Copy

- Mystery Number Stage 1 Directions (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	25 min
Lesson Synthesis	10 min

Teacher Reflection Question

As you finish up this unit, reflect on the norms and activities that have supported each student in learning math. List ways you have seen each student grow as a young mathematician throughout this work. List ways you have seen yourself grow as a teacher. What will you continue to do and what will you improve upon in the next unit?

Begin Lesson

Warm-up

10 min

True or False: Tens and Ones

Standards Alignments

Addressing 1.NBT.B.2

The purpose of this True or False is to elicit insights students have about numbers being represented in different ways. The reasoning students do here deepens their understanding of how numbers can be composed and decomposed in different ways using tens and ones.

Instructional Routines

True or False

Student-facing Task Statement

Decide if each statement is true or false.
Be prepared to explain your reasoning.

- $92 = 90 + 2$
- $90 + 2 > 80 + 12$
- $20 + 13 < 30 + 13$

Student Responses

- True: 92 is 9 tens and 2 ones, and that is the same as 90 plus 2.
- False: 92 has 9 tens 2 ones and 80 + 12 also has 9 tens 2 ones. They are equal.
- True: The left side is $30 + 3$ and the right side is $40 + 3$. $30 + 3 < 40 + 3$.

Launch

- Display one statement.
- "Give me a signal when you know whether the statement is true and can explain how you know."
- 1 minute: quiet think time

Activity

- Share and record answers and strategy.
- Repeat with each statement.

Synthesis

- "How can you determine whether each is true or false without finding the value of each side?"
- If needed, ask "How can you use what you know about tens and ones to help you know if it is true or false?" (I can compare the number of tens first, then compare ones.)

Activity 1

15 min

Introduce Mystery Number, Two-digit Numbers

Standards Alignments

Addressing 1.NBT.B

The purpose of this activity is for students to learn a new center called Mystery Number. Each student has a mystery number. They give clues to their partner based on sentence stems. After each clue, the partner guesses the mystery number. Players earn points based on how many clues they need to identify the mystery number. The player with the lowest score after five rounds wins.

Materials to Gather

Number cards 0–10

Materials to Copy

Mystery Number Stage 1 Directions (groups of 2)

Launch

- Groups of 2
- Give each group a set of cards and directions.
- "We are going to learn a new center called Mystery Number."
- "On your turn, you will choose two number cards and make a two-digit number. Then use one of the sentence starters to give a clue to your partner. Your partner can guess your number. If they don't guess the correct number, give them another clue. Continue until they guess your number. The person guessing gets one point for every clue they get to help them guess. Continue playing for five rounds. The person with the lowest score wins."

Activity

- 10 minutes: partner work time

Synthesis

- "Which clues made your partner's number easiest to guess?"

Activity 2

25 min

Center: Choice Time

Standards Alignments

Addressing 1.NBT.B, 1.NBT.B.3

The purpose of this activity is for students to choose from activities that offer practice working with two-digit numbers. Students choose from previously introduced centers.

- Mystery Number
- Get Your Numbers in Order
- Greatest of Them All

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
  - Mystery Number, Stage 1
  - Get Your Numbers in Order, Stage 1
  - Greatest of Them All, Stage 1

Student-facing Task Statement

Choose a center.

Mystery Number

Launch

- Groups of 2
- "We are going to choose from centers we have already learned."
- Display the student page.

Get Your Numbers in Order

Greatest of Them All

- "Think about what you would like to do first."
- 30 seconds: quiet think time

Activity

- Invite students to work at the center of their choice.
- 10 minutes: center work time
- "Choose what you would like to do next."
- 10 minutes: center work time

Synthesis

- "How were the two centers you worked on the same? How were they different?"

Lesson Synthesis

10 min

"How did you and your partner work together during centers? What went well? What can we continue to work on?"

Lesson 23: Two-Digit Numbers in Our World (Optional)

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3

Teacher-facing Learning Goals

- Estimate, count, and represent collections of up to 99 objects.

Student-facing Learning Goals

- Let's estimate how many objects are in a group.

Lesson Purpose

The purpose of this lesson is for students to consider the magnitude of numbers to 99 by estimating and counting.

This lesson is optional because it does not address any new mathematical content standards. This lesson does provide students with an opportunity to apply precursor skills of mathematical modeling. In this lesson, students explore quantities of objects in order to develop a sense of how big various two-digit numbers are and to leverage their understanding of tens and ones to practice counting methods.

When students recognize the mathematical features of familiar real world objects and solve problems, they model with mathematics (MP4).

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Estimation Exploration (Warm-up)

Materials to Gather

- Bags: Activity 1
- Collections of objects: Activity 1

Materials to Copy

- Estimating Quantities Card Sort (groups of 2): Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

Think about times when students were able to make connections to and build on the ideas of their peers during discussions today. What norms or routines allowed students to engage with other students' ideas?

Begin Lesson

Warm-up

10 min

Estimation Exploration: Beans

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3

The purpose of an Estimation Exploration is to practice the skill of estimating a reasonable answer based on experience and known information.

Instructional Routines

Estimation Exploration

Student-facing Task Statement

How many beans are there?

Launch

- Groups of 2
- Display the image.
- "The circled group shows 10 beans."
- "What is an estimate that's too high?" "Too low?" "About right?"
- 1 minute: quiet think time

Record an estimate that is:

too low	about right	too high

Student Responses

Sample responses:

- Too low: 5–15
- About right: 20–30
- Too high: 50–100

Activity

- "Discuss your thinking with your partner."
- 1 minute: partner discussion
- Record responses.

Synthesis

- Select one "about right" estimate.
- "What are some ways we can think about this number using 10s and 1s?"

Activity 1

15 min

Count the Objects

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

The purpose of this activity is for students to have an opportunity to apply their place value understanding to estimate quantities of objects and accurately count familiar objects.

Materials to Gather

Bags, Collections of objects

Required Preparation

- Each group of 2 needs a bag of a collection of small objects.

Student-facing Task Statement

Experiment 1: How many objects are in 2 handfuls?
Record an estimate that is:

too low	about right	too high

Now find the exact number. _____

Experiment 2: How many objects are in 2 handfuls?
Record an estimate that is:

too low	about right	too high

Now find the exact number. _____

Experiment 3: How many objects are in 2 handfuls?
Record an estimate that is:

too low	about right	too high

Now find the exact number. _____

Student Responses

Sample response:

too low	about right	too high
15	25	50

Launch

- Groups of 2
- Display for all to see approximately 15–25 beans or other small objects.
- "How many objects do you think are in this pile?"
- 1 minute: partner discussion
- Share responses.
- "How could we find out exactly?" (Count them.)

Activity

- "How many objects are in 2 handfuls? Let's do an experiment."
- Give each group a bag of objects.
- "Take turns and grab a handful. Estimate how many objects you both grabbed altogether. Then find out how many you have exactly."
- "You will do this experiment three times."
- 5 minutes: partner work time
- Monitor for students who:
    - count by ones
    - group the objects into groups of 10 and then count the tens and ones

Synthesis

- Invite previously identified students to share.
- "Did your estimates get better with practice?"
- "How did organizing your objects help you to count?"
- "Imagine I have 72 objects. How many

would you have if you have 10 fewer than I do? What if you had 10 more?"

- "If you had 72 objects, how could they be arranged in piles of 10 and ones? Are there any other ways?" (7 tens and 2 ones, 6 tens and 12 ones)

Activity 2

20 min

Quantities Card Sort

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3

The purpose of this activity is for students to consider the number of objects in a group and represent numbers in as many ways as possible. Students should be encouraged to think about the number in terms of tens and ones. Students sort pictures based on the number of objects they estimate to be in each group.

Students should be encouraged to estimate quantities rather than try to count them. Some students may not have a reasonable estimate, but can be successful in this activity if they categorize the photograph based on whatever estimate they consider is "about right."

Access for English Learners

MLR8 Discussion Supports. Students should take turns sorting cards into the different categories and explaining their reasoning to their partner. Display the following sentence frames for all to see: "I noticed _____, so I matched . . . ." Encourage students to challenge each other when they disagree.
Advances: Listening, Speaking

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Chunk this task into more manageable parts. Give students a subset of the cards to start with and introduce the remaining cards once students have completed their initial set of matches.
Supports accessibility for: Attention, Organization

Materials to Copy

Estimating Quantities Card Sort (groups of 2)

Required Preparation

- Create a set of cards from the Instructional master for each group of 2.

Student-facing Task Statement

1. Estimate and sort the pictures based on the amount of items you see.
   Sort into these groups.
   a. Less than 20
   b. 20 to 50
   c. More than 50
2. Select 1 picture from each group.
   Show the number of items you think are in the picture in as many ways as you can.

   Less than 20

   20 to 50

   More than 50

Student Responses

1. Sample sort:

Less than 20	20 to 50	More than 50
Soccer Balls	Grapes	Corn
Shirts	Flowers	Cards
Blocks	Markers	Crayons
Stuffed Animals	Pears	Nuts
Dolls	Shoes	Pattern Blocks
Paper Clips	Shells	Books
Dice	Buttons	
	Bears	

2. Students write expressions, express the number in tens and ones, or draw diagrams.

Launch

- Groups of 2
- Give each group a set of cards.

Activity

- "There is a different picture on each card. Sort the cards based on the number of objects you think are in each picture."
- 8 minutes: partner work time
- As students work, consider asking:
  - "What is an estimate that is too low, about right, and too high?"

Synthesis

- Invite students to share what object they selected and its representation.
- Record responses.
- Select two estimates that have the same digit in the ones place.
- "How do we know which estimate is bigger?"
- Highlight the use of ones and tens.

Lesson Synthesis

10 min

"Today we made estimates and counted groups of objects. How did you use your understanding of tens and ones in two-digit numbers to help you with your work?"

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Family Support Materials

Family Support Materials

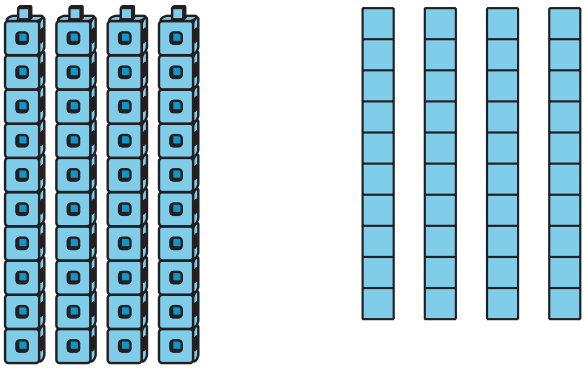
Numbers to 99

In this unit, students develop an understanding of place value for numbers up to 99. This unit is the first introduction to the base-ten system. The understanding students develop about units of tens and ones will be the foundation for base-ten work, including decimals, that continues through grade 5.

Section A: Units of Ten

In this section, students use connecting cubes organized in towers of 10. Students count and represent collections. The total number of objects in each collection is a multiple of 10. They develop an understanding that counting the same group by one or by ten gives them the same number. Through the section, students make sense of base-ten representations (towers of 10, base-ten drawings, words, and numbers).

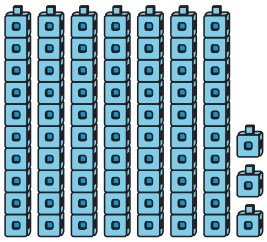
For example, the two diagrams each show 40.

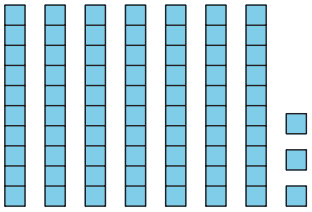


Students add and subtract multiples of ten and see that 3 tens and 2 tens is 5 tens.

Section B: Units of Ten and Units of One

In this section, students use the same representations from the previous section to make sense of two-digit numbers. For example, these are representations for 73:





Students are introduced to addition expressions to represent two-digit numbers. To ensure that students have a deep understanding of decomposing numbers, they are asked to consider expressions like $3 + 70$ in addition to the traditional standard form ($70 + 3$). Students use their base-ten understanding of two-digit numbers to add multiples of ten to any two-digit number and mentally find 10 more or 10 less than any number (that is, $52 + 10$ or $32 - 10$). They see that the value of the tens digit changes based on the number of tens added or subtracted, but the value of the ones digit remains the same.

Section C: Compare Numbers to 99

In this section, students compare and order numbers to 99. They use their place value understanding to compare numbers and may recognize that the digit in the tens place is more important than the digit in the ones place when comparing two-digit numbers. Students are introduced to the $<$ and $>$ symbols.

Section D: Different Ways to Make a Number

In this section, students dive deeper into place value understanding by breaking apart two-digit numbers using different amounts of tens and ones. The focus of this section is for students to see that there are different ways to decompose a number into tens and ones. These representations show that 62 is the same as 5 tens and 12 ones.

Students extend comparison work by using the $<$, $=$, or $>$ signs to compare numbers broken apart in different ways.

Try it at home!

Near the end of the unit ask your student to do the following with the number 62:

- Draw a representation of 62.
- What are two different ways that you can make 62 with tens and ones?
- What is 10 more? What is 10 less?

Questions that may be helpful as they work:

- Can you tell me how your drawing shows 62?
- Is (number) more or less than 62? How do you know?

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Unit Assessments

Check Your Readiness A, B, C and D
End-of-Unit Assessment

Grade 1, Unit 4 Section A Checkpoint	• Represent the base-ten structure of multiples of 10 up to 90 using towers of 10, drawings, numbers, and words.				• Add and subtract multiples of 10.
	Organize and count objects by ten.	Represent a number in more than one way (cube towers, drawings, numbers, words, expressions).	Connect different place value representations.	Write multiples of 10 accurately.	Add and subtract multiples of 10 from other multiples of 10.

Grade 1, Unit 4 Section B Checkpoint	• Understand that the two digits of a two-digit number represent amounts of tens and ones. • Represent the base-ten structure of numbers up to 99 using drawings, numbers, and words.				• Add and subtract multiples of 10.
	Describe a two-digit number as made up of _____ tens _____ ones.	Represent a number in more than one way (drawings, numbers, words, expressions).	Recognize different base-ten representations of the same number.	Write two-digit numbers accurately.	Add and subtract 10 and multiples of 10.

Grade 1, Unit 4 Section C Checkpoint	• Compare 2 two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.			
	Connect different place value representations.	Determine which two-digit number is greater or less.	Use $<$, $>$, and $=$ to write comparison statements.	Read comparison statements that use $<$, $>$, or $=$.

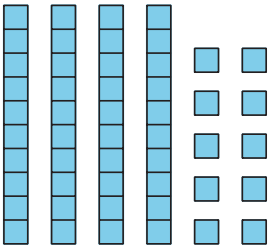
Grade 1, Unit 4 Section D Checkpoint	• Represent two-digit numbers in different ways, using different amounts of tens and ones (for example $52 = 50 + 2 = 40 + 12$).		
	Represent a number with tens and ones in more than one way.	Recognize when the same number is represented with different amounts of tens and ones.	Compare two-digit numbers represented in different ways.

Numbers to 99: End-of-Unit Assessment

1. Write the number that matches each representation.

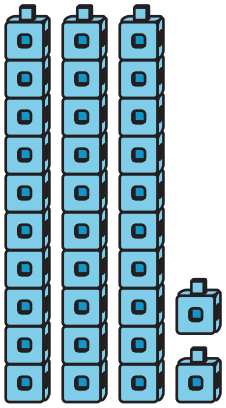
a. 4 ones and 3 tens _____

b. _____



c. 5 tens and 11 ones _____

d. _____



e. $5 + 40$ _____

2. Circle the **2** expressions that are equal to 53.

A. $3 + 50$

B. $30 + 5$

C. $40 + 10$

D. $50 + 3$

E. $5 + 3$

3. Find the number that makes each equation true.

a. $87 + 10 = \square$

b. $45 + \square = 75$

c. $24 + 30 = \square$

d. $60 - 20 = \square$

4. a. Circle the number that is greater.

41 or 29

77 or 75

b. Write <, =, or > to compare the numbers.

67 _____ 81

31 _____ 31

5. a. Write the 2 numbers that come after 80 when you are counting.

b. Write the 2 numbers that come before 80 when you are counting.

6. Han begins at 26 and counts until he reaches 53.

   a. What is the smallest number Han counts?

      What is the largest?

   b. Will Han count the number 40? What about 60?
      Show your thinking using drawings, numbers, or words.

   c. Which numbers greater than 50 does Han count?
      Show your thinking using drawings, numbers, or words.

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Assessment Answer Keys

Check Your Readiness A, B, C and D

End-of-Unit Assessment

Assessment Answer Keys
Assessment: Section A Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Represent the base-ten structure of multiples of 10 up to 90 using towers of 10, drawings, numbers, and words.
    - Organize and count objects by ten.
    - Represent a number in more than one way (cube towers, drawings, numbers, words, expressions).
    - Connect different place value representations.
    - Write multiples of 10 accurately.
- Add and subtract multiples of 10.
    - Add and subtract multiples of 10 from other multiples of 10.

Assessment: Section B Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Understand that the two digits of a two-digit number represent amounts of tens and ones.
- Represent the base-ten structure of numbers up to 99 using drawings, numbers, and words.
    - Describe a two-digit number as made up of _____ tens _____ ones.
    - Represent a number in more than one way (drawings, numbers, words, expressions).
    - Recognize different base-ten representations of the same number.
    - Write two-digit numbers accurately.
- Add and subtract multiples of 10.
    - Add and subtract 10 and multiples of 10.

Assessment: Section C Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Compare 2 two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.
    - Connect different place value representations.
    - Determine which two-digit number is greater or less.
    - Use <, >, and = to write comparison statements.
    - Read comparison statements that use <, >, or =.

Assessment: Section D Checkpoint

Teacher Instructions

For this Checkpoint Assessment, a full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Represent two-digit numbers in different ways, using different amounts of tens and ones (for example $52 = 50 + 2 = 40 + 12$).
    - Represent a number with tens and ones in more than one way.
    - Recognize when the same number is represented with different amounts of tens and ones.
    - Compare two-digit numbers represented in different ways.

Assessment: End-of-Unit Assessment

Teacher Instructions

Give students access to connecting cubes in towers of 10 and singles.

Problem 1

Standards Alignments

Addressing 1.NBT.B.2

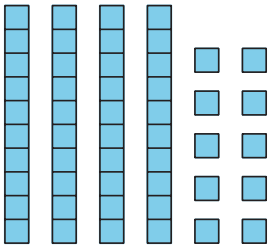
Narrative

Students write a number to represent the amount shown in different representations. Three of the examples, the first, fourth, and fifth, are presented with tens and ones so that no regrouping or combining is needed. Students who struggle with the second and third items may need more practice with composing a ten.

Write the number that matches each representation.

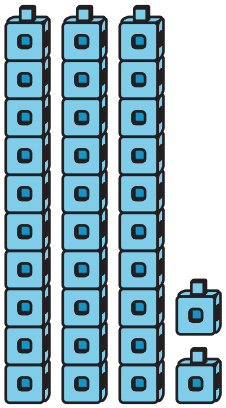
a. 4 ones and 3 tens _____

b. _____



c. 5 tens and 11 ones _____

d. _____



e. $5 + 40$ _____

Solution

a. 34
b. 50
c. 61
d. 32
e. 45

Problem 2

Standards Alignments

Addressing 1.NBT.B.2

Narrative

Students find different ways to represent 53. Students may not select A because the ones are listed before the tens. They may select B if they switch the meaning of the digits in the number 53. They may select C if they identify that 40 and 10 make 50 but forget about the 3 ones in 53. They may select E if they do not understand that the ones and tens digits in a base-ten number have different meaning.

Circle the **2** expressions that are equal to 53.

A. $3 + 50$

B. $30 + 5$

C. $40 + 10$

D. $50 + 3$

E. $5 + 3$

Solution

["A", "D"]

Problem 3

Standards Alignments

Addressing 1.NBT.C.4, 1.NBT.C.5, 1.NBT.C.6

Narrative

Students solve equations with the unknown in different locations where some tens are added to or subtracted from a two-digit number to give another two-digit number. Students who struggle with this item either need more work with place value or with equations.

Find the number that makes each equation true.

a. $87 + 10 = \square$

b. $45 + \square = 75$

c. $24 + 30 = \square$

d. $60 - 20 = \square$

Solution

a. 97

b. 30

c. 54

d. 40

Problem 4

Standards Alignments

Addressing 1.NBT.B.3

Narrative

Students compare two numbers within 100. They do this both by choosing which of two numbers is greater and using the symbols <, =, >. Students may use any method to compare the numbers, including using connecting cubes in towers of 10 and singles or drawing a picture. Students who answer question 1 correctly and question 2 incorrectly likely need more work with the symbols <, =, and >.

a. Circle the number that is greater.

41 or 29

77 or 75

b. Write <, =, or > to compare the numbers.

67 _____ 81

31 _____ 31

Solution

a. 41 and 77
b. < and =

Problem 5

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2

Narrative

Students write the two numbers that come before 80 and the two numbers that come after 80 in the count sequence. For the numbers that come after 80 they can change the ones but for the

numbers that come before 80 they will have to understand that there are now 7 tens and some ones. Alternatively, students can rely on their knowledge of the count sequence.

a. Write the 2 numbers that come after 80 when you are counting.
b. Write the 2 numbers that come before 80 when you are counting.

Solution

a. 81, 82
b. 78, 79

Problem 6

Standards Alignments

Addressing 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.3

Narrative

Students relate the count sequence to the order of numbers. While they do not need to use the signs < and > to explain their reasoning, students will likely compare numbers to 26 and 53. Another possible approach is to write the numbers from 26 to 53 and then use that list to answer the questions. Students can use the implicit order in the list to answer all of the questions.

Han begins at 26 and counts until he reaches 53.

a. What is the smallest number Han counts?

   What is the largest?
b. Will Han count the number 40? What about 60?
   Show your thinking using drawings, numbers, or words.
c. Which numbers greater than 50 does Han count?
   Show your thinking using drawings, numbers, or words.

Solution

a. smallest: 26, largest: 53
b. He will count 40 because it is greater than 26 but less than 53. He will not count 60 because he will stop at 53 and 60 is after 53.
c. Han counts 51, 52, and 53. These numbers come after 50 because there are 5 tens and some

ones.

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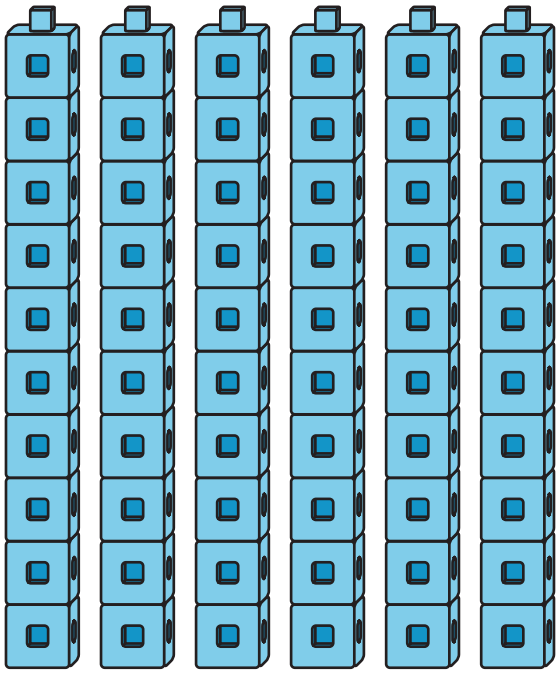
Lesson Cool Downs

Lesson 2: Match Representations of Tens

Cool Down: How Many Are There?

How many cubes are there?
Show your thinking using drawings, numbers, or words.



I know there are _____ cubes because

Lesson 4: More Addition and Subtraction with Tens

Cool Down: Add or Subtract Tens

Find the value of the expressions.

1. $50 + 20$

2. $70 - 50$

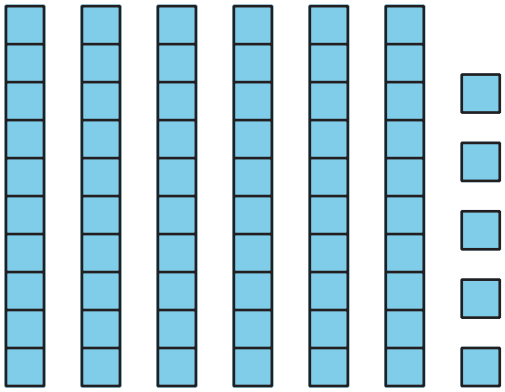
3. $60 - 30$

Lesson 10: Write Two-digit Numbers

Cool Down: Write Numbers

Write the number that matches each representation.

1. $30 + 9$ _____

2.  _____

3. 7 ones 9 tens _____

Lesson 11: Add Tens to Two-digit Numbers

Cool Down: Add Tens

Find the value of each sum.

1. $34 + 40$

2. $50 + 41$

3. $62 + 20$

4. Pick an expression from above.
   Show how you found the value using drawings, numbers, or words.

Lesson 15: Greater Than, Less Than

Cool Down: True Comparisons

Circle **2** statements that are true.

- $43 > 47$

- $12 < 52$

- $78 = 7$

- $68 > 64$

Lesson 16: Write Comparisons with Symbols

Cool Down: Make Comparison Statements

Compare each number. Write <, >, or = in each blank.

1. 35 _____ 38

2. 67 _____ 67

3. 52 _____ 42

4. 8 _____ 28

Lesson 17: Compare and Order Numbers

Cool Down: Which Numbers Belong

1. Circle **3** numbers that are greater than 75 and less than 95.

8 92 74 99 81 78

2. Write a number that makes each comparison statement true.

a. $\square > 75$

b. $\square < 95$

c. $75 < \square$

Lesson 20: Make Two-Digit Numbers in Different Ways

Cool Down: 68 Three Different Ways

Show 3 different ways to make 68 using tens and ones.
Each one should have a different number of tens.
Show your thinking using drawings, numbers, or words.

Lesson 21: Compare Two-Digit Numbers Shown in Different Ways

Cool Down: Compare 2 Collections

1. Circle the number that is less:

   4 tens 14 ones $\qquad$ $20 + 24$

2. Write the numbers above as two-digit numbers and use <, >, or = to write a comparison statement.

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Instructional Masters

Instructional Masters for Numbers to 99

address	title	students per copy	written on?	requires cutting?	card stock recommended?	color paper recommended?
Activity Grade1.4.3.2	Number Cards, Multiples of 10 (0-90)	2	no	yes	no	no
Activity Grade1.4.5.1	Number Cards, Multiples of 10 (0-90)	2	no	yes	no	no
Center	Number Cards, Multiples of 10 (0-90)	2	no	yes	no	no
Center	Number Cards, Multiples of 10 (0-90)	2	no	yes	no	no
Activity Grade1.4.12.1	Write the Number Stage 2 Gameboard	2	no	no	no	no
Center	Write the Number Stage 2 Gameboard	2	no	no	no	no
Activity Grade1.4.16.1	Greatest of Them All Stage 1 Recording Sheet	1	yes	no	no	no
Center	Greatest of Them All Stage 1 Recording Sheet	1	yes	no	no	no
Activity Grade1.4.7.1	Make It, Two-Digit Numbers Recording Sheet Number, Drawing, Words	1	yes	no	no	no
Activity Grade1.4.22.1	Mystery Number Stage 1 Directions	2	no	no	no	no
Center	Mystery Number Stage 1 Directions	2	no	no	no	no
Activity Grade1.4.3.2	Five in a Row Addition and Subtraction Stage 4 Gameboard	2	no	no	no	no

Center	Five in a Row Addition and Subtraction Stage 4 Gameboard	2	no	no	no	no
Assessment Grade1.4	Checkpoint	0	yes	no	no	no
Activity Grade1.4.8.2	Representations of Tens and Ones	2	no	yes	no	no
Activity Grade1.4.18.1	Get Your Numbers in Order Stage 1 Gameboard	2	yes	no	no	no
Center	Get Your Numbers in Order Stage 1 Gameboard	2	yes	no	no	no
Activity Grade1.4.1.1	Counting Collections Stages 1 and 2 Recording Sheet	1	yes	no	no	no
Activity Grade1.4.6.1	Counting Collections Stages 1 and 2 Recording Sheet	1	yes	no	no	no
Assessment Grade1.4	Checkpoint	0	yes	no	no	no
Activity Grade1.4.10.2	Write the Number Stage 1 Gameboard	2	no	no	no	no
Center	Write the Number Stage 1 Gameboard	2	no	no	no	no
Activity Grade1.4.17.1	Ordering Cards: Tens and Ones	2	no	yes	no	no
Activity Grade1.4.23.2	Estimating Quantities Card Sort	2	no	yes	no	no
Activity Grade1.4.5.1	Check It Off Stage 3 Recording Sheet	1	yes	no	no	no
Center	Check It Off Stage 3 Recording Sheet	1	yes	no	no	no
Assessment Grade1.4	Checkpoint	0	yes	no	no	no

Activity Grade1.4.8.3	Grab and Count Stage 2 Recording Sheet	1	yes	no	no	no
Center	Grab and Count Stage 2 Recording Sheet	1	yes	no	no	no
Activity Grade1.4.2.2	It's a Match (10-90) words, numbers, pictures	1	no	no	no	no
Assessment Grade1.4	Checkpoint	0	yes	no	no	no
Activity Grade1.4.2.1	Representations of Tens	27	no	yes	no	no
Center	How Close? Stage 1 Recording Sheet	1	yes	no	no	no
Center	How Close? Stage 2 Recording Sheet	1	yes	no	no	no
Center	Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard	2	no	no	no	no
Center	Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard	2	no	no	no	no
Center	Five in a Row Addition and Subtraction Stage 3 Gameboard	2	no	no	no	no
Center	Number Puzzles Addition and Subtraction Stage 1 Gameboard	2	no	no	no	no
Center	Number Puzzles Digit Cards	2	no	yes	no	no
Center	Number Puzzles Digit Cards	2	no	yes	no	no
Center	Number Puzzles Addition and Subtraction Stage 2 Gameboard	1	no	no	no	no
Center	Check It Off Stage 1 Recording Sheet Grade K	1	yes	no	no	no

Center	Check It Off Stage 1 Recording Sheet Grade 1	1	yes	no	no	no
Center	Check It Off Stage 2 Recording Sheet	1	yes	no	no	no
Center	Shake and Spill Stage 3 Recording Sheet Kindergarten	1	yes	no	no	no
Center	Shake and Spill Stage 3 Recording Sheet Grade 1	1	yes	no	no	no
Center	Shake and Spill Stage 4 Recording Sheet Kindergarten	1	yes	no	no	no
Center	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	1	yes	no	no	no
Center	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	1	yes	no	no	no

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards
Multiples of 10

70

Number Cards
Multiples of 10

80

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

90

Number Cards
Multiples of 10

0

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards, Multiples of 10 (0-90)

Number Cards Multiples of 10 70	Number Cards Multiples of 10 80	Number Cards Multiples of 10 90	Number Cards Multiples of 10 0

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards
Multiples of 10

70

Number Cards
Multiples of 10

80

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

90

Number Cards
Multiples of 10

0

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards, Multiples of 10 (0-90)

Number Cards Multiples of 10 70	Number Cards Multiples of 10 80	Number Cards Multiples of 10 90	Number Cards Multiples of 10 0

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards
Multiples of 10

70

Number Cards
Multiples of 10

80

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

90

Number Cards
Multiples of 10

0

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards, Multiples of 10 (0-90)

Number Cards Multiples of 10 70	Number Cards Multiples of 10 80	Number Cards Multiples of 10 90	Number Cards Multiples of 10 0

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

Number Cards
Multiples of 10

70

Number Cards
Multiples of 10

80

Number Cards, Multiples of 10 (0-90)

Number Cards
Multiples of 10

90

Number Cards
Multiples of 10

0

Number Cards
Multiples of 10

10

Number Cards
Multiples of 10

20

Number Cards
Multiples of 10

30

Number Cards
Multiples of 10

40

Number Cards
Multiples of 10

50

Number Cards
Multiples of 10

60

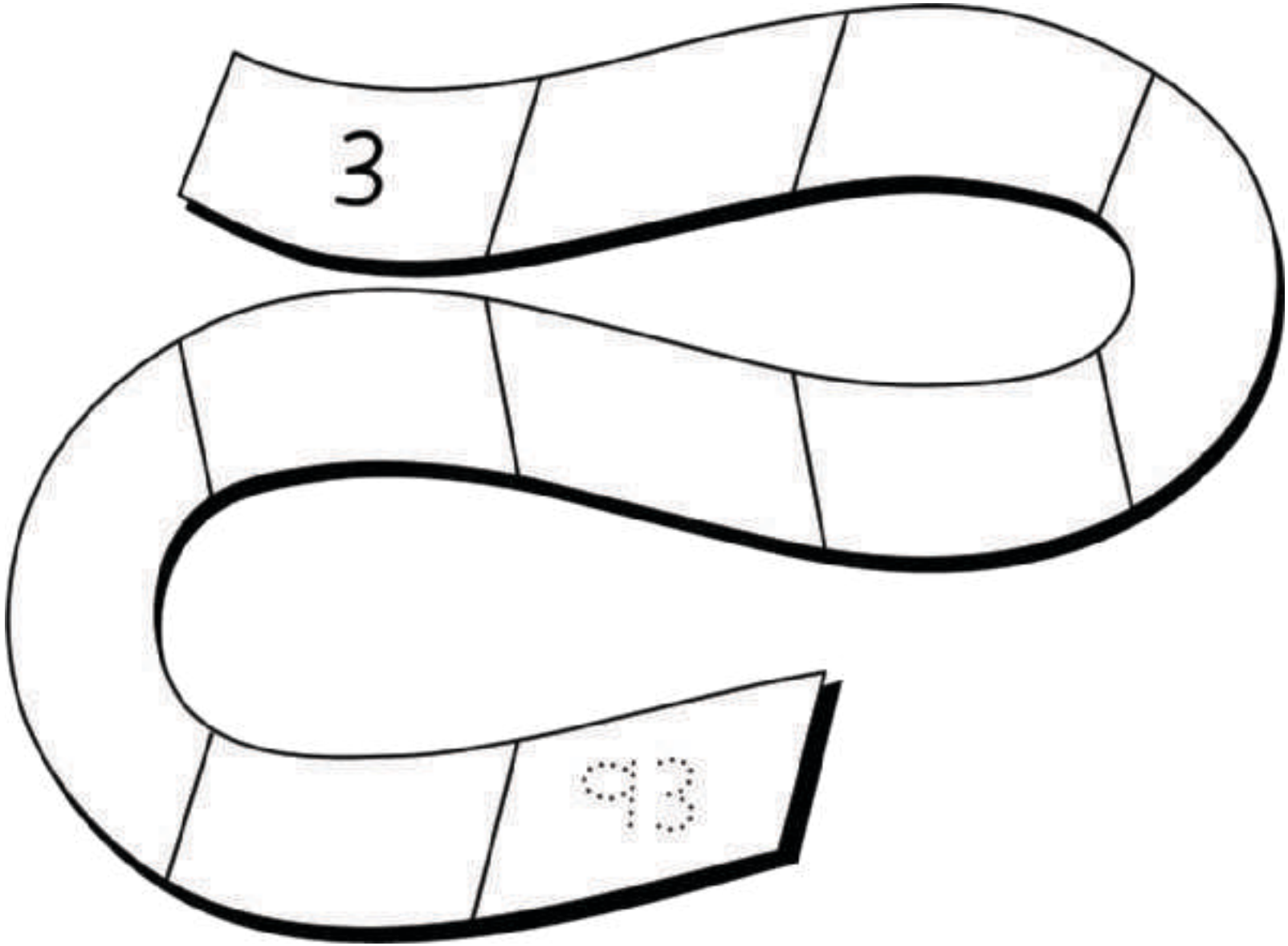
Number Cards, Multiples of 10 (0-90)

Number Cards Multiples of 10 70	Number Cards Multiples of 10 80	Number Cards Multiples of 10 90	Number Cards Multiples of 10 0

Write the Number Stage 2 Gameboard

Directions: (Count by 10.)

- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



Write the Number Stage 2 Gameboard

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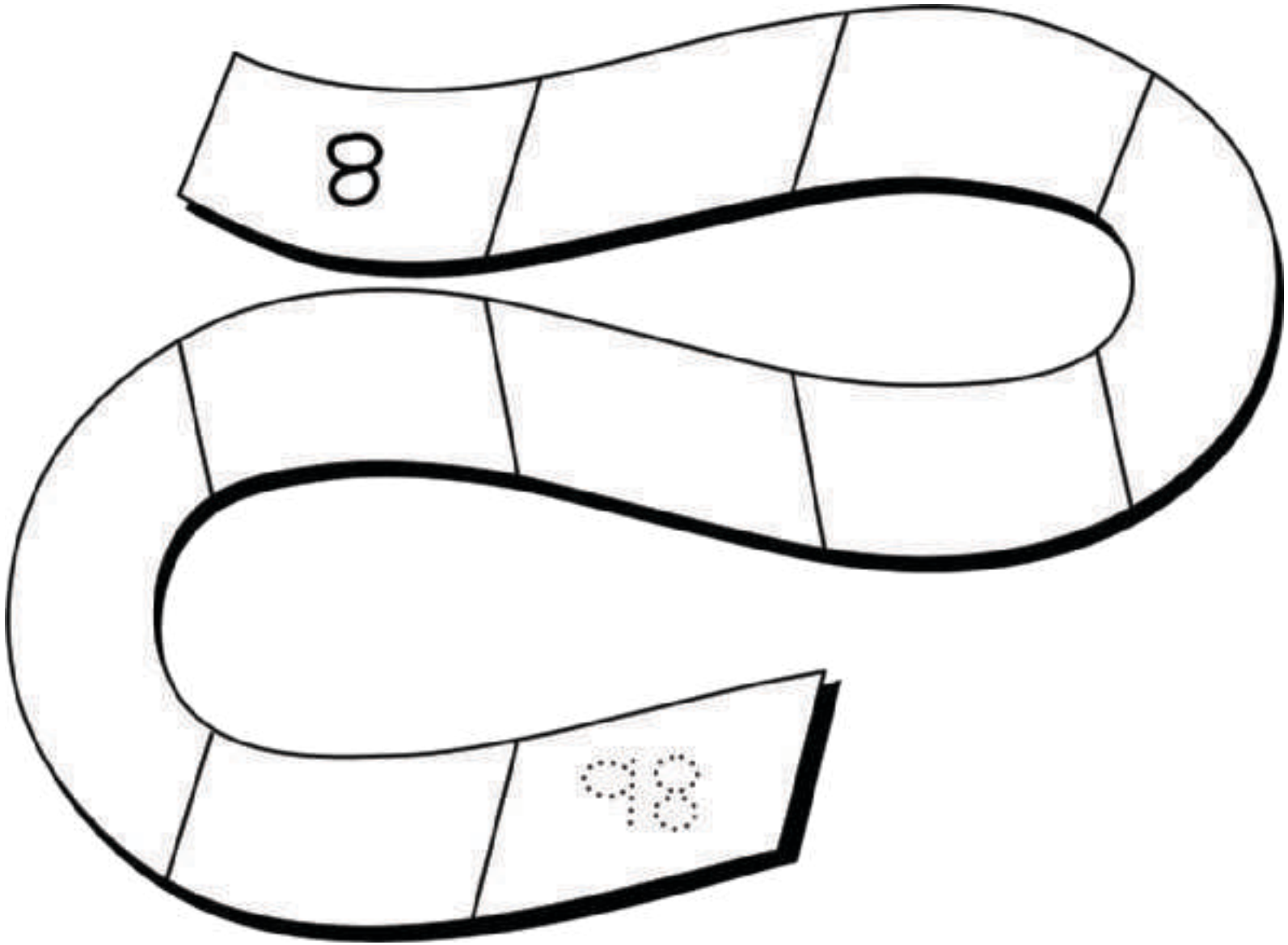

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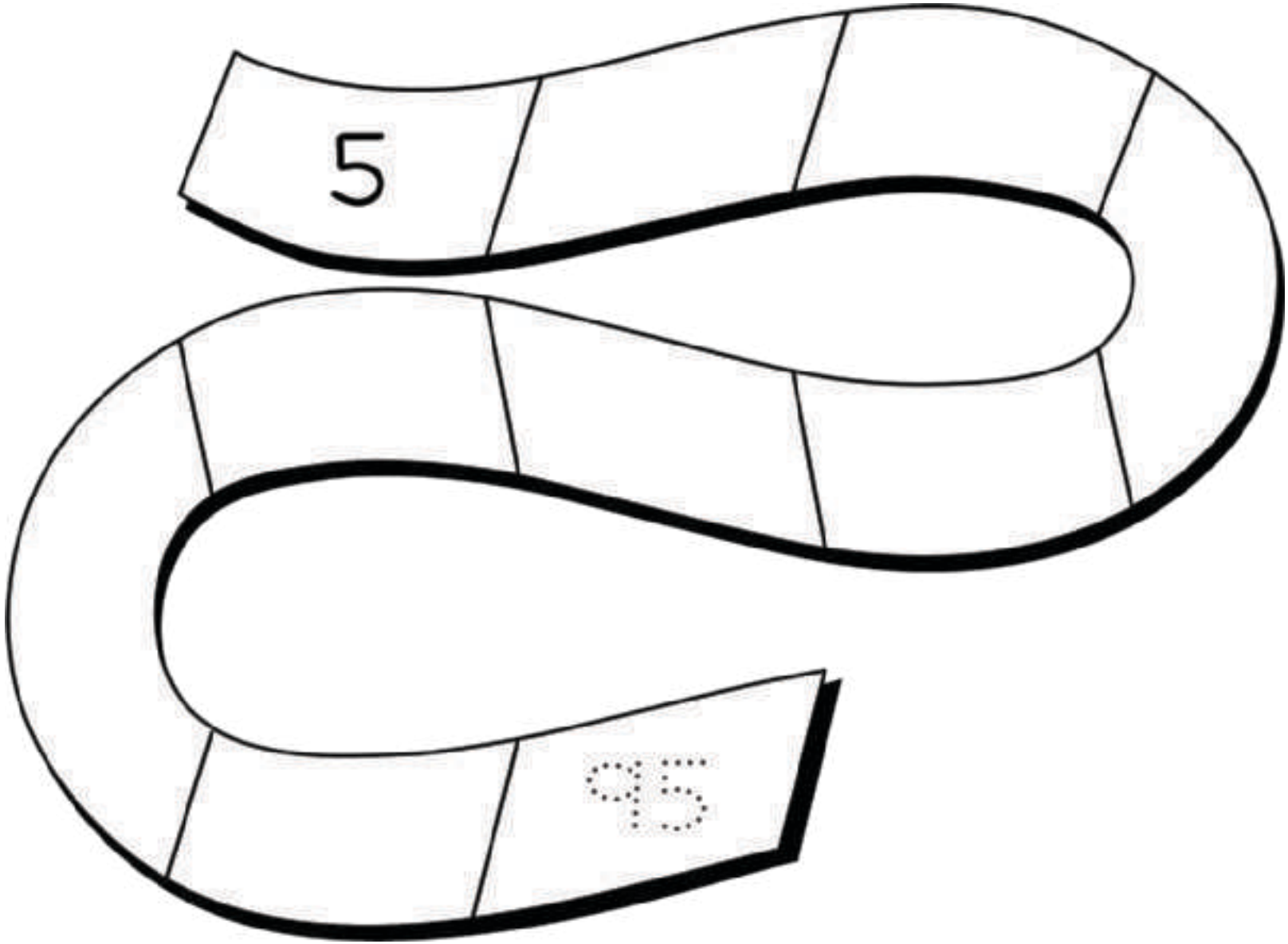

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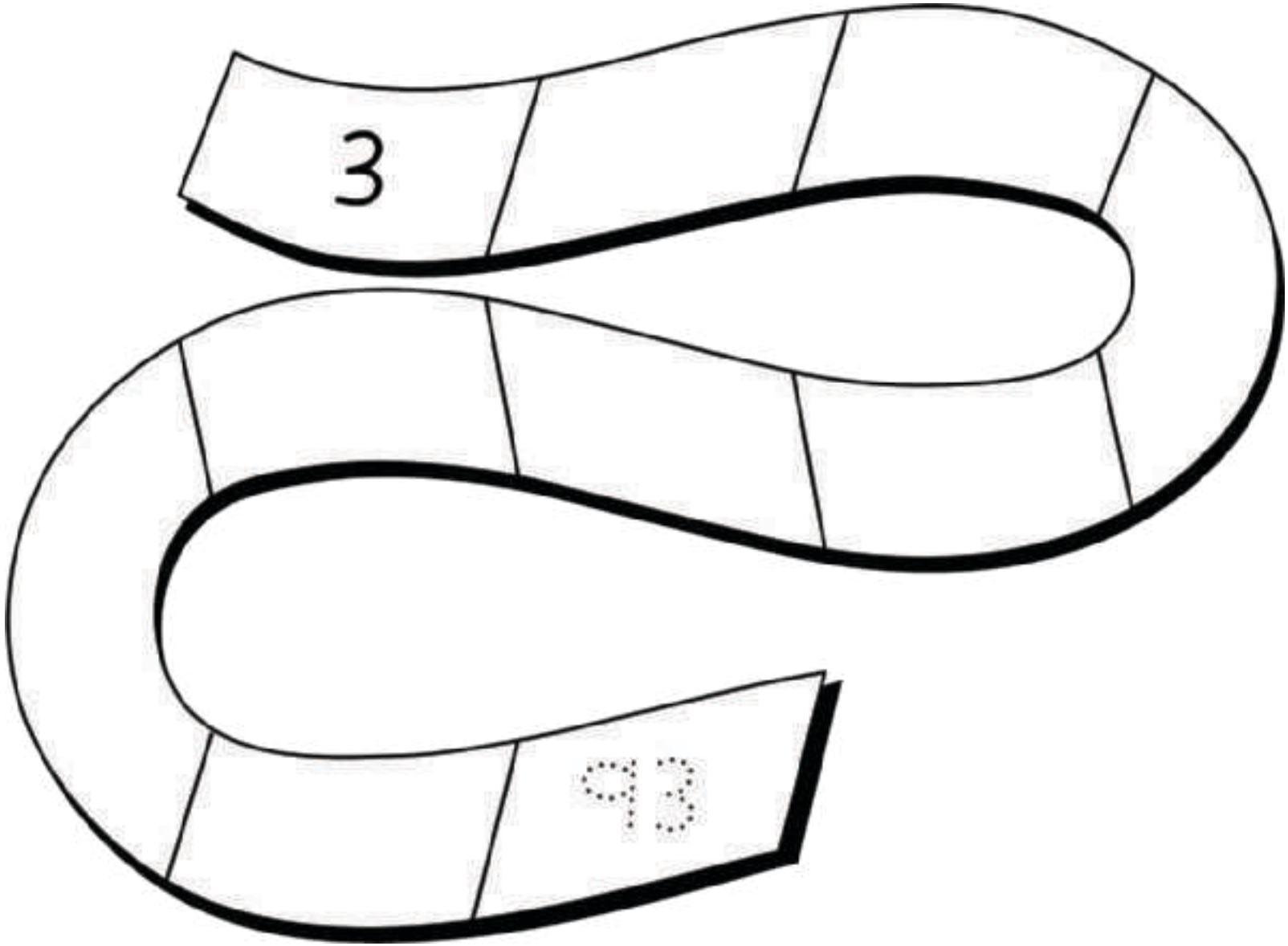

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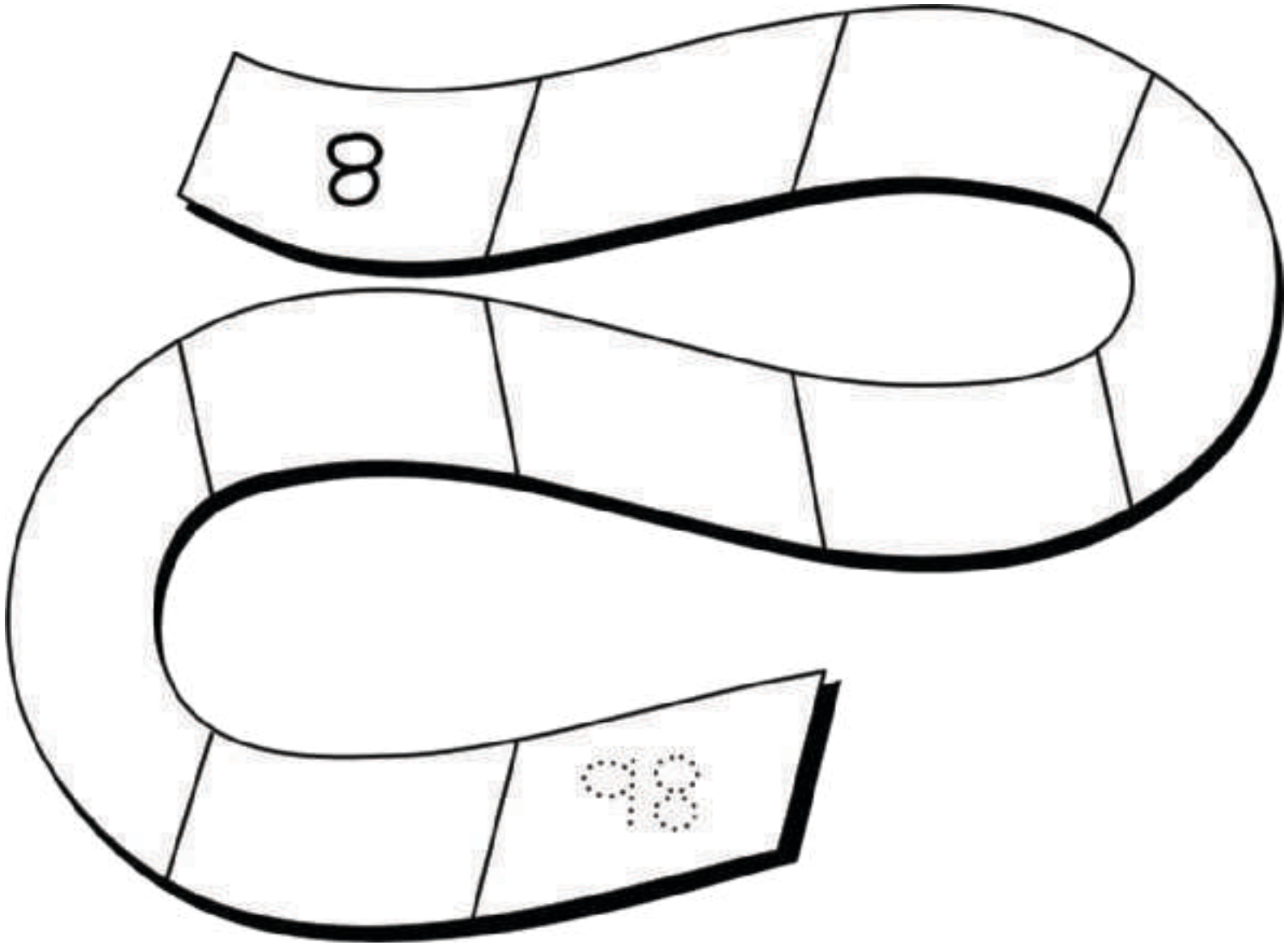

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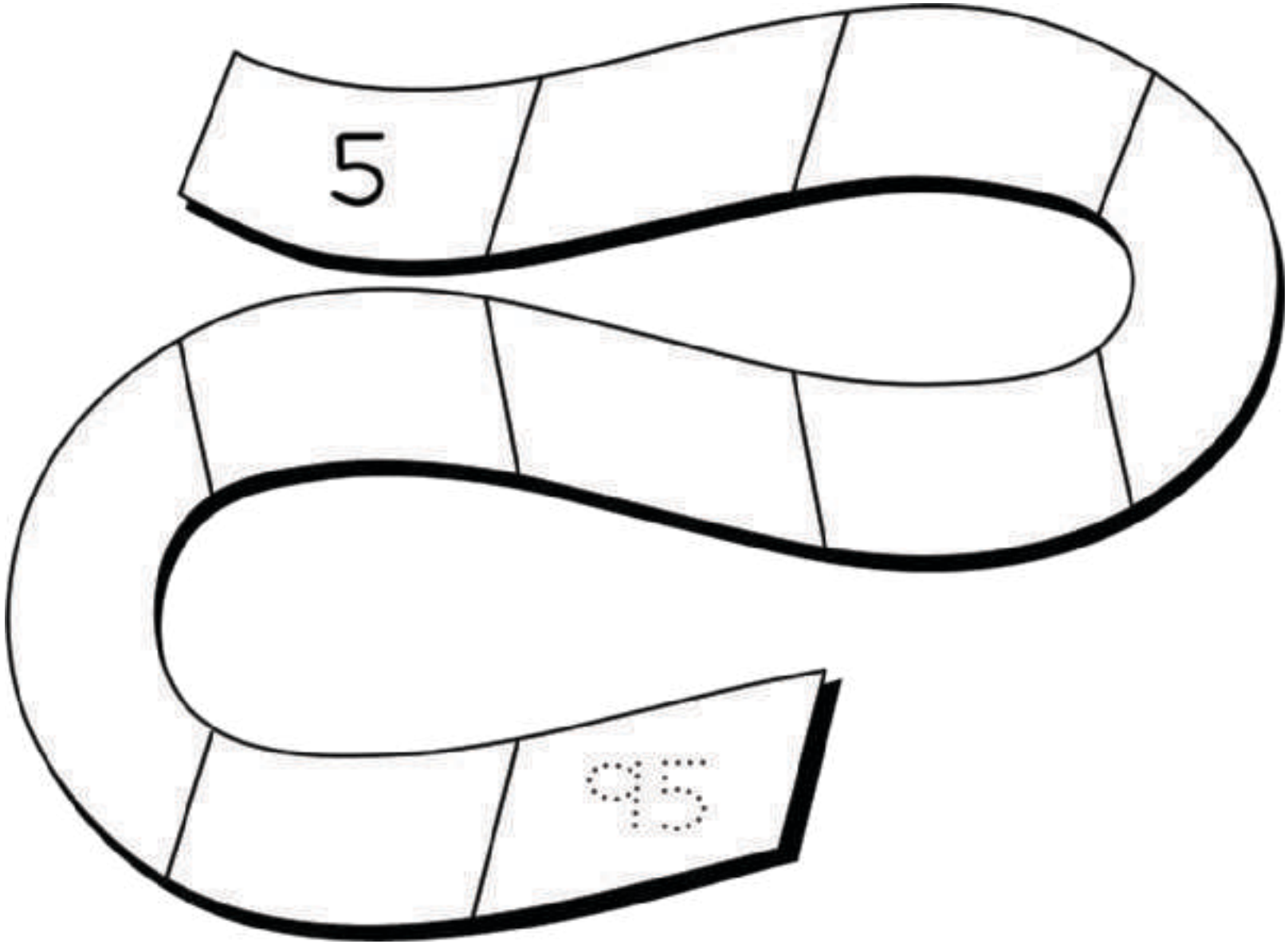


Greatest of Them All Stage 1 Recording Sheet

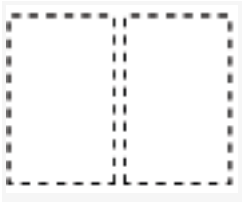
Directions:

- Partner A chooses a number card and writes the number in one of the blanks for Round 1.
- Partner B does the same.
- Repeat until each partner has a two-digit number.
- Write a comparison using <, >, or =.
- The partner with the greater number wins the round.

Round 1:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Round 2:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Greatest of Them All Stage 1 Recording Sheet

Round 3:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Round 4:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Greatest of Them All Stage 1 Recording Sheet

Round 5:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Round 6:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Greatest of Them All Stage 1 Recording Sheet

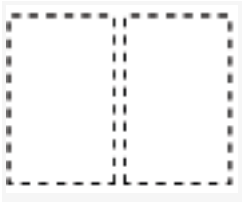
Directions:

- Partner A chooses a number card and writes the number in one of the blanks for Round 1.
- Partner B does the same.
- Repeat until each partner has a two-digit number.
- Write a comparison using <, >, or =.
- The partner with the greater number wins the round.

Round 1:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Round 2:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Greatest of Them All Stage 1 Recording Sheet

Round 3:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Round 4:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Greatest of Them All Stage 1 Recording Sheet

Round 5:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Round 6:

My Number	My Partner's Number
	
Compare using <, >, or =.	

Make It, Two-Digit Numbers Recording Sheet Number, Drawing, Words

two-digit number	drawing	__ tens __ ones

Make It, Two-Digit Numbers Recording Sheet Number, Drawing, Words

two-digit number	drawing	__ tens __ ones

Mystery Number Stage 1 Directions

Directions:

- Partner A:
  - Pick 2 cards and make a mystery two-digit number. Don't show your partner!
  - Give your partner a clue about your mystery number. You can use the sentences below to help you give clues, or make up your own.
- Partner B:
  - Guess your partner's mystery number.
- If Partner B guesses the mystery number, switch roles.
- If Partner B does not guess the mystery number, Partner A gives another clue. Go back and forth guessing the number and giving clues until Partner B guesses the mystery number.

Example clues:

- The mystery number has more than _____ tens.
- The mystery number has less than _____ ones.
- The mystery number is greater than _____.
- The mystery number is less than _____.
- The mystery number has more tens than ones.
- The mystery number has more ones than tens.

Mystery Number Stage 1 Directions

Directions:

- Partner A:
  - Pick 2 cards and make a mystery two-digit number. Don't show your partner!
  - Give your partner a clue about your mystery number. You can use the sentences below to help you give clues, or make up your own.
- Partner B:
  - Guess your partner's mystery number.
- If Partner B guesses the mystery number, switch roles.
- If Partner B does not guess the mystery number, Partner A gives another clue. Go back and forth guessing the number and giving clues until Partner B guesses the mystery number.

Example clues:

- The mystery number has more than _____ tens.
- The mystery number has less than _____ ones.
- The mystery number is greater than _____.
- The mystery number is less than _____.
- The mystery number has more tens than ones.
- The mystery number has more ones than tens.

Five in a Row Addition and Subtraction Stage 4 Gameboard

20	40	60	80	30
10	70	90	0	50
60	30	FREE	50	40
90	20	0	30	70
60	50	80	10	40

Five in a Row Addition and Subtraction Stage 4 Gameboard

20	40	60	80	30
10	70	90	0	50
60	30	FREE	50	40
90	20	0	30	70
60	50	80	10	40

Grade 1, Unit 4 Section A Checkpoint	• Represent the base-ten structure of multiples of 10 up to 90 using towers of 10, drawings, numbers, and words.				• Add and subtract multiples of 10.
	Organize and count objects by ten.	Represent a number in more than one way (cube towers, drawings, numbers, words, expressions).	Connect different place value representations.	Write multiples of 10 accurately.	Add and subtract multiples of 10 from other multiples of 10.

Representations of Tens and Ones
Card A

2 tens 3 ones

Representations of Tens and Ones
Card B

5 tens 9 ones

Representations of Tens and Ones
Card C

2 ones 3 tens

Representations of Tens and Ones
Card D

5 tens 5 ones

Representations of Tens and Ones
Card E

3 + 20

Representations of Tens and Ones
Card F

40 + 4

Representations of Tens and Ones
Card G

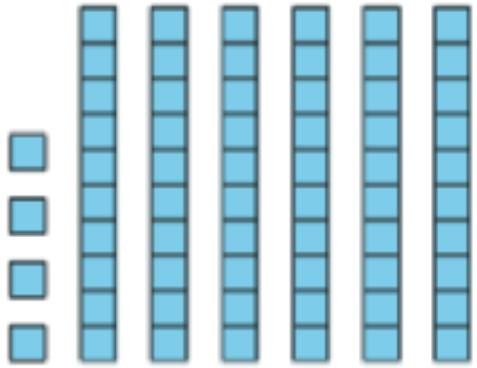
90 + 5

Representations of Tens and Ones
Card H

70 + 3

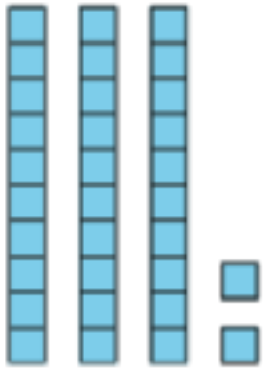
Representations of Tens and Ones

Card I



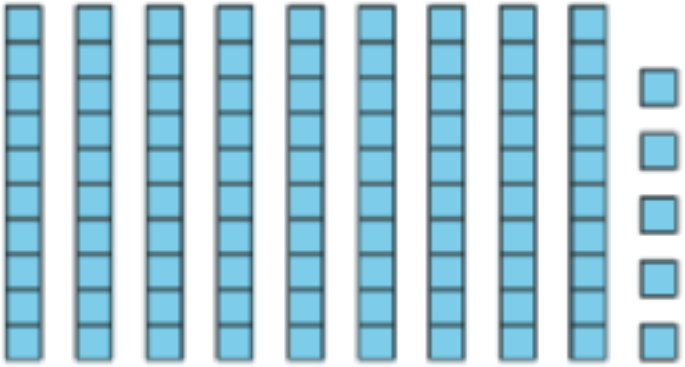
Representations of Tens and Ones

Card J



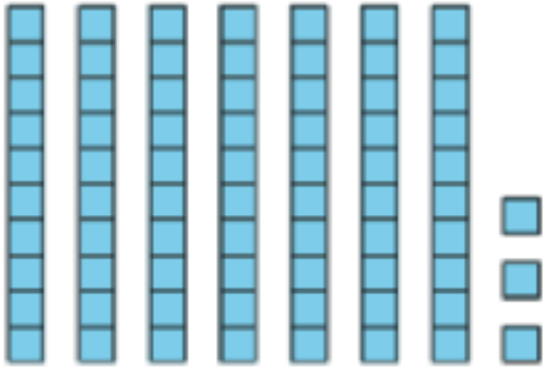
Representations of Tens and Ones

Card K



Representations of Tens and Ones

Card L



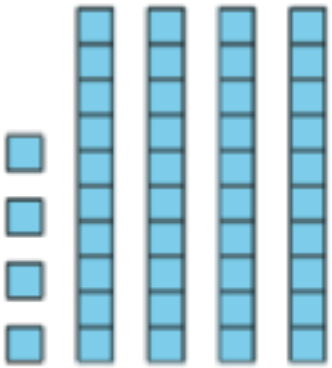
Representations of Tens and Ones
Card M

9 + 50

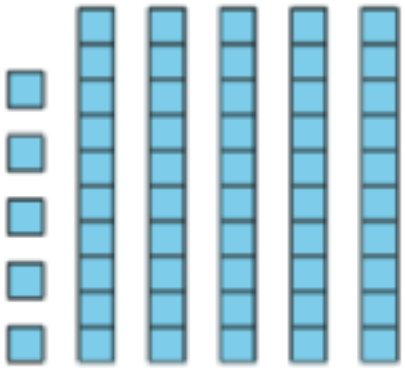
Representations of Tens and Ones
Card N

60 + 4

Representations of Tens and Ones
Card O



Representations of Tens and Ones
Card P



Representations of Tens and Ones
Card Q

23

Representations of Tens and Ones
Card R

59

Representations of Tens and Ones
Card S

32

Representations of Tens and Ones
Card T

55

Representations of Tens and Ones
Card U

44

Representations of Tens and Ones
Card V

95

Representations of Tens and Ones
Card W

73

Representations of Tens and Ones
Card X

64

Get Your Numbers in Order Stage 1 Gameboard

Directions:

- On your turn:
  - Pick 2 number cards and make a two-digit number.
  - Write your number on any spot on the board. The numbers need to go from least to greatest.
  - You may not move a number once it is on the board. If your number cannot be placed on the game board you must say “pass” and you get a point.
- Take turns with your partner until all the numbers on the board are filled. The partner with the fewest points at the end of the game wins.

Least **Greatest**

Points

Partner A	Partner B

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Least **Greatest**

Points

Partner A	Partner B

Counting Collections Stages 1 and 2 Recording Sheet

How many are there? Show how you counted.

My count:

How many? _____

Counting Collections Stages 1 and 2 Recording Sheet

How many are there? Show how you counted.

My count:

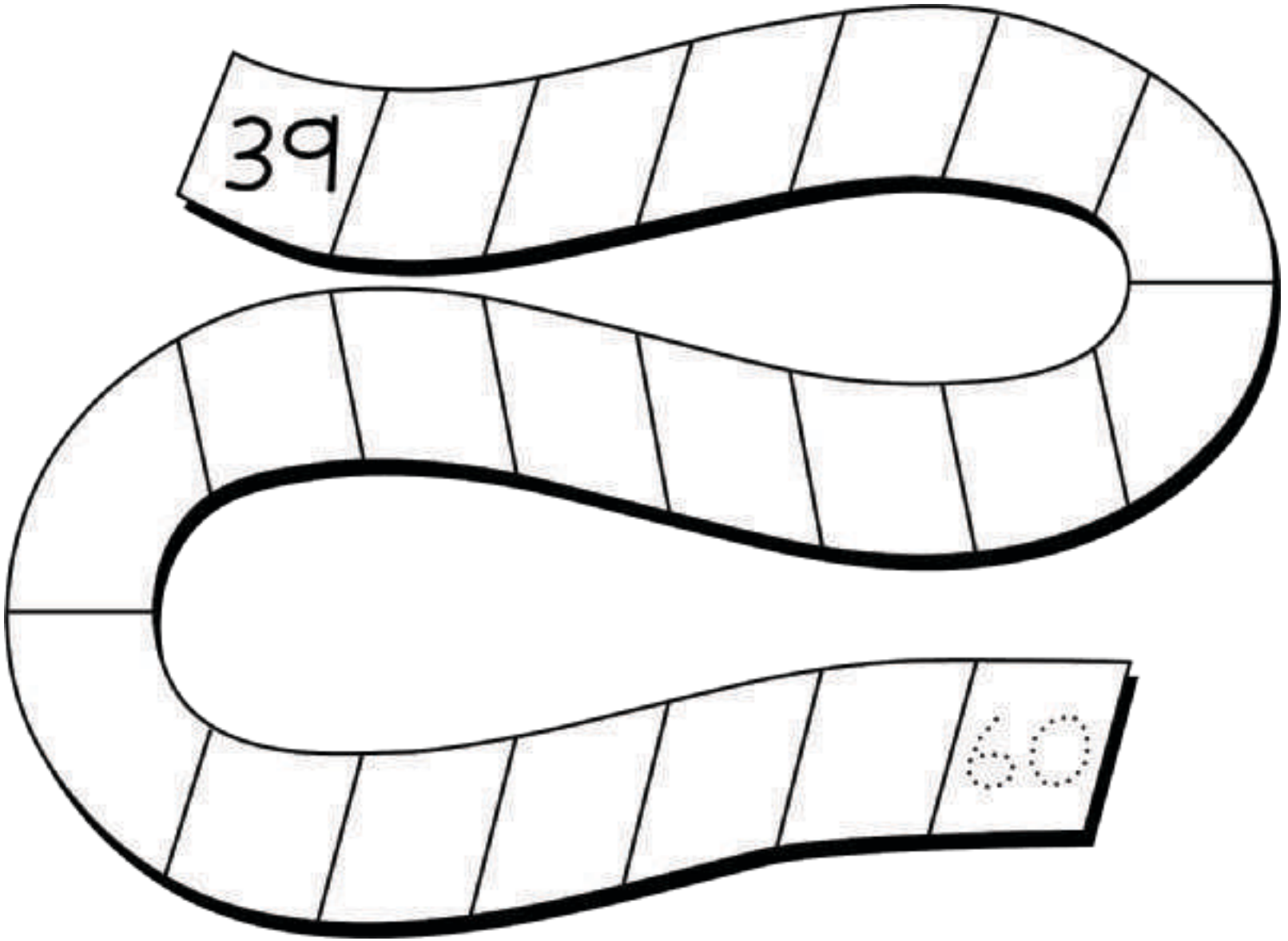
How many? _____

Grade 1, Unit 4 Section B Checkpoint	• Understand that the two digits of a two-digit number represent amounts of tens and ones. • Represent the base-ten structure of numbers up to 99 using drawings, numbers, and words.				• Add and subtract multiples of 10.
	Describe a two-digit number as made up of _____ tens _____ ones.	Represent a number in more than one way (drawings, numbers, words, expressions).	Recognize different base-ten representations of the same number.	Write two-digit numbers accurately.	Add and subtract 10 and multiples of 10.

Write the Number Stage 1 Gameboard

Directions: (Count by 1)

- Partner A: Write the next 1, 2, or 3 numbers on the gameboard.
- Take turns choosing how many numbers to write and then writing them. The player who writes the last number on the gameboard wins.



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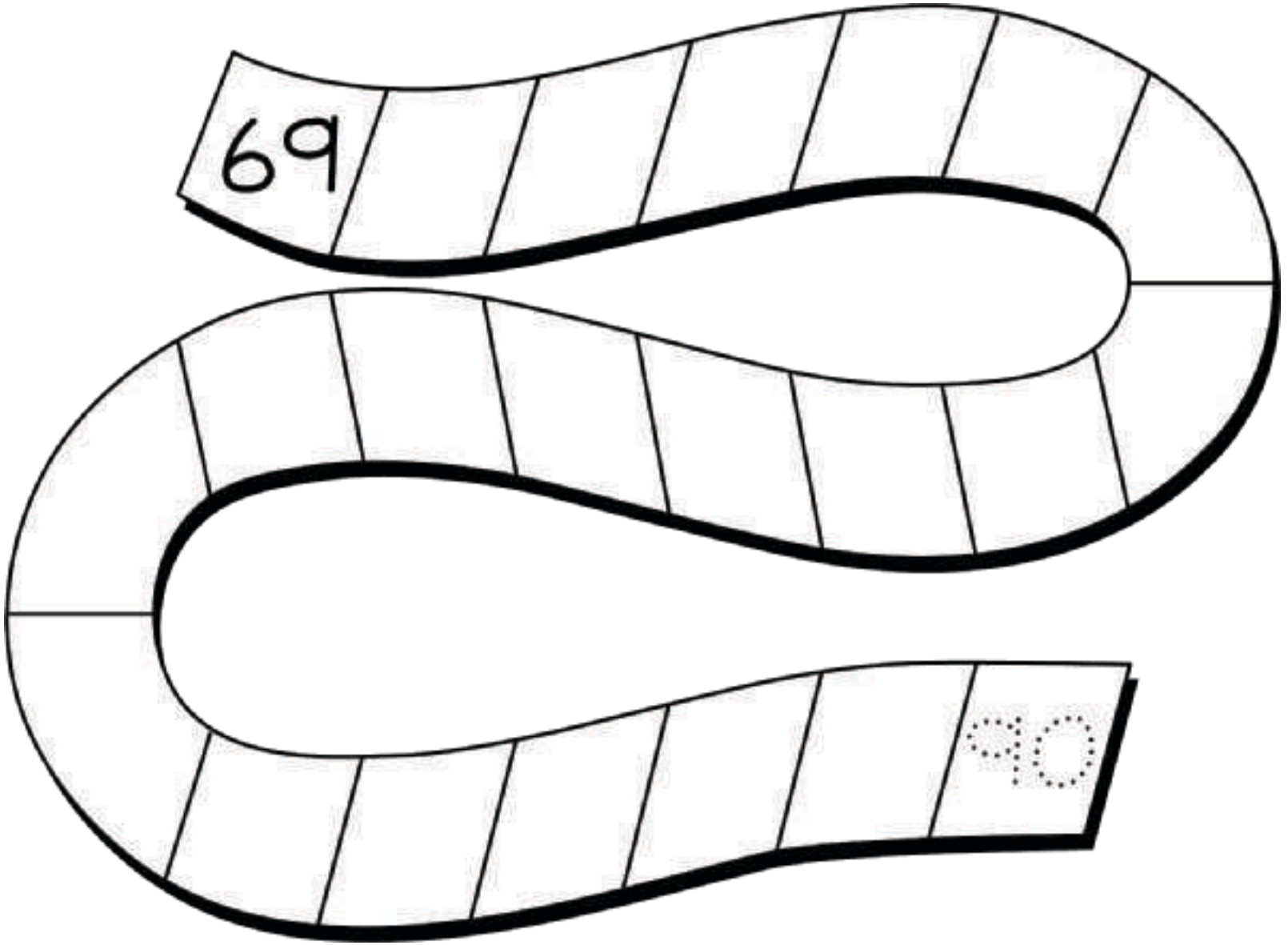

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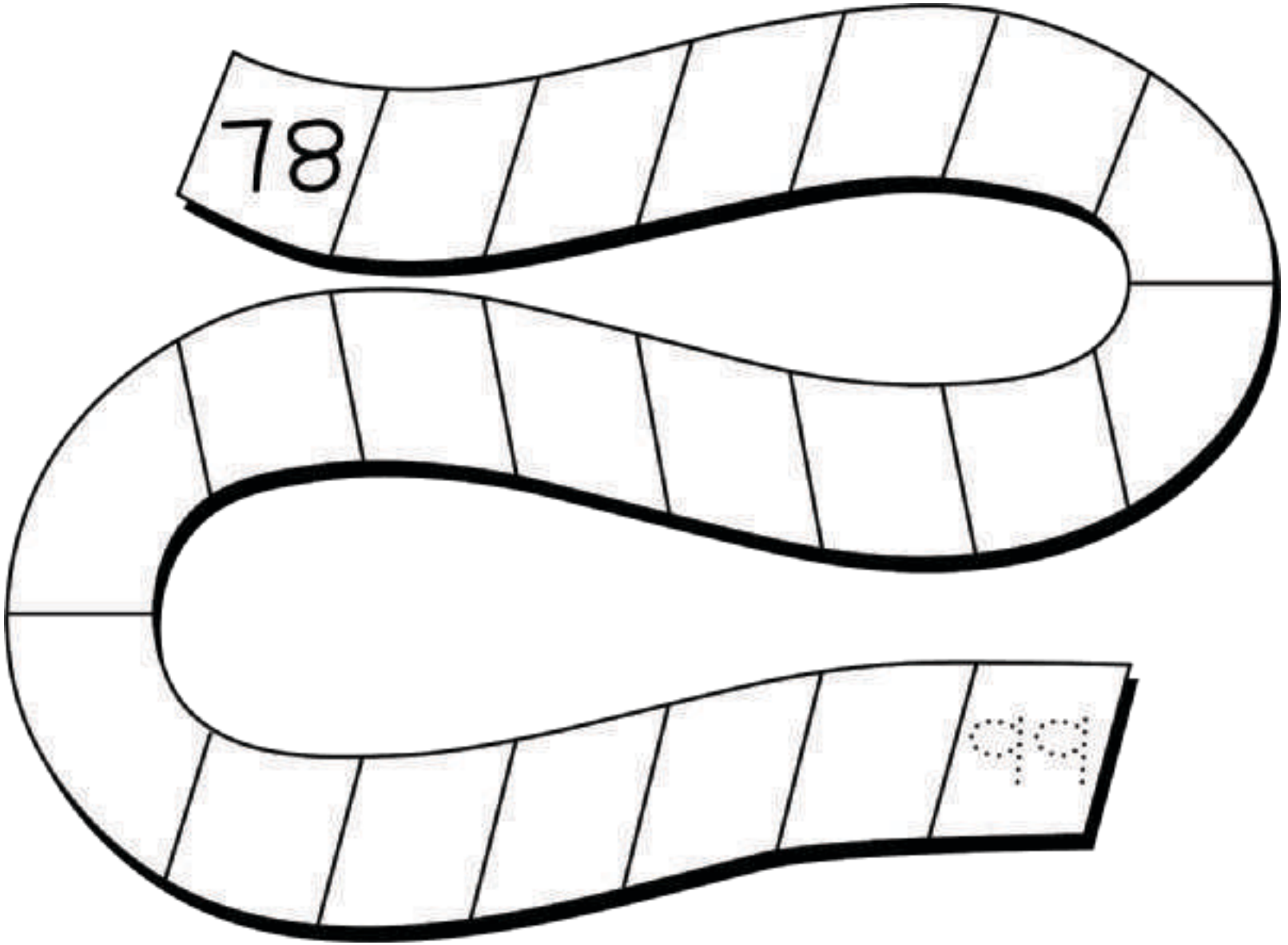

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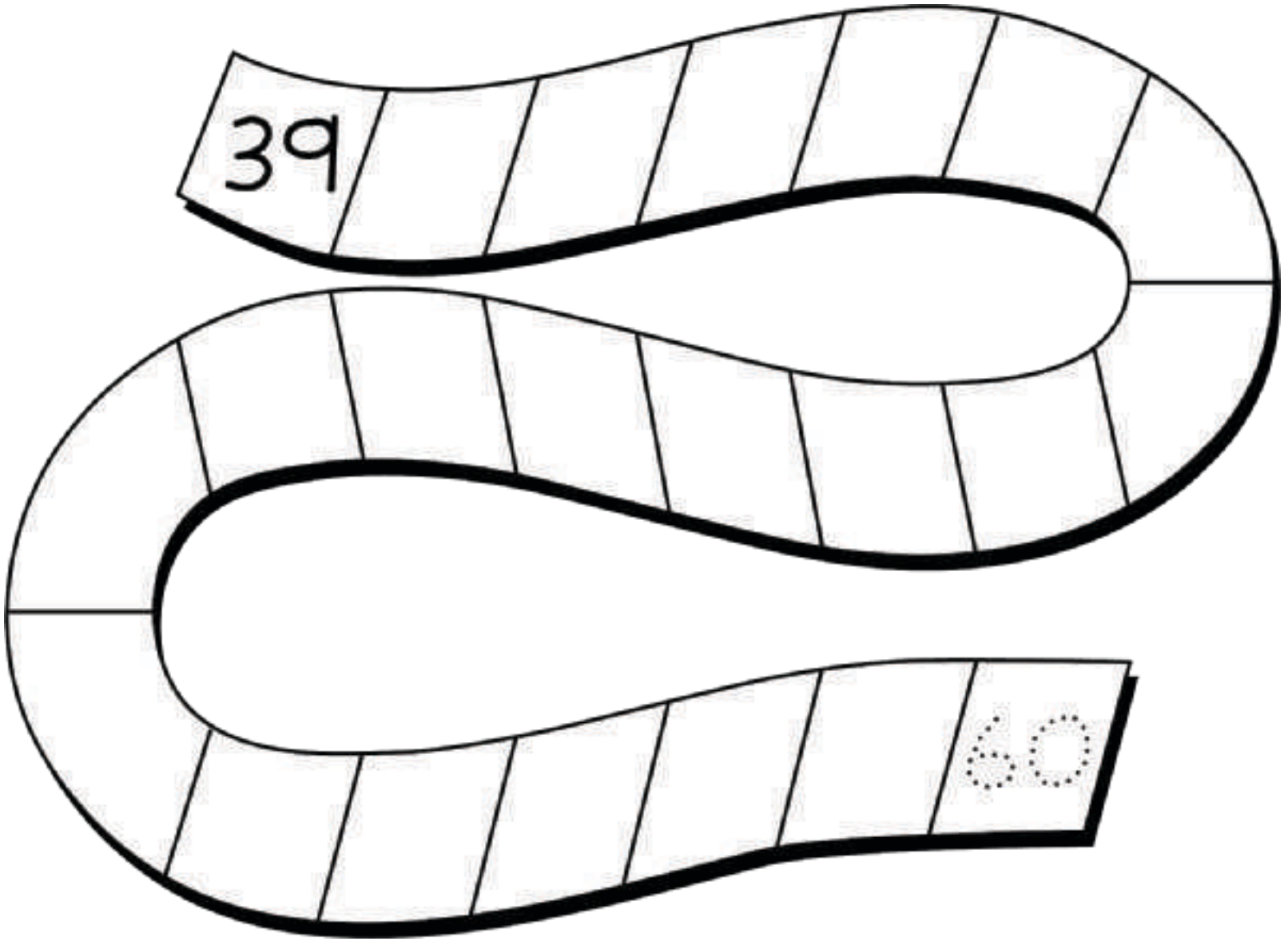

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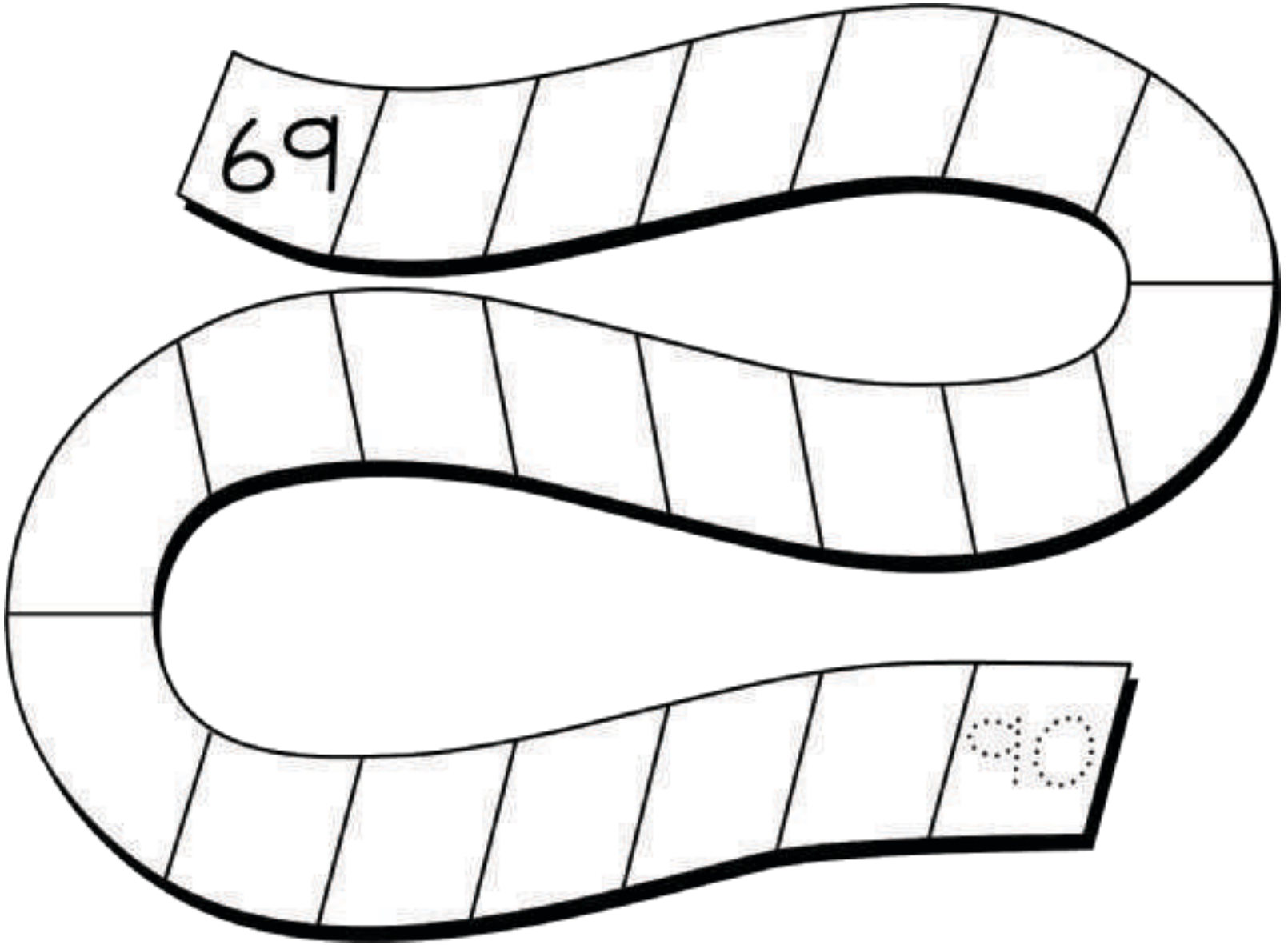

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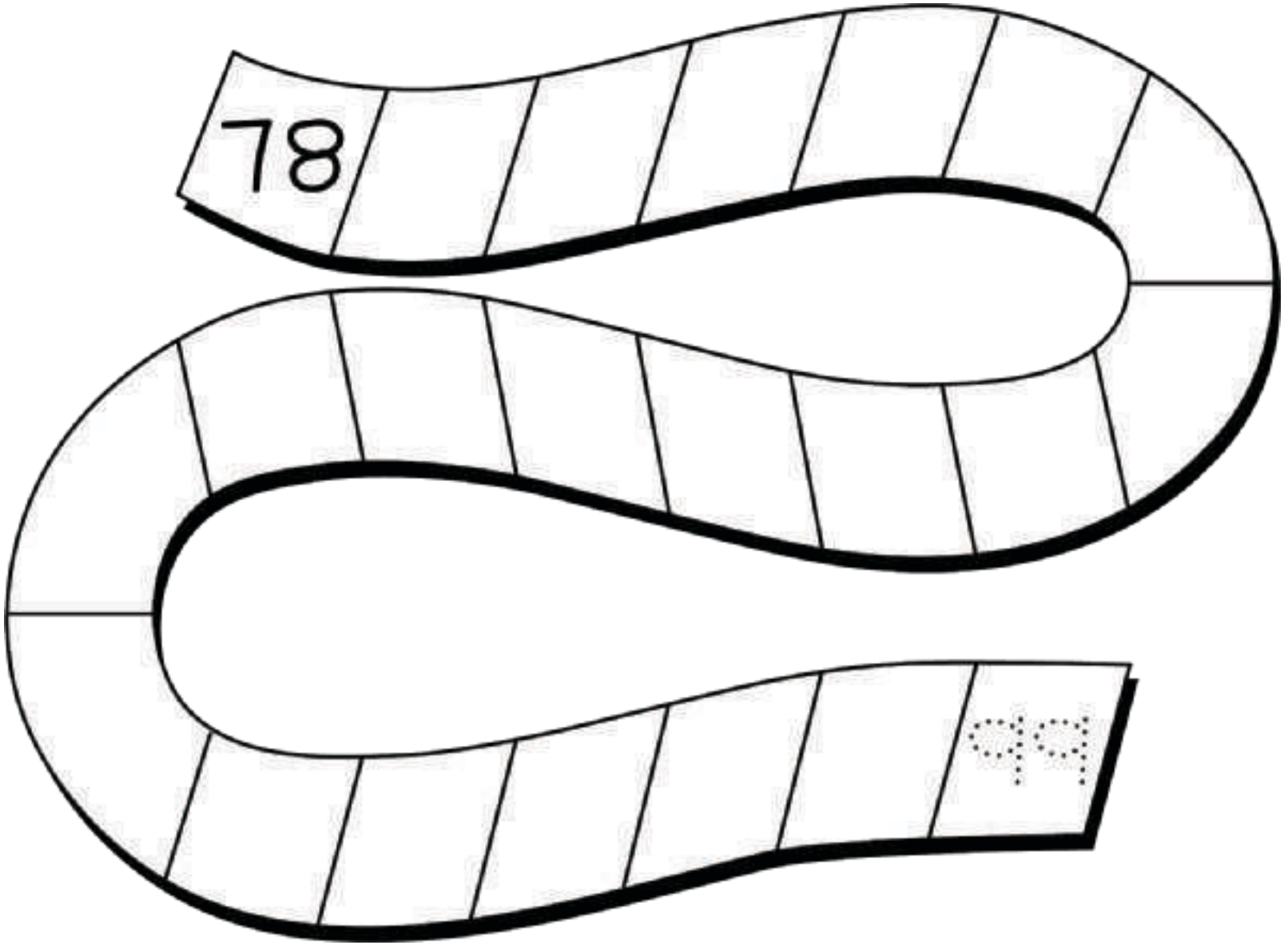


Ordering Cards: Tens and Ones
Set A Card 1

2 ones 3 tens

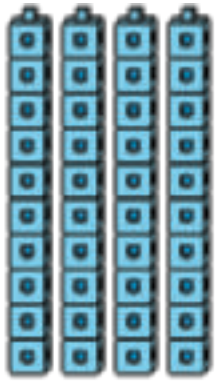
Ordering Cards: Tens and Ones
Set A Card 2

67

Ordering Cards: Tens and Ones
Set A Card 3

3 + 20

Ordering Cards: Tens and Ones
Set A Card 4



Ordering Cards: Tens and Ones
Set B Card 1

40 + 8

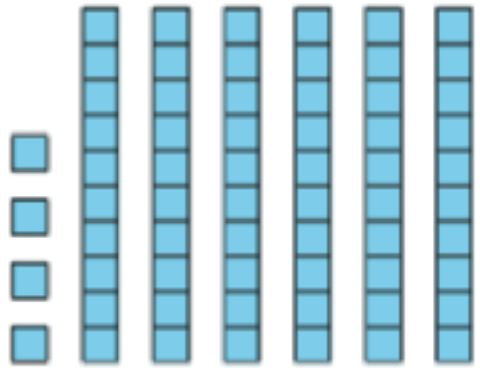
Ordering Cards: Tens and Ones
Set B Card 2

8

Ordering Cards: Tens and Ones
Set B Card 3

8 tens

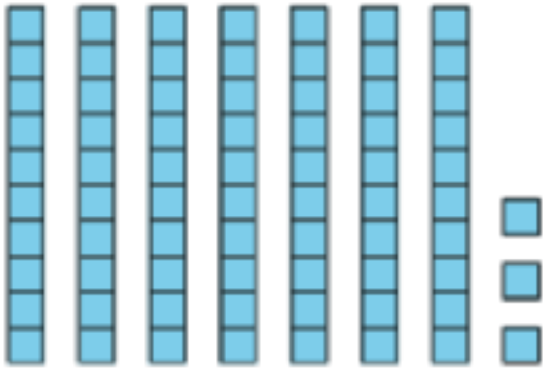
Ordering Cards: Tens and Ones
Set B Card 4



Ordering Cards: Tens and Ones
Set C Card 1

5 tens + 6 ones

Ordering Cards: Tens and Ones
Set C Card 2



Ordering Cards: Tens and Ones
Set C Card 3

6 ones

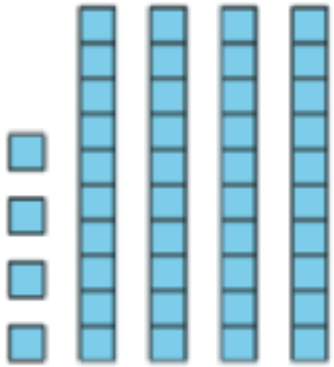
Ordering Cards: Tens and Ones
Set C Card 4

37

Ordering Cards: Tens and Ones
Set D Card 1

46

Ordering Cards: Tens and Ones
Set D Card 2



Ordering Cards: Tens and Ones
Set D Card 3

6 tens

Ordering Cards: Tens and Ones
Set D Card 4

4 + 60

Estimating Quantities Card Sort

Estimating Quantities

Balls

Estimating Quantities

Corn

Estimating Quantities

Cards

Estimating Quantities

Dice

Estimating Quantities Card Sort

Estimating Quantities

Grapes

Estimating Quantities

Pears

Estimating Quantities

Stuffed Animals

Estimating Quantities

Books

Estimating Quantities Card Sort

Estimating Quantities

Shells

Estimating Quantities

Shirts

Estimating Quantities

Crayons

Estimating Quantities

Markers

Estimating Quantities Card Sort

Estimating Quantities

Blocks

Estimating Quantities

Dolls

Estimating Quantities

Shoes

Estimating Quantities

Flowers

Estimating Quantities Card Sort

Estimating Quantities

Pattern Blocks

Estimating Quantities

Paper Clips

Estimating Quantities

Buttons

Estimating Quantities

Bears

Check It Off Stage 3 Recording Sheet

Directions:

- On your turn:
  - Pick 2 cards and find the sum or difference.
  - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		
10		
20		
30		
40		
50		
60		
70		
80		
90		

Check It Off Stage 3 Recording Sheet

Directions:

- On your turn:
  - Pick 2 cards and find the sum or difference.
  - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		
10		
20		
30		
40		
50		
60		
70		
80		
90		

Grade 1, Unit 4 Section C Checkpoint	• Compare 2 two-digit numbers based on the values of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$.			
	Connect different place value representations.	Determine which two-digit number is greater or less.	Use $<$, $>$, and $=$ to write comparison statements.	Read comparison statements that use $<$, $>$, or $=$.

Grab and Count Stage 2 Recording Sheet

Directions:

- Each partner grabs a handful of cubes and puts them together.
- Make an estimate of how many cubes without counting.
- Count to see how many cubes you have.

My estimate:_____	My count:_____
My estimate:_____	My count:_____
My estimate:_____	My count:_____
My estimate:_____	My count:_____
My estimate:_____	My count:_____

Grab and Count Stage 2 Recording Sheet

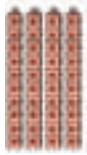
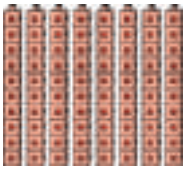
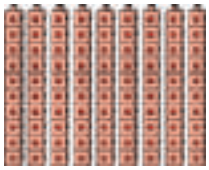
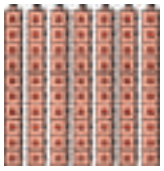
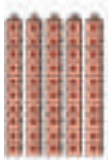
Directions:

- Each partner grabs a handful of cubes and puts them together.
- Make an estimate of how many cubes without counting.
- Count to see how many cubes you have.

My estimate:_____	My count:_____
My estimate:_____	My count:_____
My estimate:_____	My count:_____
My estimate:_____	My count:_____
My estimate:_____	My count:_____

It's a Match (10-90) words, numbers, pictures

Match each picture to the number and words that show the same amount.

30 thirty		7 tens
50 fifty		5 tens
20 twenty		1 ten
60 sixty		4 tens
10 ten		8 tens
80 eighty		3 tens
40 forty		9 tens
70 seventy		2 tens
90 ninety		6 tens

Grade 1, Unit 4 Section D Checkpoint	• Represent two-digit numbers in different ways, using different amounts of tens and ones (for example $52 = 50 + 2 = 40 + 12$).		
	Represent a number with tens and ones in more than one way.	Recognize when the same number is represented with different amounts of tens and ones.	Compare two-digit numbers represented in different ways.

Representations of Tens
A

1 ten

Representations of Tens
B

2 tens

Representations of Tens
C

3 tens

Representations of Tens
D

4 tens

Representations of Tens
E

5 tens

Representations of Tens
F

6 tens

Representations of Tens
G

7 tens

Representations of Tens
H

8 tens

Representations of Tens
I

9 tens

Representations of Tens
J

10

Representations of Tens
K

20

Representations of Tens
L

30

Representations of Tens
M

40

Representations of Tens
N

50

Representations of Tens
O

60

Representations of Tens
P

70

Representations of Tens
Q

80

Representations of Tens
R

90

Representations of Tens
S

Representations of Tens
T

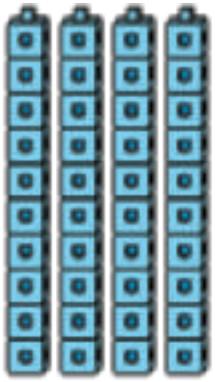
Representations of Tens

Representations of Tens

U

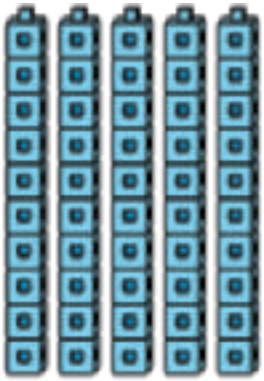
Representations of Tens

V



Representations of Tens

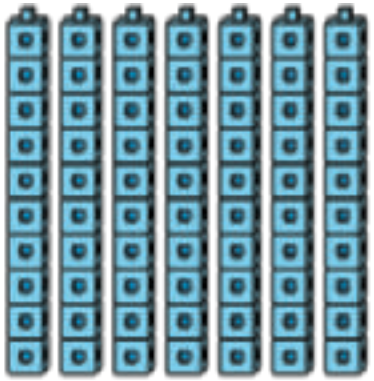
W



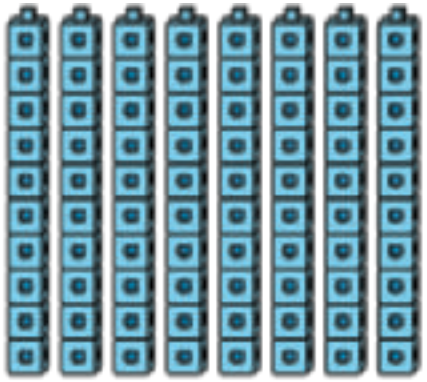
Representations of Tens

X

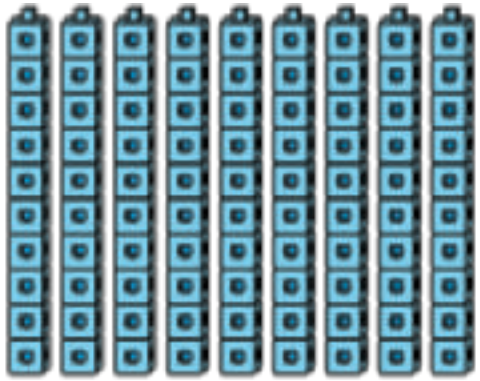
Representations of Tens
Y



Representations of Tens
Z



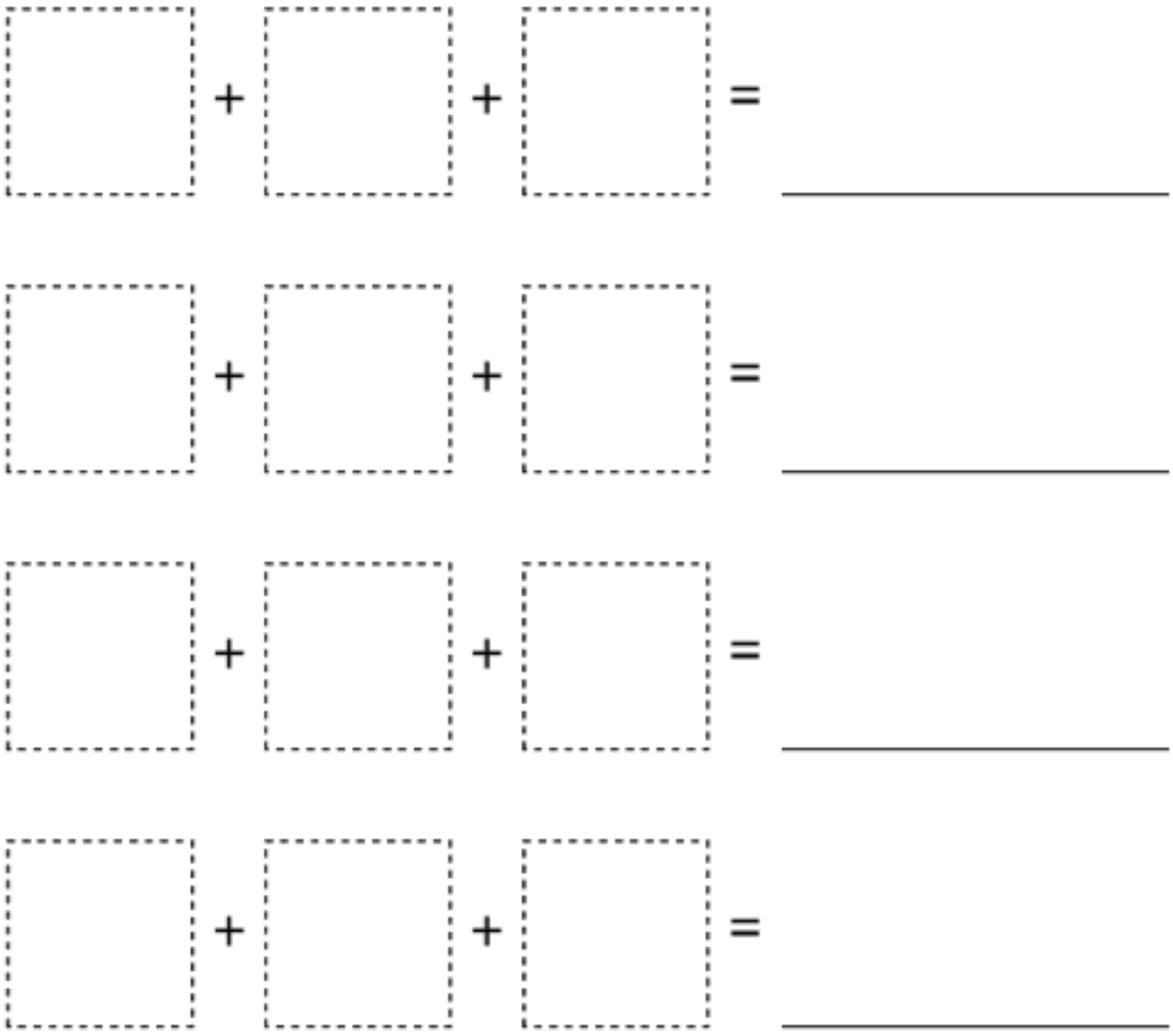
Representations of Tens
AA



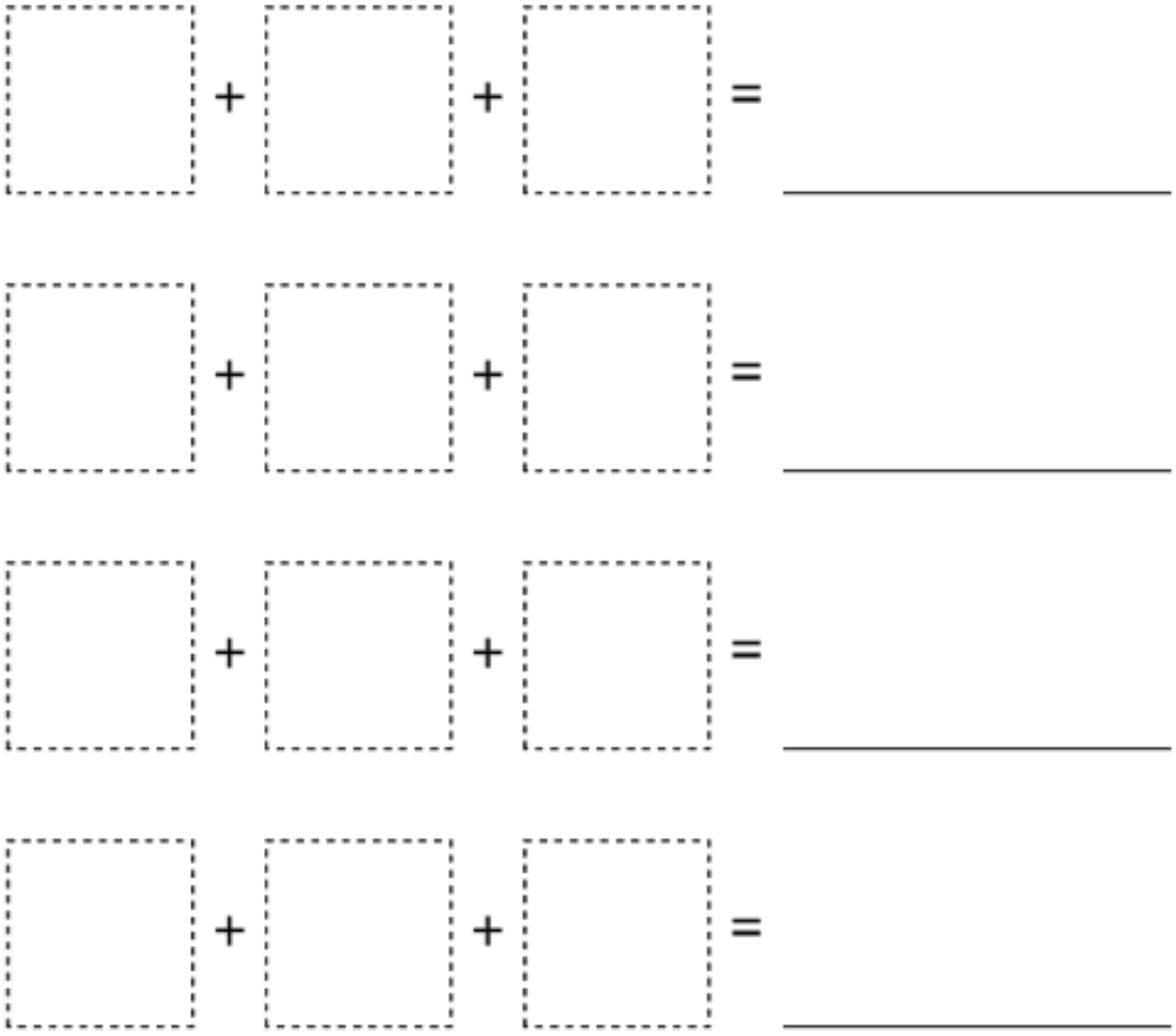
How Close? Stage 1 Recording Sheet

Directions:

- Each partner:
  - Take 5 cards.
  - Choose 3 numbers.
  - Write an equation to show the sum of the 3 numbers.
  - Compare sums with your partner, whoever is closer to 20 wins a point.
- Take 3 new cards and start the next round.



How Close? Stage 1 Recording Sheet

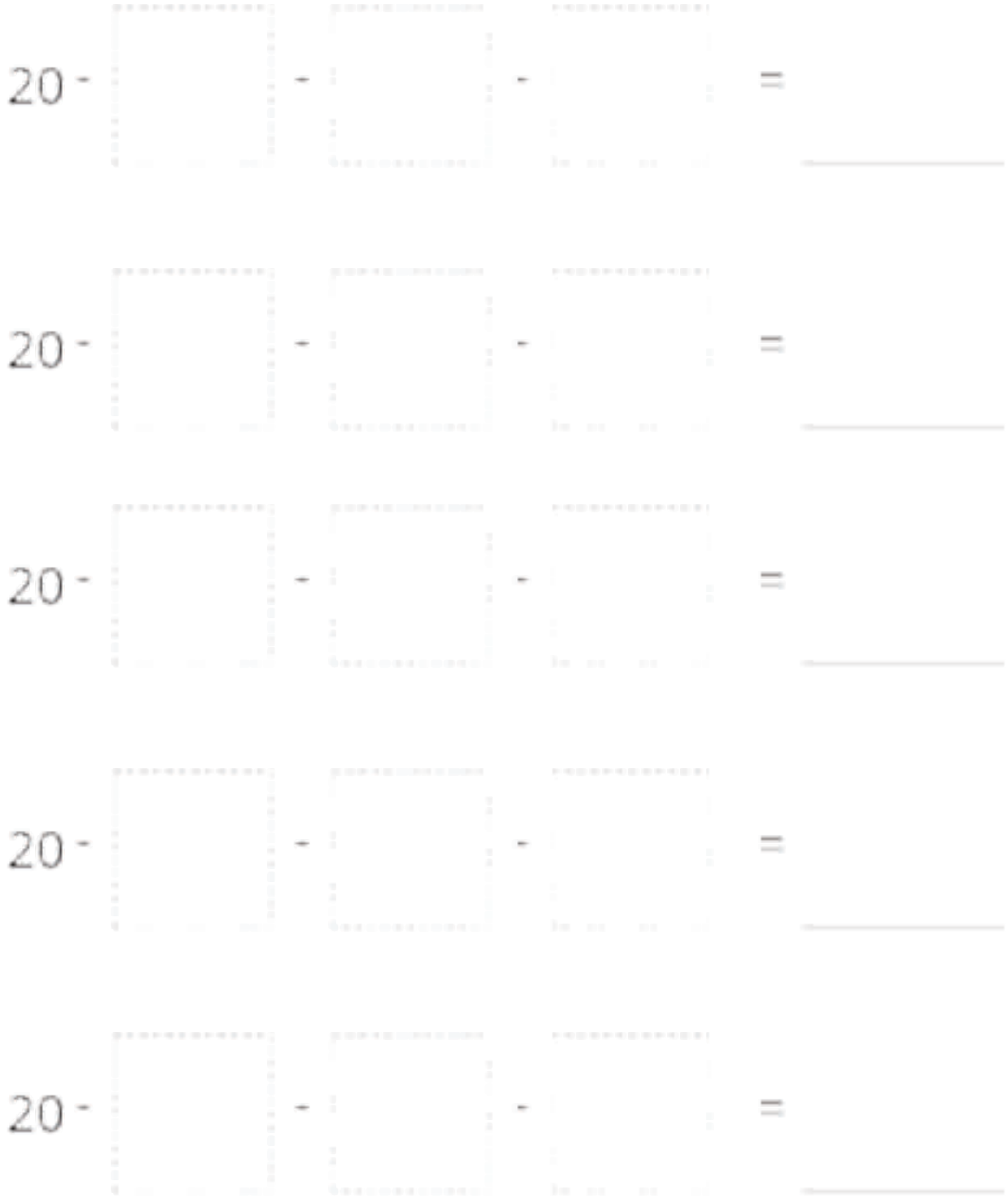


How Close? Stage 2 Recording Sheet

Directions:

- Each partner:
  - Take 4 cards.
  - Choose 2 or 3 numbers to subtract from 20.
  - Write an equation to show the difference when you subtract the numbers from 20.
  - Compare differences with your partner, whoever is closer to 0 wins a point.
- Take 2 or 3 new cards and start the next round.

How Close? Stage 2 Recording Sheet



Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard

2	4	9	8	3
5	7	6	10	9
8	3	FREE	5	4
9	2	10	3	7
6	5	8	9	4

Five in a Row Addition and Subtraction Stages 1 and 2 Gameboard

2	4	9	8	3
5	7	6	10	9
8	3	FREE	5	4
9	2	10	3	7
6	5	8	9	4

Five in a Row Addition and Subtraction Stage 3 Gameboard

12	14	12	8	11
15	17	16	10	19
18	13	FREE	15	14
9	17	10	13	7
19	16	11	9	18

Puzzle 1

Make each equation true. Use number cards 0–9.

6= □ + □	6= □ + □
6= □ - □	6= □ - 2
6= □ - □	6= □ - 1

Puzzle 2

Make each equation true. Use number cards 0–9.

7= ☐ + ☐	7= ☐ + ☐
7= ☐ - ☐	7= ☐ - 2
7= ☐ + ☐	7= ☐ - 1

Puzzle 3

Make each equation true. Use number cards 0–9.

8= ☐ + ☐	8= ☐ + ☐
8= ☐ - 0	8= ☐ - 1
8= ☐ + ☐	Leftovers: ☐ ☐

Puzzle 4

Make each equation true. Use number cards 0–9.

9= ☐ + ☐	9= ☐ + ☐
9= ☐ + ☐	9= ☐ + ☐
9= ☐ + ☐	Leftovers: ☐ ☐

Puzzle 5

Make each equation true. Use number cards 0–9.

10= ☐ + 5	10= ☐ + ☐
10= 8 + ☐	10= ☐ + ☐
10= ☐ + 2	Leftovers: ☐ ☐

Number Puzzles Digit Cards

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

Number Puzzles Digit Cards

0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9
0	1	2	3	4	5	6	7	8	9

Puzzle 1

Make each equation true. Use number cards 0–9.

11 = ☐ + ☐	11 = 1☐ - ☐
11 = 1☐ + ☐	11 = 1☐ - 2
11 = 1☐ - 8	11 = 1☐ - 1

Puzzle 2

Make each equation true. Use number cards 0–9.

14 = 1 ☐ + ☐	14 = ☐ + 7
14 = 8 + ☐	14 = 1 ☐ - 4
14 = 1 ☐ - ☐	14 = 1 ☐ - ☐

Puzzle 3

Make each equation true. Use number cards 0–9.

17 = 1□ + □	17 = 1□ - □
17 = 1□ - □	17 = 1 + 1□
17 = 1□ - 1	17 = 1□ + 2

Puzzle 4

Make each equation true. Use number cards 0–9.

18 = 1☐ + ☐	18 = 1☐ - ☐
18 = 1☐ + ☐	18 = 1☐ + 4
18 = 1☐ + ☐	18 = 1☐ - 1

Puzzle 5

Make each equation true. Use number cards 0–9.

19 = 1□ + □	19 = 1□ + □
19 = 1□ + 3	19 = 1□ + 6
19 = 1□ - □	19 = 1□ + 1

Check It Off Stage 1 Recording Sheet Grade K

Directions:

- On your turn:
  - Pick 2 cards and find the total.
  - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		_____ + _____
1		_____ + _____
2		_____ + _____
3		_____ + _____
4		_____ + _____
5		_____ + _____
6		_____ + _____
7		_____ + _____
8		_____ + _____
9		_____ + _____
10		_____ + _____

Check It Off Stage 1 Recording Sheet Grade 1

Directions:

- On your turn:
  - Pick 2 cards and find the sum.
  - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Check It Off Stage 2 Recording Sheet

Directions:

- On your turn:
  - Pick 2 cards and find the difference.
  - Check off the number you found and write the expression.
- Take turns. The partner who has checked off the most numbers at the end of the game wins.

	✓ Found it!	expression
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Shake and Spill Stage 3 Recording Sheet Kindergarten

Draw a picture.
Fill in the expression. _____ + _____

Draw a picture.
Fill in the expression. _____ + _____

Draw a picture.
Fill in the expression. _____ + _____

Shake and Spill Stage 3 Recording Sheet Kindergarten

Draw a picture.
Fill in the expression.

Draw a picture.
Fill in the expression.

Draw a picture.
Fill in the expression.

Shake and Spill Stage 3 Recording Sheet Grade 1

Directions:

- Choose how many counters to put in the cup.
- Partner A: Shake and spill.
- Both partners: Determine how many red counters and how many yellow counters there are and write an equation to show the total.
- Switch roles and start the next round.

round	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Shake and Spill Stage 4 Recording Sheet Kindergarten

total counters 	expression 
5	3 + 2
	_____ + _____
	_____ + _____
	_____ + _____
	_____ + _____
	_____ + _____

Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)

Directions:

- Choose how many counters to put in the cup.
- Partner A: Close your eyes.
- Partner B: Shake and spill. Cover up the yellow counters with the cup.
- Partner A: Open your eyes and figure out how many counters are under the cup.
- Partner B: Show how many.
- Both partners: Record an equation.
- Switch roles and start the next round.

round:	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)

Directions:

- Choose how many counters to put in the cup.
- Partner A: Close your eyes.
- Partner B: Shake and spill. Cover up the yellow counters with the cup.
- Partner A: Open your eyes and figure out how many counters are under the cup.
- Partner B: Show how many.
- Both partners: Record an equation.
- Switch roles and start the next round.

round:	Write an equation to represent the red and yellow counters.
1	
2	
3	
4	
5	
6	
7	
8	

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