



Core Knowledge[®] MATHEMATICS

Adding and Subtracting Within 20



Teacher Guide



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Adding and Subtracting Within 20

Table of Contents

Unit Overview	1
Section Overview	2
Center Overview	11
Lessons Plans and Student Task Statements:	
Section A: Lessons 1–7 Develop Fluency with Addition and Subtraction within 1	24
Section B: Lessons 8–14 Add and Subtract using Ten as a Unit	81
Section C: Lessons 15–21 Add within 20	136
Section D: Lessons 22–28 Subtract within 20	190
Teacher Resources	242
Family Support Materials	
Assessments	
Cool Downs	
Black Line Masters	



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Core Knowledge Mathematics™

Unit 3: Adding and Subtracting With 20

At a Glance

Unit 3 is estimated to be completed in 29-30 days including 2 days for assessment.

This unit is divided into four sections including 27 lessons and 1 optional lesson.

- Section A—Develop Fluency with Addition and Subtraction within 1 (Lessons 1-7)
- Section B—Add and Subtract using Ten as a Unit (Lessons 8-14)
- Section C—Add within 20 (Lessons 15-21)
- Section D—Subtract within 20 (Lessons 22-28)

On pages 7-10 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 seven student centers.

- Shake and Spill
- Number Puzzles: Addition and Subtraction
- Check It Off
- Find the Pair
- Compare
- How Close?
- Five in a Row: Addition and Subtraction

Unit 3: Adding and Subtracting Within 20

Unit Learning Goals

- Students add and subtract within 20. Students apply the properties of operations and the relationship between addition and subtraction.

In this unit, students develop an understanding of 10 ones as a unit called “a ten” and use the structure of $10 + n$ to add and subtract within 20.

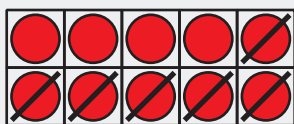
In kindergarten, students composed and decomposed the numbers 11–19 into 10 ones and some more ones. In a previous unit, students solved story problems of all types with unknown values in all positions and numbers within 10. They used the relationship between addition and subtraction, drawings and equations, and various tools (10-frames, connecting cubes, two-color counters) to represent the quantities in the problems. They learned that the values represented by the numbers or expressions on each side of an equation are equal.

Here, students decompose and recompose addends to find the sum of two or three numbers. For example, to find the value of $9 + 6$, they may decompose 6 into 1 and 5, compose the 1 and 9 into 10, and find $10 + 5$.

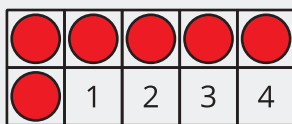
Subtraction work occurs throughout the unit and becomes the focus in the last section. Students consider taking away and counting on as methods for subtracting. They understand subtraction as an unknown-addend problem and use their knowledge of addition to find the difference of two numbers.

For instance, students may reason about the value of $10 - 6$ by:

Taking away 6 from 10



Counting on to 10, starting from 6



Using an addition fact,
 $6 + 4 = 10$

Students solve story problems throughout the unit and learn two new problem types—Add To, Start Unknown and Take From, Change Unknown. Students compare the structure of different types of story problems as they practice adding and subtracting within 20.

Section A: Develop Fluency with Addition and Subtraction within 10

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.3, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8
 Building Towards 1.NBT.A.1, 1.OA.A.1, 1.OA.C.6

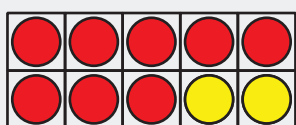
Section Learning Goals

- Build toward fluency with adding and subtracting within 10.

This section focuses on developing students' fluency with addition and subtraction within 10. All but a few sums within 10 can be found by counting on by 1, 2, or 3, or by making a sum of 10, so being able to count on up to 3 and make 10 are helpful steps toward fluency. Students have a chance to self-assess the sums they know from memory and those they are still working on. (Fluency is not expected until the end of the school year).

Note that the term "sum" has so far been used to refer to a number—the total we have when adding two or more numbers. Here, the term is also used to refer to an addition expression like $5 + 4$ because it represents the sum of two quantities.

The 10-frame can help students visualize sums of 10. For example, this 10-frame may allow students to recall several related facts:



$$8 + 2 = 10$$


$$2 + 8 = 10$$

$$10 - 2 = 8$$

$$10 - 8 = 2$$

Changing one counter from red to yellow illustrates $7 + 3 = 10$, and changing a counter from yellow to red illustrates $9 + 1 = 10$. Seeing ways to make 10 will support students in later work of adding and subtracting within 20 and within 100.

Students are introduced to Add To, Start Unknown story problems. Because the starting number is unknown, students may find this challenging. Encourage them to act out the stories and apply what they have learned about adding within 10 to solve these problems.

 PLC: Lesson 6, Activity 1, A Shake and Spill Story Problem

Section B: Add and Subtract using Ten as a Unit

Standards Alignments

Building On	K.NBT.A.1
Addressing	1.NBT.A.1, 1.NBT.B.2.a, 1.NBT.B.2.b, 1.OA.A.1, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8
Building Towards	1.NBT.B.2.a, 1.NBT.B.2.b, 1.NBT.C.4

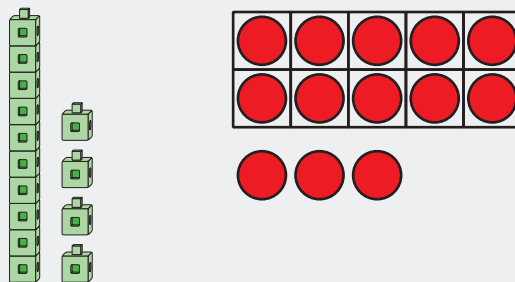
Section Learning Goals

- Add and subtract one-digit numbers from teen numbers without composing or decomposing a ten.
- Find the value that makes an addition or subtraction equation true, involving 10.
- Understand 10 ones as a ten and the numbers 11 to 19 as a ten and some ones.

In this section, students begin exploring the structure of the base-ten system and the idea of place value as they work with teen numbers.

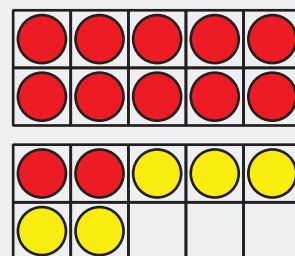
Students see that a new unit, a ten, is composed from 10 ones, and that teen numbers are composed of 1 unit of ten plus some number of ones. Double 10-frames are used here as they encourage students to see this structure (MP7).

Unlike in connecting cube towers, where identifying a unit of ten means counting individual cubes, the unit of ten—and whether it is complete—is evident in double 10-frames.



The structure of teen numbers and double 10-frames help students add and subtract teen numbers.

Here students work only with expressions that do not require composing or decomposing a ten, for example, $13 - 2$ and $12 + 5$. They notice that the unit of ten doesn't change and relate the sum to the adding or subtracting of ones.



Students encounter a new problem type—Take From, Change Unknown—in which the number that needs to be subtracted to get a difference is unknown. Encourage students to act out the story problems or to use double 10-frames and counters to make sense of them.

While they are not expected to write equations that match the action in a story, students do write equations that they may use to solve problems and explain how their equations relate to the stories. In doing so, they reason quantitatively and abstractly (MP2).

 PLC: Lesson 13, Activity 1, Sitting or Standing

Section C: Add within 20

Standards Alignments

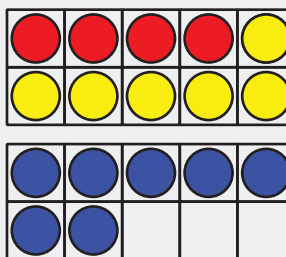
Addressing 1.OA.A.1, 1.OA.A.2, 1.OA.B.3, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8

Section Learning Goals

- Add within 20, including three addends.

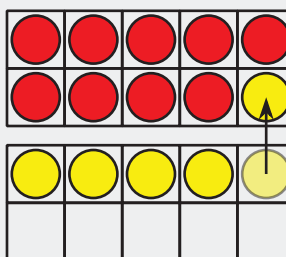
In this section, students explore the idea of composing and decomposing numbers to add up to three addends within 20. They make use of the base-ten structure and the commutative and associative properties (collectively referred to as the “add in any order” property throughout the materials) when adding, and discover the usefulness of grouping numbers to make a sum of 10 (or a unit of ten).

For instance, to find the value of $4 + 7 + 6$, they can rearrange the addends to group 4 and 6, which makes 10, and add the 7.





$$\begin{array}{r} 4 + 7 + 6 \\ 4 + 6 + 7 \\ 10 + 7 \\ 17 \end{array}$$

Making a ten is also helpful when finding the sum of two addends. For example, to find the value of $9 + 5$, students can take 1 from the 5 and group it with the 9 to make 10, and then add the 4.



$$\begin{array}{r} 9 + 5 \\ 9 + 1 + 4 \\ 10 + 4 \\ 14 \end{array}$$

Although this section focuses on making a ten, students may use other facts they know to find sums. For example, given $7 + 8$, students who know the value of $7 + 7$ may think of it as $7 + 7 + 1$.

  PLC: Lesson 17, Activity 2, Clare's Birds

Section D: Subtract within 20

Standards Alignments

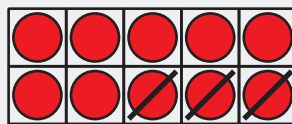
Addressing	1.NBT.A.1, 1.OA.A.1, 1.OA.A.2, 1.OA.B.3, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8
Building Towards	1.NBT.B.2

Section Learning Goals

- Subtract within 20.

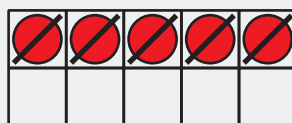
In this section, students subtract within 20. They rely on the relationship between addition and subtraction and the idea of making a ten to do so. Students encounter subtraction expressions and missing-addend equations, and use taking-away and counting-on methods to find differences.

For example, given $15 - 8$, students may take away 5 to get to 10 and then take away another 3 to find the difference of 7.

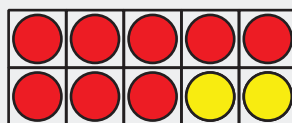


$$15 - 5 = 10$$

$$10 - 3 = 7$$



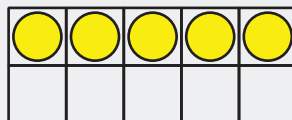
They may also start with 8 and count on by 2 to get 10, and then add another 5 to reach 15. They see that the difference is 7.



$$8 + 2 = 10$$

$$10 + 5 = 15$$

$$2 + 5 = 7$$



PLC: Lesson 24, Activity 1, Different Ways to Subtract

Throughout the Unit

Throughout the unit, warm-ups such as Number Talks and How Many Do You See reinforce students' seeing and using units of 10 when working with numbers within 20. Students are introduced to new centers that support the work of this unit. They may also revisit previously introduced centers as suggested in each section, or other familiar centers based on their need and interest.

Materials Needed

LESSON	GATHER	COPY
A.1	<ul style="list-style-type: none"> ● Bags (brown paper) ● Bags or envelopes ● Scissors 	<ul style="list-style-type: none"> ● Compare Stage 1 Addition Cards to 10 (groups of 2)
A.2	<ul style="list-style-type: none"> ● 10-frames ● Connecting cubes or two-color counters ● Materials from a previous lesson ● Two-color counters 	<ul style="list-style-type: none"> ● none
A.3	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Materials from a previous lesson 	<ul style="list-style-type: none"> ● none
A.4	<ul style="list-style-type: none"> ● 10-frames ● Crayons ● Cups ● Materials from previous centers ● Two-color counters 	<ul style="list-style-type: none"> ● Shake and Spill Stage 3 Recording Sheet Grade 1 (groups of 1)
A.5	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters 	<ul style="list-style-type: none"> ● none
A.6	<ul style="list-style-type: none"> ● 10-frames ● Connecting cubes or two-color counters 	<ul style="list-style-type: none"> ● none
A.7	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Materials from previous centers 	<ul style="list-style-type: none"> ● Compare Stage 1 Addition Cards to 10 (groups of 2) ● Compare Stage 1 Subtraction Cards to 10 (groups of 2)

B.8	<ul style="list-style-type: none">● 10-frames● Bags● Connecting cubes	<ul style="list-style-type: none">● Counting Collections Stages 1 and 2 Recording Sheet (groups of 1)
B.9	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames	<ul style="list-style-type: none">● Double 10-Frame - Standard (groups of 1)● Number Cards 11-20 (groups of 2)
B.10	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames	<ul style="list-style-type: none">● none
B.11	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames● Materials from previous centers	<ul style="list-style-type: none">● none
B.12	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Cups● Double 10-frames● Two-color counters	<ul style="list-style-type: none">● Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2) (groups of 1)
B.13	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames● Materials from previous centers	<ul style="list-style-type: none">● none
B.14	<ul style="list-style-type: none">● Materials from previous centers	<ul style="list-style-type: none">● Number Puzzles Addition and Subtraction Stage 2 Gameboard (groups of 1)
C.15	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames	<ul style="list-style-type: none">● none
C.16	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames	<ul style="list-style-type: none">● none

C.17	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Double 10-frames ● Number cards 0–10 	<ul style="list-style-type: none"> ● none
C.18	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Double 10-frames ● Materials from previous centers ● Tools for creating a visual display 	<ul style="list-style-type: none"> ● Compare Stage 2 Addition Cards to 20 (groups of 2)
C.19	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Double 10-frames ● Materials from a previous lesson 	<ul style="list-style-type: none"> ● none
C.20	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Double 10-frames 	<ul style="list-style-type: none"> ● none
C.21	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Double 10-frames ● Number cards 0–10 ● Two-color counters 	<ul style="list-style-type: none"> ● How Close? Stage 1 Recording Sheet (groups of 1) ● Five in a Row Addition and Subtraction Stage 3 Gameboard (groups of 2)
D.22	<ul style="list-style-type: none"> ● Connecting cubes or two-color counters ● Double 10-frames ● Materials from a previous lesson ● Number cards 0–10 ● Tools for creating a visual display 	<ul style="list-style-type: none"> ● none

D.23	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames● Materials from a previous lesson● Number cards 0–10	<ul style="list-style-type: none">● none
D.24	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames	<ul style="list-style-type: none">● none
D.25	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames	<ul style="list-style-type: none">● none
D.26	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames● Tools for creating a visual display	<ul style="list-style-type: none">● none
D.27	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames● Materials from a previous lesson● Materials from previous centers● Number cards 0–10	<ul style="list-style-type: none">● How Close? Stage 2 Recording Sheet (groups of 1)● Compare Stage 2 Subtraction Cards to 20 (groups of 2)
D.28	<ul style="list-style-type: none">● Connecting cubes or two-color counters● Double 10-frames● Tools for creating a visual display	<ul style="list-style-type: none">● none

Center: Shake and Spill (K–2)

Stage 3: Represent

Activities

- Grade1.3.A4.1 (supporting)
- Grade1.3.B13.3 (supporting)
- Grade1.3.B14.2 (supporting)
- Grade1.3.C18.3 (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

- Grade1.3.B13.3 (supporting)
- Grade1.3.B14.2 (supporting)
- Grade1.3.C18.3 (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

- Grade1.3.B12.3 (addressing)
- Grade1.3.B13.3 (addressing)
- Grade1.3.B14.2 (addressing)
- Grade1.3.C18.3 (addressing)

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

Stage 1: Within 10

Activities

- Grade1.3.C18.3 (addressing)
- Grade1.3.A4.3 (supporting)
- Grade1.3.A7.2 (supporting)
- Grade1.3.B11.3 (supporting)
- Grade1.3.B13.3 (supporting)
- Grade1.3.B14.2 (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

- Grade1.3.B14.1 (addressing)
- Grade1.3.B14.2 (addressing)
- Grade1.3.C18.3 (addressing)

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

- Grade1.3.A4.3 (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

- Grade1.3.A4.3 (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)

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.5.A

Center: Find the Pair (K–1)

Stage 2: Make 10

Activities

- Grade1.3.A4.3 (supporting)
- Grade1.3.A7.2 (supporting)
- Grade1.3.B11.3 (supporting)

Stage Narrative

Partner A asks their partner for a number that would make 10 when added to the number on one of their cards. If Partner B has the card, they give it to Partner A. If not, Partner A chooses a new card. When students make the target number 10, they put down those two cards and write an equation to represent the combination. Students continue playing until one player runs out of cards. The player with the most pairs wins.

Standards Alignments

Addressing 1.OA.C.6, K.OA.A.4

Materials to Gather

10-frames, Connecting cubes or counters, Number cards 0–10

Materials to Copy

Find the Pair Stage 2 Recording Sheet (groups of 1)

Stages used in Kindergarten

Stage 1

Addressing

- Kindergarten.6.A
- Kindergarten.6.B

Supporting

- Kindergarten.7.A

Stage 2

Addressing

- Kindergarten.6.C

Supporting

- Kindergarten.7.A

Center: Compare (1–5)

Stage 1: Add and Subtract within 10

Activities

- Grade1.3.A7.1 (addressing)
- Grade1.3.A7.2 (addressing)
- Grade1.3.B11.3 (addressing)
- Grade1.3.B13.3 (addressing)
- Grade1.3.B14.2 (addressing)
- Grade1.3.C18.3 (addressing)
- Grade1.3.D27.2 (addressing)

Stage Narrative

Students use cards with addition and subtraction expressions within 10.

Standards Alignments

Addressing 1.OA.C.6

Materials to Copy

Compare Stage 1 Addition Cards to 10 (groups of 2),
Compare Stage 1 Subtraction Cards to 10 (groups of 2)

Stage 2: Add and Subtract within 20

Activities

- Grade1.3.D27.2 (addressing)

Stage Narrative

Students use cards with addition and subtraction expressions within 20.

Standards Alignments

Addressing 1.OA.C.6

Materials to Copy

Compare Stage 2 Addition Cards to 20 (groups of 2),
Compare Stage 2 Subtraction Cards to 20 (groups of 2)

Center: How Close? (1–5)

Stage 1: Add to 20

Activities

- Grade1.3.C21.1 (addressing)
- Grade1.3.D27.2 (addressing)

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

- Grade1.3.D27.1 (addressing)
- Grade1.3.D27.2 (addressing)

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

- Grade1.3.D27.2 (addressing)

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

- Grade1.3.D27.2 (addressing)

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**

- Grade1.3.C21.2 (addressing)
- Grade1.3.D27.2 (addressing)

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.

Section A: Develop Fluency with Addition and Subtraction within 10

Lesson 1: Sums I Know

Standards Alignments

Addressing	1.OA.C.6
Building Towards	1.OA.C.6

Teacher-facing Learning Goals

- Add within 10.
- Identify known sums within 10.

Student-facing Learning Goals

- Let's see which sums within 10 we know.

Lesson Purpose

The purpose of this lesson is for students to identify which sums within 10 they know and which they are still working on.

In a previous unit, students practiced adding and subtracting within 10, with an emphasis on adding or subtracting 1 and 2. They also considered the commutative property in the context of story problems. Students classify sums as “got it” or “not yet” depending on whether they know the sum quickly or not. There is not a specific time expectation for students to classify sums as “got it,” but class discussion allows students to consider what it means to “get” the sum. Students discuss ways of finding sums within ten that they don't know yet.

As students find sums, they may count on, know some sums from memory, apply the commutative property and use related sums. Students work towards the end-of-year fluency goal for grade 1 which requires demonstrating fluency for adding and subtracting within 10. Fluency is defined as being efficient, flexible, and accurate.

Expression cards are cut out by students during this lesson, but can be prepared ahead of time if preferred. The cards students make will be used throughout the unit in lesson and center activities.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Bags or envelopes: Activity 2
- Scissors: Activity 2

Materials to Copy

- Compare Stage 1 Addition Cards to 10 (groups of 2): Activity 2

Lesson Timeline

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

Teacher Reflection Question

Fluency is defined as being efficient, flexible, and accurate. How is this definition different than your previous understanding of fluency? How will it change the way you assess student fluency of addition and subtraction within 10?

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

 0 min

Unit 3, Section A Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Count on to find the sum.
- Know certain sums.

----- Begin Lesson -----

Warm-up

 10 min

Notice and Wonder: Addition Table

Standards Alignments

Building Towards 1.OA.C.6

The purpose of this warm-up is to elicit the idea that there are many sums within 10, and students may already know many of these sums. This will be useful when students identify sums they know and don't know in a later activity.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?

What do you wonder?

	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8		
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7			
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6				
5	5+0	5+1	5+2	5+3	5+4	5+5					
6	6+0	6+1	6+2	6+3	6+4						
7	7+0	7+1	7+2	7+3							
8	8+0	8+1	8+2								
9	9+0	9+1									
10	10+0										

Student Responses

Students might notice:

- They are all addition.
- I already know some of these sums.
- Some of them have the same number but are flipped around.

Student might wonder:

- How many sums do I already know?
- How many sums do I need to learn?
- What are those blank squares for?

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

- "This table shows all the sums that you need to know by the end of the year. As you noticed, there are some you already know."
- "Tell your partner three sums you know."

Activity 1

🕒 15 min

My Favorite Sum

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to explore sums within 10. Students pick their favorite sum as an entry point to the next activity in which students sort the sums into those they know and those they don't yet know. In this activity, students may choose any sum within 10 that they like.

🌐 Access for English Learners

MLR8 Discussion Supports. During group 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

Student-facing Task Statement

Pick your favorite sum.

Write the equation:

Show why it is your favorite using drawings, numbers, or words.



Student Responses

Sample responses:

- $3 + 1 = 4$. I love the $+1$ sums because they

Launch

- Groups of 4
- Display the addition chart from the warm-up.
- "You are going to choose your favorite sum from the addition chart. For example, my favorite sum is $8 + 2 = 10$ because I like sums of 10."

Activity

- "Pick one or two sums that are your favorite. Explain why they are your favorite using drawings, numbers, or words."
- 4 minutes: independent work time
- "Share your favorite sums with the other students in your small group."

are quick. I can count on one more quickly. I would say 3. .4.

- $8 + 0 = 8$. They are my favorite because they add nothing, so the answer is just the number.
- $5 + 5 = 10$. I know that $5 + 5$ is 10. I can see a 10-frame in my head with 5 red counters and 5 yellow counters.

- 4 minutes: small-group discussion
- Monitor for students who wrote equations with addends of 0 or 1, equations with the same addend twice, or sums of 10.

Synthesis

- Invite previously identified students to share their favorite sums.
- “Why is this sum a favorite of yours?”

Activity 2

🕒 25 min

Sums I've Got

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to identify which sums within 10 they know and which they don't know yet. Sums that students know from memory or that they have a quick mental method for should be categorized as “got it.” Consider giving each student two bags or envelopes to keep their cards separated for ease of practice. Label one bag “Got It” and the other “Not Yet.” As students know more sums from memory, they can move them to the “Got It” bag.

This activity provides an opportunity for formative assessment on students' fluency with addition within 10. Use discretion in asking students to explain their answer, as some students will simply know the sums—or count on so quickly in their head that they may not be able to explain how they got it. These students should not be required to draw a picture to represent the sum.

Look for students who know sums such as $3 + 4$, $3 + 5$, $6 + 3$, and $4 + 5$, as these tend to be the most challenging for students and will be discussed during the lesson synthesis. After the lesson synthesis, collect the student workbook page to formatively assess sums students did not know.

Students use the addition expression cards in a future lesson.

Access for Students with Disabilities

Engagement: Develop Effort and Persistence. Support metacognition and motivation by drawing attention to the end-of-year fluency goal. “By the end of this year, we will know many sums and differences within 10. Let’s see which sums within 10 we know today, so we know which ones we can keep practicing.”

Supports accessibility for: Social-Emotional Functioning, Attention

Materials to Gather

Bags or envelopes, Scissors

Materials to Copy

Compare Stage 1 Addition Cards to 10
(groups of 2)

Student-facing Task Statement

1. Place your cards in a pile face down.
2. Flip the card and say the expression.
3. If you can say the value of the sum quickly, place it under “got it.”
4. If it takes you some time to find the value, place it under “not yet.”

got it	not yet
--------	---------

Student Responses

- Students will likely know all $+0$, $+1$, $+2$, sums of 5, and sums of 10.
- Students will likely need support with learning the value of sums such as $3 + 4$, $4 + 3$, $4 + 4$, $4 + 5$, and $5 + 4$.

Launch

- Groups of 2
- Give each student scissors and a set of cards.
- “First, cut out your cards and mix them up.”
- 5 minutes: independent work time
- “We saw that there are a lot of sums that you already know the value of. Let’s try some together. Give me a thumbs up when you know the value of the sum.”
- Display $4 + 1$.
- “How do you know this one?” (Adding 1 is quick. It’s just 1 more than the number.)
- “This is a sum that many of us know right away. Any sum that you know the value of quickly is placed in the ‘got it’ pile.”
- Display $5 + 3$.
- “For this sum, I might have to count on my fingers from 5. This is a sum that I can figure out, but it takes just a bit longer. When it takes you a little longer to find the value of the sum, place that card in the ‘not yet’ pile.”

Activity

- “Start with your cards in a pile, face down. Flip one card at a time and decide which pile it belongs in.”
- 10 minutes: independent work time
- “Record the sums that you are still working on.”
- 3 minutes: independent work time
- Monitor for sums that many students have sorted under “not yet” for the the lesson synthesis.

Synthesis

- “What patterns do you see in the sums you know? Why?” (I know all the +1 sums. I know all the sums of 10.)
- “Which sums are more difficult to find?” (The sums that have two bigger numbers, like $4 + 5$, are harder.)
- “By the end of the year, you are going to be able to quickly tell the sum for all the addition expressions within 10.”

Lesson Synthesis

🕒 10 min

Display three common “not yet” expressions. Consider showing expressions such as $3 + 5$, $4 + 5$, and $6 + 3$.

“Today we looked for sums we know, so we know which sums to continue practicing. Some students know $3 + 5 = 8$. What is a method you can use to help a friend who doesn’t know the value of this sum yet?” ($3 + 5$ is the same as $5 + 3$. They can count on 3 quickly. 5...6, 7, 8.)

Highlight and record 2–3 student methods for more challenging sums. These methods can be displayed in the classroom for students to refer to later in this section and unit.

Lesson 2: Relate Counting to Addition

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.3, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

Teacher-facing Learning Goals

- Understand and apply counting on as a method for addition.
- Understand and use the commutative property.

Student-facing Learning Goals

- Let's add within 10.

Lesson Purpose

The purpose of this lesson is for students to understand and apply counting on and the commutative property in order to find the sum.

In a previous unit, students were introduced to the commutative property in the context of story problems. In this lesson, students consider and use different methods for adding within 10. They relate counting on to addition and consider how the commutative property can help them find the sum more efficiently. Counting on is a method which students use when they are ready, so they may count on for certain sums but count all for others. Students are not explicitly told to count on from the bigger number—this is an understanding that they come to through the work of this and future lessons in which they compare addition methods.

Access for:

Students with Disabilities

- Action and Expression (Activity 3)

English Learners

- MLR6 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 3
- Connecting cubes or two-color counters: Activity 3

- Two-color counters: Activity 1, Activity 2

Required Preparation

- Each student needs their addition expression cards from a previous lesson to use during the lesson synthesis.

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	10 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

How does understanding the commutative property benefit students as they build fluency with addition within 10?

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

🕒 5 min

How Does it Help?

Standards Alignments

Addressing 1.OA.B.3

Student-facing Task Statement

How does knowing $7 + 2 = 9$ help you with $2 + 7 = \square$?

Show your thinking using drawings, numbers, or words.

Student Responses

I know it is also 9 because they are the same sum. They just have the numbers in a different order.

----- Begin Lesson -----

Warm-up

 10 min

Number Talk: 2 or 3 More

Standards Alignments

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

The purpose of this Number Talk is to elicit strategies and understandings students have for adding 2 or 3 more. These understandings help students develop fluency and will be helpful later in this lesson when students count on to add.

In this activity, students have an opportunity to notice and make use of structure (MP7). They may see patterns in the structure of the expressions by noticing that when an addend changes by one the sum changes by one.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $4 + 2$
- $5 + 2$
- $5 + 3$
- $6 + 4$

Student Responses

- 6: It's 2 more than 4.
- 7: I counted on, 5...6, 7
- 8: The last expression was $5 + 2$, this one is like $5 + 2 + 1$, which is 8.
- 10: I know my 10 facts.

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

🕒 15 min

More Shake and Spill

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.3, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to solve Put Together, Total Unknown story problems through a context they are familiar with—the game Shake and Spill. To launch the lesson, the teacher plays a round of the game with students and reminds students to draw a box around the number in the equation that answers the question.

As students find sums, they relate addition to counting on and may apply what they know about the commutative property. Some of the story problems have the smaller addend first to encourage students to consider this property (MP7). Students should make sure that the answer to each question is clear in their representations.

In the activity synthesis, use physical counters as well as students' representations to compare the two counting on methods.

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

10-frames, Two-color counters

Required Preparation

- Each group of 2 needs 10 two-color counters.
- Have one cup available to demonstrate Shake and Spill.

Student-facing Task Statement



1. Priya is playing Shake and Spill. She spills 7 red counters and 2 yellow counters. How many counters did she spill in all? Show your thinking using drawings, numbers, or words.

Equation: _____

2. Tyler spills 5 red counters and 3 yellow counters. How many counters did he spill in all? Show your thinking using drawings, numbers, or words.

Equation: _____

3. Clare spills 2 red counters and 8 yellow counters. How many counters did she spill in all? Show your thinking using drawings, numbers, or words.

Equation: _____

4. Han spills 3 red counters and 6 yellow counters. How many counters did he spill in all? Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

1. $9. 7 + 2 = \boxed{9}$. Sample response: I can count on 7...8, 9.
2. $8. 5 + 3 = \boxed{8}$. Sample response: Draws 5 circles and 3 circles and counts all.
3. $10. 8 + 2 = \boxed{10}$. Sample response: I know that $2 + 8$ is the same amount as $8 + 2$, and

Launch

- Groups of 2
- Give students access to 10-frames and two-color counters.
- "Let's play a round of Shake and Spill together."
- Demonstrate Shake and Spill.
- "What equation can I write to represent the total number of counters?"
- 30 seconds: quiet think time
- Record responses.
- "What number in the equation represents the total number of counters?"
- Draw a box around the total in the equation.

Activity

- Read each problem.
- 6 minutes: independent work time
- "Share your thinking with your partner."
- 4 minutes: partner discussion
- Monitor for students who find the sum of 2 and 8 by:
 - counting all
 - starting at 2 and count on 8
 - starting at 8 and count on 2

Synthesis

- Invite previously identified students to share in the sequence above.
- "How are these methods the same? How are they different?" (They are the same because they all add 3 and 6 and get 9. They all counted to get the answer. They are different because they counted different amounts. The first one counted all of the counters. The second counted 6 counters and the third counted

that is 10. I already know it.

4. $9. 6 + 3 = \boxed{9}$. Sample response: Writes a 6, then makes 3 tallies. Counts each tally 7, 8, 9.

3 counters.)

Activity 2

🕒 10 min

Are They Both Right?

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.5

The purpose of this activity is for students to analyze representations of the work of two students who counted on. Each student chose a different addend to count on from, which illustrates the commutative property. Methods are represented and students are asked to explain why both methods are correct using precise mathematical language (MP6).

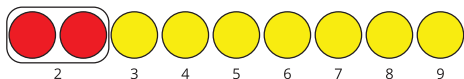
Materials to Gather

Two-color counters

Student-facing Task Statement

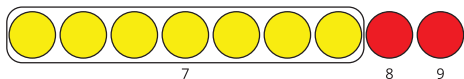
Kiran and Clare are finding the value of $2 + 7$.

Kiran counted on from 2.



$$2 + 7 = \boxed{9}$$

Clare counted on from 7.



$$7 + 2 = \boxed{9}$$

Launch

- Groups of 2
- Give students access to two-color counters.

Activity

- Read the task statement.
- 2 minutes: quiet think time
- 3 minutes: partner discussion

Synthesis

- Invite 2–3 groups to share their thinking.
- “Kiran and Clare started with different

How can both methods be correct?
Show your thinking using drawings, numbers, or words.

Student Responses

Sample responses:

- There are 2 red counters and 7 yellow counters in each representation, just the order they are shown in changes. There are still 9 counters altogether.
- Draws Kiran's representation, then turns the paper around to show that it makes Clare's representation.

numbers, but they both got the same value. As long as we add the same two numbers, we can add them in either order. This is called the add in any order property."

- "Which method do you like best? Why?" (I like adding up from the larger number since it is faster than adding up from the smaller number.)

Advancing Student Thinking

If students show that both equations are true without mentioning the 'add in any order' property, consider asking:

- "How do you know that both methods are correct?"
- "How can we use the same nine counters to move from the first method to the second?"

Activity 3

🕒 10 min

Practice Addition within 10

Standards Alignments

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

The purpose of this activity is for students to find the value of sums within 10. Students may apply what they learned about the commutative property and counting on. They may count on for certain equations, such as $+1$ or $+2$ equations as they can keep track easily, but count all for others. In the lesson synthesis, students return to the addition expressions cards they created in a previous lesson.

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for finding the sum. If time allows, invite students to share their plan with a partner before they begin.

Supports accessibility for: Organization, Attention

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

Find the value of each sum.

1. $7 + 2 = \square$

2. $3 + 5 = \square$

3. $\square = 8 + 2$

4. $3 + 6 = \square$

5. $5 + 2 = \square$

6. $\square = 4 + 4$

7. $2 + 6 = \square$

8. $\square = 1 + 9$

Student Responses

1. 9
2. 8
3. 10

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 5 minutes: independent work time
- 3 minutes: partner discussion

Synthesis

- Display answers to problems.

4. 9
5. 7
6. 8
7. 8
8. 10

Lesson Synthesis

🕒 10 min

"Today we saw different ways we can add numbers. Mai is practicing her sums to 10. She has $7 + 2$ in her 'got it' pile and $2 + 7$ in her 'not yet' pile. What would you tell Mai?" (If you know $7 + 2$, you also know $2 + 7$.) You can change the order of the numbers and get the same value.

Give students access to their addition cards sorted into 'got it' and 'not yet.' "Look through your 'not yet' cards. If you just know the sum, move it to your 'got it' pile. If you still need practice with a sum, keep it in your 'not yet' pile."

Complete Cool-Down

Response to Student Thinking

Students write an explanation other than the two expressions having the same sum because they have the same numbers in a different order.

Next Day Support

- Create a poster with a diagram that represents the cool-down from previous lessons.

Lesson 3: Are the Expressions Equal?

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6, 1.OA.D.7

Teacher-facing Learning Goals

- Interpret equations with expressions on both sides of the equal sign.
- Understand and use the commutative property.

Student-facing Learning Goals

- Let's think about how expressions can be equal.

Lesson Purpose

The purpose of this lesson is for students to identify expressions that are equal.

In previous lessons students identified sums they know and sums they don't yet know. They applied the commutative property to add within 10. The purpose of this lesson is for students to interpret equations with expressions on both sides of the equal sign. In Activity 1, students sort addition expressions within 10 by the value of the sum and discuss how expressions with the same numbers in a different order can be written as an equation. In Activity 2, students determine whether equations with addition expressions on both sides of the equal sign are true or false.

Students complete the cool down before the lesson synthesis.

Access for:

Students with Disabilities

- Representation (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

How Many Do You See? (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 2
- Materials from a previous lesson: 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

It is common for students to think that the equal sign means that the answer comes next. What evidence have students given that they have a true understanding of the meaning of the equal sign? How might you adjust instruction to clarify this understanding?

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

⌚ 5 min

Equal Expressions

Standards Alignments

Addressing 1.OA.C.6, 1.OA.D.7

Student-facing Task StatementCircle the **2** equations that are true.

$3 + 7 = 7 + 2$

$2 + 8 = 8 + 2$

$6 + 3 = 2 + 7$

Student Responses

$2 + 8 = 8 + 2$

$6 + 3 = 2 + 7$

----- **Begin Lesson** -----**Warm-up**

⌚ 10 min

How Many Do You See: Sums within 10

Standards Alignments

Addressing 1.OA.C.6

The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see. Students see two-color counters on the 10-frame and may know that when the 10-frame is filled, it is 10. Then they may see how many are not filled and subtract that many from 10 or may see how many are filled in each row and add those together. This deepens their understanding of the structure of 10 (MP7).

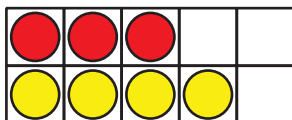
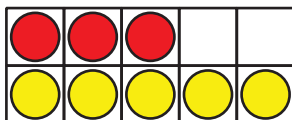
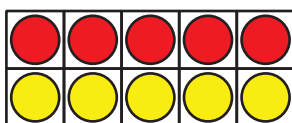
Instructional Routines

How Many Do You See?

Student-facing Task Statement

How many do you see?

How do you see them?



Student Responses

- 10: The whole 10-frame is filled so it's 10.
- 8: There are 2 missing and 2 less than 10 is 8.
- 7: It's the same as the last one except with 1 less yellow.

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 does the structure of the 10-frame help you 'see' the total?" (I know that when the 10-frame is filled it is 10. I can see how many are not filled and subtract that many from 10, or I can see how many are filled in each row and add those together.)

Activity 1

🕒 20 min

Sort Addition Expressions

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to sort addition expressions by their value. Students find the value of each sum on their own and share their method with a partner, moving students towards fluency.

During the synthesis the teacher introduces an equation with addition expressions on both sides of the equal sign.

Access for English Learners

MLR8 Discussion Supports. Synthesis: Before students share, remind students to use “sum” and “expression.”

Advances: Speaking, Conversing

Materials to Gather

Materials from a previous lesson

Required Preparation

- Each student needs their addition expression cards from a previous lesson.

Student Responses

Students sort expression cards by their value.

Sample response:

$1 + 5,$

$3 + 3,$

$5 + 1,$

$2 + 4,$

$4 + 2$

Launch

- Groups of 2
- Give students their addition expression cards.
- “Sort the cards into groups with the same value.”
- Display an addition expression card, such as $2 + 5$.
- “I know the value of this sum is seven. It is a sum that I just know. I will start a pile for

sums of seven.”

Activity

- “Work with your partner. Make sure that each partner has a chance to find the value before you place the card in a group. If you and your partner disagree, work together to find the value of the sum.”
- 12 minutes: partner work time

Synthesis

- “What sums have a value of seven?” (1 + 6, 6 + 1, 2 + 5, 5 + 2, 3 + 4, 4 + 3)
- Display $4 + 3 = 3 + 4$.
- “What do you notice about this equation?” (Each side has a 3 and a 4, but in a different order. Each side equals 7.)

Activity 2

🕒 15 min

Are Both Sides Equal?

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6, 1.OA.D.7

The purpose of this activity is for students to determine whether equations are true or false. Students may use a combination of computation and reasoning about the commutative property to determine whether each equation is true or false. The synthesis focuses on how students can use the structure of the expressions to determine if they are equal without finding their values (MP7).

Access for Students with Disabilities

Representation: Internalize Comprehension. Provide students with a graphic organizer, such as a two-column table or sorting mat, to visually represent the expressions on each side of the equations.

Supports accessibility for: Visual Spatial Processing, Conceptual Processing

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

Determine whether each equation is true or false.

Be ready to explain your reasoning in a way that others will understand.

1. $4 + 2 = 2 + 4$



True

or



False

2. $3 + 6 = 6 + 4$



True

or



False

3. $5 + 3 = 1 + 7$



True

or



False

4. $6 + 4 = 5 + 3$

Launch

- Groups of 4
- Give students access to connecting cubes or two-color counters.
- “We just found expressions that were equal to each other. Look at this equation.”
- Display $4 + 2 = 6 + 1$.
- “Is this equation true or false? How do you know?” (False. $4 + 2 = 6$, but the other side of the equal sign is 1 more than 6.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- Read the task statement.
- “You will work on these problems independently. I will let you know when it is time to share with a partner.”
- 4 minutes: independent work time
- “Share your thinking with a partner. Find a different partner for each problem. If you and your partner do not agree, work together to agree on the answer.”
- 3 minutes: partner discussion



True

or



False

5. $6 + 3 = 9 + 2$



True

or



False

If you have time: Change the false equations to make them true.

Student Responses

Sample responses:

1. True. Sample response: It doesn't matter which order you add the numbers, you get the same answer, $6 = 6$.
2. False. Sample response: Even though both expressions have a 6 that's the same, the other addend of each is different.
3. True. Sample response: I know that $5 + 3$ is 8 and $1 + 7$ is 8.
4. False. Sample response: I know that $6 + 4 = 10$ but $5 + 3$ is not equal to 10.
5. False. Sample response: $6 + 3$ is 9. The other side of the expression is 9 and some more. 9 is not equal to more than 9.

If you have time: Sample responses: $3 + 6 = 6 + 3$, $6 + 4 = 5 + 5$, $6 + 5 = 9 + 2$

Synthesis

- "Which equations could you tell were true or false without finding the value of both sums?" (Problem 1. That's the add in any order property. Problem 2. You can see that the number you are adding to 6 is different on each side of the equal sign. Problem 5. $6 + 3$ is 9. The other side of the expression is 9 and some more.)

Advancing Student Thinking

If students circle true for an equation where the value to the left of the equal sign is the same as the first number on the right of the equal sign, consider asking:

- "How did you decide this equation is true?"

- “How can you use two-color counters to represent both sides of the equation? Can you use these counters to decide if the equation is true?”

Lesson Synthesis

⌚ 10 min

Display $6 + 3 = 9 + 2$

“Today we worked with equations that have expressions on both sides of the equal sign. What would you tell someone who said this equation was true because $6 + 3 = 9$?” (This side of the equal sign is 9 and the other side is 11. 9 does not equal 11.)

Complete Cool-Down

Response to Student Thinking

Students circle an equation that is not true.

Next Day Support

- Before the launch of the next day's activity, have students demonstrate why each equation from the cool-down is true or false using connecting cubes or two-color counters.

Lesson 4: Sums of 10

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.5, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8

Teacher-facing Learning Goals

- Look for and make use of patterns in addition expressions that have a sum of 10.

Student-facing Learning Goals

- Let's find all the ways to make 10.

Lesson Purpose

The purpose of this lesson is to build toward fluency within 10 by looking for and making use of patterns in sums that have a value of 10.

In a previous lesson, students found different expressions with the same value. In this lesson, students write different expressions that equal 10. They try to find all of the ways to decompose 10. Knowing all decompositions of 10 will be helpful later when students add and subtract within 20. For example, when students find the sum of $9 + 5$, they can decompose 5 into 1 and 4 to make a ten ($9 + 5 = 9 + 1 + 4 = 10 + 4$.) In the first activity, students play Shake and Spill to identify expressions that equal 10. In the second activity, students find all the ways to make 10 and share how they know they found all of the ways.

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

- 10-frames: Activity 2
- Crayons: Activity 2
- Cups: Activity 1
- Materials from previous centers: Activity 3
- Two-color counters: Activity 1, Activity 2

Materials to Copy

- Shake and Spill Stage 3 Recording Sheet
Grade 1 (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

Reflect on how easily students found different ways to make 10 and which ways they know from memory. How prepared are students to make 10 in order to add within 20 in an upcoming section. In what other ways can you offer practice that will help prepare students for this work.

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

🕒 0 min

Unit 3, Section A Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Know certain sums.
- Use known sums to adjust expressions and find the sum or difference.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

True or False: Equal Expressions

Standards Alignments

Addressing 1.OA.D.7

The purpose of this True or False is to elicit understanding students have for the equal sign. It will also be helpful later when students generate equivalent expressions.

In this activity, students have an opportunity to look for and make use of structure (MP7) because they apply the commutative property to determine whether the equations are true or false.

Instructional Routines

True or False

Student-facing Task Statement

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

- $3 + 5 = 8$
- $6 + 3 = 8$
- $3 + 5 = 5 + 3$

Student Responses

- True: I can count on. 5... 6, 7, 8
- False: The first equation was true, so the second can't be true because it is one more.
- True: The add in any order property means that $3 + 5$ is the same amount as $5 + 3$.

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 equation.

Synthesis

- "How can you justify your answer without finding each sum?" (If $3 + 5 = 8$, then I know $6 + 3$ can't be 8. I know $3 + 5 = 5 + 3$ because of the add in any order property.)

Activity 1

🕒 10 min

Shake and Spill: 10 Counters

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to decompose 10 in different ways through a familiar game, Shake and Spill. During the synthesis, the teacher records equations that students found during the activity, and students make connections between equations.

Materials to Gather

Cups, Two-color counters

Materials to Copy

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

Launch

- Groups of 2
- Give each group a cup, 10 two-color counters, and two recording sheets.

Activity

- “Today you will play Shake and Spill with 10 counters. When you write the equation to represent your counters, make sure it shows how many red counters and how many yellow counters you got.”
- 5 minutes: partner work time

Synthesis

- Display six red counters and four yellow counters.
- “Here are the counters from a round of Shake and Spill. There are six red counters and four yellow counters. What equations can I write to represent the counters?” ($6 + 4 = 10$ and $4 + 6 = 10$)
- “Why do both equations represent the counters?” (You can start with the red or start with the yellow and there are still 10 total counters.)

Activity 2

🕒 15 min

All The Ways To Make 10

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to justify that they have found all the ways to make 10. Students are given access to 10-frames and two-color counters to construct their argument (MP3). Students notice that there are patterns in the numbers in the expressions and how the addends change.

Some students may just start writing equations or placing counters in the 10 frame randomly. Other students may have a systematic way to find combinations such as placing 10 of one color, such as red counters, on the 10-frame and flipping one counter at a time to yellow (MP6).

🌐 Access for English Learners

MLR8 Discussion Supports. Synthesis: Display sentence frames to support whole-class discussion: “I knew I found all the ways because” and “First, I ____ because”

Advances: Speaking, Representing, Conversing

♿ Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for finding all the ways to make 10. If time allows, invite students to share their plan with a partner before they begin.

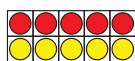
Supports accessibility for: Organization, Attention

Materials to Gather

10-frames, Crayons, Two-color counters

Student-facing Task Statement

1. Show all the ways to make 10.



2. How do you know that you have found all the ways?

Launch

- Groups of 2
- Give students access to 10-frames, two-color counters, and yellow and red crayons.

Be ready to explain your thinking in a way that others will understand.

Student Responses

1. $1 + 9, 2 + 8, 3 + 7, 4 + 6, 5 + 5, 6 + 4, 7 + 3, 8 + 2, 9 + 1$
2. Sample response: I have an expression that shows 9 reds, then 8 reds, then 7 reds, all the way down to 1 red.

Activity

- Read the task statement.
- “You will have some time to work on this problem on your own, and then share your thinking with a partner.”
- 5 minutes: independent work time
- “Each student will have two minutes to prove to your partner that you have found all the ways to make 10. Your job as a partner is to listen and ask questions if you have any.”
- 2 minutes: partner discussion
- “Switch roles.”
- 2 minutes: partner discussion
- Monitor for students who have a systematic way to find all the combinations to share during lesson synthesis.

Synthesis

- Invite previously identified students to share.
- “How do you know that you found all of the ways.” (I started by filling my 10-frame with red counters and then flipped over the first red counter to make it yellow. That was $1 + 9$. I kept flipping over a one red counter at a time to make it yellow and kept writing expressions.)

Advancing Student Thinking

If students identify different ways to make 10 in random order, consider asking:

- “Can you use two-color counters to show me that these two numbers make 10?”
- “How can you change just one counter to make 10 in a different way?”

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 10. Students choose from any stage of previously introduced centers.

- Number Puzzles
- Check it Off
- Find the Pair

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Number Puzzles, Stage 1
 - Check It Off, Stages 1 and 2
 - Find the Pair, Stage 2

Student-facing Task Statement

Choose a center.

Number Puzzles

$$14 = 8 + \square$$

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



Find the Pair



their choice.

- 10 minutes: center work time

Synthesis

- “What method do you use most often to find the value of sums you do not yet know?”

Lesson Synthesis

🕒 10 min

“Today we found all the ways to make 10.”

Display $2 + 8 = 10$, $3 + 7 = 10$, $4 + \square = 10$

“Today we found all the ways to make 10. What is the value that makes this equation true? How do you know?” (6. The 4 is one more than the 3 in the other equation, so the 7 needs to be one less.)

Lesson 5: Find the Difference

Standards Alignments

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

Teacher-facing Learning Goals

- Use the relationship between addition and subtraction to find differences within 10.

Student-facing Learning Goals

- Let's find differences within 10.

Lesson Purpose

The purpose of this lesson is for students to develop fluency with subtraction within 10, using the relationship between addition and subtraction.

In the previous lesson, students discuss the relationship between addition and subtraction. In this lesson, students find differences within 10. They may take away, count on, or use addition facts to help them find the value of the difference between two numbers. The relationship between addition and subtraction is the focus of the syntheses throughout the lesson.

Access for:

Students with Disabilities

- Engagement (Activity 3)

Instructional Routines

MLR8 Discussion Supports (Activity 2), Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters:
Activity 1, Activity 2, Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min

Teacher Reflection Question

Many students prefer addition to subtraction. How do the activities in this lesson help students see that addition and subtraction are related and that addition can be used to find the difference between two numbers?

Activity 3	10 min
Lesson Synthesis	10 min
Cool-down	5 min

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

🕒 5 min

Subtraction within 10

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Find the value of the differences.

Show your thinking using drawings, numbers, or words.

1. $9 - 6$
2. $10 - 3$

Student Responses

1. 3. Sample response: I know that $3 + 6 = 9$, so $9 - 6 = 3$.
2. 7. Sample response: I took away 3. 10...9, 8, 7

Begin Lesson

Warm-up

🕒 10 min

Number Talk: Missing Value Within 10

Standards Alignments

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

The purpose of this Number Talk is to elicit strategies and understandings students have for the

relationship between addition and subtraction. Students who relate the pairs of equations are observing regularity in how addition and subtraction are related (MP8).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the number that makes each equation true.

- $6 + \square = 10$
- $10 - 6 = \square$
- $8 + \square = 10$
- $10 - 2 = \square$

Student Responses

- 4: I counted on from 6 until I got to 10.
- 4: $6 + 4 = 10$ so $10 - 6 = 4$. The answer is the same.
- 2: I know that $8 + 2 = 10$.
- 8: $8 + 2$ and $10 - 2$ are related.

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

- "Who can restate _____'s reasoning in a different way?"

Activity 1

🕒 15 min

Different Ways to Find the Difference

Standards Alignments

Addressing 1.OA.B.4, 1.OA.C.5, 1.OA.C.6

In this activity, students analyze three different ways to subtract. They see that taking away is one way to find the difference, but that you can also count on or use known addition facts. Students further solidify their understanding that addition and subtraction are related, which sets the groundwork for a later activity when students solve subtraction problems within 10.

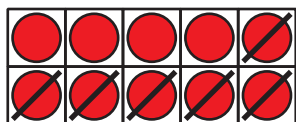
Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

Mai, Diego, and Noah find the value of $10 - 6$.

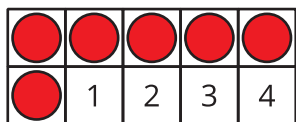
1. Diego says, "I can take away."



What does Diego mean?

Be ready to explain your thinking in a way that others will understand.

2. Mai says, "I can count on."



What does Mai mean?

Be ready to explain your thinking in a way that others will understand.

3. Noah says, "I can use what I know about $6 + 4$ to help me."

What does Noah mean?

Be ready to explain your thinking in a way that others will understand.

Student Responses

1. Diego took away 6 from 10 and saw that 4 were left.
2. Mai started at 6 and counted on 4 to get to 10.

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

Activity

- Read the task statement.
- "First you will work on your own. Think about what each student means and be ready to explain your thinking in a way that others will understand."
- 5 minutes: independent work time
- 4 minutes: partner discussion
- Monitor for students who can use the 10-frame with six red counters to explain the relationship between $10 - 6$ and $6 + \square = 10$.

Synthesis

- Invite previously identified students to share.
- "Who can restate what ____ just showed us?" (Diego subtracted by taking away 6 counters one at a time and saw that there were 4 counters left. Mai subtracted by thinking about addition. She counted on from 6 until she got to 10 and noticed she counted up 4. Noah knows his sums of 10. He knows 10 can be made by 6 and 4,

3. Noah can think of $10 - 6$ as $6 + \square = 10$, and he knows the missing number is 4 .

so $10 - 6 = 4$.)

- “Which method do you like best?” (I know my sums to 10 so I would use that. I like counting on because I like to add more than take away.)

Activity 2

🕒 10 min

Subtraction Number Strings

Standards Alignments

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

The purpose of this activity is for students to identify patterns when subtracting (MP7). Students have access to connecting cubes and two-color counters to make sense of the problems and explain their thinking (MP1). As students subtract, they continue to develop relational thinking and notice that:

- as the subtrahend, or the number being subtracted, increases, the difference decreases.
- as the subtrahend decreases, the difference increases.

This vocabulary is not necessary to use with students. During the activity synthesis, select students who can explain each of the ideas. When students show their thinking using objects and mathematical language to explain why the concept is true, they construct viable arguments (MP3).

This activity uses MLR8 Discussion Supports. Advances: Listening, Representing

Instructional Routines

MLR8 Discussion Supports

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

Find the value of each difference in the

Launch

- Groups of 2

subtraction string.
Explain what you notice.

Set 1:

$$6 - 1$$

$$6 - 2$$

$$6 - 3$$

$$6 - 4$$

What do you notice?
Why do you think this happens?
Be ready to explain your thinking in a way that others will understand.

Set 2:

$$9 - 8$$

$$9 - 7$$

$$9 - 6$$

$$9 - 5$$

What do you notice?
Why do you think this happens?
Be ready to explain your thinking in a way that others will understand.



Student Responses

Set 1:

5, 4, 3, 2

Sample response: I notice that each difference is one less. This happens because I am taking away one more each time.

Set 2:

1, 2, 3, 4

Sample response: I notice that each difference is

- Give students access to connecting cubes or two-color counters.

Activity

- Read the task statement.
- 8 minutes: partner work time
- Monitor for students who can explain the pattern for Set 1 and Set 2 using 10-frames or drawings and mathematical language.

Synthesis

MLR8 Discussion Supports

- Invite previously identified students to share.
- As students share, record their thinking with diagrams and equations.
- “Just like addition, there are patterns in subtraction. Understanding patterns can help you find differences.”

one more. This happens because I am taking away one less each time.

Advancing Student Thinking

If students start over with a new drawing or set of objects for each expression, consider asking:

- “Can you explain how you found the value of each difference?”
- “How can you use the same drawing you made for $6 - 1$, to find the value of $6 - 2$?”

Activity 3

🕒 10 min

The Value of the Difference

Standards Alignments

Addressing 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to find the value of differences within 10. Students are encouraged to think about how patterns in subtraction problems and knowing sums within 10 can help them find the value of the differences. Students may use take away or counting on methods. The problems are written for students to think about different methods for solving. For example, students may find the value of $10 - 3$ by taking away 3 to get 7, then see that they can find $10 - 7$ by knowing the relationship between 3, 7, and 10. Students should work in groups of 2, with a different partner than they had in the previous activity.

🕒 Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Provide choice. Invite students to decide which problem to start with.

Supports accessibility for: Social-Emotional Functioning, Attention

Materials to Gather

Connecting cubes or two-color counters

Student-facing Task Statement

Find the value of each difference.

1. $9 - 6$
2. $10 - 3$
3. $7 - 3$
4. $9 - 5$
5. $8 - 6$
6. $6 - 5$
7. $9 - 4$
8. $10 - 7$

Student Responses

1. 3
2. 7
3. 4
4. 4
5. 2
6. 1
7. 5
8. 3

Launch

- Groups of 2
- Give students access to connecting cubes or two-color counters.

Activity

- Read the task statement.
- “You will first find the value of each difference on your own. Then you will share your thinking with a different partner than last activity.”
- 5 minutes: independent work time
- 2 minutes: partner discussion

Synthesis

- “Were there any expressions that helped you with another expression? How did they help you?” ($10 - 3$ and $10 - 7$. They are related because $3 + 7 = 10$. $9 - 6$, $9 - 5$, and $9 - 4$. There is a pattern. Since the number being subtracted gets 1 bigger, the difference gets 1 smaller.)

Lesson Synthesis
 10 min

“Today we found differences within 10 and saw that you can use what you know about addition to find differences. To find the difference in a problem like $9 - 5 = \square$, you can think about the sums of 9. I know that $5 + 4 = 9$, so $9 - 5 = 4$.”

“We say that 4, 5, and 9 are related. We can write both addition and subtraction equations with these numbers.”

“What are the addition and subtraction equations we can write with 4, 5, and 9?” ($4 + 5 = 9$, $5 + 4 = 9$, $9 - 4 = 5$, $9 - 5 = 4$.)

----- Complete Cool-Down -----

Response to Student Thinking

Students find the value of the differences to be any number other than 3 and 7.

Next Day Support

- Before beginning the next lesson, have students use connecting cubes or two-color counters to represent the problems from the cool-down.

Lesson 6: Story Problems within 10

Standards Alignments

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

Building Towards 1.OA.A.1

Teacher-facing Learning Goals

- Solve Add To and Put Together story problems with unknowns in all positions.

Student-facing Learning Goals

- Let's solve story problems.

Lesson Purpose

The purpose of this lesson is to introduce students to a new type of story problem, Add To, Start Unknown.

In the previous unit, students made sense of and solved Add To, Result and Change Unknown; Take From, Result Unknown; Put Together, Addend or Result Unknown; and Compare, Difference Unknown story problems. They wrote equations with a box around the answer to the problem. In this lesson, students are introduced to Add To, Start Unknown story problems. Then, students make sense of a variety of types of story problems, solve the problems, and write equations to represent each (MP1). Students apply what they have learned about the structure of adding within 10 to solve these problems (MP7). When students connect the quantities in the story problem to an equation, they reason abstractly and quantitatively (MP2).

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR7 (Activity 1)

Instructional Routines

5 Practices (Activity 1), Notice and Wonder (Warm-up)

Materials to Gather

- 10-frames: Activity 1, Activity 2
- Connecting cubes or two-color counters:

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

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

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

🕒 5 min

How Many Counters?

Standards Alignments

Addressing 1.OA.A.1

Student-facing Task Statement

Diego had some counters in his cup.

His teacher put 4 more counters in his cup.

Now he has 9 counters in the cup.

How many counters did Diego have before his teacher gave him more?

Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

5. Sample response:

$$\boxed{5} + 4 = 9$$

I started with 4 and counted on until I got to 9.

4...5, 6, 7, 8, 9

----- **Begin Lesson** -----

Warm-up

🕒 10 min

Notice and Wonder: Han's Cup

Standards Alignments

Building Towards 1.OA.A.1

This warm-up prompts students to make sense of a problem before solving it by familiarizing themselves with a context and the mathematics that might be involved. Students will work with this problem in the next activity.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

Han is playing Shake and Spill.
He has some counters in his cup.
Then he puts more counters in his cup.



Student Responses

- Students may notice:
 - Han is playing Shake and Spill.
 - He has some counters in his cup, but he puts in more.
 - He has more counters than when he

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

- If needed ask, “Will Han have more counters or fewer counters in his cup? How do you know?”

started.

- Students may wonder:
 - How many counters is Han playing with?
 - How many more counters does he put in his cup?
 - How many counters does Han have altogether?

Activity 1

 15 min

A Shake and Spill Story Problem

   PLC Activity

Standards Alignments

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

In this activity students solve a new type of story problem—Add To, Start Unknown. Students represent and solve it in any way that makes sense to them.

Monitor for students who:

- show three counters and count on to 10 or know the sum ($3 + \boxed{7} = 10$)
- show the total number of counters and subtract three to find the difference ($10 - 3 = \boxed{7}$)
- think about the story problem as $\boxed{7} + 3 = 10$ and use a known fact.

During the synthesis, students make sense of these different methods and relate them to the situation (MP2).

Access for English Learners

MLR7 Compare and Connect. Synthesis: After all the equations have been presented, lead a discussion comparing, contrasting, and connecting the different equations.

Advances: Representing, Conversing

Instructional Routines

5 Practices

Materials to Gather

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

Han is playing Shake and Spill.
He has some counters in his cup.
Then he puts 3 more counters in his cup.
Now he has 10 counters in his cup.
How many counters did he start with?
Show your thinking using drawings, numbers, or words.

Equation:



Student Responses

7. Sample responses:

- $10 - 3 = \boxed{7}$. I showed ten on my 10-frame. I flipped over three counters to show the counters Han added to his cup. Then I counted how many were left since that tells me how many Han first had in his cup.
- $3 + \boxed{7} = 10$. I started by showing the three counters Han places in the cup. I added counters until I got to ten. Then I counted how many I added.
- $\boxed{7} + 3 = 10$. I don't know how many Han started with. I know he added three so I thought $\boxed{} + 3 = 10$. Since I know the sums of 10, I know that Han started with seven counters in his cup.

Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes and two-color counters.
- Display and read the story.
- "How is the story different now than when you saw it in the warm up?" (There are numbers to show how many counters Han has in the cup and how many he puts in his cup.)
- 30 seconds: quiet think time
- Share responses.

Activity

- "Now you have time to solve the problem on your own."
- 5 minutes: independent work time
- "Share your thinking with your partner. If you each found a different answer to the problem, work together to agree on an answer."
- 3 minutes: partner discussion
- Monitor and select students who use the methods described in the narrative.

Synthesis

- Invite previously identified students to share in the order above.
- "How are these methods the same? How are they different?" (Two use the add in any order property. The difference is 7. I can subtract or add to find the answer.)
- If needed, "In each of these equations, it shows that the answer to the question is

7."

Advancing Student Thinking

If students use three counters and then ten more counters and get thirteen, consider asking:

- "How did you decide how many counters to use?"
- "The story says, 'Then he put three more counters in his cup. Now he has ten counters.' How can you use counters to show the ten counters Han has at the end? Where are the three he added to the cup?"

Activity 2

 20 min

Shake and Spill Story Problems

Standards Alignments

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

The purpose of this activity is for students to solve various Add To/Take From and Put Together problems with the unknown in all positions. Problems are presented through the familiar Shake and Spill context and all sums are within 10 so students can attend to making sense of each problem. Students use the commutative property, count on, take away or use known sums. When students connect the quantities in the story problem to an equation, they reason abstractly and quantitatively (MP2). During the synthesis, students focus on sharing equations and comparing the start and change unknown problems, as well as how the commutative property can help them solve story problems with an unknown start. As students discuss and justify their decisions, they share a mathematical claim and the thinking behind it (MP3).

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

10-frames, Connecting cubes or two-color counters

Student-facing Task Statement

- Noah is playing Shake and Spill with 10 counters.
4 of the counters fall out of the cup.
How many counters are still in the cup?
Show your thinking using drawings, numbers, or words.

Equation: _____

- Kiran has 4 counters in a cup.
He doesn't have enough so he puts more counters in.
Now he has 7 counters in his cup.
How many more counters did Kiran put in his cup?
Show your thinking using drawings, numbers, or words.

Equation: _____

- Clare has some counters in a cup.
She puts 3 more counters in her cup.
Now she has 9 counters in her cup.
How many counters were in her cup before she added more?
Show your thinking using drawings, numbers, or words.

Equation: _____

- Priya has some counters in a cup.
She has 2 red counters and 8 yellow counters.
How many counters does she have?
Show your thinking using drawings, numbers, or words.

Equation: _____



Launch

- Groups of 2
- Give students access to 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 7 minutes: independent work time
- "Share your thinking with your partner."
- 3 minutes: partner discussion
- Monitor for students who write equations and can explain their thinking for Kiran's and Clare's problems.

Synthesis

- Invite previously identified students to share.
- "How are the problems about Kiran and Clare the same? How are they different?" (They are the same because they both have a number of counters missing, not the total number. You can use addition or subtraction to find the answer to both. They are different because I know how many Kiran starts with and then he adds more. I don't know how many counters are in Clare's cup to start with, but I know that three are added to make nine.)
- If needed ask, "What equations represent these story problems?"
- "What equations represent Noah's problem? Priya's problem?"

Student Responses

1. $6. 10 - 4 = \boxed{6}$. Sample response: I started with 10 and took away 4. I saw there were 6 left.
2. $3. 4 + \boxed{3} = 7$. Sample response: Draws 4 counters, keeps drawings counters until they have a total of 7. Sees that 3 extra counters were drawn.
3. $6. \boxed{6} + 3 = 9$. Sample response: I don't know how many Clare starts with but I know she adds 3. So I counted up from 3 until I got to 9.
4. $10. 8 + 2 = \boxed{10}$. Sample response: I know my tens facts.

Lesson Synthesis

🕒 10 min

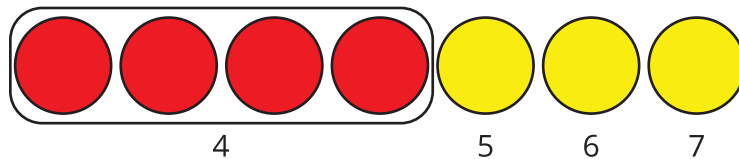
"Today we solved a new type of story problem. Sometimes we do not know what number to start with. We saw equations like $\square + 3 = 9$. How can we find the missing number in this equation?" (We can switch it to $3 + \square = 9$ and count on from 3 until we get to 9. We can subtract $9 - 3 = \square$.)

Student Section Summary

We practiced adding within 10.

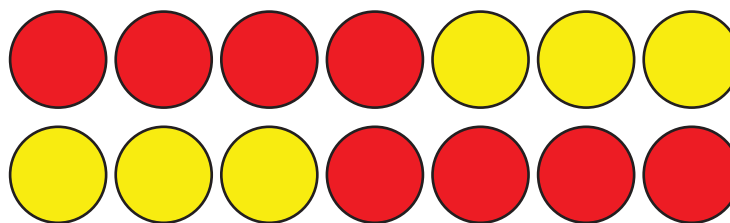
We counted on.

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



We added in any order.

$4 + 3$ is the same amount as $3 + 4$.



We learned that when expressions have the same value, you can show that with an equal sign.

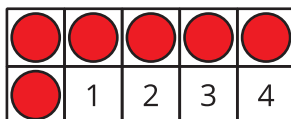
$$4 + 3 = 3 + 4$$

We learned that we can use addition to find the difference between 2 numbers.

$$10 - 6 = \square$$

$$6 + \square = 10$$

Since I know $6 + 4 = 10$, then I know $10 - 6 = 4$.



----- Complete Cool-Down -----

Response to Student Thinking

Students write a number other than 5 for the unknown number.

Next Day Support

- Launch the lesson by highlighting the important points of the previous lessons, specifically the using the commutative property and the relationship between addition and subtraction to solve a Start Unknown problem.

Lesson 7: Center Day 1

Standards Alignments

Addressing 1.OA.C.6, 1.OA.D.8
 Building Towards 1.NBT.A.1

Teacher-facing Learning Goals

- Add within 10.

Student-facing Learning Goals

- Let's play games to practice adding.

Lesson Purpose

The purpose of this lesson is for students to practice adding within 10.

In Activity 1, students learn a new center called, Compare. They find and compare sums and differences within 10. In Activity 2, students choose an activity to work on that focuses on addition and subtraction within 10.

Access for:

English Learners

- MLR8 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1
- Materials from previous centers: Activity 2

Materials to Copy

- Compare Stage 1 Addition Cards to 10 (groups of 2): Activity 1
- Compare Stage 1 Subtraction Cards to 10 (groups of 2): Activity 1

Lesson Timeline

Warm-up	10 min
Activity 1	15 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?

Activity 2	25 min
Lesson Synthesis	10 min

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

🕒 0 min

Unit 3, Section A Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Count on to find the sum.
- Know certain sums.
- Take away to find the difference.
- Count on to find the difference.
- Know certain differences.
- Use the relationship between addition and subtraction to find the difference.
- Use known sums to adjust expressions and find the sum or difference.

Begin Lesson

Warm-up

🕒 10 min

Choral Counting: Beyond 40

Standards Alignments

Building Towards 1.NBT.A.1

The purpose of this Choral Count is to invite students to practice counting forward by 1 and notice patterns in the count. These understandings help students develop fluency and will be helpful later in this lesson when students may count on to add.

When students notice patterns such as the 0–9 pattern in the ones place, as well as the pattern in the tens place they are making use of the base-ten structure (MP7).

Instructional Routines

Choral Count

Student Responses

Record the count in columns with 40, 50, 60 at the top of each column.

Sample responses:

- The first column is all in the 40s.
- The top rows goes 40, 50, 60.

Launch

- “Count by 1, starting at 40.”
- Record as students count.
- Stop counting and recording at 62.

Activity

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

Synthesis

- “Who can restate the pattern in different words?”
- “What number comes after 62? How do you know?”

Activity 1

🕒 15 min

Introduce Compare, Add and Subtract within 10

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to learn a new center called Compare. Both partners flip over a card with an addition or subtraction expression within 10. The partner whose card has the greater value takes both cards. The game is over when each partner runs out of cards to flip over. The partner with the most cards wins.

Access for English Learners

MLR8 Discussion Supports. Prior to playing the game, 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

Materials to Gather

Connecting cubes or two-color counters

Materials to Copy

Compare Stage 1 Addition Cards to 10 (groups of 2), Compare Stage 1 Subtraction Cards to 10 (groups of 2)

Required Preparation

- Create a set of Addition Fact Cards to 10 and Subtraction Fact Cards to 10 from the Instructional master for each group of 2.

Launch

- Groups of 2
- Give each group a set of addition and subtraction cards and access to connecting cubes or two-color counters.
- “We are going to learn a new game called Compare. Let’s play a round together. You can all play as my partner.”
- “Each person flips over a card with an expression. The person who has the card with the greater value takes both cards. If the cards have the same value, flip over two new cards.”
- Flip over one card for you and one for the class.
- “What is the value of my card and how do you know?”
- 30 seconds: quiet think time

- 30 seconds: partner discussion
- Share responses.
- “What is the value of your cards and how do you know?”
- 30 seconds: quiet think time
- 30 seconds: partner discussion
- Share responses.
- “I (You) take both cards. Then we each flip over a new card and play again. The game is over when you run out of cards to flip over. The winner is the person who has more cards at the end of the game.”

Activity

- 10 minutes: partner work time

Synthesis

- Display cards with $7 - 2$ and $2 + 3$.
- “Which card has the greater value?” (They have the same value. They are both 5.)
- “We could write $7 - 2 = 2 + 3$ because these cards have the same value.”

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 within 10. Students choose from any stage of previously introduced centers.

- Number Puzzles

- Find the Pair
- Compare

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Number Puzzles, Stage 1
 - Find the Pair, Stage 2
 - Compare, Stage 1

Student-facing Task Statement

Choose a center.

Number Puzzles

$$14 = 8 + \square$$

Find the Pair



Compare



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.
- 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

“Today we learned a new game that we can play during center time.”

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

Section B: Add and Subtract using Ten as a Unit

Lesson 8: Ten as a Unit

Standards Alignments

Building On	K.NBT.A.1
Addressing	1.NBT.B.2.a, 1.NBT.B.2.b
Building Towards	1.NBT.B.2.a, 1.NBT.B.2.b

Teacher-facing Learning Goals

- Compose and decompose teen numbers into 1 ten and some number of ones.
- Understand 10 ones as a unit called a ten.

Student-facing Learning Goals

- Let's explore teen numbers.

Lesson Purpose

The purpose of this lesson is for students to understand that 10 ones make a unit called a ten. Students compose and decompose teen numbers with a ten and some ones.

In this lesson, students build on their work from kindergarten where they composed and decomposed teen numbers with ten ones and some more ones. They learn that 10 ones is equivalent to a unit called a ten. In the first activity students count a collection of 16 objects and represent their count. In the second activity, students compose teen numbers with a ten and some ones. This lays the groundwork for a later unit in which students compose and decompose 2-digit numbers into tens and ones.

Access for:

Students with Disabilities

- Representation (Activity 2)

English Learners

- MLR7 (Activity 1)

Instructional Routines

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

Materials to Gather

- 10-frames: Activity 1

Materials to Copy

- Counting Collections Stages 1 and 2

- Bags: Activity 1
- Connecting cubes: Activity 1, Activity 2

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

Which students had opportunities to share their representations and thinking during whole-class discussion? How did you select these students?

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

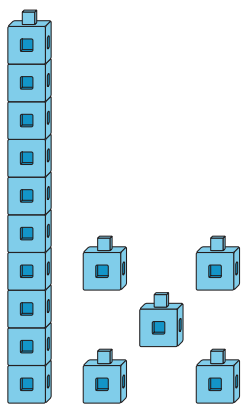
⌚ 5 min

How Many Connecting Cubes?

Standards Alignments

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

Student-facing Task Statement



How many connecting cubes are there?

There are _____ cubes.

Show your thinking using drawings, numbers, or words.

Student Responses

15. Sample response:

- There is 1 ten and 5 ones, which is $10 + 5$ or 15.
- I counted on. 10...11, 12, 13, 14, 15
- I counted them all.

Begin Lesson

Warm-up

🕒 10 min

Which One Doesn't Belong: Groups of 10

Standards Alignments

Building Towards 1.NBT.B.2.a

This warm-up prompts students to compare four images. It gives students a reason to use language precisely (MP6). It provides an opportunity for the teacher to hear how students use mathematical language to describe characteristics of the items in comparison to one another.

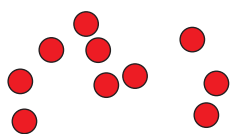
Instructional Routines

Which One Doesn't Belong?

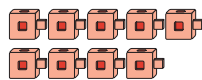
Student-facing Task Statement

Which one doesn't belong?

A



B



C

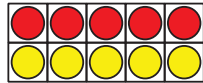
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Launch

- 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."



Student Responses

Sample responses:

- A doesn't belong because it isn't organized.
- B doesn't belong because there are not 10.
- C doesn't belong because all the things are connected.
- D doesn't belong because it has two colors; it isn't all red.

- 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

🕒 20 min

Counting Collections: Count and Show How Many

Standards Alignments

Building On K.NBT.A.1
Building Towards 1.NBT.B.2.b

The purpose of this activity is for students to count a collection of objects and show on paper how many there are so that others can understand how they counted. This collection of objects is a teen number of connecting cubes to encourage students to unitize a ten (MP7). In the synthesis, students consider representations that show a group of 10 cubes.

🌐 Access for English Learners

MLR7 Compare and Connect. Synthesis: After students have shared where 10 is in each representation, lead a discussion comparing, contrasting, and connecting the different approaches. Ask, "How did 10 show up in each method?" and "Why did the different approaches work?"

Advances: Representing, Conversing

Materials to Gather

10-frames, Bags, Connecting cubes

Materials to Copy

Counting Collections Stages 1 and 2

Recording Sheet (groups of 1)

Required Preparation

- Each group of 2 needs a bag of 16 single connecting cubes.

Student Responses

- Draws 16 single cubes, unconnected and scattered, with numbers 1–16 written underneath.
- Draws 16 single cubes in a line, unconnected, with numbers 1–16 written underneath.
- Draws 10 cubes, circled or otherwise noted as a group of 10, 6 single cubes, unconnected, with numbers 11–16 written underneath.

Launch

- Groups of 2
- Give each group a bag of connecting cubes and access to 10-frames.
- “Your job is to figure out how many cubes 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?”

Activity

- “Work with your partner to count the collection. Each partner will show on paper how many there are and show how you counted them.”
- 10 minutes: partner work time
- “Trade your representation with someone from another group. Can you understand how the other group counted? Explain how they counted.”
- 3 minutes: partner discussion
- Monitor for students who counted and represented their count by:
 - ones, in an organized way such as a row or tower of 16
 - a group of 10 and some ones
 - a tower of 10 and some ones

Synthesis

- Invite previously identified students to share in the sequence above.
- “How are these representations the same? How are they different?” (They all show there are 16 cubes, some show counting by ones, some are organized in rows, some made a group of 10 and counted on.)
- “Where is 10 in each representation?” (In ____’s representation, you see the 10 when they count up to it by ones, in ____’s representation, they circled 10 ones to show 10, in ____’s representation they connected 10 and wrote 10 before counting on to 16.)

Advancing Student Thinking

If students leave the objects scattered as they count, consider asking:

- “How did you count the objects?”
- “How can you organize the objects as you count so you know you counted each one?”

Activity 2

🕒 15 min

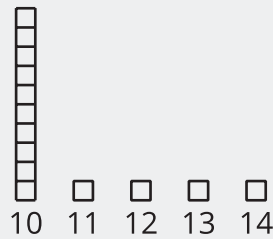
Building Teen Numbers

Standards Alignments

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

The purpose of this activity is for students to compose a **teen number** as one ten and some ones. In the launch, students look at an example of cubes arranged in a tower of 10 and singles. Then students build teen numbers out of connecting cubes using a tower of 10 cubes. As students share their thinking, the teacher draws a tower of 10 units and some ones. For example, a student may say, “I have a tower of ten, and made a line with the 4 other cubes, 11, 12, 13, 14.” The

teacher draws: 14



If students do not specifically describe their arrangement, the teacher should ask students, “How did you arrange the ones?” before drawing them.

Some students may connect the cubes that represent ones in their representation, but it is important that the teacher draw and label them as separate units.

Access for Students with Disabilities

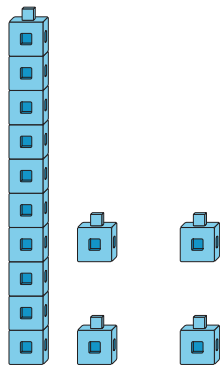
Representation: Develop Language and Symbols. Invite students to explain their thinking orally using the cubes, as an alternative to the written explanation.

Supports accessibility for: Conceptual Processing, Language

Materials to Gather

Connecting cubes

Student-facing Task Statement



Choose 4 numbers to represent.
Circle them.

10 11 12 13 14 15 16 17 18 19

Use connecting cubes to show each number like

Launch

- Groups of 2
- Display the image of 14 connecting cubes or show actual cubes.
- “Clare was counting her cubes and arranged them like this. What do you notice? What do you wonder?” (She made a tower with 10 cubes and put 4 more off to the side. Altogether there are 14 cubes.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Activity

- Read the task statement.

Clare did.

What did you notice as you were showing each number?

Student Responses

Sample responses:

- Every number had a tower of ten.
- Every number besides 10 had a tower of ten and some more cubes.

- 6 minutes: partner work time
- Monitor for students who represented 15, 16, and 17 to display in the lesson synthesis.

Synthesis

- Invite previously identified students to share their representations.
- Record with a diagram.
- “What did you notice as you were showing these numbers with connecting cubes?” (They all had a tower of 10.)
- “The numbers we made today are called teen numbers. A **teen number** is a number with one ten and between one and nine ones.”

Advancing Student Thinking

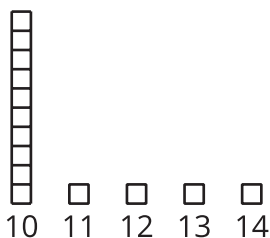
If students make a tower with more or less than 10 cubes, consider asking:

- “How many cubes are in your tower? How do you know?”
- “How many cubes were in Clare's tower? Can you make a tower with the same number of cubes?”

Lesson Synthesis

🕒 10 min

Display a base-ten drawing of 14.



“Today we showed teen numbers with connecting cubes. We can say 14 is a ten and 4 ones. How does

this representation show a ten and 4 ones?" (There are 10 cubes in the tower, so that is why it is called a ten. There are 4 single cubes left over. That shows the 4 ones.)

Label the representation with 10 and 4. "We can also say that 14 is 10 and 4. We can write the equation $10 + 4 = 14$."

"If I have a collection with 1 ten and 6 ones, how many are in my collection? What equation represents this?" ($10 + 6 = 16$)

"If I have 19 in my collection, how can I show that with cubes?" (1 tower of ten and 9 ones)

"What equation can I write?" ($10 + 9 = 19$)

----- Complete Cool-Down -----

Response to Student Thinking

Students count all the connecting cubes to find out how many there are.

Next Day Support

- During the launch of the first activity in the next lesson, have students practice counting on from 10 as you count a tower of connecting cubes and single cubes.

Lesson 9: Addition With a Ten

Standards Alignments

Addressing 1.NBT.B.2.a, 1.NBT.B.2.b, 1.OA.D.8

Teacher-facing Learning Goals

- Compose and decompose teen numbers into 1 ten and some number of ones.
- Find the value that makes an addition equation true, where one addend is 10.

Student-facing Learning Goals

- Let's use a ten to make teen numbers.

Lesson Purpose

The purpose of this lesson is for students to deepen their understanding that teen numbers are composed of a ten and some ones, and to find the value that makes an addition equation true when one addend is 10.

This lesson builds on the previous lesson in which students composed teen numbers using a ten and some ones. Students move from using connecting cube towers to filled-in 10-frames to represent teen numbers. Students also relate their composition work and the relationship between addition and subtraction to find values that make equations true.

Students continue using double 10-frames throughout the unit. Consider making copies on card stock so they can be used repeatedly.

Access for:

Students with Disabilities

- Representation (Activity 2)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: Activity 2

Materials to Copy

- Double 10-Frame - Standard (groups of 1): Activity 1
- Number Cards 11-20 (groups of 2): Activity

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 methods are students using when they build teen numbers: concrete objects on a 10-frame, drawings, numbers? How do these methods reflect their developing understanding of the unit ten?

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

🕒 5 min

Missing Number

Standards Alignments

Addressing 1.NBT.B.2.b, 1.OA.D.8

Student-facing Task Statement

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

1. $10 + 9 = \square$

2. $10 + \square = 12$

Student Responses

1. 19. Sample response: I know that 10 and 9 more is 19.
2. 2. Sample response: I put 12 on my 10-frames. I saw that the 10 was filled in, and then there were 2 more.

----- **Begin Lesson** -----

Warm-up

🕒 10 min

Notice and Wonder: Teen Numbers

Standards Alignments

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

The purpose of this warm-up is to elicit the idea that teen numbers can be represented with different tools, which will be useful when students build teen numbers on 10-frames in a later activity. While students may notice and wonder many things about these images, seeing the tower of 10 and the full 10-frame as a unit is an important discussion point.

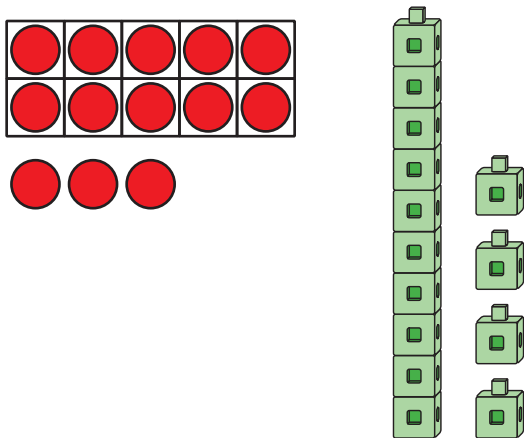
Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?

What do you wonder?



Student Responses

Students may notice:

- There are 13 counters.
- There are 14 connecting cubes.
- There are more connecting cubes than counters.

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

- “How could you figure out how many objects there are in each image?” (I saw that one whole 10-frame was filled, so I knew that was 10. Then I counted on. I saw that the connecting cubes were in a tower of 10 and then there were some more left over. I could count all the objects in the image.)

- Both images show one group of 10.

Students may wonder:

- How many more connecting cubes are there than two-color counters?
- How many objects are there altogether?

Activity 1

🕒 20 min

Make It: Teen Numbers and 10-Frames

Standards Alignments

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

The purpose of this activity is for students to continue to explore teen numbers as 1 ten and some ones, using a new version of a familiar tool, the double 10-frame. Students choose a teen number and build it. As they build teen numbers, students should notice that every teen number has a completed 10-frame, or 1 ten, in common. This further solidifies student understanding that all teen numbers have 1 ten. Some students may build the teen number, counter by counter, each time. These students are still developing an understanding of 10 ones as 1 ten. Some students may realize that one of the 10-frames is always completely filled and only change the ones. When students notice the relationship between teen numbers and the $10 + n$ pattern, they look for and make use of structure (MP7). Students who leave one 10-frame full and change the counters in the other 10-frame are observing regularity in how the teen numbers are formed (MP8).

Double 10-Frames are provided as an Instructional master. Students will continue to use these throughout the year. Consider copying them on cardstock or laminating them and keeping them organized to be used repeatedly.

Access for English Learners

MLR8 Discussion Supports. Invite students to begin partner interactions by repeating the question, “How can we use a ten-frame and counters to build this number?” This gives both students an opportunity to produce language.

Advances: Conversing, Speaking

Materials to Gather

Connecting cubes or two-color counters

Materials to Copy

Double 10-Frame - Standard (groups of 1),

Number Cards 11-20 (groups of 2)

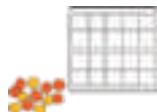
Required Preparation

- Create a set of Number Cards (11-20) from the Instructional master for each group of 2.

Student-facing Task Statement

Use your 10-frames to build teen numbers.

Write an equation that matches the teen number.



teen number	equation

If you have time, write another equation for each of the teen numbers.

Student Responses

Sample responses:

teen number	equation
11	$10 + 1 = 11$
14	$10 + 4 = 14$
16	$10 + 6 = 16$

Launch

- Groups of 2
- Give each group a set of cards, a double 10-frame, and access to at least 20 connecting cubes or two-color counters.
- “We’re going to use our double 10-frames to build teen numbers today. Let’s do one together.”
- Choose a card.
- “What number is on my card? Let’s build that number on the double 10-frame.”
- Demonstrate building the teen number.
- “Now we write an equation to show how we built the number.”
- Write an equation such as $10 + 4 = 14$.

Activity

- “Now you will build more teen numbers with your partner. Make sure you both agree on how to build the number and what equation to write.”
- 10 minutes: partner work time
- Monitor for students who:
 - build a new ten each time
 - count the 10 each time
 - change the ones only

Synthesis

- “When you were building these numbers, what part of the equation was the same? What part was different?” (There was always 10 in each equation. I was adding each time. The total changed and was

always a teen number. The number I was adding to 10 changed.)

Advancing Student Thinking

If students remove all counters from the 10-frames and build a new ten for each teen number, consider asking:

- “Can you explain how you built this number?”
- “Can you keep some of the counters here to help you build your next number?”

Activity 2

🕒 15 min

Equations With a Ten

Standards Alignments

Addressing 1.NBT.B.2.b, 1.OA.D.8

The purpose of this activity is for students to determine the value that makes addition equations true. The numbers in the equations all use the relationship between 1 ten and some ones and teen numbers. Students find the value that makes the equation true with one addend or the total unknown. This will help when students solve story problems with the unknown value in different positions in a later lesson.

🕒 Access for Students with Disabilities

Representation: Internalize Comprehension. Activate background knowledge. Begin by asking, “Do these problems remind anyone of something we have seen or done before?”

Supports accessibility for: Conceptual Processing, Attention

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

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

1. $14 = 10 + \square$

2. $10 + 5 = \square$

3. $16 = \square + 6$

4. $10 + \square = 12$

5. $\square + 3 = 13$

6. $13 = \square + 10$

Student Responses

4. Sample response: I filled in 4 on my 10-frames. I saw that the first 10-frame was filled, and the second 10-frame had 4.
15. Sample response: I know that 10 and 5 more is 15.
10. Sample response: I filled in a 10-frame, then counted 6 more to get to 16. Then I took away 6. The 10-frame was filled so I knew there were 10 left.
2. Sample response: I started at 10 and counted on 2 to get to 12.
10. Sample response: I know if I fill up a 10-frame and have 3 more, it's 13.
3. Sample response: I filled in 13 on my 10-frames. I saw a filled in 10-frame and 3 more counters.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 6 minutes: independent work time
- 4 minutes: partner discussion

Synthesis

- "How are the last two problems related?" (They both show that 13 is the same as 10 and 3. 13 is the sum but they have different missing values.)

Display 18 using double 10-frames.

"Today we showed teen numbers on double 10-frames and wrote equations to match. What equations can you write to represent this number?" ($10 + 8 = 18$, $18 = 8 + 10$)

"How do these equations help you understand teen numbers?" (Teen numbers can be made up of a ten and some number of ones. This can be represented as 10 plus something.)

Complete Cool-Down

Response to Student Thinking

Students write numbers other than 19 and 2 for the missing values.

Next Day Support

- After the warm-up in the next day's lesson, display 14 on a double 10-frame and the equations $10 + 4 = \square$ and $10 + \square = 14$. Use the 10-frames to show where we see the missing value in each equation.

Lesson 10: Addition and Subtraction with a Ten

Standards Alignments

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

Teacher-facing Learning Goals

- Find the value that makes an equation true where the total is a teen number.
- Use the relationship between addition and subtraction to find missing values.

Student-facing Learning Goals

- Let's add and subtract with teen numbers.

Lesson Purpose

The purpose of this lesson is for students to find the value that makes an equation true when one value is a teen number and one is a ten.

In the previous lesson, students found the value that made addition equations true when one addend was 10. In this lesson, students find the missing value in story problems and addition and subtraction equations. They may find the missing value in any way that makes sense to them. In the syntheses, students discuss how the relationship between addition and subtraction is helpful when finding missing values.

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 or two-color counters: Activity 1, Activity 2
- Double 10-frames: 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

How did the student work you selected impact the direction of the discussion? What student work might you pick next time if you taught the lesson again?

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

🕒 5 min

What's Missing?

Standards Alignments

Addressing 1.NBT.B.2.b, 1.OA.D.8

Student-facing Task Statement

Find the number that makes each equation true.

1. $16 - 10 = \square$

2. $19 = 10 + \square$

3. $17 - \square = 7$

Choose one equation.

Show your thinking using drawings, numbers, or words.

Student Responses

6. Sample response: I know 16 is $10 + 6$. If I subtract 10, then I have 6 left.
9. Sample response: I know that 19 is made of a ten and 9 ones.
10. Sample response: I know 17 is $10 + 7$. So I know if I have 17 I have to take away 10 to get 7.

Begin Lesson

Warm-up

🕒 10 min

Number Talk: A Ten and Some Ones

Standards Alignments

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

The purpose of this Number Talk is to elicit strategies and understandings students have for addition and subtraction equations with 10 and some more. These understandings help students develop fluency and will be helpful later in this lesson when students will need to be able to solve story problems with 10 and some more.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $10 + 4$
- $14 - 4$
- $5 + 10$
- $15 - 5$

Student Responses

- 14: I started with 10 in my head and counted on...11, 12, 13, 14 on my fingers.
- 10: I counted back from 14...13, 12, 11, 10.
- 15: 10 and 5 is 15.
- 10: I know that $10 + 5 = 15$, so $15 - 5 = 10$.

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 can you use problem one to help you find the difference in problem two?" (If $10 + 4 = 14$, then I know that $14 - 4 = 10$.)
- "Did anyone approach the problem in a different way?"

Activity 1

🕒 20 min

Story Problems With a Ten

Standards Alignments

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

The purpose of this activity is to elicit methods students have for solving story problems involving addition and subtraction with teen numbers. Students are presented with story problem types that are familiar to them to allow for discussion about methods they used to find the answer. Students solve the problems in any way that makes sense to them. They may build values and add-on or take-away, or use what they have learned about the $10 + n$ structure of teen numbers. Students write equations; they can write many different equations to represent the problem or how they solved it. It is important that students are able to relate their equations to the story problem and explain their work (MP2, MP4).

🌐 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 or two-color counters,
Double 10-frames

Student-facing Task Statement



1. Kiran has a collection of 5 baseball caps. He gets some more baseball caps for his birthday.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- “Many people have the hobby of collecting things. Do any of you collect something?”
- Share responses.

Now he has 15 baseball caps all together.
How many baseball caps did he get?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Equation: _____

2. Priya has a comic book collection.
She gets 3 new comic books.
Now she has 13 comic books.
How many comic books did she have to
start?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Equation: _____

Student Responses

1. 10. Sample response: $5 + \boxed{10} = 15$,
 $15 - 5 = \boxed{10}$: I know that $10 + 5$ is 15, so I
knew that if he started with 5 and had 15 at
the end, then he must have gotten 10.
2. 10. Sample response: $\boxed{10} + 3 = 13$,
 $13 - 3 = \boxed{10}$. I used my 10-frame to make
13. I took away the 3 that she got, and saw
that there were 10 left. She started with 10
comic books.

- “What are some things that you know people collect, or that you might like to collect?” (baseball cards, marbles, rocks)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- “Let’s solve some story problems about collections.”

Activity

- Read the task statement.
- “Write two equations to match each of these stories.”
- 6 minutes: independent work time
- 4 minutes: partner discussion
- Monitor for a student who wrote an addition equation and one who wrote a subtraction equation for the problem about Priya.

Synthesis

- Invite previously identified students to share their equations for Priya’s problem.
- If no student writes a subtraction equation, display $13 - 3 = \square$.
- “How do the equations match the story problem? How are they related to each other?” (They show that the total number of comic books is 13 and that 3 is one part and 10 is the other part. They all show that 10 is the missing number. The subtraction equations takes 3 away from the 13 to find the other part. The addition equation adds 3 to some number to get 13.)
- “Which equation makes more sense to you? Why?” (Addition, because I know that to get from 3 to 13, I have to add 10. Subtraction, because I know what number to start with and how many to take away. I don’t know what numbers to use in the addition

equation.)

Activity 2

 15 min

Related Equations

Standards Alignments

Addressing 1.NBT.B.2.b, 1.OA.B.4, 1.OA.D.8

The purpose of this activity is for students to discuss the relationship between addition and subtraction equations involving teen numbers. Students find the value that makes the addition and subtraction equations true with the unknown in all positions. Students may choose to use objects to represent the problems and find the value that makes the equation true (MP5).

Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for finding the missing value. 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 or two-color counters,
Double 10-frames

Student-facing Task Statement

Mai is finding the missing number

in $16 - 10 = \square$.

She says, "I can use what I know about 10 and some ones to help."

What does Mai mean?

Find the number that makes each equation true.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- Read the problem about Mai.
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.

Show your thinking using drawings, numbers, or words.

1. $15 - 10 = \square$

2. $\square = 13 - 3$

3. $8 = 18 - \square$

4. $2 + \square = 12$

Student Responses

5. Sample response: I know that $10 + 5$ is 15, so I know $15 - 10$ is 5.
10. Sample response: I put 13 on my 10-frames. I took away 3 and saw that one 10-frame was filled.
10. Sample response: I put 18 on my 10-frames. I took away 8 and saw that one 10-frame was filled.
10. Sample response: I know $10 + 2$ is 12.

Activity

- Read the task statement.
- 4 minutes: independent work time
- 4 minutes: partner discussion

Synthesis

- Share solutions for each problem.
- “How are $\square = 13 - 3$ and $2 + \square = 12$ related?” (One is an addition problem and one is a subtraction problem, but you can use addition or subtraction for either one. For $\square = 13 - 3$ you can subtract or change it to $3 + \square = 13$. For $2 + \square = 12$ you can add or change it to $12 - 2 = \square$. Both have a missing value of 10.)

Advancing Student Thinking

If students take away using drawings for each equation, consider asking:

- “How did you find the missing value?”
- “How could the double 10-frame help you find the missing value?”

Lesson Synthesis

🕒 10 min

Display 17 on a double 10-frame.

Display $\square - 10 = 7$. “Today we solved problems and completed equations with 10 and some more. We saw that sometimes we can use addition to help us with subtraction. How can using addition help you find the number that makes this equation true?” (I know that $7 + 10 = 17$ so the missing number is

17.)

Display $10 + \square = 17$. "How can using subtraction help you find the number that makes this equation true?" (I see on the 10-frame that there's 10 and 7 more. If I take away the 10, there's 7 left.)

Complete Cool-Down

Response to Student Thinking

Students write numbers other than 6, 9, and 10 for the missing values.

Next Day Support

- During the activities, ask students to draw a picture or use counters to represent a problem before solving.

Lesson 11: Add to a Teen Number

Standards Alignments

Addressing 1.OA.A.1, 1.OA.C.6, 1.OA.D.7, 1.OA.D.8
Building Towards 1.NBT.C.4

Teacher-facing Learning Goals

- Add within 20 when one addend is a teen number.

Student-facing Learning Goals

- Let's add to teen numbers.

Lesson Purpose

The purpose of this lesson is for students to add within 20 when one addend is a teen number.

In previous lessons, students learned that a teen number is composed of a ten and some ones and related addition and subtraction with teen numbers in equations. Students also learned that counting is related to addition, and added numbers using the commutative property.

The purpose of this lesson is for students to solve an addition story problems within 20 in which one addend is a teen number. Students then find the missing value in addition equations where one addend is a teen number. Students may count all, count on, or recognize that they can add the ones and then add the ten. This lesson prepares students for future work, when they add within 100 using methods involving place value.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR7 (Activity 2)

Instructional Routines

True or False (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: Activity 1, Activity 2
- Materials from previous centers: Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	10 min
Activity 2	10 min
Activity 3	20 min
Lesson Synthesis	10 min

Teacher Reflection Question

What aspects of today's lesson allowed each of your students to see themselves as productive mathematical reasoners?

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

🕒 0 min

Unit 3, Section B Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Identify teen numbers as a ten and some ones.
- Count all to find the sum.
- Count on to find the sum or difference.
- Take away to find the difference.
- Use the $10 + n$ structure of teen numbers to add and subtract.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

True or False: Teen Numbers

Standards Alignments

Addressing 1.OA.D.7

The purpose of this True or False is to elicit insights students have about composing teen numbers as a ten and some ones. This will be helpful later in the lesson when students add a single-digit number to a teen number within 20.

Instructional Routines

True or False

Student-facing Task Statement

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

- $10 + 4 = 10 + 5$
- $10 + 3 = 2 + 1 + 10$
- $14 = 10 + 4 + 5$

Student Responses

- False: $10 + 4$ can't be the same as $10 + 5$ because the two numbers being added to 10 are not the same.
- True: $2 + 1 = 3$ so both sides are $10 + 3$.
- False: $10 + 4$ is 14. Adding 5 more on would make it 19 instead of 14.

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

- "Does anyone want to add on to ____'s reasoning?"
- "Did you determine if any of these were true or false without solving? How?" (I knew the first one without solving. Both had $10 +$ something, and one had a 4 and one had a 5, so they are not equal.)

Activity 1

Rock Collection

🕒 10 min

Standards Alignments

Addressing	1.OA.A.1, 1.OA.C.6
Building Towards	1.NBT.C.4

The purpose of this activity is to elicit and discuss methods for adding a one-digit number to a teen number, within 20. Students are presented with a simple story problem type (Add To, Result Unknown) so discussion can focus on the methods students used to find the sum. Students represent and solve the problem in a way that makes sense to them (MP1). Some students may build the teen number, add counters and count all, while other students may count on from the teen number. Some students may see that the sum will still have 1 ten and just combine the ones. During the synthesis, students notice that when adding to teen numbers within 20, the unit of ten in the representation does not change—only the ones change (MP8).

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Kiran collects rocks.
So far he has 14 rocks.
He goes on a hike and collects 3 more rocks.
How many rocks does Kiran have?
Show your thinking using drawings, numbers, or words.

Equation:



Student Responses

17. $14 + 3 = \boxed{17}$. Sample responses:

- I put 14 red counters on my 10-frames and added 3 yellow counters. I counted them all and got 17.
- I used my fingers and counted on. 14...15,

Launch

- Groups of 2
- Give each group access to double 10-frames and connecting cubes or two-color counters.
- “Something that is common for people to collect is rocks. People collect lots of different types of rocks. We are going to solve a problem about a rock collection.”

Activity

- Read the task statement.
- 3 minutes: independent work time
- “Share your thinking with your partner.”
- 2 minutes: partner work time
- Monitor for students who represent their thinking using 10-frames to show 14 and then add 3 more.

16, 17

- I showed 14 with red counters and 3 with yellow counters. I saw that there was a full 10-frame, so I already know there are 10. I added 4 and 3 to get 7 and I know that 10 and 7 is 17.

Synthesis

- Invite previously identified students to share.
- “How did the representation change when they added three ones? What stayed the same?” (You start with a full 10-frame and four ones, and when you add three more, that 10-frame does not change. This 10-frame changed because now there are four red counters and three yellow counters.)

Activity 2

⌚ 10 min

Write Equations: Adding on to Teen Numbers

Standards Alignments

Addressing 1.OA.C.6
 Building Towards 1.NBT.C.4

The purpose of this activity is for students to add a one-digit number to a teen number. All of the totals are within 20. Students are provided 10-frames and two-color counters which they may choose to use to represent the sums. Using 10-frames encourages students to see that the unit of ten stays the same and the ones are combined.

During the activity synthesis, the teacher records how students found the value of the sum of $17 + 2$. It is important that the teacher write the equation the way that students think about the answer to the problem. For example, the equation $17 + 2 = \boxed{19}$ represents students who show 17 counters and count on as they add two more. The equation $7 + 2 + 10 = \boxed{19}$ or $10 + 7 + 2 = \boxed{19}$ represents students who see that the ten stays the same and they can add the ones to help them find the total.

Access for English Learners

MLR7 Compare and Connect. Synthesis: After the solutions have been presented, lead a discussion comparing, contrasting, and connecting the two equations. Ask, “How are these equations similar?” and “How are 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

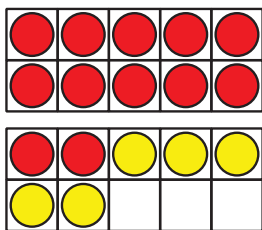
Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

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

1. $12 + 5 = \square$



2. $6 + 11 = \square$

3. $\square = 17 + 2$

4. $4 + 14 = \square$

5. $\square = 15 + 4$

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 5 minutes: independent work time
- 2 minutes: partner discussion
- Monitor for students who find the value of the sum $17 + 2$ in these ways:
 - $17 + 2 = \boxed{19}$
 - $7 + 2 + 10 = \boxed{19}$

Synthesis

- Display each missing number.
- Invite previously identified students to share.

6. $16 + 2 = \square$

Student Responses

17. Sample response: I put 12 counters on the 10-frames and then put 5 more on. Then I counted all the counters.
17. Sample response: I started with 11 and counted on 6 more. 12, 13, 14, 15, 16, 17
19. Sample response: I said 18, 19.
18. Sample response: I know $4 + 4 = 8$ so I know it is 18.
19. Sample response: I know $5 + 4 = 9$ and 10 more is 19.
18. Sample response: $6 + 2 = 8$ and then there are 10 more so it is 18.

- “How does $17 + 2 = \boxed{19}$ match ____’s work?” (They put 17 on and then counted 2 more—18, 19—to get the value.)
- “How does $7 + 2 + 10 = \boxed{19}$ match ____’s work?” (They added the ones and got 9 and then added 10 to get 19.)

Activity 3

🕒 20 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 from activities that offer practice adding and subtracting within 10. Students choose from previously introduced centers.

- Compare
- Number Puzzles
- Find the Pair

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Compare, Stage 1
 - Number Puzzles, Stage 1
 - Find the Pair, Stage 2

Student-facing Task Statement

Choose a center.

Compare



Number Puzzles

$$14 = 8 + \square$$

Find the Pair



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

- “How do you choose which center will be most helpful for you?”

Lesson Synthesis

🕒 10 min

Display $\boxed{20} = 18 + 2$ and the double 10-frame representation.

“Today we added to teen numbers. What are different ways to find the value that makes the equation true?” (I can count up 19, 20, I can add the ones, so $8 + 2 = 10$ and then $10 + 10 = 20$, I can put 2 more in my 10-frames and see that both are filled, which is 20.)

Write equations to represent each student’s thinking.

Lesson 12: Subtract From a Teen Number

Standards Alignments

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

Teacher-facing Learning Goals

- Add and subtract single-digit numbers from teen numbers without composing or decomposing a ten.

Student-facing Learning Goals

- Let's subtract and add within 20.

Lesson Purpose

The purpose of this lesson is for students to add and subtract within 20 without composing or decomposing a ten.

In previous lessons, students learned the $10 + n$ structure of teen numbers and considered the relationship between addition and subtraction. The purpose of this lesson is for students to use their understanding of the structure of teen numbers to add and subtract from a teen number, without composing or decomposing a ten (MP7). Students use methods they used in a previous section such as counting on, taking away, or relating addition and subtraction.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR8 (Activity 3)

Instructional Routines

5 Practices (Activity 1), Choral Count (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Cups: Activity 3
- Double 10-frames: Activity 1, Activity 2
- Two-color counters: Activity 3

Materials to Copy

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

What connections did students make between the different methods shared? What questions did you ask to help make the connections more visible?

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

🕒 0 min

Unit 3, Section B Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Identify teen numbers as a ten and some ones.
- Count all to find the sum.
- Count on to find the sum or difference.
- Take away to find the difference.
- Use the $10 + n$ structure of teen numbers to add and subtract.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Choral Count: By Ten

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Choral Count is to invite students to practice counting on by 10 and notice patterns in the count. These understandings help students develop fluency and will be helpful when students make use of the base-ten structure (MP7).

Instructional Routines

Choral Count

Student Responses

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

Sample responses:

- All the numbers end with a 2.
- The numbers on the left go up by one each time.
- It goes 20, 30, 40, 50. . .

Launch

- “Count by 10, starting at 2.”
- Record as students count.
- Stop counting and recording at 52.

Activity

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

Synthesis

- “Who can restate the pattern in different words?”
- “What do you predict would come after 82? Why?”

Activity 1

🕒 15 min

Noah’s Collection

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to solve a Take From, Result Unknown story problem in which the minuend is in the teens. Students solve using any method that makes sense to them, which could include using double 10-frames, connecting cubes, or drawings, and counting back or counting on (MP1).

Monitor and select students with the following methods to share in the synthesis:

- cross off 8 and count remaining or see it as 10 and 1
- count on from 8 to 19
- know the ten stays the same, subtract $9 - 8$

Access for Students with Disabilities

Representation: Internalize Comprehension. Synthesis: Record students' strategies on a display and keep it visible during the next activity.

Supports accessibility for: Conceptual Processing, Organization

Instructional Routines

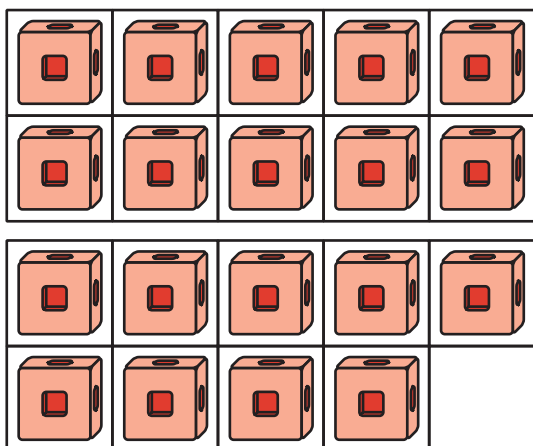
5 Practices

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Noah likes to collect game pieces.
He has 19 game pieces arranged like this in his bin.



Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 4 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students using methods listed in the narrative.

He takes out 8 game pieces to play with.
How many game pieces are left in the bin?
Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

11. $19 - 8 = \boxed{11}$

Sample responses:

- Crosses off 8 of the game pieces, counts remaining, or sees 10 and 1
- Counts on from 8 to 19

Synthesis

- “What do you notice about how the game pieces are organized? How can that help us solve the story problem?” (They are in two 10-frames. Since I know there are 5 in each row, I can take away 5 and then 3 more.)
- Invite previously identified students to share in the given order.
- “How are these methods the same? How are they different?” (They are the same because they all show 19 game pieces and the 8 he took out. They all got 11. They are different because one counts on, one counts back, and the other doesn't count at all.)
- “What equation could we write to represent the problem?” ($19 - 8 = \boxed{11}$, $8 + \boxed{11} = 19$)

Activity 2

🕒 10 min

Addition and Subtraction Equations with Teen Numbers

Standards Alignments

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

The purpose of this activity is for students to find the value that makes the addition and subtraction equations true using methods that make sense to them. Each equation has a total within 20 and one part that is a teen number.

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Find the number that makes each equation true.

Be ready to explain your thinking in a way that others will understand.

1. $13 + 4 = \square$

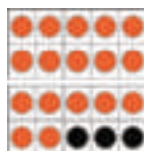
2. $16 + \square = 17$

3. $19 - 8 = \square$

4. $14 - 2 = \square$

5. $11 + \square = 17$

6. $\square + 1 = 18$



Student Responses

1. 17
2. 1
3. 11
4. 12
5. 6
6. 17

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-colors counters.

Activity

- Read the task statement.
- "You will work on your own at first, then you will share with a partner."
- 5 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students who find the value that makes the equation $19 - 8 = \square$ true by taking away 8 or counting on from 8 to 19 using double 10-frames and counters or drawings. These methods will be discussed in the lesson synthesis.

Synthesis

- Display each equation with the missing value.

Activity 3

🕒 15 min

Introduce Shake and Spill, Cover (up to 20)

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to learn stage 5 of the Shake and Spill center. Students use between 11-20 counters. One partner shakes, spills, and covers up the yellow counters with a cup. The other partner determines how many counters are under the cup and explains how they know. Both partners record the round with an equation.

Access for English Learners

MLR8 Discussion Supports. Synthesis: Provide students with the opportunity to rehearse what they will say with a partner before they share with the whole class.

Advances: Speaking

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)

Launch

- Groups of 2
- Give each group a cup, two-color counters, and recording sheets.
- “We are going to learn a new way to play the Shake and Spill center. We will play Shake and Spill, Cover, with more than 10 counters.”
- “First, you and your partner decide how many counters you want to use. You can use 11–20 counters. Then you play the same way we have played in the past. One partner shakes and spills the counters and covers the yellow counters with the cup. Their partner needs to figure out how many yellow counters are under the cup. Then both partners write an equation to match the counters.”

Activity

- 10 minutes: partner work time

Synthesis

- Display five red counters and cover ten yellow counters under the cup.
- “My partner and I are playing with 15 counters. How many yellow counters are under the cup? How do you know?”

Lesson Synthesis

🕒 10 min

“Today we added and subtracted with teen numbers.”

Display $19 - 8 = \square$.

Invite previously identified students to share.

“Which method would you recommend to a friend? Why?” (I would recommend building numbers on 10-frames and taking away because it’s easier to use the counters. I would recommend counting on because it is faster than using counters.)

Lesson 13: More Story Problems with Teen Numbers

Standards Alignments

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

Teacher-facing Learning Goals

- Solve Take From, Result or Change Unknown story problems.

Student-facing Learning Goals

- Let's solve story problems.

Lesson Purpose

The purpose of this lesson is for students to solve Take From, Result or Change Unknown story problems.

In previous lessons, students added and subtracted within 20 with teen numbers that did not require composing or decomposing a ten. They used counting on, take away, the $10 + n$ structure of teen numbers, and the relationship between subtraction and addition.

The purpose of this lesson is for students to solve a new type of story problem—Take From, Change Unknown. Students also solve a familiar problem type—Take From, Result Unknown. They use methods that make sense to them and then make connections between methods.

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR2 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: 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

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)

🕒 0 min

Unit 3, Section B Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Identify teen numbers as a ten and some ones.
- Count all to find the sum.
- Count on to find the sum or difference.
- Take away to find the difference.
- Use the $10 + n$ structure of teen numbers to add and subtract.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Number Talk: Add Ones

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for adding to teen numbers. These understandings help students develop fluency and will be helpful later in this lesson when students will need to be able to find the missing value in an equation with a teen number.

When students add ones to ones, they are making use of the structure of the base-ten number system (MP7).

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $3 + 4$
- $4 + 3$
- $10 + 3$
- $14 + 3$

Student Responses

- 7: I know $3 + 3 = 6$ and 1 more is 7.
- 7: It is the same as the first one.
- 13: I just know it.
- 17: I added the 4 and 3 and got 7 and then there are 10 more.

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 does knowing $4 + 3$ help you with $14 + 3$?" (You can add $4 + 3$ and then add 10 more.)

Activity 1

Sitting or Standing

 15 min

 PLC Activity

Standards Alignments

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

The purpose of this activity is for students to solve a Take From, Change Unknown story problem using a method that makes sense to them. This is a challenging problem type for students because the amount that students are taking away or counting on is the unknown. The activity begins with a numberless and questionless story problem to help students understand the context and structure of the story problem. Students begin the activity by looking at the problem displayed, rather than in their books. The numbers 5, 10, and 15 are used so that the focus of the activity can be on making sense of the story problem, rather than the computation. Students may benefit from acting out the story.

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement



1. There are students standing in the classroom.
Some of the students sit down on the rug.
There are still some students standing.
2. There are 15 students standing in the classroom.
Some of the students sit down on the rug.
There are still 5 students standing.
How many students sat down on the rug?
Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- Display and read the numberless and questionless story problem.
- “What do you notice? What do you wonder?”
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Record responses.
- If needed, “What question could we ask?”

Activity

- “Turn the page and look at the next problem.”
- Read the complete story problem.
- 3 minutes: independent work time
- 2 minutes: partner discussion

Equation: _____

Student Responses

10. Sample responses:

- $5 + \boxed{10} = 15$. I know that 5, 10, and 15 are related so I thought $5 + 10 = 15$.
- $15 - 5 = \boxed{10}$. I took away 5 from 15 and counted what was left.

- Monitor for students who:
 - Show 15 on the 10-frames and make 5 a different color to represent the students who are still standing. The student counts the remaining counters, or just see that there are 10. ($15 - 5 = \boxed{10}$)
 - Draw 15 objects and cross out until there are 5 left. Count how many are crossed out. $15 - \boxed{10} = 5$
 - Take away 5 from 15 (14, 13, 12, 11, 10) ($15 - 5 = \boxed{10}$).

Synthesis

- Invite previously identified students to share.
- “How does this method show the story problem?” (I can see 15 for the number they started with. 10 is how many students sat down on the rug. 5 is how many students are still standing.)
- “Remember to put a box around your answer when you solve and write an equation.”

Activity 2

🕒 10 min

Solve Story Problems and Compare Methods

Standards Alignments

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

The purpose of the lesson is for students to solve a Take From, Result Unknown and a Take From, Change Unknown story problem. The story problems have the same numbers, which include a teen number, so that the focus can be on the structure of the story problems and the equations.

In the activity synthesis students compare the structure of the problems and in the lesson synthesis, students make sense of equations that represent the story problems (MP2).

Access for English Learners

MLR2 Collect and Display. Circulate, listen for, and collect the language students use as they talk about their solution strategies. On a visible display, record words and phrases such as: “counted back” and “equation”. 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. Invite students to plan a method, including the tools they will use, for solving the story problems. If time allows, invite students to share their plan with a partner before they begin.

Supports accessibility for: Organization, Conceptual Processing

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

- There are 17 students in the classroom.
4 students go home.
How many students are still in the classroom?
Show your thinking using drawings, numbers, or words.
Equation: _____
- There are 17 students in the classroom.
Some students go home.
Then there are 4 students in the classroom.
How many students went home?
Show your thinking using drawings, numbers, or words.
Equation: _____

Student Responses

13. Sample response: $17 - 4 = \boxed{13}$, I can count back 4 from 17. 16, 15, 14, 13

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 4 minutes: independent work time
- “Share your thinking with your partner.”
- 2 minutes: partner discussion

Synthesis

- “How are the two story problems the same and different?” (They have the same numbers. In one of them we know how many to take away and in the other one we

2. 13. Sample response: $17 - \square = 4$, I put 17 on the 10-frames and took away 4. There were 13 left.

have to figure out how many to take away.)

Activity 3

🕒 15 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 from activities that offer practice adding and subtracting within 10. Students choose from any stage of previously introduced centers.

- Shake and Spill
- Compare
- Number Puzzles

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Shake and Spill, Stages 3-5
 - Compare, Stage 1
 - Number Puzzles, Stage 1

Student-facing Task Statement

Choose a center.

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



Compare



Number Puzzles

$$14 = 8 + \square$$

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 twelve red counters and cover five yellow counters with a cup.
- “We are playing with seventeen counters. How many yellow counters are under the cup? How do you know?”

Lesson Synthesis

🕒 10 min

“Today we compared two different types of story problems.”

Display stories and equations from the activity about students leaving the classroom.

$$17 - 4 = \square$$

$$17 - \square = 4$$

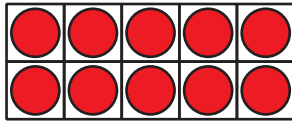
“What question was the first equation answering?” (How many students are still in the classroom?)

“What question was the second equation answering?” (How many students went home?)

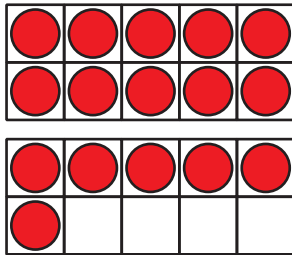
“Why is the box in different places?” (They are answering different questions. The unknown part of the story is different.)

✍ Student Section Summary

We learned that 10 ones make a ten.



We learned that all teen numbers can be represented as a ten and some ones.



We used that understanding to find missing numbers in addition and subtraction equations with teen numbers.

$$10 + \square = 16$$

$$13 - 10 = \square$$

$$10 + 2 = \square$$

$$19 - 9 = \square$$

$$5 + \square = 15$$

We solved a new type of story problem where we don't know how many to subtract. We used different equations to match the story.

There are 17 students in the classroom.

$$17 - \square = 4$$

Some students go home.

Then there are 4 students in the classroom.

$$17 - 4 = \square$$

How many students went home?

Lesson 14: Center Day 2

Standards Alignments

Addressing 1.OA.C.6, 1.OA.D.7, 1.OA.D.8

Teacher-facing Learning Goals

- Add and subtract within 20.

Student-facing Learning Goals

- Let's play games to practice adding and subtracting.

Lesson Purpose

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

Students learn a new stage in the Number Puzzles center and then choose from previously introduced centers, focusing on adding and subtracting within 20.

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

True or False (Warm-up)

Materials to Gather

- Materials from previous centers: Activity 1, Activity 2

Materials to Copy

- Number Puzzles Addition and Subtraction Stage 2 Gameboard (groups of 1): Activity 1

Lesson Timeline

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

Teacher Reflection Question

Identify something you thought was going to go well in math class recently, but did not. What can you do to make it a success next time?

 ----- Begin Lesson -----

Warm-up

 10 min

True or False: Expressions on Both Sides

Standards Alignments

Addressing 1.OA.C.6, 1.OA.D.7

The purpose of this True or False is to elicit strategies students have for determining whether two expressions have the same value. Students may find the value of each expression, or they may reason about the numbers on each side of the equal sign. This will also be helpful later when students compare addition expressions.

Instructional Routines

True or False

Student-facing Task Statement

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

- $3 + 2 = 3 + 2$
- $5 + 1 = 5 + 2$
- $4 + 6 = 3 + 7$

Student Responses

- True: It's the same thing on both sides.
- False: Both sides have $5 + 1$ but the right side has 1 more added on to make $5 + 2$.
- True: Both sides have a value of 10. We can give one away from the 4 to the 6 and then have $3 + 7$.

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

- "Who can restate ____'s reasoning in a different way?"
- "How could you figure out that $5 + 1$ is not equal to $5 + 2$ without finding the sum of both sides?" (Both sides have $5 + 1$ but the right side has 1 more added on to make $5 + 2$.)

Activity 1

🕒 15 min

Introduce Number Puzzles, Within 20

Standards Alignments

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

The purpose of this activity is for students to learn stage 2 of the Number Puzzles center. 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.

🕒 Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Give students access to connecting cubes.

Supports accessibility for: Conceptual Processing, Memory

Materials to Gather

Materials from previous centers

Materials to Copy

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

Required Preparation

- Each group of 2 needs one set of Number Puzzle Digit Cards from stage 1 of this center.

Launch

- Groups of 2
- Give each group a set of digit cards and gameboards.
- “We are going to do new Number Puzzles. This time the puzzles are within 20 instead of 10. You need to place the digit cards to make each equation true. Remember, you can only use each digit card once on the gameboard.”

Activity

- 10 minutes: center work time

Synthesis

- Display Puzzle 1.
- “Which equation would you start with? Why would you start there?”

Activity 2

🕒 25 min

Centers: Choice Time

Standards Alignments

Addressing 1.OA.C.6

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

- Number Puzzles
- Shake and Spill
- Compare

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

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Number Puzzles, Stages 1 and 2
 - Shake and Spill, Stages 3-5
 - Compare, Stage 1

Student-facing Task Statement

Choose a center.

Number Puzzles

$$14 = 8 + \square$$

Shake and Spill



Compare



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 method do you use most often to add within 20? Why do you use that method the most?”

Lesson Synthesis

🕒 10 min

“Today we learned a new game that we can play during center time.”

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

Section C: Add within 20

Lesson 15: Solve Story Problems with Three Numbers

Standards Alignments

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

Teacher-facing Learning Goals

- Solve story problems within 20 with three addends, two of which make a ten.

Student-facing Learning Goals

- Let's solve story problems with 3 numbers.

Lesson Purpose

The purpose of this lesson is for students to solve story problems with three addends, two of which make a ten, in a way that makes sense to them.

In previous lessons, students solved Add To, Result Unknown and Put Together, Total Unknown story problems with two addends. They found all the combinations of 10. They applied the add in any order property to find sums. They learned that teen numbers are made up of a ten and some ones.

In this lesson, students solve story problems with three addends in a way that makes sense to them (MP1). In each of the problems, two of the addends make a ten. Students may apply the commutative and associative properties in order to make the problem easier to solve. Students write equations to represent the story problem (MP2), and draw a box around the answer to the problem. All students should be encouraged to make sense of the methods their classmates share (MP3). This allows teachers to see the vocabulary students use to describe their mathematical thinking (MP6).

The problems in this lesson were written around the context of birds. The inspiration for including the context of birds was Louis Agassiz Fuertes. Louis Agassiz Fuertes was a painter of birds in the early nineteen-hundreds. He was the first bird artist who painted live birds. He did not want to kill the birds in order to paint them so he challenged himself to learn how to paint quickly. He is responsible for painting most of the bird books in his era and he painted murals at the Museum of Natural History in New York City. Consider reading the book, *The Sky Painter* by Margarita Engle before the lesson.

Access for:

Students with Disabilities

- Engagement (Activity 2)

English Learners

- MLR6 (Activity 1)

Instructional Routines

5 Practices (Activity 1), How Many Do You See? (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: 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

How did introducing Louis Agassiz Fuertes and his bird paintings support students as they engaged in story problems about birds? Why is it important for students to experience real-world contexts in math?

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

 0 min

Unit 3, Section C Checkpoint

Standards Alignments

Addressing 1.OA.A.2, 1.OA.B.3, 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Count on to find the sum.
- Make 10 to find the sum.
- Use known sums to adjust addends to find the sum.
- Apply the “add in any order property” to find the sum.
- Know certain sums.

 Begin Lesson

Warm-up

🕒 10 min

How Many Do You See: 10-frames

Standards Alignments

Addressing 1.OA.C.6

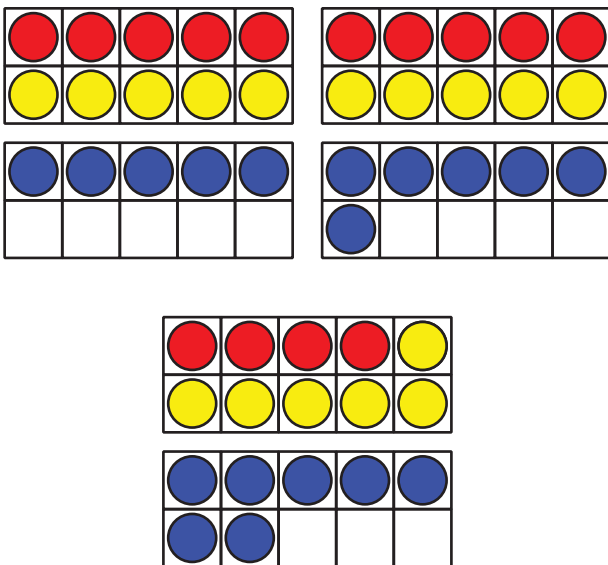
The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see. Two-color counters are arranged on 10-frames so that students might notice there are three addends in the problem.

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:

- 15: I see a full 10-frame and 5 more.

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

- "What equation could I write for each image?"
- If needed, "How can I write an equation that shows the number of each color of counters?"
($10 + 5 = 15$, $5 + 5 + 5 = 15$)

- 16: I see 5 and 5 is 10, and 6 more is 16.
- 17: I see a group of 10 and 7 more.

Activity 1

🕒 20 min

Louis Agassiz Fuertes's Birds

Standards Alignments

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

The purpose of this activity is for students to solve a story problem with three addends in which two of the addends make 10. The addends that make a ten are not next to each other to encourage students to use the commutative and associative properties to make 10. Students are given access to double 10-frames and connecting cubes or two-color counters. Students read the prompt carefully to identify quantities before they start to work on the problem. They have an opportunity to think strategically about which numbers of birds to combine first since 3 and 7 make 10. They also may choose to use appropriate tools such as counters and a double 10-frame strategically to help them solve the problem (MP1, MP5).

Monitor and select students with the following methods to share in the synthesis:

- Represent addends in the order presented, counting all.
Teacher records: $3 + 8 + 7 = 18$
- Use the associative property to make a ten by adding 3 and 7 and then adds on 8 more.
Teacher records:
 - $3 + 7 + 8 = 18$
 - $3 + 7 = 10$
 - $10 + 8 = 18$
- Use the associative property to make a ten by adding 3 and 7 and recognizes that the answer is 18. Teacher records:
 - $3 + 7 + 8 = 18$
 - $3 + 7 = 10$
 - $10 + 8 = 18$

During the activity synthesis, the teacher records student thinking as drawings and equations so it is visible to all students. Teachers should consider having several blank copies of 10-frames

available and three different colored markers to represent the three addends so that students can see how making a ten can make solving more efficient.

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

Instructional Routines

5 Practices

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

7 blue birds fly in the sky.

8 brown birds sit in a tree.

3 baby birds sit in a nest.

How many birds are there altogether?

Show your thinking using objects, drawings, numbers, or words.

Equation: _____



Student Responses

18. Sample responses:

- $7 + 8 + 3 = \boxed{18}$. I showed 7 cubes, then 8 cubes, and 3 cubes. I counted all of the cubes.
- $7 + 8 + 3 = \boxed{18}$. I showed $7 + 8$ in red counters. That was $10 + 5$. I counted on 3

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- “What kind of birds do you see where you live? Where do you see the birds?” (I see pigeons on wires. I see a big bird in the park. I see red birds at the bird feeder. I hear loud birds in the morning.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share and record responses. Write the authentic language students use to describe the birds they see and where they see them.
- “Louis Fuertes was a bird artist. When he was a child, he loved to paint the birds he saw.”

more 16, 17, 18.

- $7 + 8 + 3 = \boxed{18}$. I showed 7 on the 10-frame in red counters and noticed that I needed 3 more to make 10, so I added the 3 from the story problem. Then I added the 8 that was left.
- $7 + 8 + 3 = \boxed{18}$. I know I can use “add in any order” to switch the addends so I did $3 + 7 + 8$. $3 + 7 = 10$. Then there were 8 left so $10 + 8 = 18$.

- Consider reading the book *The Sky Painter* by Margarita Engle.
- “We are going to solve some problems about birds.”

Activity

- 3 minutes: independent work time
- 2 minutes: partner discussion
- As students work, consider asking:
 - “How are you finding the total number of birds?”
 - “How did you decide the order to add the numbers?”
 - “Is there another way you can add the numbers?”
- Monitor for students who use the methods described in the narrative.

Synthesis

- Invite previously identified students to share in the given order.
- “How are these methods the same? How are they different?” (They are the same because they all got 18. The last two methods use the “add in any order” property to move addends to make $3 + 7$. Then they added $10 + 8$. There was a lot of counting in the first method, some counting in the second, and no counting in the last method.)
- If needed, ask, “Where is 10 in the story problem?” ($3 + 7$, the number of blue birds in the sky and baby birds in a nest.)
- “Is there a method that is different than yours, that you would like to try?” (I want to make ten because I know my facts to ten.)

Activity 2

🕒 20 min

Fuertes's Bird Cards

Standards Alignments

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

The purpose of this activity is for students to solve more story problems with three addends, in which two of the addends make 10. Students are encouraged to look for addends that have a sum of 10 and think about how that helps when adding (MP7). Students should have access to double 10-frames and connecting cubes or two-color counters to use if they choose.

When recording student thinking, it is important that the teacher write each part of the equation on a separate line. For example, when representing student thinking for $5 + 9 + 5 = \square$ record:

- $5 + 9 + 5 = \square$
- $5 + 5 = 10$
- $10 + 9 = \boxed{19}$

♿ 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, Organization

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

1. Noah collected 3 bird picture cards.
Clare collected 4 cards.
Jada collected 7 cards.
How many cards did they collect altogether?
Show your thinking using drawings,
numbers, or words.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- "Many pictures of birds that Louis Fuertes painted were printed on cards that people liked to collect. They would bring their

Equation: _____

2. Jada used her cards to name the birds she saw.

She saw 4 orioles.

She saw 2 goldfinches.

She saw 8 sparrows.

How many birds did Jada see?

Show your thinking using drawings, numbers, or words.

Equation: _____

3. Write your own problem.

We see some birds.

We see 9 _____.

We see 8 _____.

We see 1 _____.

How many birds do we see altogether?

Show your thinking using drawings, numbers, or words.

Equation: _____

4. $10 + 6 + 4 = \square$

Show your thinking using drawings, numbers, or words.

5. $5 + 9 + 5 = \square$

Show your thinking using drawings, numbers, or words.

Student Responses

14. Sample response: $3 + 4 + 7 = \boxed{14}$ I showed all with counters and counted them all.
14. Sample response: $4 + 2 + 8 = 14$.
 $2 + 8 = 10$, $10 + 4 = 14$
18. Sample response: I know 9 and 1 is 10. I used my fingers to count on 8 more. $9 + 1 + 8 = \boxed{18}$

cards outside and try to name the birds they saw. Let's answer some story problems about the bird cards."

Activity

- 10 minutes: independent work time
- 4 minutes: partner discussion
- Monitor for students who use different methods to solve $10 + 6 + 4 = \square$.

Synthesis

- Invite previously identified students to share their work.
- "Who can restate ____'s method?"
- Repeat for each student's work.
- "What connections do you see between the different methods?" (There are two tens in each method. Each method is addition.)

4. 20. Sample response: One number is already a ten. I know that $6 + 4$ is 10. $10 + 10$ is 20.
5. 19. Sample response: $5 + 5 = 10$. $10 + 9 = 19$.

Lesson Synthesis

🕒 10 min

“Today, we learned about a man who was a very good painter. He wanted to paint birds while they were alive so he learned how to paint quickly. We also found the sum of three numbers. What did each of you do today that helped you solve a problem with three numbers?”

Lesson 16: Add Three Numbers

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6, 1.OA.D.7

Teacher-facing Learning Goals

- Make sense of equations with addition expressions on both sides of the equal sign (For example, $3 + 6 + 7 = 10 + 6$).
- Use the associative property to make a ten when adding three numbers.

Student-facing Learning Goals

- Let's add 3 numbers.

Lesson Purpose

The purpose of this lesson is for students to apply the commutative and associative properties in order to make a ten when adding three numbers within 20, and make sense of equations with addition expressions on both sides of the equal sign.

In the previous lesson students found the sum of three addends in which two addends made a ten. They considered different methods for finding the sums. In this lesson, students make sense of equations with addition expressions on both sides of the equal sign. One of the expressions has three addends, two of which make 10. Students apply what they learned about the commutative and associative properties to match these expressions to a $10 + n$ expression, and determine whether equations are true or false.

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR2 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters:
Activity 1, Activity 2, Activity 3

- Double 10-frames: Activity 1, Activity 2, Activity 3

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	10 min
Activity 3	10 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Think about a time you recently made a mistake during math class. How did you leverage your mistake to show students that mistakes are just learning in process?

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

 5 min

Add Them Up

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

Student-facing Task Statement

Find the value of the sum.

$$3 + 8 + 7$$

Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

18. Sample responses:

- I showed 3 on my 10-frame and saw there were 7 left to make 10. So I added 7 from the expression to make 10. Then I know that $10 + 8 = 18$.
- 3 and 7 make 10. $10 + 8 = 18$

Begin Lesson

Warm-up

🕒 10 min

Number Talk: Related Expressions

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for adding on to 10. These understandings help students develop fluency and will be helpful later in this lesson when students write equivalent expressions.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $7 + 10$
- $7 + 2 + 8$
- $10 + 9$
- $4 + 9 + 6$

Student Responses

- 17: I just know it.
- 17: $8 + 2$ is 10, 7 more is 17.
- 19: I just know it.
- 19: $4 + 6$ is 10, 9 more is 19.

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

- “Why did some of the expressions have the same value?”

Activity 1

🕒 15 min

Match Expressions

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to match expressions with three addends to the $10 + n$ expression with the same value. This activity sets the groundwork for the next activity in which students make sense of addition equations with expressions on both sides of the equal sign. Students should have access to double 10-frames and two-color counters or connecting cubes.

Access for English Learners

MLR2 Collect and Display. Circulate, listen for, and collect the language students use as they work with partners. On a visible display, record words and phrases such as: equivalent, expression, the same, different, sum. Invite students to borrow language from the display as needed, and update it throughout the lesson.

Advances: Conversing, Speaking

Access for Students with Disabilities

Representation: Develop Language and Symbols. Synthesis: Make connections between representations visible. Ask students to identify the correspondences between concrete representations (10-frames or connecting cubes) and expressions.

Supports accessibility for: Conceptual Processing, Visual-Spatial Processing

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Draw a line to match expressions with the same value.

expressions with 3 numbers $10 + \square$ expression

- | | |
|----------------|----------|
| 1. $4 + 6 + 8$ | $10 + 1$ |
| 2. $3 + 6 + 7$ | $10 + 2$ |
| 3. $9 + 1 + 1$ | $10 + 3$ |
| 4. $8 + 4 + 2$ | $10 + 4$ |
| 5. $5 + 5 + 9$ | |

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

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

- | | | |
|-----|--------------|-----------|
| 6. | $7 + 3 + 3$ | $10 + 5$ |
| 7. | $5 + 10 + 5$ | $10 + 6$ |
| 8. | $4 + 7 + 6$ | $10 + 7$ |
| 9. | $9 + 5 + 1$ | $10 + 8$ |
| 10. | $1 + 10 + 1$ | $10 + 9$ |
| | | $10 + 10$ |

If you have time: Write another expression with 3 numbers. 2 of the numbers should make 10.

Ask your partner to think of the matching

$10 + \square$ expression.

Student Responses

- $4 + 6 + 8, 10 + 8$
- $3 + 6 + 7, 10 + 6$
- $9 + 1 + 1, 10 + 1$
- $8 + 4 + 2, 10 + 4$
- $5 + 5 + 9, 10 + 9$
- $7 + 3 + 3, 10 + 3$
- $5 + 10 + 5, 10 + 10$
- $4 + 7 + 6, 10 + 7$
- $9 + 5 + 1, 10 + 5$
- $1 + 10 + 1, 10 + 2$

If you have time: Sample response:

- $5 + 7 + 5, 10 + 7$
- $2 + 4 + 8, 10 + 4$

Synthesis

- “How did you know which expressions have the same value?” (I looked for ways to make 10 and the amount left to add.)
- “What patterns did you notice?” (They are all teen numbers. They are all $10 +$ facts.)

Advancing Student Thinking

If students find the value of each three addend expression, rather than making a ten first, consider asking:

- “Can you explain how you know these expressions match?”

- “How can we use the numbers in this expression to make 10? After we make 10, what number is left to add? What expression does that match?”

Activity 2

🕒 10 min

Is the Equation True?

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6, 1.OA.D.7

The purpose of this activity is for students to determine whether equations with an expression on each side of the equal sign are true. Each equation has an expression with three addends on one side and a $10 + n$ expression on the other. Students do not need to find the value of each expression in order to determine if the equation is true, but some students may do so. In this activity, students have an opportunity to look for and make use of structure (MP7) because they apply the associative property and $10 + n$ pattern to determine whether equations are true.

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Determine whether each equation is true or false.

Be ready to explain your reasoning in a way that others will understand.

1. $7 + 3 + 4 = 10 + 4$



True

or



False

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 4 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for a student who uses 10-frames

2. $6 + 5 + 4 = 15 + 10$



True

or



False

3. $9 + 10 = 9 + 10 + 1$



True

or



False

4. $3 + 7 + 8 = 8 + 10$



True

or



False

5. $5 + 10 + 5 = 10 + 10$



True

or



False

If you have time:

1. Make any false equations true.
2. Write 1 equation that is true and 1 that is false.
Switch with your partner.

Student Responses

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

and counters or drawings to show $3 + 7 + 8$ as $10 + 8$ and a student who uses reasoning that $3 + 7 = 10$ and $10 + 8 = 8 + 10$.

Synthesis

- Invite previously identified students to share.
- “Does their reasoning prove whether the equation is true? Why or why not?” (Yes, we can see that it is $10 + 8$ on the 10-frame. Yes, we see that $3 + 7$ is 10 and then there are 8 left. That is the same as $8 + 10$.)

If you have time: Sample response:

1. $6 + 5 + 4 = 5 + 10$, $10 + 10 = 9 + 10 + 1$
2. $4 + 9 + 6 = 10 + 9$, $3 + 3 + 7 = 13 + 10$

Activity 3

🕒 10 min

Write Expressions

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to write a $10 + n$ expression that is equal to a given expression. Each expression given has three addends, two of which make a ten.

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Write a $10 + \square$ expression that has the same value as each expression.

1. $5 + 7 + 5$
2. $3 + 7 + 6$
3. $1 + 9 + 9$
4. $4 + 8 + 6$
5. $8 + 10 + 2$

If you have time, write as many expressions as you can with 3 numbers that are equal to $10 + 5$.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- “Now you will write a $10 + n$ expression with the same value as each of the given expressions.”

Activity

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

Student Responses

1. $10 + 7$
2. $10 + 6$
3. $10 + 9$
4. $10 + 8$
5. $10 + 10$

If you have time: Sample response:

- $9 + 1 + 5, 8 + 2 + 5, 3 + 5 + 7, 5 + 4 + 6,$
 $5 + 5 + 5$

Synthesis

- Display each $10 + n$ expression.
- “In order to make adding three numbers easier, we can rewrite each expression as a $10 + \square$ expression.”
- Invite students to say the value of each $10 + n$ expression together.

Lesson Synthesis

🕒 10 min

Give students access to double 10-frames and connecting cubes or two-color counters.

Display $2 + 6 + 8 = 7 + 3 + 6$.

“Today we worked with expression with three numbers and expressions with 10. Is this equation true or false? How do you know?” (True. $2 + 8 = 10$, $10 + 6 = 16$. $7 + 3 = 10$. $10 + 6 = 16$.)

If needed, “Did anyone determine whether it is true or false without adding all the numbers?” (Yes. Both sides have a 6, so I looked to see if the other numbers made 10. $2 + 8 = 10$ and $7 + 3 = 10$, so both sides of the equation are equal to $10 + 6$.)

----- Complete Cool-Down -----

Response to Student Thinking

Students write a number other than 18 for the value of the sum.

Prior Unit Support

Grade K, Unit 6, Section B: 10 Ones and Some More

Grade K, Unit 5, Section C: Make and Break Apart 10

Lesson 17: Make 10 to Add

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.3, 1.OA.C.6

Teacher-facing Learning Goals

- Analyze methods for adding within 20 that involve making a ten.
- Look for and use patterns in addition expressions to add within 20.

Student-facing Learning Goals

- Let's look for patterns and think about making 10 as we add.

Lesson Purpose

The purpose of this lesson is for students to look for and use patterns to add within 20. Students see that they can decompose one addend in order to make a ten.

In previous lessons, students recognized the $10 + n$ structure of teen numbers and used the structure to find the sum of three numbers. In this lesson, students use the structure of the 10-frame to find the sum of two addends when one addend is 9. Students come to see that when they find the sum of two addends, they can decompose one addend to make 10 with the other addend (associative property). For example, $9 + 5 = 9 + 1 + 4 = 10 + 4 = 14$. When students identify and use equivalent expressions, they look for and make use of structure (MP7) and here they repeatedly make a 10 to find the value of expressions (MP8).

Student methods are recorded with equations. It may also be helpful to represent how one addend is decomposed in order to make a ten.

$$\begin{array}{c}
 9 + 5 \\
 \swarrow \searrow \\
 1 \quad 4 \\
 9 + 1 + 4 \\
 \swarrow \searrow \\
 10 + 4
 \end{array}$$

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR7 (Activity 2)

Instructional Routines

How Many Do You See? (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: Activity 1, Activity 2
- Number cards 0–10: 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 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)

 5 min

Sitting Birds

Standards Alignments

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

Student-facing Task Statement

8 birds are sitting in a tree.

6 birds are sitting on the grass.

How many birds are there all together?

Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

14. Sample response:

6 is the same as 2 and 4. $8 + 2 = 10$ and $10 + 4 = 14$

Begin Lesson

Warm-up

🕒 10 min

How Many Do You See: Double 10-frames

Standards Alignments

Addressing 1.OA.C.6

The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see.

When students use grouping strategies to visualize the quantities in the $10 + n$ structure they come to see that some can be taken from one group and added to the other to make a ten and some more (MP7).

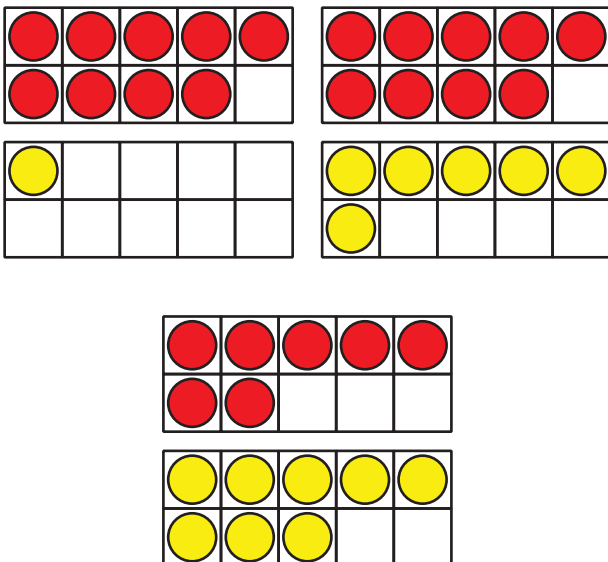
Instructional Routines

How Many Do You See?

Student-facing Task Statement

How many do you see?

How do you see them?

**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

- “Who can restate the way ____ saw the dots in different words?”

Student Responses

- 10: I took one from the bottom and added it to 9. So 9 and 1 is 10.
- 15: I took one from the 6 and added it to the 9 to make 10. So 10 and 5 is 15.
- 15: I saw 2 fives to make a ten and 2 and 3 is 5. So 10 and 5 is 15.

Activity 1

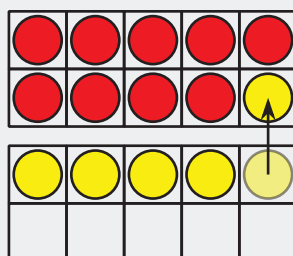
🕒 20 min

The 9 Plus Game

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to find sums when one addend is nine. Students represent sums on the 10-frame to encourage them to use the structure of a ten. During the launch, the teacher demonstrates playing a round of the game. It is important to let students discover patterns as they play the game. For example, when finding the sum of $9 + 5$, some students may represent each addend on a separate 10-frame and count to find the sum. Other students may use the associative property and move one counter from the five, and add it to the nine to make a ten.



Students may generalize that when they take one from an addend to make 10, the sum has one less one than that addend. When students build this understanding, they may no longer need to show their thinking on the 10-frame and can just write an equation. By repeatedly making the ten by taking one from an addend, students may see and use the structure of ten to add on (MP7, MP8).

Access for Students with Disabilities

Engagement: Internalize Self-Regulation. Synthesis: Provide students an opportunity to self-assess and reflect on their own progress. For example, ask students how comfortable they are adding different numbers to 9.

Supports accessibility for: Conceptual Processing, Organization

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames, Number cards 0–10

Required Preparation

- Each group of 2 needs a set of Number Cards (0-10).

Student-facing Task Statement

- Put out 9 counters.
- Pick a number card and add that many counters.
- Write an equation to represent the counters.
Can you write more than one?

Equations:

Round 1: _____

Round 2: _____

Round 3: _____

Round 4: _____

Round 5: _____

Student Responses

Sample responses:

- $9 + 7 = 16$. I showed 9, then added on 7. I counted on from 9 to 16.
- $10 + 2 = 12$. I showed 9 on this 10-frame. Then I showed 3 on the other 10-frame. I

Launch

- Groups of 2
- Give each group a set of number cards and access to double 10-frames and connecting cubes or two-color counters.
- “We are going to play the 9 Plus game. In this game, we add different numbers to 9 and record our thinking with equations. Let’s play the first round together.”
- Demonstrate displaying 9 counters on the double 10-frame to start the game.
- “Now we pick a number card. I add that many counters to 9 and figure out the sum.”
- Demonstrate placing each counter on the empty 10-frame.
- “What is the sum? How do you know? What equation can I write to show the total?” (The sum is 13. I counted on from 9. We could move 1 from the 4 to the 9 to make 10 and then there are 3 more. $9 + 4 = 13$ or $10 + 3 = 13$)
- 30 seconds: quiet think time
- Share and record responses.

moved a counter to make 10. Now I have 10 and 2.

- $9 + 4 = 10 + 3$. I showed 9 on this 10-frame. Then I showed 4 on the other 10-frame. I moved a counter to make 10. Now I have 10 and 3. $9 + 4$ is the same amount as $10 + 3$.

Activity

- “Talk with your partner about the patterns you notice as you play the game.”
- 8 minutes: partner work time

Synthesis

- “What patterns did you notice as you played the game?” (I saw that any $9+$ expression can be written as a $10+$ expression. You can take one from the other addend. The nine goes up by one and the other addend goes down by one.)
- “We can write the equation $9 + 5 = 10 + 4$ to represent that the expressions are equal.”

Activity 2

Clare’s Birds

 15 min

 PLC Activity

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to solve addition story problems in which one addend is close to 10. Students may use any method or representation that makes sense to them. During the synthesis, the double 10-frame is used to visually show decomposing one addend to make ten with the other (the associative property).

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 the different strategies similar? How are they different?”

Advances: Representing, Conversing

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

- Clare draws some birds.
She draws 3 birds in a nest and 9 birds flying.
How many birds did she draw?
Show your thinking using drawings, numbers, or words.

Equation: _____

- Clare draws birds that like warm weather.
She draws 6 toucans and 8 parrots.
How many birds did she draw?
Show your thinking using drawings, numbers, or words.

Equation: _____

- Clare draws birds that like cold weather.
She draws 7 penguins and 5 owls.
How many birds did she draw?
Show your thinking using drawings, numbers, or words.

Equation: _____



Student Responses

12. I showed 9 on the 10-frame and added 3 more. I saw that is 12.
14. I started with 8 circles. Then I drew 6

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 4 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students who use these methods:
 - shows 6, shows 8 more, and counts all
 - shows 8, and counts on 6
 - shows 6, adds 4 to make 10, adds 4 more
 - shows 8, adds 2 to make 10, adds 4 more

Synthesis

- Invite previously identified students to share in the sequence above.
- “What did ____ do to represent the problem?”
- Record each method with an equation.
 - $6 + 8 = 14$
 - $8 + 6 = 14$
 - $6 + 4 = 10, 10 + 4 = 14$
 - $8 + 2 = 10, 10 + 4 = 14$

more circles. I circled 8 and 2 to make 10.
Now I have 10 and 4.

3. 12. I showed 7 red counters on the top 10-frame. I added 3 yellow counters to make 10. Then I put the last 2 yellow counters on the other 10-frame. That is 12.

Lesson Synthesis

🕒 10 min

“Today, we saw that making a ten can help us add numbers within 20.”

Display the double 10-frame with nine red counters.

“If I add seven, how could we record the sum with an equation?” ($9 + 7 = 16$, $10 + 6 = 16$)

“How can I write one equation to show that these two expressions are equivalent?” ($9 + 7 = 10 + 6$)

Complete Cool-Down

Response to Student Thinking

Students count all to find the sum.

Next Day Support

- During the warm-up, use the 10-frame images to demonstrate making a ten to help find the sum.

Lesson 18: Patterns in Addition

Standards Alignments

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

Teacher-facing Learning Goals

- Look for and use patterns in addition expressions to add within 20.
- Make a ten to find the sum of two numbers within 20.

Student-facing Learning Goals

- Let's look for and use patterns to help us add within 20.

Lesson Purpose

The purpose of this lesson is for students to find expressions equivalent to $10 + n$ expressions. Students then look for patterns in the expressions.

In the previous lesson, students discussed how making a ten can help them find the value of expressions in which one addend is close to 10. In this lesson, students continue to add two addends within 20, focusing on how making a ten can help them add. In the first activity, students match addition expressions to their equivalent $10 + n$ expression. In the second activity, students participate in a Gallery Walk, noticing patterns between expressions that represent a sum. In each activity, students have access to double 10-frames and two-color counters as they explore patterns they notice.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR7 (Activity 1)

Instructional Routines

How Many Do You See? (Warm-up), MLR7 Compare and Connect (Activity 2)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1
- Double 10-frames: Activity 1
- Materials from previous centers: Activity 3

Materials to Copy

- Compare Stage 2 Addition Cards to 20 (groups of 2): Activity 1

- Tools for creating a visual display: 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

As students worked in their small groups today, whose ideas were heard, valued, and accepted? How can you adjust the group structure tomorrow to ensure each student's ideas are a part of the collective learning?

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

 0 min

Unit 3, Section C Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Count on to find the sum.
- Make 10 to find the sum.
- Use known sums to adjust addends to find the sum.
- Apply the “add in any order property” to find the sum.
- Know certain sums.

----- **Begin Lesson** -----

Warm-up

 10 min

How Many Do You See: More Double 10-frames

Standards Alignments

Addressing 1.OA.C.6

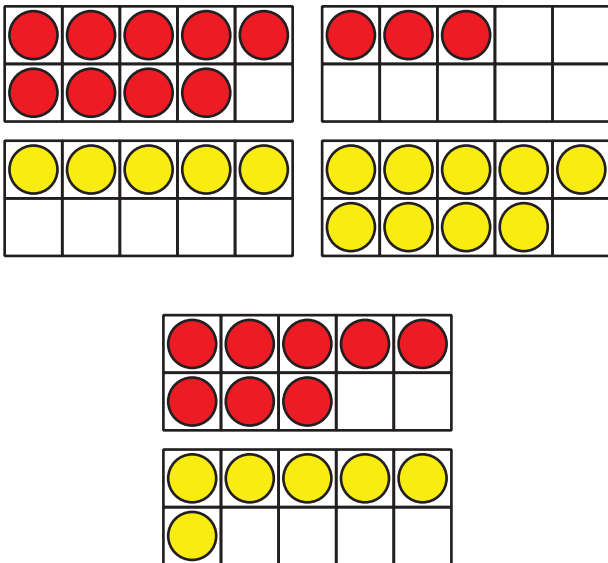
The purpose of this How Many Do You See is for students to subitize or use grouping strategies to describe the images they see. This warm-up is similar to the warm-up in the previous lesson. The teacher can notice if the students' approach to the warm-up is different after the activities in the previous lesson. When students use grouping strategies to visualize the quantities in the $10 + n$ structure they come to see that some can be taken from one group and added to the other to make a ten and some more (MP7).

Instructional Routines

How Many Do You See?

Student-facing Task Statement

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



Student Responses

- 14: I took one from the 5 and added it to 9 to make 10. So 10 and 4 is 14.

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

- "What do these images have in common?" (You can take some dots from one 10-frame and add them to the other. None of the 10-frames are full.)
- "The first image shows $9 + 5$, but if we share one yellow with the top 10-frame we could

- 12: I took one from the 3 and added it to the 9 to make 10. So 2 and 10 is 12.
 - 14: I saw 2 fives make a ten and then 3 and 1 is 4.
- write $10 + 4$.”
- Write $9 + 5 = 10 + 4$.
 - “What expressions could we write for the second image?” ($3 + 9 = 2 + 10$)

Activity 1

🕒 10 min

Expression Match

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to use what they know about making a ten to identify which addition expressions are equivalent to $10 + n$ expressions. Students should have access to double 10-frames and connecting cubes or two-color counters.

The Compare Stage 2 Addition Cards will be used again in a later lesson.

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Materials to Copy

Compare Stage 2 Addition Cards to 20
(groups of 2)

Required Preparation

- Create a set of Compare Stage 2 Addition Cards to 20 from the Instructional master for each group of 3.

Student-facing Task Statement

1. Take out all the expression cards that have the number 10.
2. Mix up the rest of the cards.
3. Pick a card.
4. Place the card under the expression with 10 that it is equal to.

Launch

- Groups of 3
- Give each group a set of cards and access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 8 minutes: small-group work



Student Responses

Sample responses:

- $10 + 1: 9 + 2, 8 + 3, 7 + 4, 6 + 5$
- $10 + 4: 9 + 5, 8 + 6, 7 + 7$
- $10 + 8: 9 + 9$

Synthesis

- “We are going to create a poster and do a Gallery Walk.”

Activity 2

🕒 15 min

Compare and Connect: Gallery Walk

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to create a poster to show all the expressions equivalent to their assigned $10 + n$ expression. Before the activity, assign each group an expression for which they will make a poster. Then, students get into new groups of three and each group visits three posters. Students consider what patterns they notice between the expressions on the poster. Students may notice there is a relationship between the addends of equivalent expressions. For example, when one addend decreases by 1, the other addend in the sum increases by 1 (MP7).

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

🕒 Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Provide students with alternatives to writing their observations on paper: students can share their observations verbally, or through drawings.

Supports accessibility for: Language, Conceptual Processing

Instructional Routines

MLR7 Compare and Connect

Materials to Gather

Tools for creating a visual display

Launch

- Groups of 3
- Give each group tools for creating a visual display.
- Assign each group an expression.

Activity

MLR7 Compare and Connect

- “Create a visual display that shows the expressions equal to the expression with 10 assigned you.”
- 3 minutes: small group work
- 7 minutes: gallery walk
- During the gallery walk, consider asking:
 - “What do you notice about the expressions on the poster?”
 - “What patterns do you notice?”
 - “Are the patterns the same across all of the posters?”

Synthesis

- Display posters for $10 + 1$, $10 + 3$, and $10 + 5$.
- “What patterns did you notice as you went from poster to poster?” (I saw that there was an expression with 9 on every poster. For example, $10 + 3$ is equivalent to $9 + 4$. This is because I can take 1 from the 4 and give it to the 9.) To amplify student language and illustrate connections, follow along and point to the relevant parts of the displays as students speak.

- Record responses as equations (for example, $10 + 3 = 9 + 4$).
- Record $10 + 3 = 9 + 4$. “Is the same pattern on other posters?” (Yes, it happened on $10 + 2$. If I have $9 + 3$, I can take one from the 3 and give it to the 9. Then I have $10 + 1$.)

Activity 3

🕒 15 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 from activities that offer practice adding and subtracting within 10. Students choose from any stage of previously introduced centers.

- Shake and Spill
- Compare
- Number Puzzles

Materials to Gather

Materials from previous centers

Required Preparation

- Gather materials from previous centers:
 - Shake and Spill, Stages 3–5
 - Compare, Stage 1
 - Number Puzzles, Stages 1 and 2

Student-facing Task Statement

Choose a center.

Launch

- Groups of 2

Shake and Spill



Compare



Number Puzzles

$$14 = 8 + \square$$

- “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 cover five yellow counters with a cup.
- “We are playing with 14 counters. How many yellow counters are under the cup? How do you know?”

Lesson Synthesis

⌚ 10 min

Display a double 10-frame with eight counters on the top frame and four on the bottom, and $8 + 4 = 10 + 3$.

“Today we matched addition expressions to equivalent expressions with a 10. Is this equation true or false? How do you know?” (It’s false, because if I move two counters to the top 10-frame then it shows $10 + 2$.)

Lesson 19: Methods for Addition Within 20

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

Teacher-facing Learning Goals

- Analyze methods for adding within 20.
- Use addition methods flexibly to find sums based on the numbers in a given problem.

Student-facing Learning Goals

- Let's add within 20.

Lesson Purpose

The purpose of this lesson is for students to analyze addition methods for adding within 20, then use those methods flexibly to find sums based on the numbers in a given expression.

In previous lessons, students decomposed an addend in order to make a ten and thought about sums as equivalent $10 + n$ expressions. They applied the commutative and associative properties to find the sum more easily. Students looked for and used patterns in addition expressions (such as $4 + 8 = 5 + 7$). In this lesson, students continue adding within 20.

Students may use any method they choose, but are encouraged to think about methods which may work better for certain sums. In the first activity, students analyze three different methods for finding a sum, all of which include decomposing an addend to make a known sum. In the second activity, students find sums within 20 and share their thinking with a partner.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

MLR8 Discussion Supports (Activity 1), Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: Activity 1, Activity 2

- Materials from a previous lesson: Activity 2

Lesson Timeline

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

Teacher Reflection Question

What methods are students using to find sums? Which methods were you expecting and which surprised you?

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

 0 min

Unit 3, Section C Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Count on to find the sum.
- Make 10 to find the sum.
- Use known sums to adjust addends to find the sum.
- Apply the “add in any order property” to find the sum.
- Know certain sums.

----- Begin Lesson -----

Warm-up

 10 min

Number Talk: Related Expressions

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for the structure of adding within 20. These understandings help students develop fluency and will be helpful later in this lesson when students use relationships between addends to make equivalent expressions to find sums.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $5 + 8$
- $6 + 7$
- $8 + 7$
- $6 + 9$

Student Responses

- 13: I can break 8 into 5 and 3 and then have $10 + 3$.
- 13: I can break 6 into 3 and 3 and then have $10 + 3$.
- 15: I can take 2 from the 7 and add it to the 8 to make a ten. Then I have $10 + 5$.
- 15: 9 is almost 10, so $6 + 10 = 16$. Since I added 1 to 10 I have to take it away, so $16 - 1 = 15$.

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

- "Who can restate ____'s reasoning in a different way?"

Activity 1

🕒 20 min

Lin, Han, and Kiran Add

Standards Alignments

Addressing 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to analyze three different methods for solving $7 + 8$, two of which involve decomposing an addend to make a known fact. The third method involves adding 1 to make a known fact then taking 1 away from the sum.

Throughout this activity, students must justify and explain the work of the given characters. Students share their thinking and have opportunities to listen to and critique the reasoning of their peers (MP3).

This activity uses *MLR8 Discussion Supports*. *Advances: listening, speaking, representing*

Instructional Routines

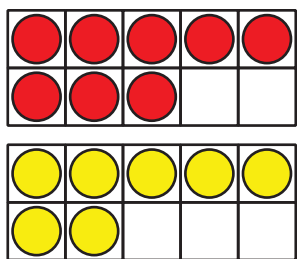
MLR8 Discussion Supports

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Lin, Han, and Kiran are finding the value of $8 + 7$.



Lin thinks about $8 + 2 + 5$.

Han thinks about $7 + 7 + 1$.

Kiran thinks about $8 + 8 - 1$.

Explain how each student's method works. Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- "Use double 10-frames and counters to determine how each method works. Show your thinking in a way that others will understand."
- 10 minutes: partner work time
- 3 minutes: partner discussion
- Monitor for students who can explain each method using 10-frames.

Student Responses

Sample responses:

- Lin makes a ten. She shows 8 red counters on the first 10-frame and 7 yellow counters on the second 10-frame. She moves 2 yellow counters to the first 10-frame to make $8 + 2 + 5$. $8 + 2 = 10$, $10 + 5 = 15$
- Han uses $7 + 7$ because he might know it's 14. Then he adds 1 more. $14 + 1 = 15$
- Kiran added an extra counter to the second 10-frame because he wants to add $8 + 8$. Since he added it, he has to remove it since it is not part of the original problem. $8 + 8 = 16$, $16 - 1 = 15$

Synthesis

- Invite previously identified students to share their explanations.

MLR8 Discussion Supports

- "Who can restate what ____ shared in their own words?"
- 30 seconds: quiet think time
- Consider providing students time to restate what they heard to a partner before selecting one or two students to share with the class.

Activity 2

🕒 20 min

How Did You Add?

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to find sums within 20, using addition methods flexibly based on the numbers in a given problem. Students may use any method they choose. For example, for a sum such as $9 + 2$, students may choose to count on. For $7 + 9$, students may apply the commutative and associative properties, and think $9 + 7 = 10 + 6$. Students may use known facts and adjust addends as needed. Students first work independently to find each sum and then explain their method to their partner. During the activity synthesis, the teacher records student methods as equations.

Access for English Learners

MLR8 Discussion Supports. Synthesis: Display sentence frames to support whole-class discussion: “My favorite equation is ____ because . . .,” “First, I ____ because . . .,” and “My approach and ____’s approach are alike because . . .”

Advances: Speaking, Conversing

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

Connecting cubes or two-color counters,
Double 10-frames, Materials from a previous lesson

Required Preparation

- Each group needs a set of the Compare Stage 2 Addition Cards cards from the previous lesson.

Student-facing Task Statement

- Choose an addition card.
- Each partner finds the value independently.
- Each partner gives a signal when they are ready to explain their thinking.
- Each partner shares their thinking.
- Each partner writes the equation.

Choose your favorite equation.
Show how you found the value using drawings, numbers, or words.

Student Responses

Sample responses for $4 + 9$:

- I counted on. $9 \dots 10, 11, 12, 13$
- $9 + 4 = 10 + 3 = 13$

Launch

- Groups of 2
- Give each group a set of addition cards from the previous lesson and access to double 10-frames and connecting cubes or two-color counters.
- Display card $5 + 6$.
- “What is the sum? How do you know?” (11. I can count on from 6. It’s the same as $10 + 1$. It’s $5 + 5 + 1$.)
- 1 minute: quiet think time
- 30 seconds: partner discussion
- Record responses.
- “You have learned a lot of different ways to find sums, and now you are going choose the best way for you to solve each problem.”

- $4 + 6 = 10$, $10 + 3 = 13$

Activity

- Read the task statement.
- 5 minutes: partner work time
- “Choose your favorite equation. Show how you found the value using drawings, numbers, or words.”
- 2 minutes: independent work time

Synthesis

- “What is your favorite equation? Explain how you found the sum.”
- “Did someone find that sum in a different way?”
- Share two or three equations and methods, as time allows.

Advancing Student Thinking

If students count all to find the sum, consider asking,

- “How did you find the sum?”
- “How could you find the sum without counting all of the circles?”

Lesson Synthesis

🕒 10 min

Give students access to 10-frames and two-color counters.

“Today, we used different methods to find sums.”

Display $7 + 6$.

“I saw some different ways students thought about this problem.”

Display: $6 + 6 + 1$ $7 + 3 + 3$ $3 + 4 + 6$

“Pick one of those ways and explain to your partner what the student did.” (In the first one, they thought about $6 + 6 = 12$ and then added 1 more. In the second one, they broke the 6 into a 3 and a 3 so they could combine a 3 with a 7 to make 10. In the last one, they broke the 7 into a 3 and a 4 so that they could combine 6 and 4 to make 10.)

Lesson 20: A Trip to the Zoo

Standards Alignments

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

Teacher-facing Learning Goals

- Solve story problems with three addends.

Student-facing Learning Goals

- Let's solve story problems.

Lesson Purpose

The purpose of this lesson is for students to solve story problems with three addends.

In this lesson, students solve story problems that call for addition of three numbers. Students solve the problems in any way that makes sense to them. Students may work flexibly with different methods based on the numbers they are adding.

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 or two-color counters: Activity 1, Activity 2
- Double 10-frames: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min

Teacher Reflection Question

What student thinking was made visible through representations and discussion today? What thinking was still invisible? How might you make that thinking visible in future lessons?

Lesson Synthesis 10 min

Cool-down 5 min

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

🕒 5 min

A Visit with the Primates

Standards Alignments

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

Student-facing Task Statement

Jada visited the primate exhibit.
She saw 8 monkeys, 4 gorillas, and 7 orangutans.
How many primates did she see?
Show your thinking using drawings, numbers, or words.

Equation: _____

Student Responses

19. Sample response:

- I used 10-frames. I showed 8 counters and 2 more to make 10. I placed 2 more on the other 10-frame to make 4, then added 7 more. That's 10 and 9.
- I took 3 from the 4 and added it to the 7 to make a ten. Then I have $10 + 8 + 1 = 19$.

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Number Talk: Using $10 + \square$ **Standards Alignments**

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for adding within 20.

Students may have many ideas for adding these numbers. In the synthesis, students discuss what they notice about the first two expressions. Students may notice that the expressions are equal and that one expression might help them with the other.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $8 + 2 + 4$
- $8 + 6$
- $7 + 3 + 6$
- $7 + 9$

Student Responses

- 14: I can make 10 with $8 + 2$, then add 4.
- 14: I took 2 from the 6 to make 10 with the 8. Then there were 4 more. I can make 10 with $8 + 2$, then add 6.
- 16: $7 + 3 = 10$, $10 + 6 = 16$
- 16: 9 and 1 is 10 and then 6 more is 16.

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

- "What do you notice about the first two expressions?" (They are both 14. If 6 was broken into 2 and 4, it would be the same expression.)

Activity 1

🕒 15 min

How Many Reptiles?

Standards Alignments

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

The purpose of this activity is for students to discuss different ways to solve a three-addend story problem in which none of the addends can be combined to make 10 without being decomposed. Students solve the problem in a way that makes sense to them. Some students may build each number separately on the 10-frames and see both are filled. Some students may manipulate the numbers and think $8 + 7 + 5 = 8 + 2 + 5 + 5$. Different methods for solving are highlighted in the synthesis. It is important that the teacher represents student thinking, so that these methods are visible to all.

When students make sense of the story problems and connect the quantities in the story to an equation, they reason abstractly and quantitatively (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 3 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 or two-color counters,
Double 10-frames

Student-facing Task Statement

Jada went to the zoo with her family. They went to the reptile exhibit and saw 8 snakes, 7 iguanas, and 5 frogs.



How many reptiles did Jada's family see?
Show your thinking using drawings, numbers, or

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 4 minutes: independent work time
- 2 minutes: partner discussion
- Monitor for students who:
 - place 8, 7, and 5 counters on the 10-frames and see that they are both full
 - count on

words.

Student Responses

20. Sample responses:

- I showed 8, 7, and 5 on my 10-frames. Both 10-frames are filled so that's 20.
- I know that $7 + 7$ is 14. One more is 15, so $8 + 7 = 15$ and 5 more makes 20.
- I grabbed 8, 7, and 5 counters. I know that $8 + 2 = 10$, so I filled one of my 10-frames. That leaves me with 5 and 5. That's another 10.

- represent the problem as $8 + 2 + 5 + 5$
- use a known sum like $8 + 8$ and then add 4 more.

Synthesis

- Invite previously identified students to share.
- "What did they do to find the sum?"
- Record each method with an equation.

Activity 2

🕒 20 min

Zoo Exhibits

Standards Alignments

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

In this activity students solve three-addend story problems within 20. Students use methods and representations that make sense to them. When students connect the quantities in the story to an equation, they reason abstractly and quantitatively (MP2). They think strategically and may either choose to use a double 10-frame or decompose and compose the numbers in a way that helps them see the sum as 10 and some ones (MP1, MP5).

🕒 Access for Students with Disabilities

Action and Expression: Internalize Executive Functions. Invite students to plan a method, including the tools they will use, for solving story problems with three addends. 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 or two-color counters,

Double 10-frames

Student-facing Task Statement

1. In the bird exhibit, Jada saw 3 herons, 6 hawks, and 7 hummingbirds.
How many birds did Jada see?
Show your thinking using drawings, numbers, or words.
2. Next Jada went to the large cat exhibit. There were 8 lions, 4 tigers, and 3 cheetahs.
How many large cats were there?
Show your thinking using drawings, numbers, or words.
3. Finally, Jada went to the petting zoo. She petted 8 goats, 7 sheep, and 4 pigs.
How many animals did Jada pet?
Show your thinking using drawings, numbers, or words.



Student Responses

1. 16. Sample response: I drew 3 circles, 6 circles, and 7 circles. I know that 3 and 7 make 10 so I drew a line to connect them. Now I have 10 and 6. That's 16.
2. 15. Sample response: I put 8 counters on the 10-frame. I knew I needed 2 more to make 10 so I filled in the 2. Then I had 2 and 3 to put on the next 10-frame. That's 10 and 5.
3. 19. Sample response: I drew 8 marks, 7 marks, and 4 marks. I know that $8 + 8$ is 16, so I circled that many marks. I counted on, 17, 18, 19.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- "We are going to solve some problems using the different methods we've been working on."

Activity

- Read the task statement.
- 6–8 minutes: independent work time
- 4 minutes: partner discussion

Synthesis

- Invite students to share their method for each problem.
- Record each method with an equation.

Lesson Synthesis

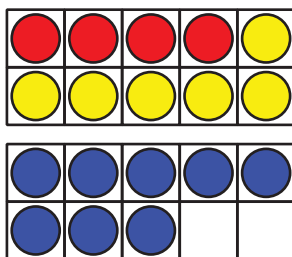
🕒 10 min

"In this section, we worked on different ways to add within 20. What are you most proud of? What do you still need to practice?"

✍ Student Section Summary

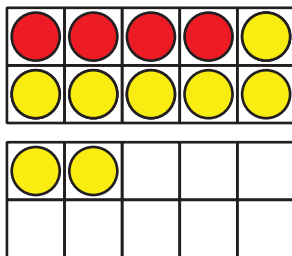
We saw that making a ten could help when we add 3 numbers together.

$$4 + 8 + 6 = 10 + 8 = 18$$



We saw that making a ten could also help when we add 2 numbers together.

$$4 + 8 = 4 + 6 + 2 = 10 + 2 = 12$$



----- Complete Cool-Down -----

Response to Student Thinking

Students count all to find the total number of primates.

Next Day Support

- During the launch of the first activity, use the double 10-frame to demonstrate making a ten when adding three numbers.

Lesson 21: Center Day 3

Standards Alignments

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

Teacher-facing Learning Goals

- Students add two and three numbers within 20.
- Students write equations with three addends.

Student-facing Learning Goals

- Let's play games where we add and subtract.

Lesson Purpose

The purpose of this lesson is for students to practice adding within 20.

In Activity 1, students learn stage 1 of the center, How Close? In Activity 2, students learn stage stage 3 of the center, Five in a Row. In both activities, students have opportunities to apply methods and concepts from the section such as counting on, making a ten, adjusting addends (using known facts), and using the commutative and associative properties.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

English Learners

- MLR8 (Activity 2)

Instructional Routines

What Do You Know About ____? (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1
- Double 10-frames: Activity 1, Activity 2
- Number cards 0–10: Activity 1, Activity 2
- Two-color counters: Activity 2

Materials to Copy

- How Close? Stage 1 Recording Sheet (groups of 1): Activity 1
- Five in a Row Addition and Subtraction Stage 3 Gameboard (groups of 2): Activity 2

Lesson Timeline

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

Teacher Reflection Question

What methods are students using to add three numbers? What questions have you asked to encourage them to make a ten?

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

What Do You Know About 20?

Standards Alignments

Addressing 1.OA.C.6

The purpose of this What Do You Know About ____? is to invite students to share what they know and how they can represent the number 20.

Instructional Routines

What Do You Know About ____?

Student-facing Task Statement

What do you know about 20?

Student Responses

Sample responses:

- I know I have 20 fingers and toes.
- I know 20 is two full 10-frames.
- I know it comes after 19.

Launch

- Display the number 20.
- “What do you know about 20?”
- 1 minute: quiet think time

Activity

- Record responses.

- I know it is 10 and 10.
- I know it is $5 + 5 + 10$.

Synthesis

- “What connections do you see between different answers?”
- Pick two addition expressions that use different addends and ask, “How are these two expressions related?”

Activity 1

🕒 20 min

Introduce How Close? Add to 20

Standards Alignments

Addressing 1.OA.C.6

The purpose of this lesson is for students to learn stage 1 of the center, How Close? Students pick a given number of digit cards and then choose a subset of those to make an expression that yields a number as close as possible to 20.

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames, Number cards 0–10

Materials to Copy

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

Launch

- Groups of 2
- Give each group a set of number cards, two recording sheets, and access to double 10-frames and connecting cubes or two-color counters.
- “We are going to learn a game called How Close? Add to 20. Let's play the first round together.”
- “First we take out any card that has the number 10. We will not use those cards for the game.”
- Display 5 cards.

- “I can choose two or three of these cards to add to get as close to 20 as I can. What cards should I choose?”
- 1 minute: quiet think time
- 2 minutes: partner discussion
- Share responses.
- “I write an equation with the numbers I chose and the sum of the numbers.”
- Demonstrate writing the equation on the recording sheet.
- “The person who gets a sum closer to 20 gets a point for the round. Then you each get more cards so you always have five cards to choose from. Play again. The person who gets more points wins.”

Activity

- 10 minutes: partner work time

Synthesis

- Invite students to share their methods for making a sum close to 20.

Activity 2

🕒 20 min

Introduce Five in a Row, Add 7, 8, or 9

Standards Alignments

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

The purpose of this activity is for students to learn stage 3 of the Five in a Row center. Students choose to add 7, 8, or 9 to the number on their card and then place their counter on the sum on the gameboard. The first partner to have five counters in a row wins.

Access for English Learners

MLR8 Discussion Supports. Synthesis: For each method 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 10-frames.

Supports accessibility for: Conceptual Processing, Memory

Materials to Gather

Double 10-frames, Number cards 0–10, Two-color counters

Materials to Copy

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

Launch

- Groups of 2
- “We are going to learn a new way to play Five in a Row.”
- Display the gameboard and pick a number card.
- “I can decide to add 7, 8, or 9 to the number on this card. What should I add?”
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- Choose 7, 8, or 9 to add to the number and find the sum.
- “Now I put a counter on the sum on the gameboard. Then it is my partner's turn. Continue playing until someone gets five counters in a row.”

Activity

- 10 minutes: partner work time

Synthesis

- “What method did you see your partner use to decide whether to add 7, 8, or 9?”

Lesson Synthesis

🕒 10 min

“Today we learned two new games we can play during center time.”

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

Section D: Subtract within 20

Lesson 22: Subtract from Teen Numbers

Standards Alignments

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

Teacher-facing Learning Goals

- Subtract within 20 in a way that makes sense to them.

Student-facing Learning Goals

- Let's subtract from a teen number.

Lesson Purpose

The purpose of this lesson is for students to subtract from a teen number.

In previous lessons, students learned about the unit of ten and composed and decomposed teen numbers. They also subtracted one-digit numbers from teen numbers without decomposing a ten. The purpose of this lesson is for students to subtract from teen numbers with decomposing a ten. Students may use methods such as take away or relating subtraction to addition. The first activity invites students to solve a Take From, Result Unknown story problem in a way that makes sense to them. In the second activity, students play a game in which they subtract a number 1-9 from a teen number. The lesson synthesis focuses on taking away and counting on as methods for solving subtraction. These methods will be discussed further in the next lesson.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

Instructional Routines

MLR7 Compare and Connect (Activity 1), Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters:
Activity 1, Activity 2

- Double 10-frames: Activity 1, Activity 2
- Materials from a previous lesson: Activity 2
- Number cards 0–10: Activity 2
- Tools for creating a visual display: Activity 1

Lesson Timeline

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

Teacher Reflection Question

As you move into a section that focuses on different subtraction methods, how can you continue to develop students' understanding of the relationship between addition and subtraction and encourage students to work flexibly with both operations?

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

 0 min

Unit 3, Section D Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Take away to find the difference.
- Count on to find the difference.
- Make 10 to find the difference.
- Know certain differences.
- Use addition facts to find the difference.

----- Begin Lesson -----

Warm-up

 10 min

Number Talk: Subtract from a Teen Number

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for finding the difference of two numbers. These understandings develop fluency and will be helpful later in this lesson when students subtract from teen numbers.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $14 - 4$
- $14 - 5$
- $17 - 7$
- $17 - 9$

Student Responses

- 10: I know $14 - 4 = 10$.
- 9: I am subtracting 1 more than in the first expression, so the answer is 1 less than 10.
- 10: 17 is 10 and 7. When you subtract the 7, you're left with the 10.
- 8: The last problem was $17 - 7$, this one is $17 - 9$. I am subtracting 2 more, so my answer is 2 less than 10.

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 can you use $14 - 4 = 10$ to find the difference in $14 - 5$?" (I know $14 - 4$ is 10, so if I subtract 1 more, the answer is 9.)
- "How can you use $17 - 7 = 10$ to find the difference in $17 - 9$?" ($17 - 7$ is 10, so I am subtracting 2 more in $17 - 9$. So I can take 2 from 10 to get the answer.)

Activity 1

🕒 20 min

Subtraction Methods

Standards Alignments

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

The purpose of this activity is for students to solve a Take From, Result Unknown problem, which requires decomposing a ten, in a way that makes sense to them. The problem is presented with an image that encourages students to think about 16 as a ten and 6 ones. They create a poster to share how they solved the problem, and participate in a gallery walk to see how their classmates solved. As students are working, the teacher monitors for methods to analyze during the activity synthesis. As they do so, students connect addition and subtraction and see how either can be used to solve the problem (MP7).

This activity uses *MLR7 Compare and Connect*. Advances: representing, conversing

Instructional Routines

MLR7 Compare and Connect

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames, Tools for creating a visual display

Student-facing Task Statement



Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement
- 5 minutes: partner work time
- Monitor for students who

Elena has 16 crayons.
She gives 7 crayons to Diego.
How many crayons does she have left?
Show your thinking using drawings, numbers, or words.

Student Responses

9. Sample responses:

- I started with 16 then I and took away 7. I could see there were 9 left.
- I started with the 7 crayons Diego had. Then I added 1 until I got to 16. I had to add 9.
- I took away the 6 crayons that weren't in the box. But she gave away 7 crayons, so I had to take one from the box and that left 9.

- take away 7 from 16
- count on from 7 to 16
- take away 6 to get 10 and then subtract 1 more
- count on from 7 to 10 and then add 6 more

Synthesis

MLR7 Compare and Connect

- Give each group tools for creating a visual display.
- “Create a poster that shows your thinking about the problem. Make sure to show your thinking in a way others will understand.”
- 5 minutes: partner work time
- “As you walk around and look at the posters, think about how the work is the same and different.”
- 5 minutes: gallery walk
- “What is the same and what is different about the representations?” (They all showed 16 and 7. They used math tools to represent the problem. Some people used addition facts they knew, some counted up, some took away.)

Activity 2

🕒 20 min

Number Card Subtraction

Standards Alignments

Addressing 1.OA.B.4, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to subtract a one-digit number from a teen number. Students choose a teen number card, then choose a number card to subtract from the teen number. They write an equation to represent each round. The equations students write may involve subtraction, or addition with a missing addend. During the synthesis, students share their methods. When explaining, students have opportunities to revise their language to make their explanations more precise and clear (MP6).

Students play this game again in the next lesson with a double 10-frame, so keep the materials organized for future use.

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

Connecting cubes or two-color counters,
Double 10-frames, Materials from a previous
lesson, Number cards 0–10

Required Preparation

- Each group of 2 needs a set of Number Cards 0–10 and a set of Number Cards 11–20 used in a previous lesson.

Student-facing Task Statement

- Choose a teen number card.
- Choose a number card to subtract.
- Find the difference.
- Write an equation.

My equations:

Pick your favorite equation.
Show how you found the value of the difference
using drawings, numbers, or words.

Student Responses

Sample responses:

Launch

- Groups of 2
- Give each group a set of number cards 0–10, a set of number cards 11–20, and access to double 10-frames and connecting cubes or two-color counters.
- “We’re going to play a game to practice subtracting. To play this game you pick a teen number card. Then you pick a number card 0–9 and subtract that number from your teen number. Write an equation to show the difference.”
- “At the end of the game, you are going to pick one turn and show how you found the difference.”

- $13 - 5 = \boxed{8}$. I showed 13 on my 10-frames. I took away 5 counters and saw I had 8 counters left.
- $6 + \boxed{8} = 14$. I put 6 counters on my 10-frames. I saw that I needed 4 more to get to 10. I know I need to add 4 more to 10 to get to 14. So I added 4 and 4 more which is 8.

Activity

- 10 minutes: partner work time
- Monitor for students who:
 - take away
 - count on
 - take away to get to 10, then take away some more
- "On your own, pick your favorite round. Show how you found the value of the difference using drawings, numbers, or words."
- 3 minutes: independent work time

Synthesis

- Invite previously identified students to share.
- "What method did you see today that you would like to try?"

Lesson Synthesis

🕒 10 min

Show 14 on the double 10-frame and the number card 6.

"Today we subtracted from teen numbers. How can you find the difference between 14 and 6?"

Lesson 23: Use a Ten to Subtract

Standards Alignments

Addressing 1.OA.C.6

Teacher-facing Learning Goals

- Use the unit of a ten to find differences within 20.

Student-facing Learning Goals

- Let's use 10 to help us subtract.

Lesson Purpose

The purpose of this lesson is for students to notice how the unit of ten can be used to find differences within 20.

In previous lessons, students subtracted from teen numbers in a way that made sense to them. The purpose of this lesson is to encourage students to use the unit of ten to find differences. In the first activity, students play the same subtraction game they played in the previous lesson, this time using 10-frames to represent their starting number. By using 10-frames, students can visually make sense of how to use 10 in order to take away efficiently. In the second activity, students analyze taking away to make a ten as a method to find the difference between two numbers.

Although many students may use math tools to help them find the difference, they may choose to write equations to represent their thinking. At this point in the year, students are not expected to write equations that match all of their steps, but teachers should always write accurate equations. Student equations may be accurate, like $13 - 3 - 3 = 7$ or $8 + 2 + 5 = 15$ or inaccurate, like $8 + 2 = 10 + 5 = 15$ or $13 - 3 = 10 - 3 = 7$.

In addition to writing equations, it may also be helpful to represent how the 10 was used in order to find the difference.

$$\begin{array}{r}
 13 - 6 \\
 \wedge \\
 10 \quad 3 \\
 10 - 6 = 4 \\
 3 + 4 = 7
 \end{array}$$

$$\begin{array}{r}
 13 - 6 \\
 \wedge \\
 3 \quad 3 \\
 13 - 3 = 10 \\
 10 - 3 = 7
 \end{array}$$

Access for:

Students with Disabilities

- Action and Expression (Activity 1)

English Learners

- MLR8 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: Activity 1, Activity 2
- Materials from a previous lesson: Activity 1
- Number cards 0–10: Activity 1

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

Check-in with your norms and routines. Are they promoting engagement from all of your students? Are there any adjustments you might make so that all students do math tomorrow?

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

 5 min

Subtract from 14

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Find the value of $14 - 6$.

Show your thinking using drawings, words, or numbers.

Student Responses

8. Sample responses:

- I put 14 on my double 10-frame. I took away 4 to get 10 and then another 2 to get 8.

- I took away 6 from the full 10-frame and saw that there were $4 + 4$ left.

Begin Lesson

Warm-up

🕒 10 min

Number Talk: Subtract to Make 10

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for subtracting. The expressions are explicitly chosen to encourage students to use their understanding of the $10 + n$ structure of teen numbers to subtract (MP7). This method will be discussed in more depth in this lesson's activities.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $17 - 7$
- $17 - 7 - 1$
- $17 - 8$
- $17 - 9$

Student Responses

- 10: $7 + 10$ is 17, so $17 - 7$ is 10.
- 9: In the last problem I did $17 - 7$, and this is taking one more away so it's 9.
- 9: $17 - 7$ would get me to 10, and then subtract one more and get 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

- 8: I thought about it like addition $9 + 1$ makes ten and then I add 7 more to get to 17. different way?"

Activity 1

🕒 15 min

Number Card Subtraction with 10-frames

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is to play the same game from the previous lesson, with a focus on using the ten in the teen number to help find the difference. This time, all students use the double 10-frame to represent the teen number to encourage students to use a ten to help them subtract.

Students may start by taking away the ones from the teen number and then take additional ones from the 10-frame to determine the answer. Students may use a different method and take away the single digit number from the full 10-frame, then count the remaining counters across both 10-frames. Or, students may count on from the one-digit number to the teen number. In each case, students write an equation to show the difference. Students may write subtraction equations or missing addend equations.

♿ 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 orally or using manipulatives.

Supports accessibility for: Language, Conceptual Processing

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames, Materials from a previous lesson, Number cards 0–10

Required Preparation

- Each group of 2 needs a set of Number Cards 0 - 10 and a set of Number Cards 11-20 used in a previous lesson.

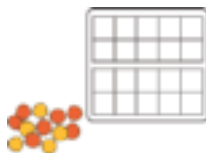
Student-facing Task Statement

1. Choose a teen number card.
2. Build the number on 10-frames.
3. Choose a number card to subtract.
4. Find the difference.
5. Write an equation.

My equations:

Pick your favorite equation.

Show how you found the value of the difference using drawings, numbers, or words.



Student Responses

Sample responses:

- $13 - 5 = \boxed{8}$. I showed 13 on my 10-frames. I took away 5 counters and saw I had 8 counters left.
- $12 - 7 = \boxed{5}$. I showed 12 on my 10-frames. I took 7 away from the filled-in 10-frame. I saw there were 3 left, and counted 4, 5 on the second 10-frame.
- $14 - 8 = \boxed{6}$. I put 14 counters on my 10-frames. I took away the 4 from the 10-frame that wasn't full and then I had to take 4 more away.

Launch

- Groups of 2
- Give each group a set of number cards 0–10, a set of number cards 11–20, double 10-frames, and connecting cubes or two-color counters.
- “We’re going to play the same subtraction game as yesterday, but this time you will represent your teen number on the double 10-frame.”
- If needed, play a round of the game with the class, demonstrating using the double 10-frame.

Activity

- 7 minutes: partner work time
- Monitor for students who:
 - take away to 10, then take away some more
 - take away from the 10, then count what is left
- “On your own, pick your favorite round. Show how you found the value of the difference using drawings, words, or numbers.”
- 3 minutes: independent work time

Synthesis

- Invite previously identified students to share.
- “How is the game different from yesterday?” (Yesterday we could solve any way we want, today we used 10-frames to build numbers and take away.)
- “Did the double 10-frames help? Why?” (They helped me see how I could use 10 to take away easier.)

Activity 2

🕒 20 min

Diego and Andre Find the Difference

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to analyze different take away methods used to find the difference between two numbers. During the launch, students discuss the two different methods to subtract. Then they solve two problems using one of the methods they discussed. Given the first step toward a calculation, students make sense of and then complete the calculation (MP3).

During the activity synthesis, the teacher records equations to match the method shared. It is important that each step is written as its own equation. For example, when solving $13 - 6 = \square$, the teacher records:

- $13 - 3 = 10$
- $10 - 3 = 7$

🌐 Access for English Learners

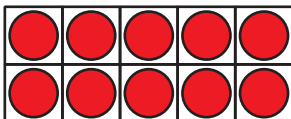
MLR8 Discussion Supports. Invite students to begin partner interactions by repeating the question, “How did you solve the problem?” This gives both students an opportunity to produce language.
Advances: Conversing

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

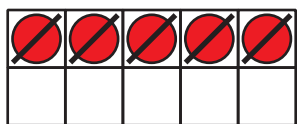
Student-facing Task Statement

Diego is playing Number Card Subtraction. He started with 15 and then picked an 8. He started out by doing this:



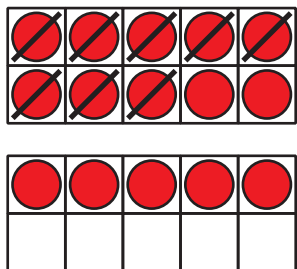
Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- “Have you ever started solving a math problem, and then had trouble finishing?”



What could Diego do next to find the difference?

Andre was also finding the value of $15 - 8$.
He started out by doing this:



What could Andre do next to find the difference?

Find the value of each difference using Diego's way or Andre's way.

- $14 - 5$
Show your thinking using drawings, numbers, or words.
- $13 - 6$
Show your thinking using drawings, numbers, or words.

Student Responses

9. Sample response: I put 14 counters on my 10-frames. I took away 4 to get to 10. Then I took away 1 more to make 5. My answer is 9.
7. Sample response: I put 13 counters on my 10-frames. I took away 6 from the 10 and got 4. Then I added the 3 counters in the other 10-frame to 4 and got 7.

Today we're going to see some ways that students started to find the difference, and suggest ways they could finish."

- Display the first problem with Diego's work.
- "What did Diego do?" (He put 15 on his 10-frames and crossed out 5 to get to 10.)
- 1 minute: quiet think time
- 1 minute: partner discussion
- "What could Diego do next to find the difference?" (He already took away 5, so he needs to take 3 more away so that he subtracts 8 altogether.)
- 1 minute: quiet think time
- 1 minute: partner discussion
- Demonstrate crossing off three more.
- "What is the difference?"
- Repeat the discussion with Andre's work. (Andre took 8 away from the full 10-frame and has 2 left. He needs to combine the 2 with the 5 in the other 10-frame to find the difference.)

Activity

- Read the task statement.
- 4 minutes: independent work time
- 2 minutes: partner discussion
- Monitor for a student who uses and can explain each way to subtract $14 - 5$.

Synthesis

- Invite previously identified students to share.
- As each student shares, ask them to explain why they chose their method.
- "Did anyone solve it a different way? Why?"

Advancing Student Thinking

If students take away without using the ten, consider asking:

- “Can you explain how you found the difference?”
- “How many counters would you take away to make 10? Then how many more would you need to take away?”

Lesson Synthesis

🕒 10 min

“Today we used a ten to subtract from teen numbers.”

Display $13 - 7$.

“How can we use a ten to help us find the value of the difference?” (I know that 13 is 10 and 3. I can take away the 3 and then I just have to take 4 more from 10. I know that is 6.)

Complete Cool-Down

Response to Student Thinking

Students take away six and count all that are left to find the difference.

Next Day Support

- Launch the lesson by highlighting the subtraction methods discussed in the previous lesson.

Lesson 24: Relate Counting to Addition and Subtraction

Standards Alignments

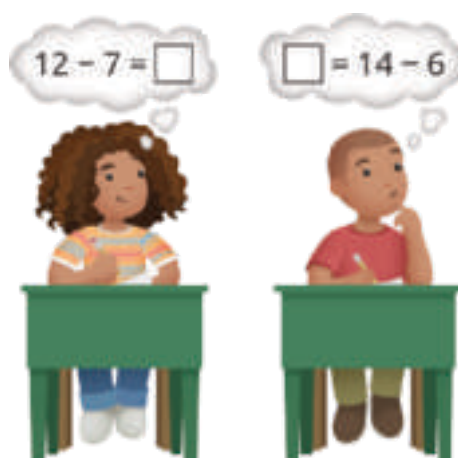
Addressing 1.NBT.A.1, 1.OA.B.4, 1.OA.C.5, 1.OA.C.6, 1.OA.D.8

Teacher-facing Learning Goals

- Analyze and use counting on and taking away as methods to subtract.

Student-facing Learning Goals

- Let's subtract by counting on or taking away.



Lesson Purpose

The purpose of this lesson is for students to analyze and use counting on and taking away methods to subtract within 20.

In a previous unit, as well as a previous section in this unit, students related addition to subtraction and thought about how knowing their addition facts to 10 could help them find differences.

The work of this lesson builds on students understanding of the relationship between addition and subtraction. In the first activity, students analyze two different methods for solving the same subtraction problem, then they try each method with new problems. In the second activity, students find the value of the difference in subtraction equations and find the value in missing addend equations.

Access for:

🕒 Students with Disabilities

- Engagement (Activity 2)

🌐 English Learners

- MLR7 (Activity 2)

Instructional Routines

Choral Count (Warm-up), MLR8 Discussion Supports (Activity 1)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: 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

With which math ideas from today's lesson did students grapple most? Did this surprise you or was this what you expected?

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

 0 min

Unit 3, Section D Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations:

Student Responses

- Take away to find the difference.
- Count on to find the difference.
- Make 10 to find the difference.
- Know certain differences.
- Use addition facts to find the difference.

 ----- Begin Lesson -----

Warm-up

🕒 10 min

Choral Count: Backward from 50

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Choral Count is to invite students to practice counting by one backwards and notice patterns in the count. These understandings help students develop fluency and will be helpful later in this lesson when students count back to find the value that makes the subtraction equation true.

Instructional Routines

Choral Count

Student Responses

Record the count in columns with the first number in each column being a multiple of 10.

Sample responses:

- It goes 50, 40, 30, 20 across the top.
- The numbers are getting smaller as we count down.
- Each column has 9, 8, 7, 6, 5, 4, 3, 2, 1.

Launch

- "Count backward by 1, starting at 50."
- Record as students count.
- Stop counting and recording at 20.

Activity

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

Synthesis

- "Who can restate the pattern in different words?"

Activity 1

Different Ways to Subtract

🕒 20 min

👤 ↔ 👤 PLC Activity

Standards Alignments

Addressing 1.OA.B.4, 1.OA.C.5, 1.OA.C.6

The purpose of this activity is for students to analyze and apply both counting on and taking away as methods to subtract. Both counting on and taking away are valid methods for finding a difference. Students should begin to notice that one method may be more efficient than the other, depending on the numbers in the problem. During the synthesis, students discuss how counting on and taking away are the same and different. This allows teachers to see the mathematical vocabulary students use to describe the strategies (MP6).

This activity uses *MLR8 Discussion Supports*. Activity: During partner work time, invite students to restate what they heard their partner say. Students may agree or clarify for their partner.

Advances: Listening, Speaking

Instructional Routines

MLR8 Discussion Supports

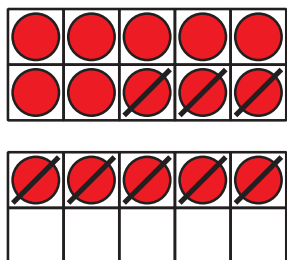
Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

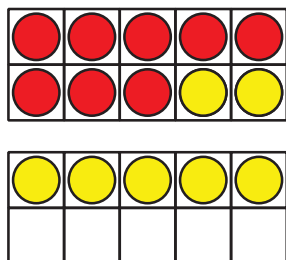
Student-facing Task Statement

Yesterday, we saw Diego's method to find the value of $15 - 8$.

Diego's way



Tyler's way



Find the value of each difference using Diego's way, then using Tyler's way.

Diego's Way

Tyler's Way

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- Read the task statement for Part 1.
- "How did Diego find the difference?" (Diego put 15 counters on the 10-frames and took away 8. The counters that are still there show the difference.)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share responses.
- "Look at Tyler's work. He started by putting eight red counters on his double 10-frame. Then he put on seven yellow counters. How

1. $16 - 3$

Diego's Way

Tyler's Way

2. $17 - 8$

3. $18 - 15$

Student Responses

1. 13. Sample responses:

- Diego's way: I put 16 counters in the 10-frames. Then I took away 3 from the 6. I counted what was left.
- Tyler's way: I put 3 yellow counters in the 10-frames. Then I added red counters until I got to 16. I counted the red counters.

2. 9. Sample responses:

- Diego's way: I put 17 counters in the 10-frames. Then I took away the 7 and 1 from the 10. I counted what was left.
- Tyler's way: I put 8 yellow counters in the 10-frames. Then I added red counters until I got to 17. I counted the red counters.

3. 3. Sample responses:

- Diego's way: I put 18 counters in the 10-frames. Then I took away the 8 and then 7 from the 10. I counted what was left.
- Tyler's way: I put 15 yellow counters in the 10-frames. Then I added red counters until I got to 18. I counted the red counters.

did that help him find the difference?" (He kept adding counters until he got to 15. He knew the yellow counters were the difference.)

- 30 seconds: quiet think time
- 1 minute: partner discussion

Activity

- Read the task statement for Part 2.
- 6 minutes: independent work time

MLR8 Discussion Supports

- "After your partner shares their thinking, repeat back what they told you."
- Display the sentence frame: "I heard you say . . ."
- 4 minutes: partner discussion

Synthesis

- Have a student share Diego's way for $18 - 15$.
- Display $18 - 15 = \boxed{3}$
- "How does this equation match their method?" (They started with 18 counters and then took away 15. They counted 3 left.)
- Have a student share Tyler's way for $18 - 15$.
- Display $15 + \boxed{3} = 18$.
- "How does this equation match Tyler's method?" (Tyler started with 15 counters. Then he counted on to get to 18. He had to count on 3.)
- "Which method did you like better for this expression? Why?" (Tyler's because it was a lot faster to count on 3 more than to take away 15 and count what was left.)

Activity 2

🕒 20 min

Find the Number That Makes Each Equation True

Standards Alignments

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

The purpose of this activity is for students to find the missing values that make subtraction and addition equations true. The numbers are selected to encourage students to use a ten to find the missing value and are presented as two sets: subtraction and addition. Students may notice that the first equation in Set B relates to a subtraction equation in Set A.

In the synthesis, students share methods for $15 - 12$. Highlight both counting on and taking away methods. Monitor for a student who found the difference between $15 - 12$ by subtracting 10 from 15 and then subtracting 2 more from the 5 ones that are left: $15 - 10$ is 5 and $5 - 2$ is 3. If a student does not use this method, teachers should demonstrate to students. When students break up 12 into 10 and 2 and subtract each number successively they are using their understanding of a teen number as 10 and some ones (MP7).

🌐 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 was the same problem solved in multiple ways?” and “Why does it work to solve the same problem in multiple ways?”

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: Social-Emotional Functioning, Attention

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Find the number that makes each equation true. Be sure you can explain your thinking in a way that others will understand.

Set A:

1. $12 - 7 = \square$

2. $18 - 5 = \square$

3. $\square = 14 - 6$

4. $15 - 12 = \square$

5. $13 - 4 = \square$

Set B:

1. $5 + \square = 18$

2. $13 = \square + 6$

3. $20 = 15 + \square$

Student Responses

Set A

1. 5

2. 13

3. 8

4. 3

5. 9

Set B

1. 13

2. 7

Launch

- Groups of 4
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- Read the task statement.
- 8 minutes: independent work time
- Monitor for students who solve $15 - 12 = \square$ by:
 - Counting on from 12 to 15
 - Taking away 12 from 15
 - Taking away 10 and then 2 from 15
- “Compare your thinking with other students at your table. Share the methods you used to find the missing numbers. If you disagree about an answer, work together until you come to an agreement.”
- 4 minutes: small-group discussion

Synthesis

- Display $15 - 12 = \square$
- Invite previously identified students to share.
- “How is $15 - 12 = \square$ different than all the other equations?” (All the others only subtract a one-digit number but this one is subtracting 12 so you can take away 10 and 2 more.)

3. 5

Advancing Student Thinking

If students use the same method for each equation, consider asking:

- “How did you decide what method to use?”
- “How could you use addition to find the missing number?”

Lesson Synthesis

 10 min

“Today we used different methods for subtracting. What method do you like best for subtracting? Why is it your favorite method?”

Lesson 25: How Do You Want to Subtract?

Standards Alignments

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

Teacher-facing Learning Goals

- Use subtraction methods flexibly to find differences based on the numbers in a given problem.

Student-facing Learning Goals

- Let's use subtraction methods that work for the numbers in a problem.

Lesson Purpose

The purpose of this lesson is for students to use subtraction methods flexibly to find differences.

Students apply their learning from the unit to flexibly use methods to subtract within 20. There is not one correct method to use, as it is based on each individual student's understanding of the concepts of subtraction and their known facts. It is helpful for students to listen to and make sense of others' reasoning about which method they used (MP3). In the first activity, students find differences given expressions. In the second activity, students apply subtraction methods as they solve story problems with the unknown in all positions.

Access for:

Students with Disabilities

- Engagement (Activity 1)

English Learners

- MLR8 (Activity 1)

Instructional Routines

Choral Count (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: 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

How did your students represent their work today? How might you support them in creating more efficient representations?

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

🕒 5 min

Subtraction Methods

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Find the value of each difference.

Show your thinking using drawings, numbers, or words.

1. $13 - 7$
2. $19 - 14$

Student Responses

1. 6. I put 13 counters on my 10-frames. Then I took away 7. I saw that I had 5 and 1 left, which is 6.
2. 5. I put 14 yellow counters on my 10-frames. Then I added red counters until I got to 19. Then I counted the red counters.

----- **Begin Lesson** -----

Warm-up

 10 min

Choral Count: Start At 50

Standards Alignments

Addressing 1.NBT.A.1

The purpose of this Choral Count is for students to practice counting by one starting at a number other than one. These understandings help students make the transition from counting all to counting on when adding and subtracting.

Instructional Routines

Choral Count

Student Responses

Record the count in columns, with multiples of 10 at the top of each column.

Sample responses:

- Each column except the last one has 10 numbers.
- There are five full columns and then the column with 100 is not full.
- Each column has 0, 1, 2, 3, 4, 5, 6, 7, 8, 9.

Launch

- "Count by 1, starting at 50."
- Record as students count.
- Stop counting and recording at 100.

Activity

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

Synthesis

- "What numbers comes after 79? What number comes before 50?"

Activity 1

 20 min

Choose Your Own Subtraction Method

Standards Alignments

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

The purpose of this activity is for students to find differences using methods they choose. As students work, they may feel more comfortable with one method than another. The numbers were chosen to encourage different methods (counting on and taking away) so students can consider the numbers in a specific expression as they find the difference. During the activity synthesis, students share which method they used for a specific problem and why they chose it (MP3).

Access for English Learners

MLR8 Discussion Supports. Synthesis: 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

Access for Students with Disabilities

Engagement: Provide Access by Recruiting Interest. Provide choice. Invite students to decide which problem to start with.

Supports accessibility for: Social-Emotional Functioning, Attention

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

1. $20 - 15 = \square$

Show your thinking using drawings, numbers, or words.

2. $19 - 3 = \square$

Show your thinking using drawings, numbers, or words.

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

Activity

- “We have been learning about different methods for subtracting. Look at each equation and think about which method you want to use to find the missing

3. $13 - 5 = \square$

Show your thinking using drawings, numbers, or words.

4. $18 - 9 = \square$

Show your thinking using drawings, numbers, or words.

5. $17 - 15 = \square$

Show your thinking using drawings, numbers, or words.

Student Responses

5. I started at 15 and counted on until I got to 20.
16. I know $9 - 3 = 6$ so $19 - 3 = 16$.
8. I started with 13, then I took away 3 to get to 10, and 2 more to get to 8.
9. I know $9 + 9 = 18$.
2. I started at 15 and counted 2 more to make 17.

number. You can use different methods for each problem if you would like."

- 8 minutes: independent work time
- As students work, consider asking:
 - "Which method did you use?"
 - "Why did you choose that method for this equation?"
 - "Do you use this method for every equation? Why or why not?"
- Monitor for students who take away three for $19 - 3 = \square$, and can explain the benefit to choosing this method for these numbers.
- 4 minutes: partner discussion

Synthesis

- Invite previously identified students to share.
- "We can choose to use different methods for different equations depending on the numbers. If we need to take away a lot, we might choose to count on instead. If we only need to take away a few, we might choose to take away. Both methods will work, but we can think about which method is more efficient for each equation."

Activity 2

🕒 15 min

Solve Story Problems

Standards Alignments

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

The purpose of this activity is for students to solve different types of story problems involving teen numbers. Each story problem can be solved using either addition or subtraction. Students may use either operation for the second and third problems and any method that makes sense to them. They write equations to match the stories and should be able to explain how they match (MP2).

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

1. There are 12 pencils on the table.
The teacher picks up 7 pencils.
How many pencils are still on the table?
Show your thinking using drawings,
numbers, or words.

Equation:

2. Clare collects 8 glue sticks from the red table.
She collects some more from the blue table.
Now she has 15 glue sticks.
How many did she collect from the blue table?
Show your thinking using drawings,
numbers, or words.

Equation:

3. Kiran has 17 crayons.
He gives some to his friends.
Now he has 9 crayons.
How many did he give to his friends?
Show your thinking using drawings,
numbers, or words.

Equation:

Launch

- Groups of 4
- Give students access to double 10-frames and two-color counters or connecting cubes.

Activity

- Read the task statement.
- 6 minutes: independent work time
- Monitor for students who solve Kiran's story problem by:
 - Counting on from 9
 - Taking away 9
 - Subtracting from the ten or subtracting to get to 10
- "Share your thinking with your group."
- 4 minutes: small-group discussion

Synthesis

- Display Kiran's story problem.
- Invite previous identified students to share their methods and equations.
- "How do their equations match their work? Where do we see the answer to the question in their equation?"



Student Responses

1. 5: I started with 12 and took away 2 to get to 10. Then I took away 5 more.
2. 7: I started with 8 red counters. Then I added until I got to 15. I added 7.
3. 8: I put 17 counters on my 10-frames. I took away 9 from the filled 10-frame so it only had 1 left. 7 and 1 more is 8.

Lesson Synthesis

🕒 10 min

Display $14 - 9 = \square$.

“Today we used different methods to solve story problems and find missing numbers in equations. Talk to your partner about how you can find the missing number in this equation using addition or subtraction.”

Lesson 26: What's the Story?

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

Teacher-facing Learning Goals

- Solve addition and subtraction story problems with unknowns in all positions.

Student-facing Learning Goals

- Let's solve story problems.

Lesson Purpose

The purpose of this lesson is for students to solve addition and subtraction story problems with the unknowns in all positions.

In previous lessons, students solved Add To, Start or Change Unknown and Take Away, Change or Result Unknown story problems. In this lesson, students apply addition and subtraction methods learned in this unit to solve story problems. In the first activity, students solve two story problems that highlight the relationship between addition and subtraction. In the second activity, students solve more story problems with missing values in all positions. Students do a gallery walk in order to analyze how their classmates solved and compare their representations.

In this lesson students have an opportunity to make sense of problems and persevere in solving them as they solve closely related story problems many of which can be solved with either addition or subtraction (MP1). The focus of the discussion is on how students interpreted the problem and how they used mathematics to model a solution (MP4).

This lesson has a Student Section Summary.

Access for:

Students with Disabilities

- Representation (Activity 2)

English Learners

- MLR6 (Activity 1)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters:

Activity 1, Activity 2

- Double 10-frames: Activity 1, Activity 2
- Tools for creating a visual display: Activity 2

Required Preparation

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. How have you seen each student grow as a young mathematician throughout this work? How have you seen yourself grow as a teacher? What will you continue to do and what will you improve upon in Unit 4?

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

 0 min

Unit 3, Section D Checkpoint

Standards Alignments

Addressing 1.OA.C.6

Student-facing Task Statement

Lesson observations

Student Responses

- Take away to find the difference.
- Count on to find the difference.
- Make 10 to find the difference.
- Know certain differences.
- Use addition facts to find the difference.

----- **Begin Lesson** -----

Warm-up

 10 min

Number Talk: Subtract 10 or More

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for subtracting a teen number from another teen number. The expressions are sequenced to encourage students to break the subtrahend into a ten and some ones. Students can then subtract the ten and ones in two different steps. Based on the previous lesson students may decompose the subtrahend into $10 + n$ and subtract 10 first and then n .

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $15 - 10$
- $15 - 12$
- $16 - 10$
- $16 - 13$

Student Responses

- 5: I know that 10 and 5 is 15, so 15 minus 10 is 5.
- 3: I thought about 15 minus 10 to get 5. Then 5 minus 2 is 3.
- 6: 16 is 10 and 6.
- 3: I started at 13 and counted on 3.

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 can $15 - 10$ help with $15 - 12$?” (We know 12 is 10 and 2 so we can use $15 - 10$ and subtract 2 more.)

Activity 1

 15 min

Solve Related Story Problems

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to solve two story problems that highlight the relationship between addition and subtraction. Both are Change Unknown stories that use the same numbers. Although one story sounds like addition and the other subtraction, both stories can be solved using either operation. The same equations can be used to solve both problems.

Students write equations to represent each problem and there are many equations students could write. The important thing is for students to be able to explain how the equation they wrote matches the story problem. Some students may write each of their steps as equations.

For example, for $6 + \square = 18$ students may write:

- $6 + 4 = 10$
- $10 + 8 = 18$
- $4 + 8 = \boxed{12}$

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 or two-color counters,
Double 10-frames

Student-facing Task Statement

1. Elena has 6 counters.
She gets some more counters.
Now she has 18 counters.
How many more counters did Elena get?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.

2. Elena has 18 counters.
She gets rid of some counters.
Now she has 6 counters.
How many counters did Elena get rid of?
Show your thinking using drawings,
numbers, or words.

Equation: _____

Student Responses

- 12 Sample responses: $6 + \boxed{12} = 18$ or $6 + 4 + 8 = 18$
12. Sample responses: $18 - 6 = \boxed{12}$ or $6 + \boxed{12} = 18$

Activity

- Read the task statement.
- 5 minutes: independent work time
- 3 minutes: partner discussion
- Monitor for students who write and can explain a variety of equations such as:
 - $6 + \boxed{12} = 18$
 - $18 - 6 = \boxed{12}$
 - $18 - \boxed{12} = 6$

Synthesis

- Invite previously identified students to share their equation for each problem.
- If needed, ask, “How does your equation match how you solved the problem?”
- “What do you notice about the equation used to solve each problem?” (They could be the same. You can add $6 + 12$ or subtract $18 - 6$ for both problems to solve it.)
- “Why is the missing number the same in each of these equations?” (Because $6 + 12 = 18$ and $18 - 6 = 12$. The difference is the same whether I add or subtract.)

Activity 2

🕒 25 min

More Story Problems

Standards Alignments

Addressing 1.OA.A.1, 1.OA.B.4, 1.OA.C.6

The purpose of this activity is for students to solve related addition and subtraction story problems with the unknown in different positions. Students work with a partner to solve a story problem and create a poster of their work. They share their work with groups who solved a different problem and compare their representations and methods.

Access for Students with Disabilities

Representation: Access for Perception. Invite students to act out the scenario of their assigned story problem before solving.

Supports accessibility for: Conceptual Processing

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames, Tools for creating a visual display

Student-facing Task Statement

Story Problem 1

Han has some pencils.
He gets 9 pencils from the art store.
Now he has 15 pencils.
How many pencils did Han have to start?

Story Problem 3

Han has 9 pencils.
He gets some more pencils from the art store.
Now he has 15 pencils.
How many pencils did he get from the art store?

Show your thinking using drawings, words or

Story Problem 2

Han has 15 pencils.
He gives some pencils to his friends.
Now he has 9 pencils.
How many pencils did Han give to his friends?

Story Problem 4

Han has 15 pencils.
He gives 9 pencils to his friends.
How many pencils does Han have now?

Launch

- Groups of 2
- Give each group tools to create a visual display and access to double 10-frames and connecting cubes or two-color counters.
- Assign each group a story problem to solve.
- “Work with your partner to solve the story problem and create a poster showing how you solved. Be sure to include any equations you used. If you can solve the problem in more than one way, show the different ways and equations.”

Activity

- 8 minutes: partner work time
- Arrange groups together so each larger group has students who have solved each of the four problems.
- “Share your poster with your group. Explain how the equations you wrote match the story. As each group shares, discuss how

numbers.

Equation:



Student Responses

1. $6. \boxed{6} + 9 = 15$. We thought about how many to add to 9 to get 15. We had to add 1 + 5 or 6.
2. $6. 15 - \boxed{6} = 9$. We took away from 15 until we had 9 left.
3. $6. 9 + \boxed{6} = 15$. We started with 9, then added 1 to make 10, then added 5 more to get 15. We added 6.
4. $6. 15 - 9 = \boxed{6}$. We know that $15 - 5 = 10$, but we still need to subtract 4 more. $10 - 4 = 6$.

the problems are the same and different. Make a list of equations you used for each problem."

- 10 minutes: group work time

Synthesis

- Display a list of equations one group made for each problem.
- "What do you notice about the equations this group used for each problem?" (They used the same equations for each problem. All the problems have more than one equation. All the problems have addition and subtraction equations.)

Lesson Synthesis

🕒 10 min

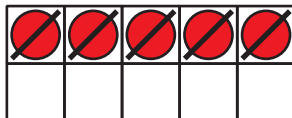
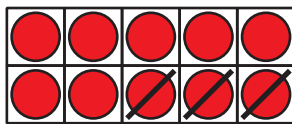
"We have been doing a lot of subtraction using different methods. Tell your partner something new you have learned about subtraction." (I learned that you can turn a subtraction expression into an addition expression. I learned that you can use 10 to help you subtract.)

Student Section Summary

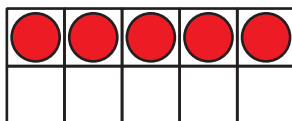
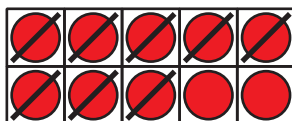
We used different methods to subtract within 20.

We used take away methods.

$$15 - 8$$



We used a ten to take away 8.



We used counting on methods.

$$15 - 8$$

8 . . 9, 10, 11, 12, 13, 14, 15

Use ten to help count on.

$$8 + 2 = 10$$

$$10 + 5 = 15$$

$$2 + 5 = 7$$

Lesson 27: Center Day 4

Standards Alignments

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

Teacher-facing Learning Goals

- Add and subtract within 20.

Student-facing Learning Goals

- Let's play games to practice addition and subtraction.

Lesson Purpose

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

Students learn new stages in two centers that focus on adding and subtracting within 20. Students have opportunities to practice methods such as finding the difference by counting on, taking away, making 10, and using addition facts.

Access for:

Students with Disabilities

- Action and Expression (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 2
- Double 10-frames: Activity 1, Activity 2
- Materials from a previous lesson: Activity 2
- Materials from previous centers: Activity 2
- Number cards 0–10: Activity 1

Materials to Copy

- How Close? Stage 2 Recording Sheet (groups of 1): Activity 1
- Compare Stage 2 Subtraction Cards to 20 (groups of 2): Activity 2

Lesson Timeline

Warm-up 10 min

Teacher Reflection Question

Reflect on who got to do math today in class. What norms or routines allowed those students

Activity 1	15 min
Activity 2	25 min
Lesson Synthesis	10 min

to engage in the mathematics? How can you adjust these norms and routines so all students do math tomorrow?

Begin Lesson

Warm-up

🕒 10 min

Number Talk: Subtract 10

Standards Alignments

Addressing 1.OA.C.6

The purpose of this Number Talk is to elicit strategies and understandings students have for subtracting a teen number. The expressions are written to encourage students to notice a teen number can be broken into a ten and some ones and subtracted in parts.

Instructional Routines

Number Talk

Student-facing Task Statement

Find the value of each expression mentally.

- $20 - 10$
- $20 - 10 - 1$
- $18 - 10 - 4$
- $18 - 14$

Student Responses

- 10: 20 is 2 tens and I take 1 ten away and am left with 10.
- 9: I know 20 minus 10 is 10, and take away

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.

one more is 9.

- 4: $18 - 10 = 8$ and $8 - 4 = 4$
- 4: It is the same as the one before but the 14 is together instead of 10 and 4.

Synthesis

- Display $20 - 10 - 1$.
- “How much did we subtract from 20 in this expression? What other expression can we write to show this?” ($20 - 11$)

Activity 1

🕒 15 min

Introduce How Close? Subtract from 20

Standards Alignments

Addressing 1.OA.C.6

The purpose of this activity is for students to learn stage 2 of the How Close center. Students pick four number cards and then choose two or three of the numbers to subtract from 20 to get as close as possible to zero.

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames, Number cards 0–10

Materials to Copy

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

Launch

- Groups of 2
- Give each group a set of number cards, two recording sheets, and access to double 10-frames and connecting cubes or two-color counters.
- “We are going to learn a new way to play the How Close center. Let's play one round together.”
- Display four cards.
- “Each player starts with four cards. Choose numbers to subtract from 20 in order to get as close as possible to zero. You can choose two or three numbers to subtract.”

- “Which of these numbers should I subtract from 20 to get close to zero?”
- Share responses.
- “After you have chosen the numbers you will subtract, complete the equation on your recording sheet.”
- Demonstrate writing the equation.
- “Compare your work with your partner’s. The player who gets closer to zero gets one point. The person who gets more points wins.”

Activity

- 10 minutes: partner work time

Synthesis

- Display number cards 6, 4, 9, 8
- “Which cards would you use and why?” (9 and 8 are the biggest numbers so that would get me close to 0. 6 and 4 make 10 and if we include 9 that would get us closer to 0.)

Activity 2

🕒 25 min

Introduce Compare, Add and Subtract Within 20

Standards Alignments

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

The purpose of this activity is for students to learn stage 2 of the Compare center. Students choose a card with either an addition or subtraction expression and compare the values. After learning this new stage of the Compare center, students then choose from other activities focused on addition and subtraction.

Students choose from any stage of previously introduced centers.

- Compare
- How Close?
- Five in a Row

Access for Students with Disabilities

Action and Expression: Develop Expression and Communication. Give students access to manipulatives such as connecting cubes, counters, or 10-frames.

Supports accessibility for: Conceptual Processing, Memory

Materials to Gather

Connecting cubes or two-color counters, Double 10-frames, Materials from a previous lesson, Materials from previous centers

Materials to Copy

Compare Stage 2 Subtraction Cards to 20 (groups of 2)

Required Preparation

- Create a set of Compare Stage 2 Subtraction Cards for each group of 2.
- Each group of 2 needs a set of Compare Stage 2 Addition Cards from a previous lesson.
- Gather materials from previous centers:
 - Compare, Stage 1
 - How Close? Stages 1 and 2
 - Five in a Row, Stages 1-3

Student-facing Task Statement

Choose a center.

Compare



Five in a Row

Launch

- Groups of 2
- Give each group a set of addition and subtraction cards and access to double 10-frames and connecting cubes or two-color counters.
- “We are going to learn a new way to play the Compare center. You will still find the value of the expression on your card and compare values with your partner. The partner whose card has the greater value takes both cards. The game is over when each partner runs out of cards to flip over. The partner with the most cards wins.”



How Close?

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

Activity

- 8 minutes: partner work time
- “Now you will choose from centers we have already learned. One of the choices is to continue with Compare.”
- Display the center choices in the student book.
- “Think about what you would like to do.”
- 30 seconds: quiet think time
- Invite students to work at the center of their choice.
- 10 minutes: center work time

Synthesis

- Display $9 + 6$ and $19 - 6$.
- “Which card has the greater value? How do you know?”

Lesson Synthesis

🕒 10 min

“Today we learned new ways to play two of our centers.”

“What is one thing you have gotten better at by working in centers?”

Lesson 28: Around the Room (Optional)

Standards Alignments

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

Teacher-facing Learning Goals

- Add within 20 with three addends.
- Write and solve story problems.

Student-facing Learning Goals

- Let's write addition and subtraction story problems.

Lesson Purpose

The purpose of this lesson is for students to write and solve their own story problems involving addition and subtraction.

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 use objects in their classroom to create story problems and equations. When students ask mathematical questions that arise from a situation and use mathematical features of a situation to solve a problem, they model with mathematics (MP4).

Access for:

Students with Disabilities

- Representation (Activity 1)

English Learners

- MLR7 (Activity 3)

Instructional Routines

Notice and Wonder (Warm-up)

Materials to Gather

- Connecting cubes or two-color counters: Activity 1, Activity 3
- Double 10-frames: Activity 1, Activity 3
- Tools for creating a visual display: Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	10 min
Activity 3	10 min
Lesson Synthesis	10 min

Teacher Reflection Question

What part of the lesson went really well today in terms of students' learning? What did you do that made that part go well?

----- **Begin Lesson** -----**Warm-up**

🕒 10 min

Notice and Wonder: Counting Things in the Classroom

Standards Alignments

Building Towards 1.NBT.B.2

This warm-up prompts students to familiarize themselves with the mathematical context for the lesson, and builds curiosity about what kinds of objects they might be able to count in their own classroom. Teachers may use the image but it is preferable to have students answer the questions based on their own classroom. The sample responses are for the image in the workbook. Student responses will differ if they use their own classroom.

Instructional Routines

Notice and Wonder

Student-facing Task Statement

What do you notice?
What do you wonder?

Launch

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



Student Responses

Students may notice:

- There are two tables and 5 chairs at one table.
- There are shapes on the wall. I see a square.
- There are lots of colors.

Students may wonder:

- Are there more tables in this classroom?
- What are the pictures on those squares?
- Whose classroom is this?

Activity

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

Synthesis

- “What are some things you could count in the classroom image?” (Chairs, designs on the wall, books in the bookcase)
- “Look around our classroom. What are some things we have more than five of?” (scissors, books, desks, chairs, glue sticks, paper, markers, students)
- Record responses.
- “Do we have more than ten of any of these? How do you know?” (There are 25 kids in the class and I know we all have a pair of scissors. So that’s more than 10. Or there are 7 table baskets and there are lots more baskets in the classroom than that.)

Activity 1

🕒 20 min

Writing Classroom Story Problems

Standards Alignments

Addressing 1.OA.A.1, 1.OA.A.2, 1.OA.B.3, 1.OA.C.6

The purpose of this activity is for students to generate, articulate, and solve their own addition and subtraction problems. They use the context of classroom objects to create story problems and represent their thinking (MP2). Students may tell a story without asking a question, so in the launch students consider a questionless word problem so the teacher can emphasize the importance of having a question when students write their own problems.

Access for Students with Disabilities

Representation: Develop Language and Symbols. Create a display that includes useful vocabulary related to addition and subtraction (how many, altogether, more than), as well as common items found in the classroom (chairs, markers, books). Invite students to borrow from the display as they write story problems.

Supports accessibility for: Language

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Noah had 8 pencils.

Elena had 5 pencils.

Han had 4 pencils.

1. Addition story problem:

Solve the story problem.

Show your thinking using drawings,
numbers, or words.

Equation: _____

2. Subtraction story problem:

Solve the story problem.

Show your thinking using drawings,
numbers, or words.

Equation: _____

Student Responses

1. Sample response: There are 4 books on the back table, and 6 books in my backpack, and 8 books on the shelf. How many books are there altogether? I know that $4 + 6 = 10$, and $10 + 8 = 18$. $4 + 6 + 8 = 18$
2. Sample response: There are 6 red markers and 5 blue markers. How many more red

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- Display and read the questionless story problem.
- “What is this story missing? What kind of questions could you ask?” (How many pencils did they have altogether? How many more pencils does Noah have than Elena?)
- 30 seconds: quiet think time
- 1 minute: partner discussion
- Share and record responses.
- “We have been solving different kinds of story problems. Today, you and your partner will write and solve addition and subtraction story problems using objects we have in our classroom.”

Activity

- “Partner A will pick a number less than 20. Partner B will use objects in the room to write a story problem and ask a question for which the number Partner A picked is

markers are there than blue markers? 6 is one more than 5. $6 - 5 = 1$

the answer.”

- “Together, solve the story problem and write an equation.”
- “Switch roles for problem 2.”
- 10 minutes: partner work time
- Monitor for a variety of methods students use to add three numbers such as:
 - Count on
 - Make a 10
 - Use related facts

Synthesis

- “What were some of the problems you came up with that you were proud of?”
- Share students' story problems.

Activity 2

🕒 10 min

Story Problem Posters

Standards Alignments

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

The purpose of this activity is for students to create a poster of their story problem so that others can solve it. Students use these posters in the next activity, in which they solve, and write equations for other students' story problems. They notice connections between the equation and the written problem and create a poster that communicates their work.

Alternatively, to make this task more challenging, students can rewrite their stories as missing addend story problems.

Materials to Gather

Tools for creating a visual display

Student Responses

Students create posters with one of their story problems from the previous activity.

Launch

- Groups of 2
- Give each group tools for creating a visual display.
- “Now we’re going to use your story problems from the last activity to make posters so we can show our thinking and challenge each other.”

Activity

- “Choose one of the story problems you and your partner wrote. Create a poster with your story problem. Your classmates will solve it in the next activity. So make sure to not include the answer.”
- 5 minutes: partner work time.
- “Take turns sharing your poster with another pair at your table.”
- “The pair listening should tell the presenters if their poster is clear and organized.”
- 5 minutes: group work time.
- If needed, give students an opportunity to revise their posters.

Synthesis

- “What were some things you changed to make your poster clear and organized for the gallery walk?” (We wrote the story problem bigger. We added a picture to go with my story.)

Activity 3

🕒 10 min

Poster Gallery Walk

Standards Alignments

Addressing 1.OA.A.1

The purpose of this activity is for students to solve their classmates' story problems. Students may use any method that makes sense to them to solve the addition and subtraction story problems.

Access for English Learners

MLR7 Compare and Connect. Synthesis: After the Gallery Walk, lead a discussion comparing, contrasting, and connecting the different story problems. To amplify student language, and illustrate connections, follow along and point to the relevant parts of the displays as students speak.

Advances: Representing, Conversing

Materials to Gather

Connecting cubes or two-color counters,
Double 10-frames

Student-facing Task Statement

Let's solve our classmates' story problems.

1. Solve the story problem using drawings, numbers, or words.

Equation: _____

2. Solve the story problem using drawings, numbers, or words.

Equation: _____

3. Solve the story problem using drawings, numbers, or words.

Equation: _____

4. Solve the story problem using drawings, numbers, or words.

Equation: _____

Launch

- Groups of 2
- Give students access to double 10-frames and connecting cubes or two-color counters.
- Set up posters in an accessible way for all students.

Activity

- "You will go around the room and read your classmates' story problems. Then solve and write equations for them."
- 8 minutes: gallery walk

Synthesis

- "Let's reflect on the work we did today."

Student Responses

Sample response:

I put five counters on the 10-frame. Then I put four more on. Then I added seven more counters. I know it's 16 because I see a full 10-frame and six more.

$$5 + 4 + 7 = 16$$

Lesson Synthesis

🕒 10 min

"Today, we wrote and solved story problems involving addition and subtraction. What was the most challenging part of writing or solving the story problems today?"

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Family Support
Materials

Family Support Materials

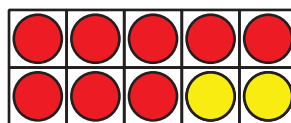
Adding and Subtracting Within 20

In this unit, students add and subtract within 20.

Section A: Develop Fluency with Addition and Subtraction to 10

This section focuses on developing students' fluency with addition and subtraction within 10. Students need to have fluency with addition and subtraction facts within 10 by the end of grade 1. Students are encouraged to think about addition facts that can help them figure out subtraction facts. For example, given $9 - 4$, students may say "I know that $5 + 4 = 9$, so $9 - 4 = 5$."

Students develop fluency with sums of 10 and the 10-frame is used as a helpful visual. For example, this 10-frame may allow students to see several related facts.



$$8 + 2 = 10$$

$$2 + 8 = 10$$

$$10 - 2 = 8$$

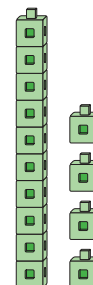
$$10 - 8 = 2$$

Students also continue to build an understanding of the equal sign as they work with equations with an expression on both sides. They may use computation, or reasoning about the numbers, to determine if the equations are true or false.

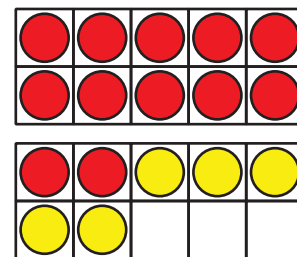
Section B: Use the Structure of 10 to Add and Subtract

In this section, students explore the base-ten system and place value as they learn that ten ones are put together to make a new unit, a ten.

Students see that teen numbers are a group of ten plus some number of ones. Students use connecting cubes organized into towers of 10 and 10-frames to make sense of ten as a unit.



Students use 10-frames to help them add and subtract from teen numbers. For example, this image shows $12 + 5$ and $17 - 5$.

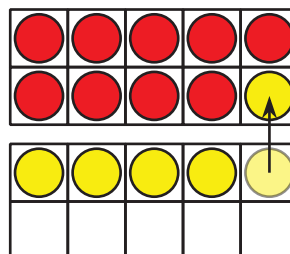


Section C: Add within 20

In this section, students add 2 or 3 numbers with a total within 20. They start with problems where 2 of the numbers make a 10 (for example, $6 + 8 + 4$) and learn that you can add numbers in any order, which can make adding easier. They discover the usefulness of grouping numbers to find a sum of 10 when adding. Students find the sum of 2 addends using methods where they count on or use related facts they know.

For example, making a ten is helpful when finding the value of $9 + 5$.

Students can take 1 from the 5 and group it with the 9 to make 10, and then add the 4.

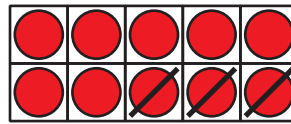


$$\begin{aligned} &9 + 5 \\ &9 + 1 + 4 \\ &10 + 4 \\ &14 \end{aligned}$$

Section D: Subtract within 20

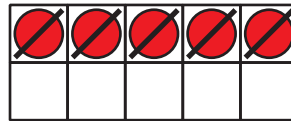
In this section, students subtract within 20. They use the relationship between addition and subtraction and their understanding of the usefulness of a ten.

For example, given $15 - 8$, students may take away 5 to get to 10 and then take away another 3 to find the difference of 7.

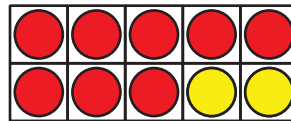


$$15 - 5 = 10$$

$$10 - 3 = 7$$



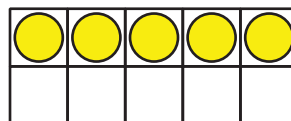
They may also start with 8 and count on to get 10, and then add another 5 to reach 15. They see that the difference is 7.



$$8 + 2 = 10$$

$$10 + 5 = 15$$

$$2 + 5 = 7$$



Try it at home!

Near the end of the unit ask your student to solve these expressions:

1. $7 + 2 + 3$

2. $18 - 9$

Questions that may be helpful as they work:

- How could you make a 10 to help you?
- Could you tell me how to count on/count back to find the answer?
- Could you solve this problem a different way?

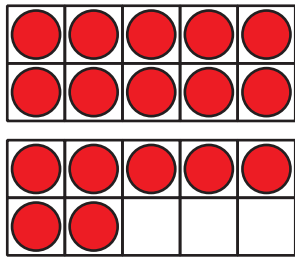
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Unit Assessments

Check Your Readiness A, B, C and D
End-of-Unit Assessment

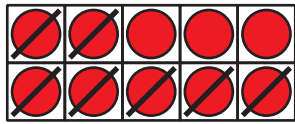
Adding and Subtracting Within 20: End-of-Unit Assessment

1. Circle 4 representations of the number 17.

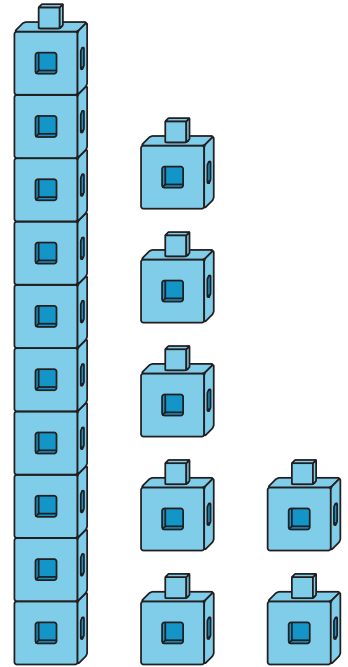


$$10 + 7$$

$$6 + 5 + 5$$



$$19 - 2$$



2. Find the number that makes each equation true.

a. $6 + \square = 20$

b. $10 + \square = 16$

3. Elena scored 8 points in a basketball game.
Noah scored 5 points and Diego scored 2 points.
How many points did Elena, Noah, and Diego score together?
Show your thinking using drawings, numbers, or words.
4. a. Find the value of $6 + 8$. Show your thinking using drawings, numbers, or words.
- b. Find the value of $13 - 5$. Show your thinking using drawings, numbers, or words.

5. Clare says that $16 - 7$ must be 9 because $9 + 7 = 16$.

Do you agree with Clare?

Show your thinking using drawings, numbers, or words.

6. Lin has a box of crayons.

She takes out 6 crayons.

Now there are 9 crayons in the box.

How many crayons were in Lin's box before she took some out?

Show your thinking using drawings, numbers, or words.

7. Find the value of each expression.

a. $5 + 3$

b. $11 + 6$

c. $9 - 7$

d. $18 - 5$

e. $10 + 3$

f. $15 - 10$

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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

A full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Build toward fluency with adding and subtracting within 10.
 - Count on to find the sum.
 - Know certain sums.
 - Take away to find the difference.
 - Count up to find the difference.
 - Know certain differences.
 - Use the relationship between addition and subtraction to find the difference.
 - Use known sums to adjust expressions and find the sum or difference.

Assessment: Section B Checkpoint

Teacher Instructions

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 10 ones as a ten and the numbers 11 to 19 as a ten and some ones.
 - Identify teen numbers as a ten and some ones.
- Find the value that makes an addition or subtraction equation true, involving 10.
- Add and subtract one-digit numbers from teen numbers without composing or decomposing a ten.
 - Count all to find the value of the sum.
 - Count on to find the value of the sum or difference.
 - Take away to find the value of the difference.
 - Use the $10 + n$ structure of teen numbers to add and subtract.

Assessment: Section C Checkpoint

Teacher Instructions

A full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Add within 20, including 3 addends.
 - Count on to find the sum.
 - Make 10 to find the sum.
 - Use known sums to adjust addends to find the sum.
 - Apply the “add in any order” property to find the sum.
 - Know certain sums.

Assessment: Section D Checkpoint

Teacher Instructions

A full checklist for observation of students can be found in the Assessments for this unit. The content assessed is listed below for reference.

- Subtract within 20.
 - Take away to find the difference.
 - Count on to find the difference.
 - Make 10 to find the difference.
 - Know certain differences.
 - Use addition facts to find the difference.

Assessment: End-of-Unit Assessment

Teacher Instructions

Give students access to double 10-frames and connecting cubes or two-color counters.

Problem 1

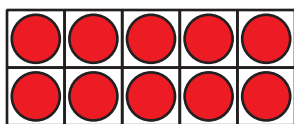
Standards Alignments

Addressing 1.OA.C.6

Narrative

Students select different representations of a number within 20, including double 10-frames, expressions, and connecting cubes. Students may select the 10-frame with 6 crossed out if they confuse the operations of addition and subtraction. They may select $6 + 5 + 5$ if they make an arithmetic error. Students who struggle with this item will likely require more work with representing numbers and operations before they are ready to move forward with the materials in this course.

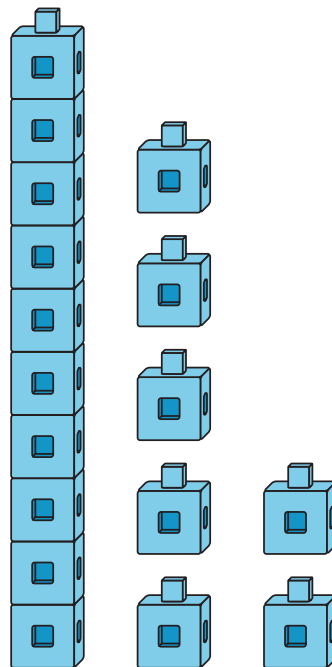
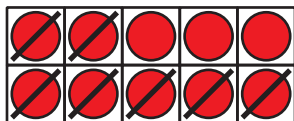
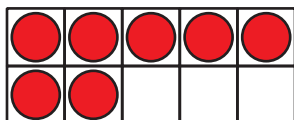
Circle **4** representations of the number 17.



$$10 + 7$$

$$6 + 5 + 5$$

$$19 - 2$$



Solution

ten frame with 7 ones, $10 + 7$, $19 - 2$, and connecting cubes

Problem 2

Standards Alignments

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

Narrative

Students find the numbers that make addition and subtraction equations within 20 true. No explanation or reasoning is solicited here as students will have opportunities to explain their reasoning in other items. Both problems can be solved by counting strategies but the numbers are chosen to encourage thinking about making a ten or decomposing a teen number into a ten and some ones.

Find the number that makes each equation true.

a. $6 + \square = 20$

b. $10 + \square = 16$

Solution

a. 14

b. 6

Problem 3

Standards Alignments

Addressing 1.OA.A.2, 1.OA.B.3

Narrative

Students add 3 numbers within 20. While students can add the numbers together in any order, the numbers are chosen so that two of them combine to make a ten. Watch for student work to see if they combine 8 and 2 first to make 10 and then add 5 more.

Elena scored 8 points in a basketball game.
Noah scored 5 points and Diego scored 2 points.
How many points did Elena, Noah, and Diego score together?
Show your thinking using drawings, numbers, or words.

Solution

15. Sample response: 8 and 2 make 10 and then 5 more is 15.

Problem 4

Standards Alignments

Addressing 1.OA.C.6

Narrative

Students find the value of expressions within 20 with no method suggested. Watch for these strategies for addition:

- counting all
- counting on
- making a 10

Given the emphasis in this unit on the importance of 10 for these sums, expect many students to use the make a 10 strategy.

Watch for these strategies for finding the value of the subtraction expression:

- counting back
- drawing a picture of 13 and removing 5
- making a 10

As with the closely related addition problem, expect many students to use the make a 10 strategy.

- Find the value of $6 + 8$. Show your thinking using drawings, numbers, or words.
- Find the value of $13 - 5$. Show your thinking using drawings, numbers, or words.

Solution

14. Sample response: Since 8 and 2 make 10, I took 2 from 6 to make 10 and that left 4 more. 10 and 4 is 14.

- b. 8. Sample response: First I subtracted 3 from 13 and that makes 10. Then I subtracted 2 more from 10 and that makes 8.

Problem 5

Standards Alignments

Addressing 1.OA.B.4, 1.OA.C.6

Narrative

Students use an addition fact in order to calculate a difference. The addition and subtraction expressions are presented with symbols and no context so students will need to interpret the addition and subtraction signs correctly and understand the relationship between addition and subtraction.

Clare says that $16 - 7$ must be 9 because $9 + 7 = 16$.
Do you agree with Clare?
Show your thinking using drawings, numbers, or words.

Solution

Clare is correct. Since 9 and 7 more make 16 that means that if I take 7 away from 16 it leaves 9.

Problem 6

Standards Alignments

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

Narrative

Students solve a Start Unknown problem. Students may perform the wrong operation, subtracting 6 from 9 instead of adding. Students who make this error need more practice solving Start Unknown problems or more practice reading and interpreting story problems in general.

Lin has a box of crayons.
She takes out 6 crayons.
Now there are 9 crayons in the box.
How many crayons were in Lin's box before she took some out?
Show your thinking using drawings, numbers, or words.

Solution

15. Sample response: $9 + 6$. I can add 1 to 9 to make 10 and then 5 more to get 15.

Problem 7

Standards Alignments

Addressing 1.OA.C.6

Narrative

Students find the value of sums and differences within 20. No explanation is expected. The problems cover several important skills:

- fluency within 10 (first and third problems)
- understanding teen numbers as 10 and some more (problems 5 and 6)
- working with teen numbers with no composition (problems 2 and 4)

Find the value of each expression.

- $5 + 3$
- $11 + 6$
- $9 - 7$
- $18 - 5$
- $10 + 3$
- $15 - 10$

Solution

- 8
- 17
- 2
- 13
- 13
- 5

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Lesson
Cool Downs

Lesson 2: Relate Counting to Addition

Cool Down: How Does it Help?

How does knowing $7 + 2 = 9$ help you with $2 + 7 = \square$?

Show your thinking using drawings, numbers, or words.

Lesson 3: Are the Expressions Equal?

Cool Down: Equal Expressions

Circle the 2 equations that are true.

$$3 + 7 = 7 + 2$$

$$2 + 8 = 8 + 2$$

$$6 + 3 = 2 + 7$$

Lesson 5: Find the Difference

Cool Down: Subtraction within 10

Find the value of the differences.

Show your thinking using drawings, numbers, or words.

$$1. 9 - 6$$

$$2. 10 - 3$$

Lesson 6: Story Problems within 10

Cool Down: How Many Counters?

Diego had some counters in his cup.

His teacher put 4 more counters in his cup.

Now he has 9 counters in the cup.

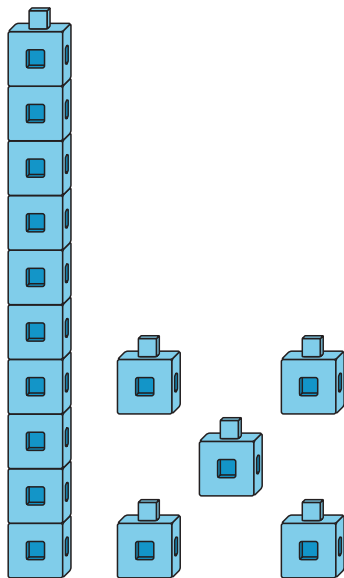
How many counters did Diego have before his teacher gave him more?

Show your thinking using drawings, numbers, or words.

Equation: _____

Lesson 8: Ten as a Unit

Cool Down: How Many Connecting Cubes?



How many connecting cubes are there?

There are _____ cubes.

Show your thinking using drawings, numbers, or words.

Lesson 9: Addition With a Ten

Cool Down: Missing Number

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

1. $10 + 9 = \square$

2. $10 + \square = 12$

Lesson 10: Addition and Subtraction with a Ten

Cool Down: What's Missing?

Find the number that makes each equation true.

1. $16 - 10 = \square$

2. $19 = 10 + \square$

3. $17 - \square = 7$

Choose one equation.

Show your thinking using drawings, numbers, or words.

Lesson 16: Add Three Numbers

Cool Down: Add Them Up

Find the value of the sum.

$$3 + 8 + 7$$

Show your thinking using drawings, numbers, or words.

Equation: _____

Lesson 17: Make 10 to Add

Cool Down: Sitting Birds

8 birds are sitting in a tree.

6 birds are sitting on the grass.

How many birds are there all together?

Show your thinking using drawings, numbers, or words.

Equation: _____

Lesson 20: A Trip to the Zoo

Cool Down: A Visit with the Primates

Jada visited the primate exhibit.

She saw 8 monkeys, 4 gorillas, and 7 orangutans.

How many primates did she see?

Show your thinking using drawings, numbers, or words.

Equation: _____

Lesson 23: Use a Ten to Subtract

Cool Down: Subtract from 14

Find the value of $14 - 6$.

Show your thinking using drawings, words, or numbers.

Lesson 25: How Do You Want to Subtract?

Cool Down: Subtraction Methods


Find the value of each difference.

Show your thinking using drawings, numbers, or words.

1. $13 - 7$

2. $19 - 14$

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Core Knowledge **MATHEMATICS™**



Instructional
Masters

Instructional Masters for Adding and Subtracting Within 20

address	title	students written per copy	on? requires cutting?	card stock recommended?	color paper recommended?
Activity Grade1.3.18.1	Compare Stage 2 Addition Cards to 20	2	no	yes	no
Center	Compare Stage 2 Addition Cards to 20	2	no	yes	no
Activity Grade1.3.7.1	Compare Stage 1 Subtraction Cards to 10	2	no	yes	no
Center	Compare Stage 1 Subtraction Cards to 10	2	no	yes	no
Assessment Grade1.3	Checklist	0	yes	no	no
Activity Grade1.3.9.1	Double 10-Frame - Standard	1	no	no	yes
Activity Grade1.3.8.1	Counting Collections Stages 1 and 2 Recording Sheet	1	yes	no	no
Activity Grade1.3.12.3	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	1	yes	no	no
Center	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	1	yes	no	no
Center	Shake and Spill Stage 4 and 5 Recording Sheet (G1 and 2)	1	yes	no	no
Activity Grade1.3.9.1	Number Cards 11-20	2	no	yes	no
Activity Grade1.3.4.1	Shake and Spill Stage 3 Recording Sheet Grade 1	1	yes	no	no

Center	Shake and Spill Stage 3 Recording Sheet Grade 1	1	yes	no	no	no
Activity Grade1.3.2.1.1	How Close? Stage 1 Recording Sheet	1	yes	no	no	no
Center	How Close? Stage 1 Recording Sheet	1	yes	no	no	no
Assessment Grade1.3	Checklist	0	yes	no	no	no
Activity Grade1.3.2.1.2	Five in a Row Addition and Subtraction Stage 3 Gameboard	2	no	no	no	no
Center	Five in a Row Addition and Subtraction Stage 3 Gameboard	2	no	no	no	no
Activity Grade1.3.14.1	Number Puzzles Addition and Subtraction Stage 2 Gameboard	1	no	no	no	no
Center	Number Puzzles Addition and Subtraction Stage 2 Gameboard	1	no	no	no	no
Activity Grade1.3.27.1	How Close? Stage 2 Recording Sheet	1	yes	no	no	no
Center	How Close? Stage 2 Recording Sheet	1	yes	no	no	no
Assessment Grade1.3	Checklist	0	yes	no	no	no
Activity Grade1.3.27.2	Compare Stage 2 Subtraction Cards to 20	2	no	yes	no	no
Center	Compare Stage 2 Subtraction Cards to 20	2	no	yes	no	no
Assessment Grade1.3	Checkpoint	0	yes	no	no	no
Activity Grade1.3.1.2	Compare Stage 1 Addition Cards to 10	2	no	yes	no	no

Activity Grade1.3.7.1	Compare Stage 1 Addition Cards to 10	2	no	yes	no	no
Center	Compare Stage 1 Addition Cards to 10	2	no	yes	no	no
Center	Shake and Spill Stage 3 Recording Sheet Kindergarten	1	yes	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	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	Find the Pair Stage 2 Recording Sheet	1	yes	no	no	no
Center	Shake and Spill Stage 4 Recording Sheet Kindergarten	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

Compare Stage 2 Addition Cards to 20

Compare Stage 2

$$\begin{array}{l} 1 + 10 \\ 10 + 1 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 2 + 9 \\ 9 + 2 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 3 + 8 \\ 8 + 3 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 4 + 7 \\ 7 + 4 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 5 + 6 \\ 6 + 5 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 2 + 10 \\ 10 + 2 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 3 + 9 \\ 9 + 3 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 4 + 8 \\ 8 + 4 \end{array}$$

Compare Stage 2 Addition Cards to 20

Compare Stage 2

$$\begin{array}{c} 5 + 7 \\ 7 + 5 \end{array}$$

Compare Stage 2

$$6 + 6$$

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$$\begin{array}{c} 5 + 9 \\ 9 + 5 \end{array}$$

Compare Stage 2 Addition Cards to 20

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$$\begin{array}{c} 6 + 8 \\ 8 + 6 \end{array}$$

Compare Stage 2

$$7 + 7$$

Compare Stage 2

$$\begin{array}{c} 5 + 10 \\ 10 + 5 \end{array}$$

Compare Stage 2

$$\begin{array}{c} 6 + 9 \\ 9 + 6 \end{array}$$

Compare Stage 2

$$\begin{array}{c} 7 + 8 \\ 8 + 7 \end{array}$$

Compare Stage 2

$$\begin{array}{c} 6 + 10 \\ 10 + 6 \end{array}$$

Compare Stage 2

$$\begin{array}{c} 7 + 9 \\ 9 + 7 \end{array}$$

Compare Stage 2

$$8 + 8$$

Compare Stage 2 Addition Cards to 20

Compare Stage 2

$$\begin{array}{l} 8 + 9 \\ 9 + 8 \end{array}$$

Compare Stage 2

$$9 + 9$$

Compare Stage 2

$$\begin{array}{l} 9 + 10 \\ 10 + 9 \end{array}$$

Compare Stage 2

$$10 + 10$$

Compare Stage 2

$$\begin{array}{l} 7 + 10 \\ 10 + 7 \end{array}$$

Compare Stage 2

$$\begin{array}{l} 8 + 10 \\ 10 + 8 \end{array}$$

Compare Stage 2 Addition Cards to 20

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Compare Stage 2

$$\begin{array}{c} 7 + 9 \\ 9 + 7 \end{array}$$

Compare Stage 2

$$8 + 8$$

Compare Stage 2 Addition Cards to 20

Compare Stage 2

$$\begin{array}{c} 8 + 9 \\ 9 + 8 \end{array}$$

Compare Stage 2

$$9 + 9$$

Compare Stage 2

$$\begin{array}{c} 9 + 10 \\ 10 + 9 \end{array}$$

Compare Stage 2

$$10 + 10$$

Compare Stage 2

$$\begin{array}{c} 7 + 10 \\ 10 + 7 \end{array}$$

Compare Stage 2

$$\begin{array}{c} 8 + 10 \\ 10 + 8 \end{array}$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$8 - 6$$

Compare Stage 1

$$8 - 5$$

Compare Stage 1

$$8 - 4$$

Compare Stage 1

$$8 - 3$$

Compare Stage 1

$$8 - 2$$

Compare Stage 1

$$8 - 1$$

Compare Stage 1

$$8 - 7$$

Compare Stage 1

$$8 - 8$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$9 - 9$$

Compare Stage 1

$$9 - 8$$

Compare Stage 1

$$9 - 7$$

Compare Stage 1

$$7 - 7$$

Compare Stage 1

$$9 - 6$$

Compare Stage 1

$$7 - 6$$

Compare Stage 1

$$9 - 5$$

Compare Stage 1

$$7 - 5$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$9 - 4$$

Compare Stage 1

$$7 - 4$$

Compare Stage 1

$$9 - 3$$

Compare Stage 1

$$7 - 3$$

Compare Stage 1

$$9 - 2$$

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$$9 - 1$$

Compare Stage 1

$$7 - 1$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$6 - 6$$

Compare Stage 1

$$5 - 5$$

Compare Stage 1

$$6 - 5$$

Compare Stage 1

$$5 - 4$$

Compare Stage 1

$$6 - 4$$

Compare Stage 1

$$5 - 3$$

Compare Stage 1

$$6 - 3$$

Compare Stage 1

$$5 - 2$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$6 - 2$$

Compare Stage 1

$$5 - 1$$

Compare Stage 1

$$6 - 1$$

Compare Stage 1

$$4 - 4$$

Compare Stage 1

$$3 - 3$$

Compare Stage 1

$$4 - 3$$

Compare Stage 1

$$3 - 2$$

Compare Stage 1

$$4 - 2$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$3 - 1$$

Compare Stage 1

$$4 - 1$$

Compare Stage 1

$$2 - 2$$

Compare Stage 1

$$1 - 1$$

Compare Stage 1

$$2 - 1$$

Compare Stage 1

$$10 - 1$$

Compare Stage 1

$$10 - 9$$

Compare Stage 1

$$10 - 8$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$10 - 7$$

Compare Stage 1

$$10 - 1$$

Compare Stage 1

$$10 - 6$$

Compare Stage 1

$$10 - 3$$

Compare Stage 1

$$10 - 5$$

Compare Stage 1

$$10 - 2$$

Compare Stage 1

$$10 - 4$$

Compare Stage 1

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$8 - 6$$

Compare Stage 1

$$8 - 5$$

Compare Stage 1

$$8 - 4$$

Compare Stage 1

$$8 - 3$$

Compare Stage 1

$$8 - 2$$

Compare Stage 1

$$8 - 1$$

Compare Stage 1

$$8 - 7$$

Compare Stage 1

$$8 - 8$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$9 - 9$$

Compare Stage 1

$$9 - 8$$

Compare Stage 1

$$9 - 7$$

Compare Stage 1

$$7 - 7$$

Compare Stage 1

$$9 - 6$$

Compare Stage 1

$$7 - 6$$

Compare Stage 1

$$9 - 5$$

Compare Stage 1

$$7 - 5$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$9 - 4$$

Compare Stage 1

$$7 - 4$$

Compare Stage 1

$$9 - 3$$

Compare Stage 1

$$7 - 3$$

Compare Stage 1

$$9 - 2$$

Compare Stage 1

$$7 - 2$$

Compare Stage 1

$$9 - 1$$

Compare Stage 1

$$7 - 1$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$6 - 6$$

Compare Stage 1

$$5 - 5$$

Compare Stage 1

$$6 - 5$$

Compare Stage 1

$$5 - 4$$

Compare Stage 1

$$6 - 4$$

Compare Stage 1

$$5 - 3$$

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$$6 - 3$$

Compare Stage 1

$$5 - 2$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$6 - 2$$

Compare Stage 1

$$5 - 1$$

Compare Stage 1

$$6 - 1$$

Compare Stage 1

$$4 - 4$$

Compare Stage 1

$$3 - 3$$

Compare Stage 1

$$4 - 3$$

Compare Stage 1

$$3 - 2$$

Compare Stage 1

$$4 - 2$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$3 - 1$$

Compare Stage 1

$$4 - 1$$

Compare Stage 1

$$2 - 2$$

Compare Stage 1

$$1 - 1$$

Compare Stage 1

$$2 - 1$$

Compare Stage 1

$$10 - 1$$

Compare Stage 1

$$10 - 9$$

Compare Stage 1

$$10 - 8$$

Compare Stage 1 Subtraction Cards to 10

Compare Stage 1

$$10 - 7$$

Compare Stage 1

$$10 - 1$$

Compare Stage 1

$$10 - 6$$

Compare Stage 1

$$10 - 3$$

Compare Stage 1

$$10 - 5$$

Compare Stage 1

$$10 - 2$$

Compare Stage 1

$$10 - 4$$

Compare Stage 1

Counting Collections Stages 1 and 2 Recording Sheet

How many are there? Show how you counted.

My count:

How many? _____

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	

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	

11

12

13

14

15

16

17

18

19

20

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 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	

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.

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How Close? Stage 1 Recording Sheet

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

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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.
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- Take 3 new cards and start the next round.

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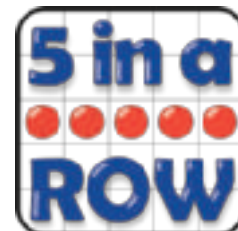
How Close? Stage 1 Recording Sheet

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

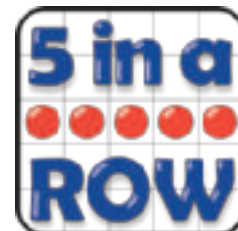
$$\square + \square + \square = \underline{\hspace{2cm}}$$

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

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



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



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.

$11 = \square + \square$	$11 = 1 \square - \square$
$11 = \square + \square$	$11 = 1 \square - 2$
$11 = 1 \square - \square$	$11 = 1 \square - 1$

Puzzle 2

Make each equation true. Use number cards 0-9.

$14 = 1$ <input type="text"/>	+	<input type="text"/>	$14 =$ <input type="text"/>	+	7
$14 =$ 8	+	<input type="text"/>	$14 = 1$ <input type="text"/>	-	4
$14 = 1$ <input type="text"/>	-	<input type="text"/>	$14 = 1$ <input type="text"/>	-	<input type="text"/>

Puzzle 3

Make each equation true. Use number cards 0-9.

$17 = 1 \square + \square$	$17 = 1 \square - \square$
$17 = 1 \square - \square$	$17 = 1 \square + 1 \square$
$17 = 1 \square - 1$	$17 = 1 \square + 2$

Puzzle 4

Make each equation true. Use number cards 0-9.

$18 = 1$ <input type="text"/>	+	<input type="text"/>	$18 = 1$ <input type="text"/>	-	<input type="text"/>
$18 = 1$ <input type="text"/>	+	<input type="text"/>	$18 = 1$ <input type="text"/>	+	4
$18 = 1$ <input type="text"/>	+	<input type="text"/>	$18 = 1$ <input type="text"/>	-	1

Puzzle 5

Make each equation true. Use number cards 0-9.

$19 = 1$ <input type="text"/>	+	<input type="text"/>	$19 = 1$ <input type="text"/>	+	<input type="text"/>
$19 = 1$ <input type="text"/>	+	3	$19 = 1$ <input type="text"/>	+	6
$19 = 1$ <input type="text"/>	-	<input type="text"/>	$19 = 1$ <input type="text"/>	+	1

Puzzle 1

Make each equation true. Use number cards 0-9.

$11 =$ <input type="text"/>	$+$ <input type="text"/>	$11 = 1$ <input type="text"/>	$-$ <input type="text"/>
$11 = 1$ <input type="text"/>	$+$ <input type="text"/>	$11 = 1$ <input type="text"/>	$-$ <input type="text"/>
$11 = 1$ <input type="text"/>	$-$ <input type="text"/>	$11 = 1$ <input type="text"/>	$-$ <input type="text"/>
$11 = 1$ <input type="text"/>	$-$ <input type="text"/>	$11 = 1$ <input type="text"/>	$-$ <input type="text"/>

Puzzle 2

Make each equation true. Use number cards 0-9.

$14 = 1$ <input type="text"/>	+	<input type="text"/>	$14 =$ <input type="text"/>	+	7
$14 =$ 8	+	<input type="text"/>	$14 = 1$ <input type="text"/>	-	4
$14 = 1$ <input type="text"/>	-	<input type="text"/>	$14 = 1$ <input type="text"/>	-	<input type="text"/>

Puzzle 3

Make each equation true. Use number cards 0-9.

$17 = 1$ <input type="text"/>	$+$ <input type="text"/>	$17 = 1$ <input type="text"/>	$-$ <input type="text"/>
$17 = 1$ <input type="text"/>	$-$ <input type="text"/>	$17 = 1$ <input type="text"/>	$+ 1$ <input type="text"/>
$17 = 1$ <input type="text"/>	$- 1$ <input type="text"/>	$17 = 1$ <input type="text"/>	$+ 2$ <input type="text"/>

Puzzle 4

Make each equation true. Use number cards 0-9.

$18 = 1$ <input type="text"/>	+	<input type="text"/>	$18 = 1$ <input type="text"/>	-	<input type="text"/>
$18 = 1$ <input type="text"/>	+	<input type="text"/>	$18 = 1$ <input type="text"/>	+	4
$18 = 1$ <input type="text"/>	+	<input type="text"/>	$18 = 1$ <input type="text"/>	-	1

Puzzle 5

Make each equation true. Use number cards 0-9.

$19 = 1$ <input type="text"/>	+	<input type="text"/>	$19 = 1$ <input type="text"/>	+	<input type="text"/>
$19 = 1$ <input type="text"/>	+	3	$19 = 1$ <input type="text"/>	+	6
$19 = 1$ <input type="text"/>	-	<input type="text"/>	$19 = 1$ <input type="text"/>	+	1

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.

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

How Close? Stage 2 Recording Sheet

20 - - - = _____

20 - - - = _____

20 - - - = _____

20 - - - = _____

20 - - - = _____

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.

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

$$20 - \square - \square - \square = \underline{\hspace{2cm}}$$

How Close? Stage 2 Recording Sheet

20 - - - = _____

20 - - - = _____

20 - - - = _____

20 - - - = _____

20 - - - = _____

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$20 - 4$$

Compare Stage 2

$$20 - 13$$

Compare Stage 2

$$20 - 18$$

Compare Stage 2

$$20 - 12$$

Compare Stage 2

$$20 - 15$$

Compare Stage 2

$$20 - 9$$

Compare Stage 2

$$19 - 7$$

Compare Stage 2

$$19 - 11$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$19 - 16$$

Compare Stage 2

$$19 - 3$$

Compare Stage 2

$$18 - 13$$

Compare Stage 2

$$18 - 9$$

Compare Stage 2

$$18 - 6$$

Compare Stage 2

$$18 - 10$$

Compare Stage 2

$$17 - 2$$

Compare Stage 2

$$17 - 8$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$17 - 14$$

Compare Stage 2

$$17 - 9$$

Compare Stage 2

$$16 - 12$$

Compare Stage 2

$$16 - 3$$

Compare Stage 2

$$16 - 7$$

Compare Stage 2

$$16 - 8$$

Compare Stage 2

$$15 - 11$$

Compare Stage 2

$$15 - 7$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$15 - 6$$

Compare Stage 2

$$15 - 3$$

Compare Stage 2

$$14 - 2$$

Compare Stage 2

$$14 - 6$$

Compare Stage 2

$$14 - 8$$

Compare Stage 2

$$14 - 9$$

Compare Stage 2

$$13 - 4$$

Compare Stage 2

$$13 - 11$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$13 - 8$$

Compare Stage 2

$$13 - 7$$

Compare Stage 2

$$12 - 9$$

Compare Stage 2

$$12 - 3$$

Compare Stage 2

$$12 - 6$$

Compare Stage 2

$$12 - 8$$

Compare Stage 2

$$11 - 8$$

Compare Stage 2

$$11 - 9$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$11 - 4$$

Compare Stage 2

$$11 - 2$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$20 - 4$$

Compare Stage 2

$$20 - 13$$

Compare Stage 2

$$20 - 18$$

Compare Stage 2

$$20 - 12$$

Compare Stage 2

$$20 - 15$$

Compare Stage 2

$$20 - 9$$

Compare Stage 2

$$19 - 7$$

Compare Stage 2

$$19 - 11$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$19 - 16$$

Compare Stage 2

$$19 - 3$$

Compare Stage 2

$$18 - 13$$

Compare Stage 2

$$18 - 9$$

Compare Stage 2

$$18 - 6$$

Compare Stage 2

$$18 - 10$$

Compare Stage 2

$$17 - 2$$

Compare Stage 2

$$17 - 8$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$17 - 14$$

Compare Stage 2

$$17 - 9$$

Compare Stage 2

$$16 - 12$$

Compare Stage 2

$$16 - 3$$

Compare Stage 2

$$16 - 7$$

Compare Stage 2

$$16 - 8$$

Compare Stage 2

$$15 - 11$$

Compare Stage 2

$$15 - 7$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$15 - 6$$

Compare Stage 2

$$15 - 3$$

Compare Stage 2

$$14 - 2$$

Compare Stage 2

$$14 - 6$$

Compare Stage 2

$$14 - 8$$

Compare Stage 2

$$14 - 9$$

Compare Stage 2

$$13 - 4$$

Compare Stage 2

$$13 - 11$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$13 - 8$$

Compare Stage 2

$$13 - 7$$

Compare Stage 2

$$12 - 9$$

Compare Stage 2

$$12 - 3$$

Compare Stage 2

$$12 - 6$$

Compare Stage 2

$$12 - 8$$

Compare Stage 2

$$11 - 8$$

Compare Stage 2

$$11 - 9$$

Compare Stage 2 Subtraction Cards to 20

Compare Stage 2

$$11 - 4$$

Compare Stage 2

$$11 - 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$1 + 0$$

Compare Stage 1

$$0 + 7$$

Compare Stage 1

$$5 + 0$$

Compare Stage 1

$$0 + 3$$

Compare Stage 1

$$10 + 0$$

Compare Stage 1

$$0 + 9$$

Compare Stage 1

$$1 + 1$$

Compare Stage 1

$$1 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 1$$

Compare Stage 1

$$1 + 3$$

Compare Stage 1

$$3 + 1$$

Compare Stage 1

$$1 + 4$$

Compare Stage 1

$$4 + 1$$

Compare Stage 1

$$1 + 5$$

Compare Stage 1

$$5 + 1$$

Compare Stage 1

$$1 + 6$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$6 + 1$$

Compare Stage 1

$$1 + 7$$

Compare Stage 1

$$7 + 1$$

Compare Stage 1

$$1 + 8$$

Compare Stage 1

$$8 + 1$$

Compare Stage 1

$$1 + 9$$

Compare Stage 1

$$9 + 1$$

Compare Stage 1

$$2 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 3$$

Compare Stage 1

$$3 + 2$$

Compare Stage 1

$$2 + 4$$

Compare Stage 1

$$4 + 2$$

Compare Stage 1

$$2 + 3$$

Compare Stage 1

$$3 + 2$$

Compare Stage 1

$$2 + 5$$

Compare Stage 1

$$5 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 6$$

Compare Stage 1

$$6 + 2$$

Compare Stage 1

$$2 + 7$$

Compare Stage 1

$$7 + 2$$

Compare Stage 1

$$2 + 8$$

Compare Stage 1

$$8 + 2$$

Compare Stage 1

$$3 + 3$$

Compare Stage 1

$$3 + 4$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$4 + 3$$

Compare Stage 1

$$3 + 5$$

Compare Stage 1

$$5 + 3$$

Compare Stage 1

$$3 + 6$$

Compare Stage 1

$$6 + 3$$

Compare Stage 1

$$3 + 7$$

Compare Stage 1

$$7 + 3$$

Compare Stage 1

$$4 + 4$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$4 + 5$$

Compare Stage 1

$$5 + 4$$

Compare Stage 1

$$4 + 6$$

Compare Stage 1

$$6 + 4$$

Compare Stage 1

$$5 + 5$$

Compare Stage 1

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$1 + 0$$

Compare Stage 1

$$0 + 7$$

Compare Stage 1

$$5 + 0$$

Compare Stage 1

$$0 + 3$$

Compare Stage 1

$$10 + 0$$

Compare Stage 1

$$0 + 9$$

Compare Stage 1

$$1 + 1$$

Compare Stage 1

$$1 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 1$$

Compare Stage 1

$$1 + 3$$

Compare Stage 1

$$3 + 1$$

Compare Stage 1

$$1 + 4$$

Compare Stage 1

$$4 + 1$$

Compare Stage 1

$$1 + 5$$

Compare Stage 1

$$5 + 1$$

Compare Stage 1

$$1 + 6$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$6 + 1$$

Compare Stage 1

$$1 + 7$$

Compare Stage 1

$$7 + 1$$

Compare Stage 1

$$1 + 8$$

Compare Stage 1

$$8 + 1$$

Compare Stage 1

$$1 + 9$$

Compare Stage 1

$$9 + 1$$

Compare Stage 1

$$2 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 3$$

Compare Stage 1

$$3 + 2$$

Compare Stage 1

$$2 + 4$$

Compare Stage 1

$$4 + 2$$

Compare Stage 1

$$2 + 3$$

Compare Stage 1

$$3 + 2$$

Compare Stage 1

$$2 + 5$$

Compare Stage 1

$$5 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 6$$

Compare Stage 1

$$6 + 2$$

Compare Stage 1

$$2 + 7$$

Compare Stage 1

$$7 + 2$$

Compare Stage 1

$$2 + 8$$

Compare Stage 1

$$8 + 2$$

Compare Stage 1

$$3 + 3$$

Compare Stage 1

$$3 + 4$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$4 + 3$$

Compare Stage 1

$$3 + 5$$

Compare Stage 1

$$5 + 3$$

Compare Stage 1

$$3 + 6$$

Compare Stage 1

$$6 + 3$$

Compare Stage 1

$$3 + 7$$

Compare Stage 1

$$7 + 3$$

Compare Stage 1

$$4 + 4$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$4 + 5$$

Compare Stage 1

$$5 + 4$$

Compare Stage 1

$$4 + 6$$

Compare Stage 1

$$6 + 4$$

Compare Stage 1

$$5 + 5$$

Compare Stage 1

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$1 + 0$$

Compare Stage 1

$$0 + 7$$

Compare Stage 1

$$5 + 0$$

Compare Stage 1

$$0 + 3$$

Compare Stage 1

$$10 + 0$$

Compare Stage 1

$$0 + 9$$

Compare Stage 1

$$1 + 1$$

Compare Stage 1

$$1 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 1$$

Compare Stage 1

$$1 + 3$$

Compare Stage 1

$$3 + 1$$

Compare Stage 1

$$1 + 4$$

Compare Stage 1

$$4 + 1$$

Compare Stage 1

$$1 + 5$$

Compare Stage 1

$$5 + 1$$

Compare Stage 1

$$1 + 6$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$6 + 1$$

Compare Stage 1

$$1 + 7$$

Compare Stage 1

$$7 + 1$$

Compare Stage 1

$$1 + 8$$

Compare Stage 1

$$8 + 1$$

Compare Stage 1

$$1 + 9$$

Compare Stage 1

$$9 + 1$$

Compare Stage 1

$$2 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 3$$

Compare Stage 1

$$3 + 2$$

Compare Stage 1

$$2 + 4$$

Compare Stage 1

$$4 + 2$$

Compare Stage 1

$$2 + 3$$

Compare Stage 1

$$3 + 2$$

Compare Stage 1

$$2 + 5$$

Compare Stage 1

$$5 + 2$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$2 + 6$$

Compare Stage 1

$$6 + 2$$

Compare Stage 1

$$2 + 7$$

Compare Stage 1

$$7 + 2$$

Compare Stage 1

$$2 + 8$$

Compare Stage 1

$$8 + 2$$

Compare Stage 1

$$3 + 3$$

Compare Stage 1

$$3 + 4$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$4 + 3$$

Compare Stage 1

$$3 + 5$$

Compare Stage 1

$$5 + 3$$

Compare Stage 1

$$3 + 6$$

Compare Stage 1

$$6 + 3$$

Compare Stage 1

$$3 + 7$$

Compare Stage 1

$$7 + 3$$

Compare Stage 1

$$4 + 4$$

Compare Stage 1 Addition Cards to 10

Compare Stage 1

$$4 + 5$$

Compare Stage 1

$$5 + 4$$

Compare Stage 1

$$4 + 6$$

Compare Stage 1

$$6 + 4$$

Compare Stage 1

$$5 + 5$$

Compare Stage 1

Shake and Spill Stage 3 Recording Sheet Kindergarten



Draw a picture.

Fill in the expression.

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

Draw a picture.

Fill in the expression.

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

Draw a picture.

Fill in the expression.

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

Draw a picture.

Fill in the expression.

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

Draw a picture.

Fill in the expression.

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

Draw a picture.

Fill in the expression.

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

Puzzle 1

Make each equation true. Use number cards 0-9.

$6 = \square + \square$	$6 = \square + \square$
$6 = \square - \square$	$6 = \square - 2$
$6 = \square - \square$	$6 = \square - 1$

Puzzle 2

Make each equation true. Use number cards 0-9.

$7 = \square + \square$	$7 = \square + \square$
$7 = \square - \square$	$7 = \square - 2$
$7 = \square + \square$	$7 = \square - 1$

Puzzle 3

Make each equation true. Use number cards 0-9.

$8 = \square + \square$	$8 = \square + \square$
$8 = \square - 0$	$8 = \square - 1$
$8 = \square + \square$	Leftovers: $\square \square$

Puzzle 4

Make each equation true. Use number cards 0-9.

$9 = \square + \square$	$9 = \square + \square$
$9 = \square + \square$	$9 = \square + \square$
$9 = \square + \square$	Leftovers: $\square \square$

Puzzle 5

Make each equation true. Use number cards 0-9.

$10 = \square + 5$	$10 = \square + \square$
$10 = 8 + \square$	$10 = \square + \square$
$10 = \square + 2$	Leftovers: $\square \square$

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		

Find the Pair Stage 2 Recording Sheet

Directions:

- Take 5 cards each and put the rest in a pile face down.
- Partner A:
 - Ask your partner for a number that can be added to one of your cards to make 10.
 - If they have the card, put the pair of cards down and fill in the equation.
 - If they don't have that card, pick a card from a pile.
- Take turns asking for cards. The partner with the most pairs at the end of the game wins.

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

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

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

Find the Pair Stage 2 Recording Sheet

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

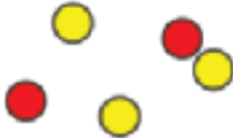

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 10$$

Shake and Spill Stage 4 Recording Sheet Kindergarten



<p>total counters</p> 	<p>expression</p> 
<p>5</p>	<p>3 + 2</p> <p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>
	<p>_____ + _____</p>



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



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

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