IMKH California

GRADE 1

Student Edition

UNITS

3 | 4

Illustrative Mathematics LEARN MATH FOR LIFE | Kendall Hunt

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UNIT 4 NUMBERS TO 99

GRADE 1

UNIT

Adding and Subtracting within 20

Content Connections

In this unit you will add within 100, using place value and properties of operations in your reasoning. You will make connections by:

- **Reasoning with Data** while collecting, representing, organizing and answering questions about two or more categories of information.
- **Exploring Changing Quantities** while solving addition and subtraction problems with the use of manipulatives and expressions.

- **Taking Wholes Apart, Putting Parts Together** when you investigate the use of whole numbers to solve addition and subtraction problems.

Addressing the Standards

As you work your way through **Unit 3 Adding and Subtracting within 20,** you will use some mathematical practices that you may have started using in kindergarten and have continued strengthening over your school career. These practices describe types of thinking or behaviors that you might use to solve specific math problems.

Mathematical Practices	Where You Use these MPs
MP1 Make sense of problems and persevere in solving them.	Lesson 5, 6, 11, 15, 20, and 26
MP2 Reason abstractly and quantitatively.	Lesson 3, 4, 6, 10, 13, 14, 18, 20, 21, 25, and 27
MP3 Construct viable arguments and critique the reasoning of others.	Lesson 2, 5, 6, 15, 19, 23, and 25
MP4 Model with mathematics.	Lesson 10, 26, and 28
MP5 Use appropriate tools strategically.	Lesson 10 and 20
MP6 Attend to precision.	Lesson 2, 4, 8, 9, 14, 15, 21, 22, 24, and 27

MP7 Look for and make use of structure.	Lesson 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 13, 15, 16, 17, 18, 22, 23, and 24
MP8 Look for and express regularity in repeated reasoning.	Lesson 5, 11, and 17

The California Common Core State Standards for Mathematics (CA CCSSM) describe the topics you will learn in this unit. Many of these topics build upon knowledge you already have and challenge you to expand upon that knowledge. The table below shows what standards are being addressed in this unit.

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Make Sense of Data • Equal Expressions	**1.OA.1** Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Lesson 2, 6, 10, 11, 12, 13, 17, 22, 25, 26, and 28

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Make Sense of Data • Equal Expressions	**1.OA.2** Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.	Lesson 15, 20, and 28
• Make Sense of Data • Equal Expressions • Reasoning about Equality	**1.OA.3** Apply properties of operations as strategies to add and subtract.3 *Examples: If 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.)*	Lesson 2, 3, 4, 15, 16, 17, 19, and 28
• Equal Expressions	**1.OA.4** Understand subtraction as an unknown-addend problem. *For example, subtract 10 – 8 by finding the number that makes 10 when added to 8.*	Lesson 5, 10, 12, 22, 24, 25, and 26

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Measuring with Objects • Equal Expressions	**1.OA.5** Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).	Lesson 2, 5, 6, 13, 15, 21, 22, 24, 25, and 27
• Equal Expressions • Reasoning about Equality	**1.OA.6** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).	Lesson 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, and 28

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Equal Expressions • Reasoning about Equality	**1.OA.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.*	Lesson 3, 4, 11, 14, 16
• Equal Expressions	**1.OA.8** Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = □.*	Lesson 2, 5, 9, 10, 12, 14, and 24
• Make Sense of Data • Tens and Ones	**1.NBT.1** Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	Lesson 12, 24, and 25

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Clocks and Time • Reasoning about Equality • Tens and Ones	**1.NBT.2a** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones—called a "ten."	Lesson 8 and 9
• Clocks and Time • Reasoning about Equality • Tens and Ones	**1.NBT.2b** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.	Lesson 8, 9, and 10

Addressing CA CCSSM 1.OA.6; building towards 1.OA.6; practicing MP7

Sums I Know

Let's see which sums within 10 we know.

Warm-up

Notice and Wonder: Addition Table

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										

Activity 1

My Favorite Sum

Pick your favorite sum.

Write an equation to show the value of your sum:

_____

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

Activity 2

Sums I've Got

1. Place your cards facedown in a pile.
2. Flip the first 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

Addressing CA CCSSM 1.OA.1, 1.OA.3, 1.OA.5-6, and 1.OA.8; practicing MP3, MP6, and MP7

Relate Counting to Addition

Let's add within 10.

Warm-up

Number Talk: 2 or 3 More

Find the value of each expression mentally.

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

Activity 1

More Shake and Spill

Some friends play *Shake and Spill*.

1. Priya 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: _____

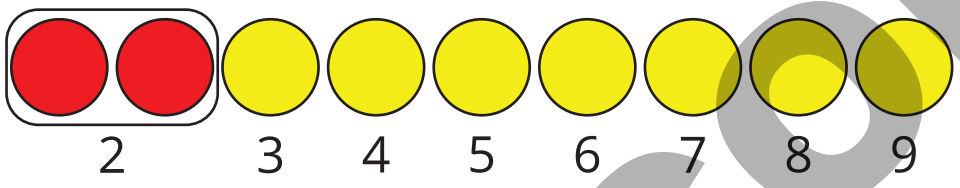
4. Han spills 3 red counters and 6 yellow counters.
   How many counters did he spill in all?
   Show your thinking using drawings, numbers, or words.

   Equation: _____

Activity 2

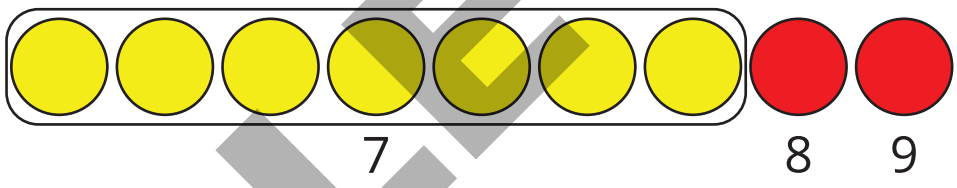
Are They Both Right?

Kiran and Clare find the value of $2 + 7$.
Kiran counts on from 2.



$2 + 7 = \boxed{9}$

Clare counts on from 7.



$7 + 2 = \boxed{9}$

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

Activity 3

Practice Addition within 10

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. $\square = 1 + 9$

Addressing CA CCSSM 1.OA.3, 1.OA.6, and 1.OA.7; Practicing MP2 and MP7

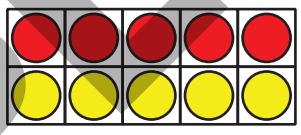
Are They Equal?

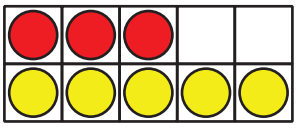
Let's think about how different expressions can have the same value.

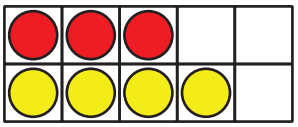
Warm-up

How Many Do You See: Sums within 10

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







Activity 2

Are Both Sides Equal?

Determine whether each equation is true or false.
Be ready to explain your reasoning.

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. $6 + 4 = 5 + 3$

True or False

5. $6 + 2 = 8 + 1$

True or False

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

Addressing CA CCSSM 1.OA.3, 1.OA.6, and 1.OA.7; practicing MP3, MP6, and MP7

Sums of 10

Let's find all the ways to make 10.

Warm-up

True or False: Equal or Not?

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

- $3 + 5 = 8$

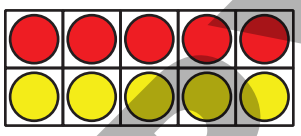
- $6 + 3 = 8$

- $3 + 5 = 5 + 3$

Activity 2

All The Ways to Make 10

1. Show all the ways to make 10.



2. How do you know that you have found all the ways? Be ready to explain your thinking.

Activity 3

Centers: Choice Time

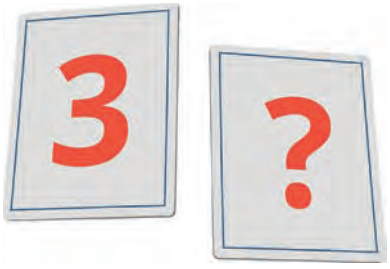
Choose a center.

Number Puzzles

$14 = 8 + \square$

Check It Off

Find the Pair



Addressing CA CCSSM 1.OA.4, 1.OA.5-6, and 1.OA.8; Practicing MP1, MP3, MP7, and MP8

Find the Difference

Let's find differences within 10.

Warm-up

Number Talk: Unknown Value within 10

Find the number that makes each equation true.

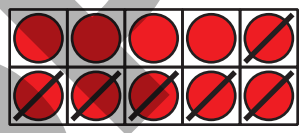
- $6 + \square = 10$
- $10 - 6 = \square$
- $8 + \square = 10$
- $10 - 2 = \square$

Activity 1

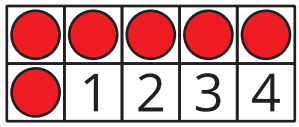
Different Ways to Find the Difference

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

1. Diego says, “I can take away.”
   What does Diego mean?



2. Mai says, “I can count up.”
   What does Mai mean?



3. Noah says, “I can use what I know about 6 + 4.”
   What does Noah mean?

Activity 2

Subtraction Number Strings

Find the value of each difference in the 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?

Set 2:

9 – 8

9 – 7

9 – 6

9 – 5

What do you notice?
Why do you think this happens?

Activity 3

The Value of the Difference

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

Unit 3, Lesson 6

Addressing CA CCSSM 1.OA.1, 1.OA.5-6; building towards 1.OA.1; practicing MP1, MP2, MP3, and MP7

Story Problems within 10

Let's solve story problems.

Warm-up

Notice and Wonder: Han's Cup

What do you notice?
What do you wonder?

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

Activity 1

A Shake and Spill Story Problem

Han plays *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: _____

Activity 2

Shake and Spill Story Problems

Students play *Shake and Spill*.

1. Noah starts with 10 counters in a cup.
   4 of the counters fall out.
   How many counters are still in the cup?

2. Kiran has 4 counters in a cup.
   He puts more counters in.
   Now he has 7 counters in his cup.
   How many more counters did Kiran put in his cup?

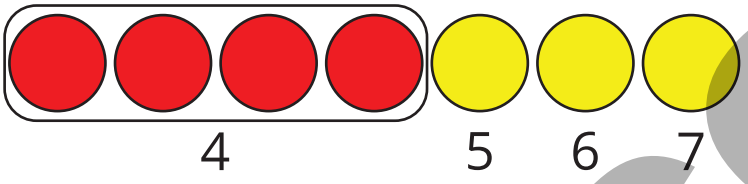
3. Clare has some counters in a cup.
   She puts 3 more counters in.
   Now she has 9 counters in her cup.
   How many counters were in her cup before she added more?

Section A Summary

We practiced adding within 10.

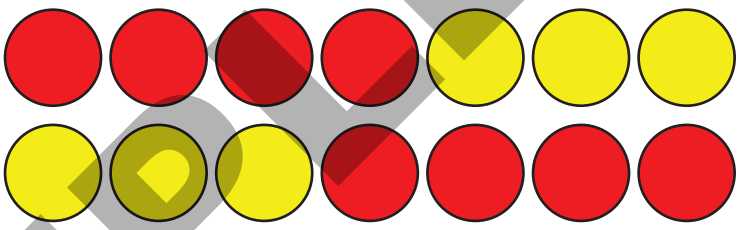
We counted on.

$4 + 3 = \boxed{7}$



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.

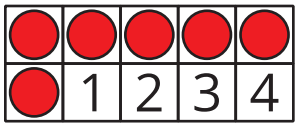
$$4 + 3 = 3 + 4$$

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 $10 - 6 = 4$.



Addressing CA CCSSM 1.OA.6; building towards 1.NBT.1; practicing MP7

Center Day 1

Let's play games to practice adding.

Activity 2

Centers: Choice Time

Choose a center.

Number Puzzles

$14 = 8 + \square$

Find the Pair

Compare

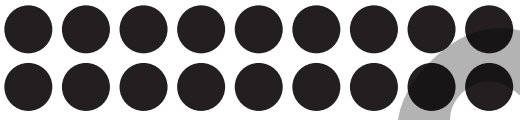
Practice Problems

11 Problems

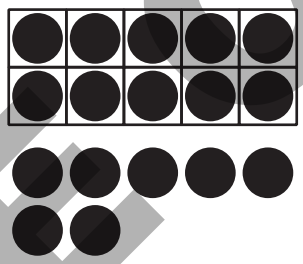
1 Pre-unit

For each picture, write a number for how many you see.

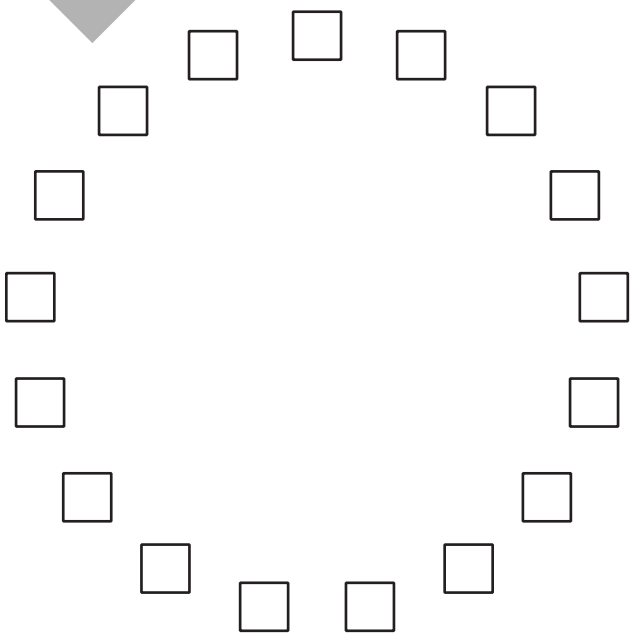
a.



b.

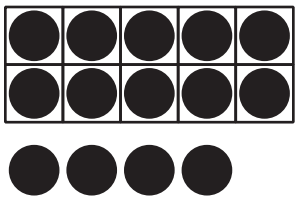


c.



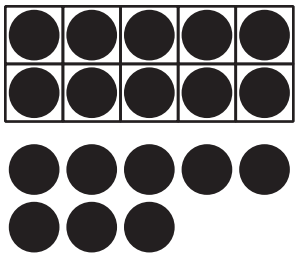
Match each picture with an expression.

A.



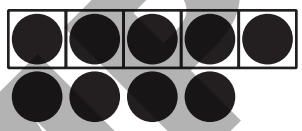
1. 10 + 8

B.



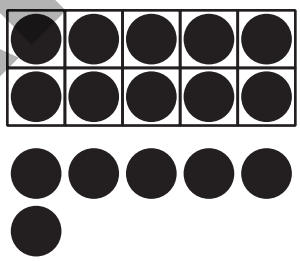
2. 5 + 4

C.



3. 10 + 4

D.



4. 10 + 6

3 Pre-unit

There were 5 monkeys in the tree.
Then 2 more monkeys joined them.
How many monkeys are in the tree now?
Show your thinking using drawings, numbers, or words.

4 from Unit 3, Lesson 1

Find the value of each sum.

a. $7 + 1$

b. $4 + 2$

c. $5 + 5$

5 from Unit 3, Lesson 2

Find the value of each sum.

a. $6 + 2$

b. $1 + 8$

c. $2 + 7$

d. $9 + 1$

6 from Unit 3, Lesson 3

Select **3** true equations.

A. $7 + 2 = 5 + 4$

B. $1 + 6 = 3 + 2$

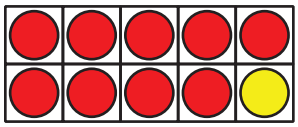
C. $4 + 4 = 2 + 6$

D. $5 + 3 = 5 + 4$

E. $3 + 7 = 5 + 5$

7 from Unit 3, Lesson 4

a. Write an equation that matches this 10-frame.



b. Write 2 equations that show other ways to make 10.

8 from Unit 3, Lesson 5

Find the value of each expression.

Show your thinking using drawings, numbers, or words.

a. $4 + 3$

b. $7 - 3$

c. $8 - 2$

9 from Unit 3, Lesson 6

There are some counters in the cup.

Lin puts in 5 more counters.

Now there are 9 counters in the cup.

How many counters were in the cup before Lin added more?

Show your thinking using drawings, numbers, or words.

10 Exploration

Here are some numbers: 1 2 4 5 7

a. Can you make 10 using **2** of the numbers?
Show your thinking using drawings, numbers, or words.

b. Can you make 10 using **3** of the numbers?
Show your thinking using drawings, numbers, or words.

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

a. $7 + 2 = \square + 5$

b. $3 + \square = 5 + 5$

c. $\square + 1 = 3 + 5$

Addressing CA CCSSM 1.NBT.2a-b; building on K.NBT.1; building towards 1.NBT.2a-b; practicing MP6 and MP7

Ten as a Unit

Let's explore teen numbers.

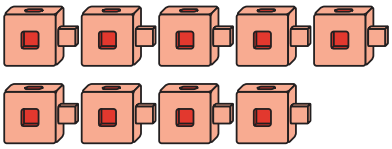
Warm-up

Which Three Go Together: Groups of 10

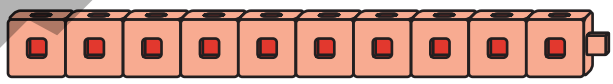
Which 3 go together?

A

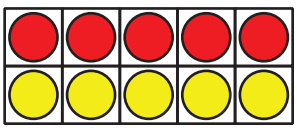
B



C



D



Activity 1

Count and Show How Many

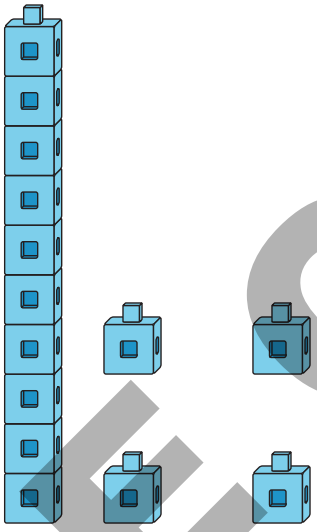
How many are there?
Show how you counted.
My count:

How many? _____

Activity 2

Building Teen Numbers

Clare shows a number like this.



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 Clare did.

What did you notice as you were showing each number?

Addressing CA CCSSM 1.NBT.2a-b and 1.OA.8; practicing MP7 and MP8

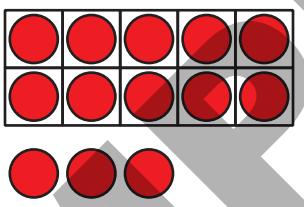
Addition with a Ten

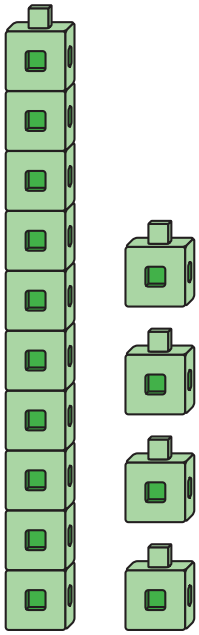
Let's use a ten to make teen numbers.

Warm-up

Notice and Wonder: Teen Numbers

What do you notice?
What do you wonder?





Activity 1

Make It: Teen Numbers and 10-frames

Use your 10-frames to build teen numbers. Write an equation that matches the teen number.

Sec B

teen number	equation

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

Activity 2

Equations With a Ten

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. $13 = \square + 10$

Addressing CA CCSSM 1.NBT.2b, 1.OA.1, 1.OA.4, 1.OA.6, and 1.OA.8; practicing MP2, MP4, and MP5

Addition and Subtraction with a Ten

Let's add and subtract with teen numbers.

Warm-up

Number Talk: A Ten and Some Ones

Find the value of each expression mentally.

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

Activity 1

Story Problems with a Ten

1. Kiran collects baseball caps.
   He has 5.
   He gets some more.
   Now he has 15.
   How many baseball caps did he get?
   Show your thinking using drawings, numbers, or words.

Equation: _____

Equation: _____

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

Equation: _____

Equation: _____

Activity 2

Related Equations

Mai is finding the unknown number in 16 – 10 = ☐.

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

1. 15 – 10 = ☐

2. $\square = 13 - 3$

3. $8 = 18 - \square$

4. $2 + \square = 12$

Addressing CA CCSSM 1.OA.1, 1.OA.6, and 1.OA.7; building towards 1.NBT.4; practicing MP1 and MP8

Add to a Teen Number

Let's add to teen numbers.

Warm-up

True or False: Teen Numbers

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

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

Activity 1

Rock Collection

Kiran collects rocks.
So far, he has 14 rocks.
He gets 3 more.
How many rocks does Kiran have now?
Show your thinking using drawings, numbers, or words.

Equation: _____

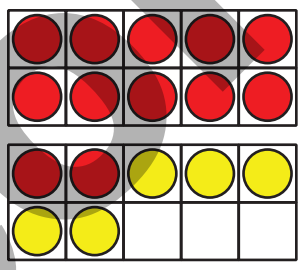
Activity 2

Write Equations: Adding On to Teen Numbers

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

Sec B

1. $12 + 5 = \square$



2. $6 + 11 = \square$

3. $\square = 17 + 2$

4. $4 + 14 = \square$

5. $\square = 15 + 4$

6. $16 + 2 = \square$

Activity 3

Centers: Choice Time

Choose a center.

Compare

Number Puzzles

$14 = 8 + \square$

Find the Pair

Unit 3, Lesson 12

Addressing CA CCSSM 1.NBT.1, 1.OA.1, 1.OA.4, 1.OA.6, and 1.OA.8; practicing MP7

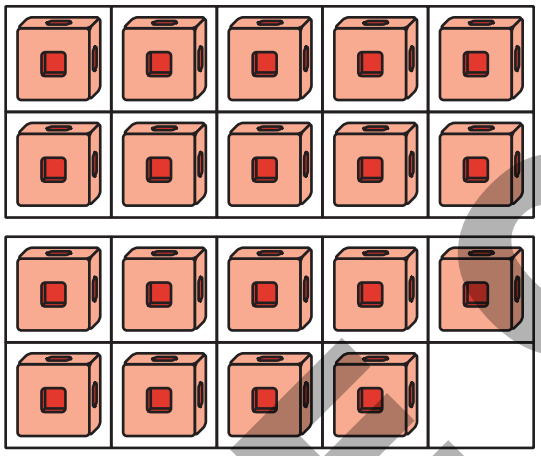
Subtract from a Teen Number

Let's subtract and add within 20.

Activity 1

Noah's Collection

Noah collects game pieces.
He has 19 game pieces arranged like this in his bin.



Noah 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.

Activity 2

Addition and Subtraction Equations with Teen Numbers

Find the number that makes each equation true.
Be ready to explain your thinking.

1. $13 + 4 = \square$

2. $16 + \square = 17$

3. $19 - 8 = \square$

4. $14 - 2 = \square$

5. $11 + \square = 17$

6. $\square + 1 = 18$

Unit 3, Lesson 13

Addressing CA CCSSM 1.OA.1 and 1.OA.5-6; practicing MP2 and MP7

More Story Problems with Teen Numbers

Sec B

Let's solve story problems.

Warm-up

Number Talk: Add Ones

Find the value of each expression mentally.

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

Activity 1

Sitting or Standing

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.

Activity 2

Solve Story Problems and Compare Methods

1. 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.

2. There are 17 students in the classroom.
   Some students go home.
   Now there are 4 students in the classroom.
   How many students went home?
   Show your thinking using drawings, numbers, or words.

Activity 3

Centers: Choice Time

Choose a center.

Shake and Spill

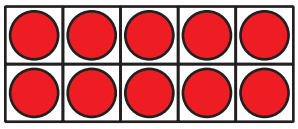
Compare

Number Puzzles

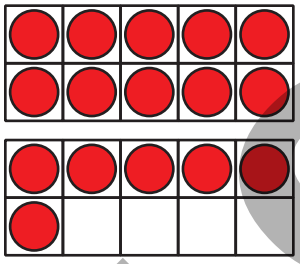
$14 = 8 + \square$

Section B 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 unknown 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.

Some students go home.

Then there are 4 students in the classroom.

How many students went home?

$17 - \square = 4$

$17 - 4 = \square$

Addressing CA CCSSM 1.OA.6 and 1.OA.7-8; practicing MP2 and MP6

Center Day 2

Let's play games to practice adding and subtracting.

Warm-up

True or False: Expressions on Both Sides

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

- $3 + 2 = 3 + 2$

- $5 + 1 = 5 + 2$

- $4 + 6 = 3 + 7$

Activity 2

Centers: Choice Time

Choose a center.

Number Puzzles

$14 = 8 + \square$

Shake and Spill

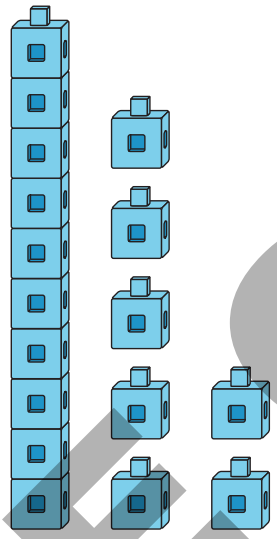
Compare

Practice Problems

9 Problems

1 from Unit 3, Lesson 8

a. How many cubes are there?
How do you see them?



b. Show 14 with connecting cubes.

2 from Unit 3, Lesson 9

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

a. $10 + 3 = \square$

b. $10 + \square = 13$

3 from Unit 3, Lesson 10

a. Find the number that makes each equation true.

$18 - \square = 10$ $10 + \square = 18$

b. How are the 2 equations alike?
How are they different?

4 from Unit 3, Lesson 11

Find the number that makes each equation true.

a. $15 + 1 = \square$

b. $12 + 6 = \square$

c. $\square = 10 + 7$

d. $\square = 13 + 5$

5 from Unit 3, Lesson 12

Find the number that makes each equation true.

a. $18 - 3 = \square$

b. $17 - \square = 10$

c. $13 + \square = 17$

d. $15 + 4 = \square$

e. $16 - 2 = \square$

6 from Unit 3, Lesson 13

12 kids play soccer.
Then 4 more come to play with them.
How many kids play soccer now?
Show your thinking using drawings, numbers, or words.

7 Exploration

Jada has 17 cards.
She gives Han 4 cards.
Now Han and Jada have the same number of cards.
How many cards did Han have to start?
Show your thinking using drawings, numbers, or words.

Jada has 14 cards on her desk.
Han has 15 cards on his desk.
Jada gives Han 3 cards.

a. How many cards does Jada have on her desk now? Show your thinking using drawings, numbers, or words.

Equation: _____

b. How many cards does Han have on his desk now? Show your thinking using drawings, numbers, or words.

Equation: _____

9 Exploration

number	name
16	sixteen
17	seventeen
18	eighteen
19	nineteen

What do you notice about the numbers and names in the table?

Addressing CA CCSSM 1.OA.2, 1.OA.3, and 1.OA.5-6; practicing MP1, MP3, MP6, and MP7

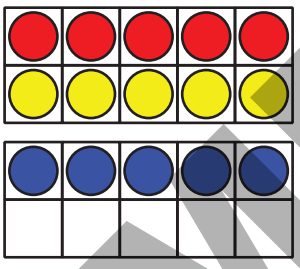
Solve Story Problems with Three Numbers

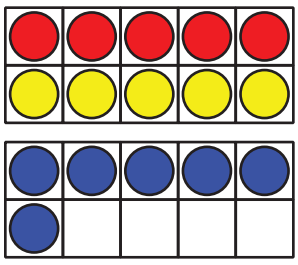
Let's solve story problems with 3 numbers.

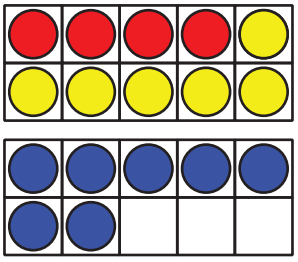
Warm-up

How Many Do You See: 10-frames

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

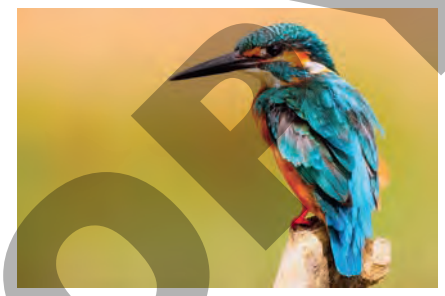






Activity 1

Louis Agassiz Fuertes's Birds



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.

Activity 2

Fuertes's Bird Cards

Show your thinking using drawings, numbers, or words.

1. Noah has 3 bird cards.
   Clare has 4 cards.
   Jada has 7 cards.
   How many cards do they have altogether?

2. Jada uses her cards to name birds she sees.
   She sees 4 orioles.
   She sees 2 goldfinches.
   She sees 8 sparrows.
   How many birds does Jada see?

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?

Addressing CA CCSSM 1.OA.3, 1.OA.6, and 1.OA.7; practicing MP7

Add 3 Numbers

Let's add 3 numbers.

Warm-up

Number Talk: Related Expressions

Find the value of each expression mentally.

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

Activity 1

Match Expressions

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

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.

Activity 2

Is the Equation True?

Determine whether each equation is true or false.
Be ready to explain your reasoning.

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


True or False

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.

Activity 3

Write Expressions

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 have the same value as $10 + 5$.

Addressing CA CCSSM 1.OA.1, 1.OA.3, and 1.OA.6; practicing MP7 and MP8

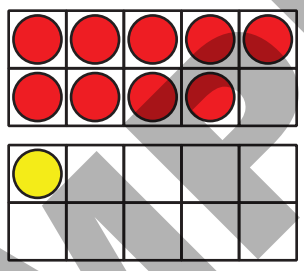
Make 10 to Add

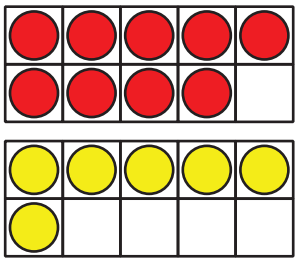
Let's look for patterns and think about making 10 as we add.

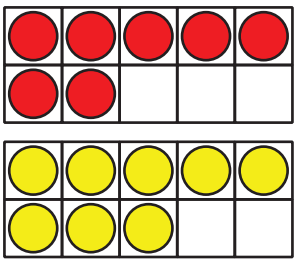
Warm-up

How Many Do You See: Double 10-frames

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







Activity 1

The 9 Plus Game

- 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 1?

Sec C

Equations:

Round 1: _____

Round 2: _____

Round 3: _____

Round 4: _____

Round 5: _____

Activity 2

Clare's Birds

1. 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.

2. 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.

3. 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.

Addressing CA CCSSM 1.OA.6; practicing MP2 and MP7

Patterns in Addition

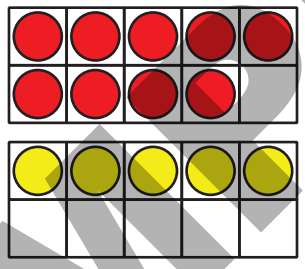
Let's look for and use patterns to help us add within 20.

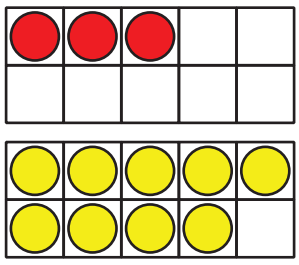
Warm-up

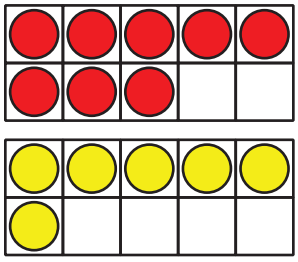
How Many Do You See: More Double 10-frames

How many do you see?

How do you see them?







Activity 3

Centers: Choice Time

Choose a center.

Shake and Spill

Sec C

Compare

Number Puzzles

$14 = 8 + \square$

Addressing CA CCSSM 1.OA.3 and 1.OA.6; practicing MP3

Methods for Addition within 20

Let's add within 20.

Warm-up

Number Talk: Related Expressions

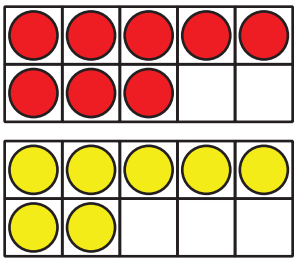
Find the value of each expression mentally.

- 5 + 8
- 6 + 7
- 8 + 7
- 6 + 9

Activity 1

Lin, Han, and Kiran Add

Lin, Han, and Kiran find 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.

Activity 2

How Did You Add?

- Pick a card.
- Each partner finds the value on their own.
- Each partner gives a signal when they are ready to explain their thinking.
- Each partner shares their thinking.
- Each partner writes the equation to show the sum.

Choose your favorite equation.
Show how you found the value using drawings, numbers, or words.

Unit 3, Lesson 20

Addressing CA CCSSM 1.OA.2 and 1.OA.6; practicing MP1, MP2, and MP5

A Trip to the Zoo

Let's solve story problems.

Warm-up

Sec C

Number Talk: Using 10 + ☐

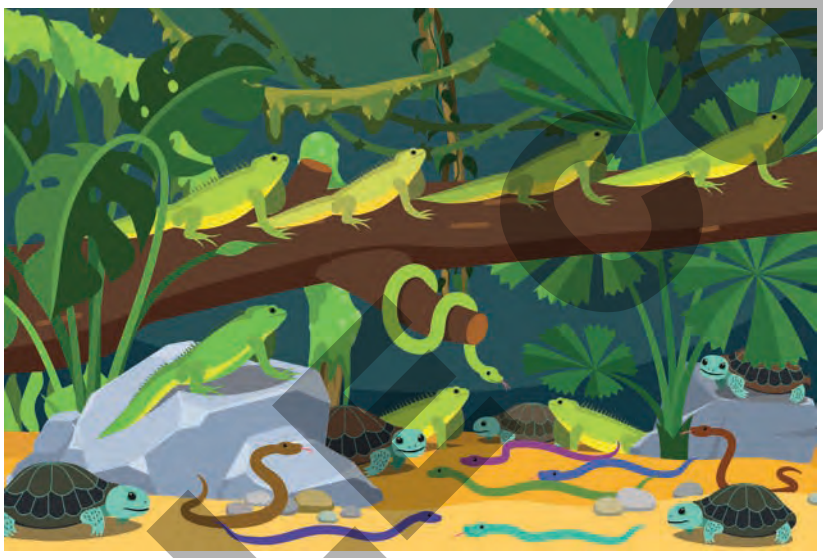
Find the value of each expression mentally.

- 8 + 2 + 4
- 8 + 6
- 7 + 3 + 6
- 7 + 9

Activity 1

How Many Reptiles?

Jada went to the zoo with her family.
They saw reptiles.
They saw 8 snakes, 7 iguanas, and 5 turtles.



How many reptiles did Jada's family see?
Show your thinking using drawings, numbers, or words.

Activity 2

Zoo Exhibits

Show your thinking using drawings, numbers, or words.

1. Jada sees birds at the zoo.
   She sees 3 herons, 6 hawks, and 7 hummingbirds.
   How many birds does Jada see?

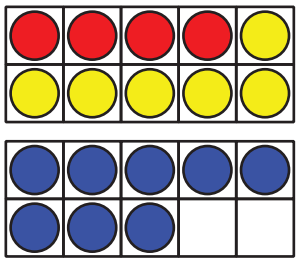
2. Jada sees large cats.
   There were 8 lions, 4 tigers, and 3 cheetahs.
   How many large cats are there?

3. Jada goes to the petting zoo.
She pets 8 goats, 7 sheep, and 4 pigs.
How many animals does Jada pet?

Section C Summary

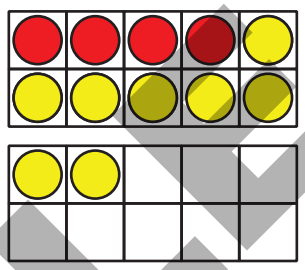
We made a ten to add 3 numbers.

$$4 + 8 + 6 = 10 + 8 = 18$$



We made a ten to add 2 numbers.

$$4 + 8 = 4 + 6 + 2 = 10 + 2 = 12$$



Addressing CA CCSSM 1.OA.5-6; building towards 1.OA.6; practicing MP2 and MP6

Center Day 3

Let's play games where we add.

Warm-up

What Do You Know about 20?

What do you know about 20?

Practice Problems

8 Problems

1 from Unit 3, Lesson 15

There are 5 bananas, 6 oranges, and 4 apples in a bowl.
How many pieces of fruit are in the bowl?
Show your thinking using objects, drawings, numbers, or words.

2 from Unit 3, Lesson 16

Select **3** expressions that each have the same value as $10 + 8$.

A. $5 + 5 + 8$

B. $9 + 7 + 3$

C. $1 + 9 + 9$

D. $3 + 8 + 7$

E. $8 + 4 + 6$

3 from Unit 3, Lesson 17

Find the value of each sum.

Show your thinking using drawings, numbers, or words.

a. $9 + 6$

b. $4 + 9$

c. $7 + 5$

d. $8 + 4$

4 from Unit 3, Lesson 18

Select **3** expressions that each have the same value as $10 + 3$.

A. $9 + 4$

B. $2 + 12$

C. $5 + 8$

D. $7 + 6$

E. $5 + 9$

5 from Unit 3, Lesson 19

Find the value of each sum.

Show your thinking using drawings, numbers, or words.

a. $3 + 9$

b. $6 + 5$

c. $8 + 7$

6 from Unit 3, Lesson 20

Jada has 6 cubes.

Han has 8 cubes.

Lin has 5 cubes.

How many cubes do Jada, Han, and Lin have all together?

Show your thinking using drawings, numbers, or words.

7 Exploration

a. Tyler starts counting up from 3.

Mai starts counting back from 15.

Which number do Tyler and Mai say at the same time?

Show your thinking using drawings, numbers, or words.

b. Clare starts counting up from 1.

Andre starts counting back from 20.

Do Andre and Clare say the same number at the same time?

Show your thinking using drawings, numbers, or words.

a. Write an addition story problem. Use 3 numbers from the list:

3 5 7 4 9 6

b. Solve your story problem.

c. Write an equation that matches the story problem.

Equation: _____

Trade with a classmate. Solve each other's problem.

Addressing CA CCSSM 1.OA.1, 1.OA.4, and 1.OA.5-6; practicing MP6 and MP7

Subtract from Teen Numbers

Let's subtract from a teen number.

Warm-up

Number Talk: Subtract from a Teen Number

Find the value of each expression mentally.

- 14 – 4
- 14 – 5
- 17 – 7
- 17 – 9

Activity 1

Subtraction Methods

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.

Activity 2

Number Card Subtraction

1. Choose a teen number card.
2. Choose a number card 0–9 to subtract.
3. Find the difference.
4. Write an equation.

My equations:

Pick your favorite equation.

Show how you found the value of the difference. Use drawings, numbers, or words.

Addressing CA CCSSM 1.OA.6; practicing MP3 and MP7

Use a Ten to Subtract

Let's use 10 to help us subtract.

Warm-up

Number Talk: Subtract to Make 10

Find the value of each expression mentally.

- 17 – 7
- 17 – 7 – 1
- 17 – 8
- 17 – 9

Activity 1

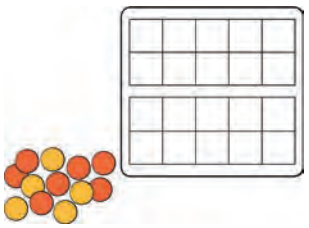
Number Card Subtraction with 10-frames

1. Choose a teen number card.
2. Build the number on 10-frames.
3. Choose a number card 0–9 to subtract.
4. Find the difference.
5. Write an equation.

My equations:

Pick your favorite equation.

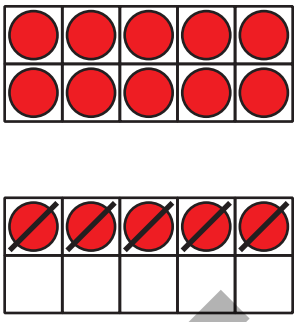
Show how you found the value of the difference. Use drawings, numbers, or words.



Activity 2

Diego and Andre Find the Difference

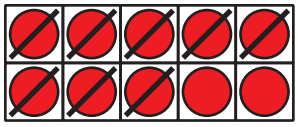
Diego plays Number Card Subtraction.
He starts with 15 and picks an 8.
He starts out by doing this:

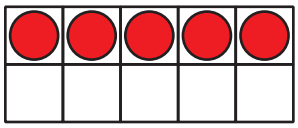


Sec D

What can Diego do next to find the difference?

Andre also finds the value of 15 – 8.
He starts out by doing this:





What can Andre do next to find the difference?

Find the value of each difference using Diego's way or Andre's way.

Show your thinking using drawings, numbers, or words.

1. 14 – 5

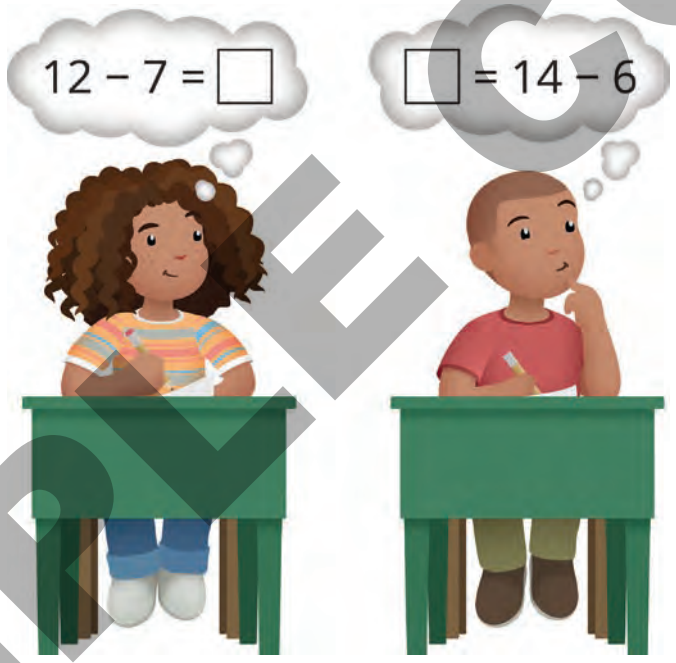
2. 13 – 6

Unit 3, Lesson 24

Addressing CA CCSSM 1.NBT.1, 1.OA.4, 1.OA.5-6, and 1.OA.8; practicing MP6 and MP7

Relate Counting to Addition and Subtraction

Let's subtract by counting on or taking away.

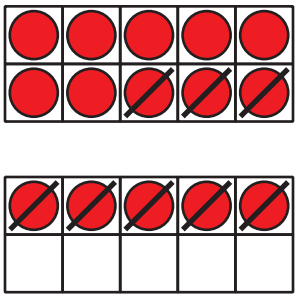


Activity 1

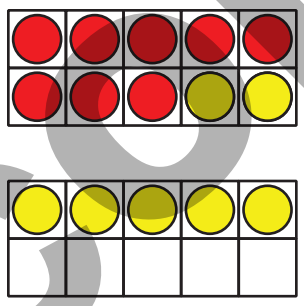
Different Ways to Subtract

We saw 2 ways to find the value of 15 – 8.

Diego's way



Tyler's way



Sec D

Find the value of each difference. Use Diego's way. Then use Tyler's way.

Diego's way Tyler's way

1. 16 – 3

Diego's way | Tyler's way

2. 17 – 8

3. 18 – 15

Activity 2

Find the Number that Makes Each Equation True

Find the number that makes each equation true.

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. $20 = 15 + \square$

Unit 3, Lesson 25

Addressing CA CCSSM 1.NBT.1, 1.OA.1, 1.OA.4, and 1.OA.5-6; practicing MP2 and MP3

How Do You Want to Subtract?

Let's use subtraction methods that work for the numbers in a problem.

Activity 1

Choose Your Own Subtraction Method

Show your thinking using drawings, numbers, or words.

1. $20 - 15 = \square$

2. $19 - 13 = \square$

3. $13 - 5 =$ ☐

4. $18 - 9 =$ ☐

5. $17 - 15 =$ ☐

Activity 2

Solve Story Problems

Show your thinking using drawings, numbers, or words.

1. 12 pencils are on the table.
   The teacher picks up 7.
   How many pencils are still on the table?

2. Clare gets 8 glue sticks from the red table.
   She gets some more from the blue table.
   Now she has 15 glue sticks.
   How many did she get from the blue table?

3. Kiran has 17 crayons.
   He gives some to his friends.
   Now he has 9 crayons.
   How many did he give to his friends?

Unit 3, Lesson 26

Addressing CA CCSSM 1.OA.1, 1.OA.4, and 1.OA.6; practicing MP1 and MP4

What's the Story?

Let's solve story problems.

Warm-up

Number Talk: Subtract 10 or More

Sec D

Find the value of each expression mentally.

- 15 – 10
- 15 – 12
- 16 – 10
- 16 – 13

Activity 1

Solve Related Story Problems

Show your thinking using drawings, numbers, or words.

1. Elena has 6 counters.
   She gets some more.
   Now she has 18 counters.
   How many more counters did Elena get?

2. Elena has 18 counters.
   She gets rid of some.
   Now she has 6 counters.
   How many counters did Elena get rid of?

Activity 2

More Story Problems

Story Problem 1

Han has some pencils.

He gets 9 more.

Now he has 15 pencils.

How many pencils did Han have to start?

Story Problem 2

Han has 15 pencils.

He gives some to friends.

Now he has 9 pencils.

How many pencils did Han give to his friends?

Story Problem 3

Han has 9 pencils.

He gets some more from the store.

Now he has 15 pencils.

How many pencils did Han get from the store?

Story Problem 4

Han has 15 pencils.

He gives 9 to friends.

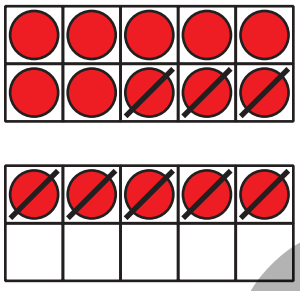
How many pencils does Han have now?

Show your thinking using drawings, words or numbers.

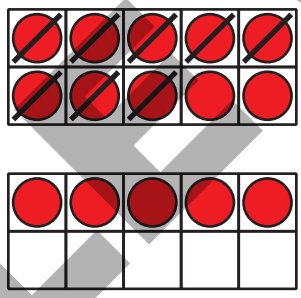
Section D Summary

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

We used a ten to count on.

8 + 2 = 10

10 + 5 = 15

2 + 5 = 7

Addressing CA CCSSM 1.OA.5-6;
practicing MP2 and MP6

Center Day 4

Let's play games to practice addition and subtraction.

Warm-up

Number Talk: Subtract 10

Find the value of each expression mentally.

- 20 – 10
- 20 – 10 – 1
- 18 – 10 – 4
- 18 – 14

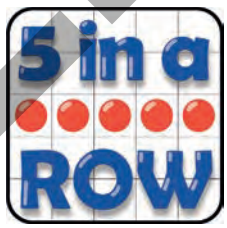
Activity 2

Introduce Compare—Add and Subtract within 20

Choose a center.

Compare

Five in a Row



How Close?

☐ ☐ + ☐ ☐ = _____

Unit 3, Lesson 28

Addressing CA CCSSM 1.OA.1-2, 1.OA.3, and 1.OA.6; building on 1.OA.1-2; building towards 1.OA.1-2; practicing MP4

The Garden

Let's write and solve story problems.

Warm-up

Notice and Wonder: Onion Plants

Sec D

What do you notice?
What do you wonder?

Activity 1

Planting a Garden

1. Lin and her father will plant in their community garden. What questions can you ask about this situation?

2. Circle the questions that can be answered using addition or subtraction.

Activity 2

Make it a Story Problem

Choose one of the questions from the list.

Think about what information you need in order to answer the question.

Write a story problem that would help us answer the question.

Practice Problems

7 Problems

1 from Unit 3, Lesson 22

from Unit 3, Lesson 22

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

a. $12 - 3 = \square$

b. $19 - 5 = \square$

2 from Unit 3, Lesson 23

Find the value of each difference. Show your thinking using drawings, numbers, or words.

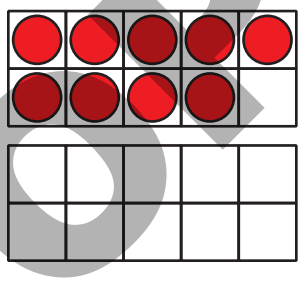
a. $16 - 10$

b. $16 - 9$

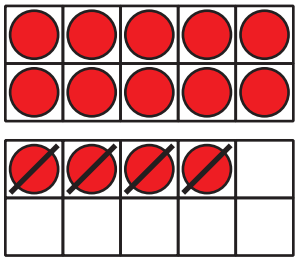
3 from Unit 3, Lesson 24

Find the value of each difference.
Use the 10-frames if they help.

a. 13 – 9



b. 14 – 6



4 from Unit 3, Lesson 25

Find the number that makes each equation true.

a. $15 - 11 = \square$

b. $14 - 5 = \square$

5 from Unit 3, Lesson 26

Some children skate on the pond.
8 more join them.
Now 14 children skate on the pond.
How many children were skating before more joined?
Show your thinking using drawings, numbers, or words.

6 Exploration

Mai plays *Number Card Subtraction*.
She starts with a teen number.
Then she picks a card 0–9.
She subtracts that number.
Mai's answer is the same as the number she subtracted.
What could Mai's teen number and card be?

7 Exploration

Find the value of the expression in as many ways as you can.

16 – 9

What is your favorite way?

GRADE 1

UNIT

4

Numbers to 99

Content Connections

In this unit you will use multiple representations of two-digit numbers including connecting cubes, base-ten diagrams, words, and expressions to understand place values for numbers up to 99. You will make connections by:

- **Reasoning with Data** while collecting, representing, organizing and answering questions about two or more categories of information.
- **Exploring Changing Quantities** while composing and decomposing numbers using manipulatives and expressions and using flexible number strategies to reason about equal amounts and place values.

- **Taking Wholes Apart, Putting Parts Together** while using manipulatives and expressions to think of whole numbers between 10 and 100 in terms of tens and ones.

Addressing the Standards

As you work your way through **Unit 4 Numbers to 99,** you will use some mathematical practices that you may have started using in kindergarten and have continued strengthening over your school career. These practices describe types of thinking or behaviors that you might use to solve specific math problems.

Mathematical Practices	Where You Use these MPs
MP1 Make sense of problems and persevere in solving them.	
MP2 Reason abstractly and quantitatively.	Lesson 4, 8, 13, 17, 18, 19, 21, 22, 23
MP3 Construct viable arguments and critique the reasoning of others.	Lesson 6, 7, 11, 14
MP4 Model with mathematics.	Lesson 23
MP5 Use appropriate tools strategically.	Lesson 6
MP6 Attend to precision.	Lesson 5, 6, 8, 9, 10, 13, 14, 15, 16, 17, 18, 19

Mathematical Practices	Where You Use these MPs
MP7 Look for and make use of structure.	Lesson 1, 2, 3, 4, 6, 8, 11, 12, 14, 15, 16, 17, 20, 21, 23
MP8 Look for and express regularity in repeated reasoning.	Lesson 2, 3, 4, 7, 20

The California Common Core State Standards for Mathematics (CA CCSSM) describe the topics you will learn in this unit. Many of these topics build upon knowledge you already have and challenge you to expand upon that knowledge. The table below shows what standards are being addressed in this unit.

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Make Sense of Data • Tens and Ones	**1.NBT.1** Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.	Lesson 1, 2, 3, 6, 7, 8, 9, 10, 11, 12, and 23

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Clocks and Time • Reasoning about Equality • Tens and Ones	**1.NBT.2** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: a. 10 can be thought of as a bundle of ten ones—called a "ten." b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	Lesson 1, 2, 3, 5, 6, 7, 8, 9, 10, 14, 16, 17, 19, 20, 21, 22, and 23

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Clocks and Time • Reasoning about Equality • Tens and Ones	**1.NBT.2c** Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases: c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).	Lesson 4
• Reasoning about Equality • Tens and Ones	**1.NBT.3** Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.	Lesson 14,15, 16, 17, 18, 21, and 22

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Equal Expressions • Reasoning about Equality • Tens and Ones	**1.NBT.4** Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.	Lesson 3, 4, 5, 11, 12, 18, and 21
• Tens and Ones	**1.NBT.5** Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.	Lesson 3 and 15

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Tens and Ones	**1.NBT.6** Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning sed.	Lesson 3, 4, 5, 12, 13, and 18

Big Ideas You Are Studying	California Content Standards	Lessons Where You Learn This
• Equal Expressions • Reasoning about Equality	**1.OA.6** Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 – 4 = 13 – 3 – 1 = 10 – 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 – 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).	Lesson 12 and 21
• Equal Expressions • Reasoning about Equality	**1.OA.7** Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. *For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 – 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.*	Lesson 15

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; building towards 1.NBT.1, 1.NBT.2c, and 1.NBT.5; practicing MP7

Count Large Collections

Let's count objects.

Warm-up

Choral Count: Count by 10

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; practicing MP7 and MP8

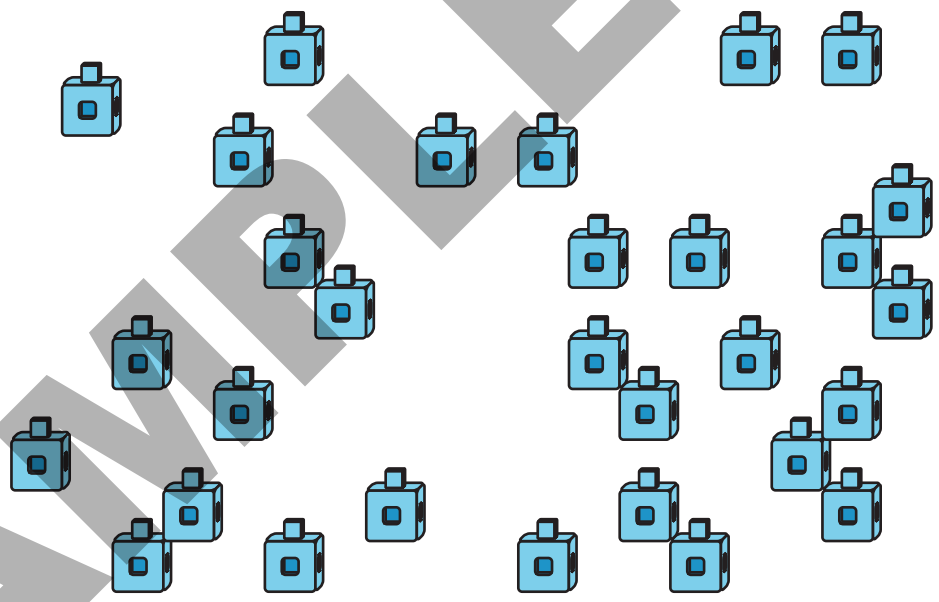
Match Representations of Tens

Let's match different representations of numbers.

Warm-up

Estimation Exploration: Cubes and Towers

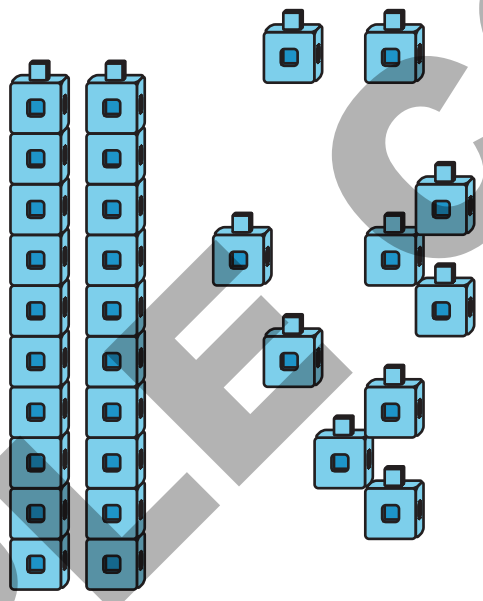
Round 1: How many cubes?



Record an estimate that is:

too low	about right	too high

Round 2: How many cubes?



Record an estimate that is:

too low	about right	too high

Unit 4, Lesson 3

Addressing CA CCSSM 1.NBT.1, 1.NBT.2, 1.NBT.4, and 1.NBT.5-6; building towards 1.NBT.2c and 1.NBT.5; practicing MP7 and MP8

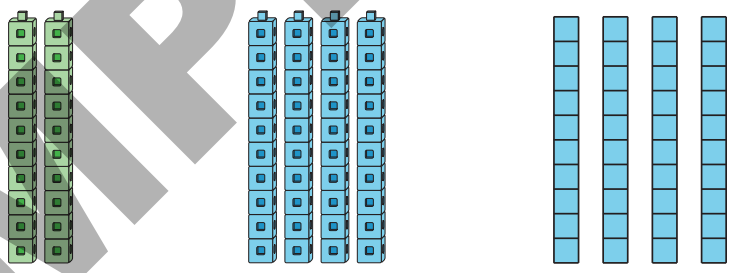
Addition and Subtraction with Tens

Let's add and subtract 10.

Warm-up

How Many Do You See: Groups of 10

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



Activity 1

How Many Tens Now?

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

   a. Show 1 ten.
   Add a ten.
   How many do you have now?

   b. Add another ten.
   How many do you have now?

c. Add another ten.
How many do you have now?

d. Add another ten.
How many do you have now?

e. Add another ten.
How many do you have now?

f. Add another ten.
How many do you have now?

g. Add another ten.
How many do you have now?

h. Add another ten.
How many do you have now?

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

   a. Show 9 tens.
      Take away a ten.
      How many do you have now?

   b. Take away another ten.
      How many do you have now?

c. Take away another ten.
How many do you have now?

d. Take away another ten.
How many do you have now?

e. Take away another ten.
How many do you have now?

f. Take away another ten.
How many do you have now?

g. Take away another ten.
How many do you have now?

h. Take away another ten.
How many do you have now?

Activity 2

Introduce Five in a Row—Add or Subtract 10

Record your favorite round.

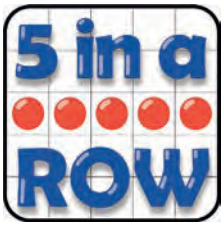
Show your thinking using drawings, numbers, or words.

Activity 3

Centers: Choice Time

Choose a center.

Five in a Row



How Close?

Number Puzzles

14 = 8 + ☐

Addressing CA CCSSM 1.NBT.2c, 1.NBT.4-6; practicing MP2, MP7, and MP8

More Addition and Subtraction with Tens

Let's add and subtract tens.

Warm-up

Number Talk: Plus or Minus 10

Find the value of each expression mentally.

- 30 + 10
- 40 + 10
- 80 – 10
- 70 – 10

Activity 1

How Many Are in the Bag?

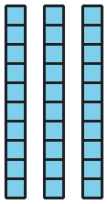
1. Jada is counting collections of cubes.
   Bag A has 30 cubes.
   Bag B has 2 towers of 10.
   How many cubes are in the 2 bags all together?
   Show your thinking using drawings, numbers, or words.

2. Tyler is counting a collection of cubes.
   Bag C has 7 towers of 10.
   He takes 40 cubes out of the bag.
   How many cubes does he have left in the bag?
   Show your thinking using drawings, numbers, or words.

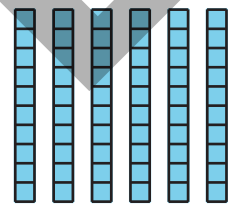
Activity 2

Add and Subtract Tens

1. Add 20:



2. Subtract 20:



3. 4 tens and 5 tens is _____

4. 8 tens take away 3 tens is _____

5. $20 + 60 =$ ☐

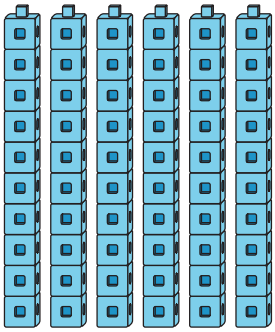
6. $70 - 20 =$ ☐

7. $90 - 70 =$ ☐

8. $40 + 40 =$ ☐

Section A Summary

We learned how to show tens in different ways.



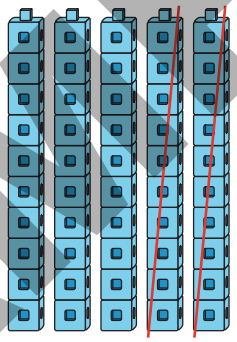
6 tens

60

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

4 tens and 1 ten is 5 tens

$40 + 10 = 50$



5 tens take away 2 tens is 3 tens

$50 - 20 = 30$

Addressing CA CCSSM 1.NBT.2, 1.NBT.4, and 1.NBT.6; practicing MP6

Center Day 1

Let's add and subtract.

Warm-up

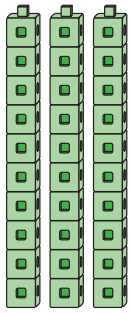
Which Three Go Together: Tens

Which 3 go together?

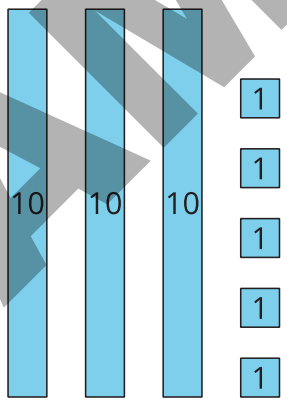
A

10 + 10 + 10

B



C



D

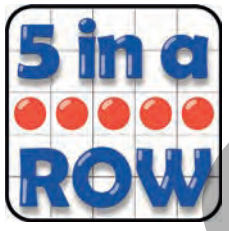
30

Activity 2

Centers: Choice Time

Choose a center.

Five in a Row



How Close?

☐ ☐ + ☐ ☐ = _____

Number Puzzles

14 = 8 + ☐

Practice Problems

8 Problems

1 Pre-unit

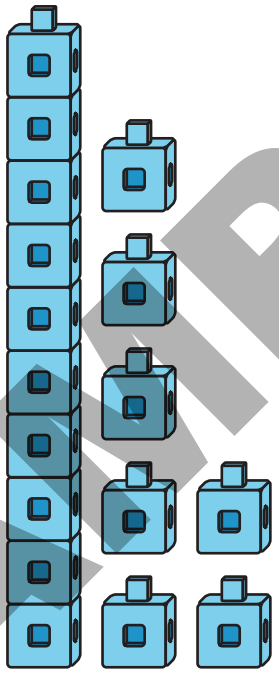
a. Mai says the numbers 10, 20, 30. What is Mai counting by?

b. What is the next number Mai will say?

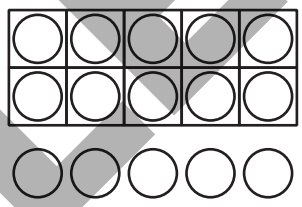
2 Pre-unit

How many are in each picture?

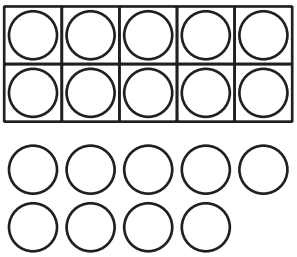
a.



b.

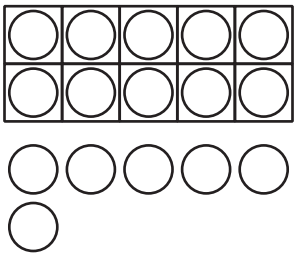


c.



_____ _____ _____

3 Pre-unit



Which expression shows the number of dots?

A. $5 + 1$

B. $10 + 5$

C. $10 + 6$

4 Pre-unit

Find the number that makes each equation true.

a. $10 + 7 = \square$

b. $10 + \square = 15$

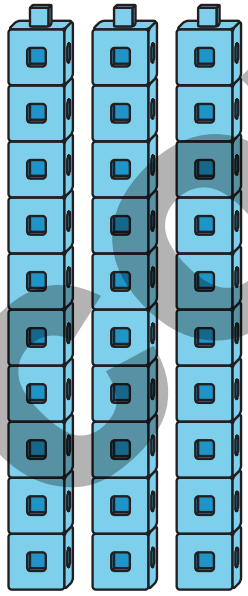
c. $\square + 3 = 13$

5 from Unit 4, Lesson 2

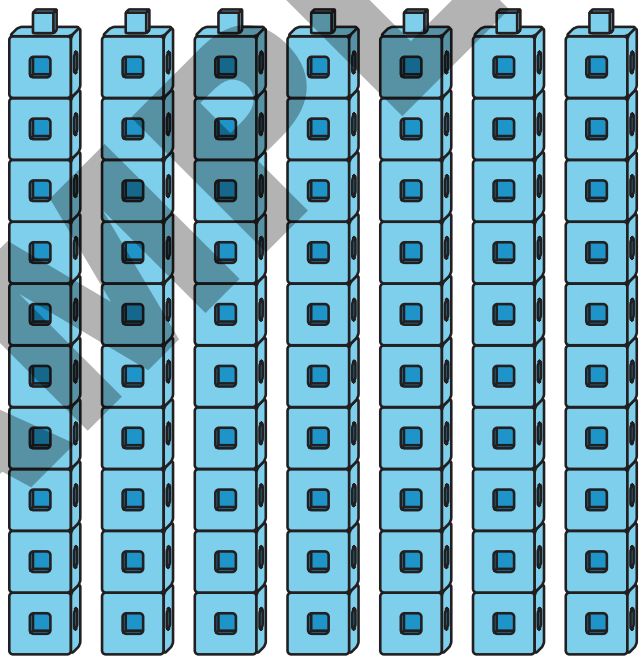
How many connecting cubes are in each picture?

a.

b.

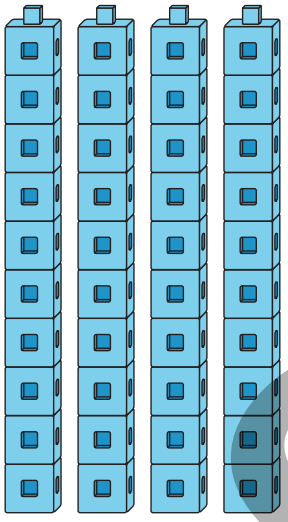


c.



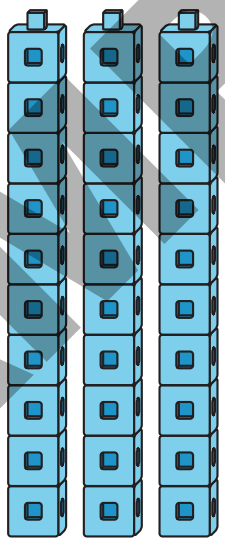
6 from Unit 4, Lesson 3

How many connecting cubes are in the picture?

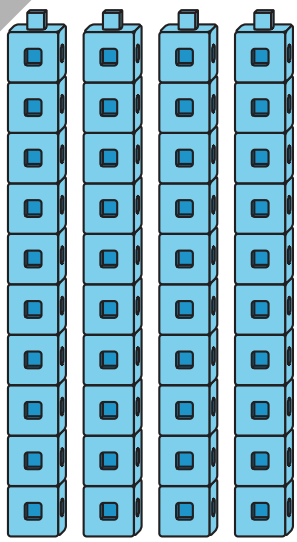


Which shows 10 more? Circle it.
Which shows 10 fewer? Cross it out.

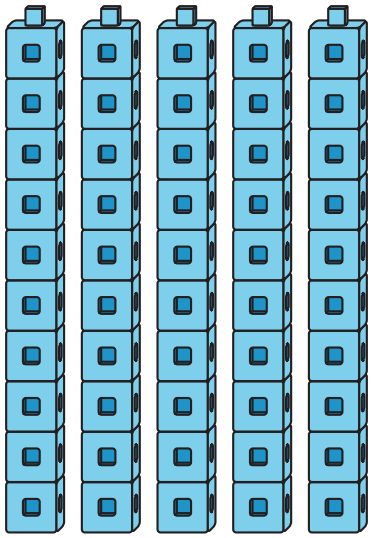
A



B

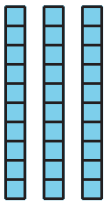


C



7 from Unit 4, Lesson 4

a. Add 30:



b. 70 take away 2 tens is _____.

c. $50 + 20 =$ ☐

d. $80 - 50 =$ ☐

8 Exploration

You can use towers of 10 cubes to help you with these questions.

a. Noah has 70 cubes in towers of 10.

He gave some towers to Clare.
Then he gave some towers to Andre.
Now Noah has no cubes left.
Describe 1 way this could happen.
Show your thinking using drawings, numbers, or words.
Write equations to represent the problem.

b. Describe another way this could happen.
Show your thinking using drawings, numbers, or words.
Write equations to represent the problem.

c. Diego has 10 cubes in a tower.
Elena gave him some more towers.
Then Mai gave him some more towers.
Now Diego has 60 cubes in towers of 10.
Describe 1 way this could happen.
Show your thinking using drawings, numbers, or words.
Write equations to represent the problem.

d. Describe another way this could happen.
Show your thinking using drawings, numbers, or words.
Write equations to represent the problem.

Unit 4, Lesson 6

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; practicing MP3, MP5, MP6, and MP7

Count Larger Collections

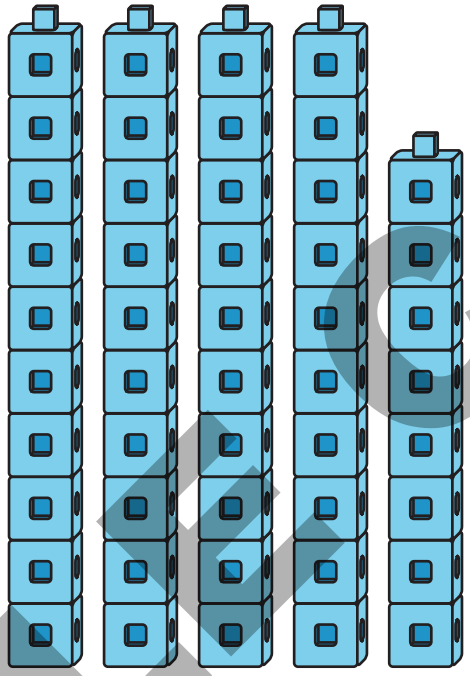
Let's organize, count, and show collections.

Sec B

Activity 2

Noah Counts a Collection

Noah organized his collection of connecting cubes.



He says there are 50 cubes.

Do you agree or disagree?

Explain how you know.

I _____ with Noah because

_____

_____

Activity 3

Centers: Choice Time

Choose a center.

Check It Off

Five in a Row

Number Puzzles

$14 = 8 + \square$

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; practicing MP3 and MP8

Numbers with Tens and Ones

Let's learn more about tens and ones.

Warm-up

Notice and Wonder: 1-and 2-digit Numbers

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

Activity 1

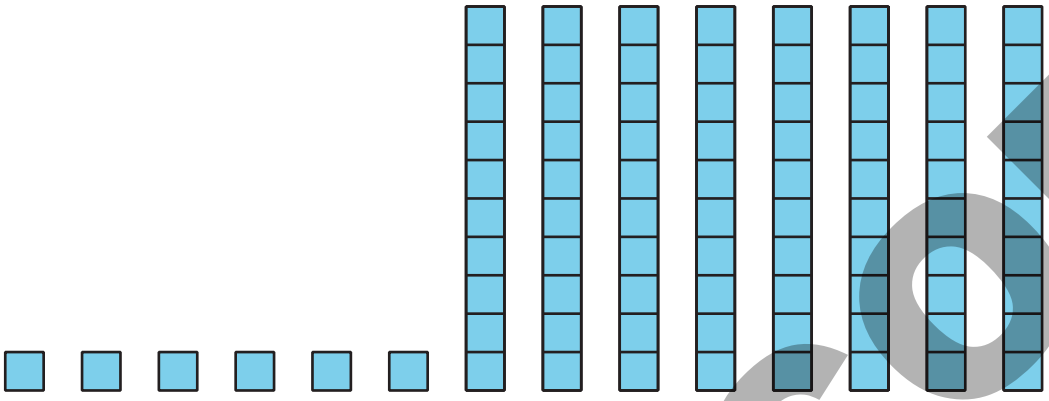
Make It: Tens and Ones

2-digit number	drawing	___ tens ___ ones

2-digit number	drawing	____ tens ____ ones

Activity 2

Who Do You Agree With?



Clare says this shows 68 (sixty-eight).
Diego says this shows 86 (eighty-six).
Who do you agree with?
Explain your reasoning.

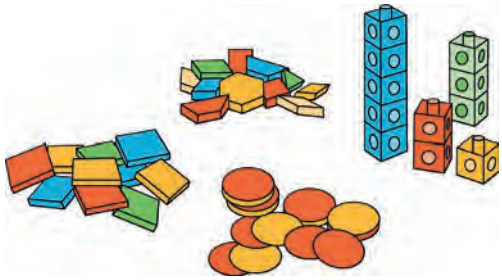
I agree with _____ because

Activity 3

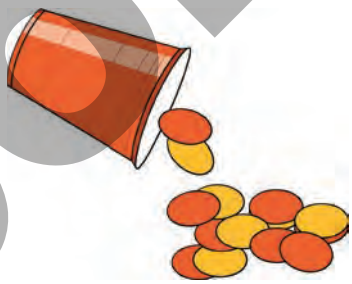
Centers: Choice Time

Choose a center.

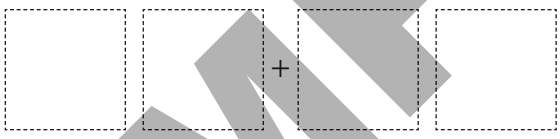
Counting Collections



Shake and Spill



How Close?



+ =

Check It Off

Unit 4, Lesson 8

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; practicing MP2, MP6, and MP7

Different Representations of Tens and Ones

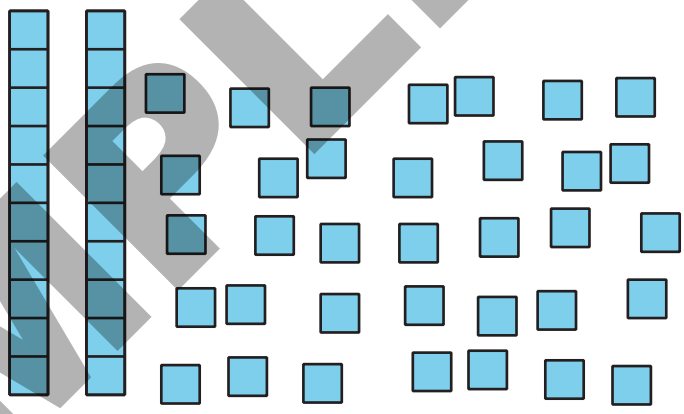
Sec B

Let's think about how 2-digit numbers can be shown.

Warm-up

Estimation Exploration: How Many?

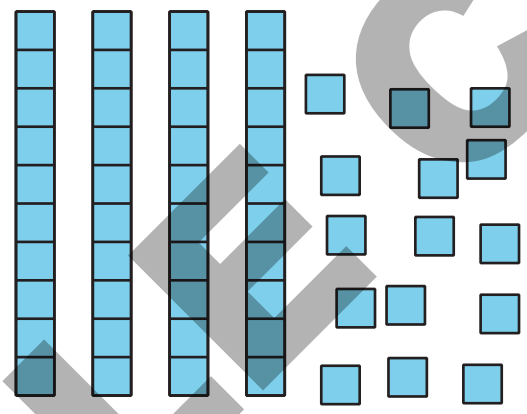
1. How many do you see?



Record an estimate that is:

too low	about right	too high

2. How many do you see?



Record an estimate that is:

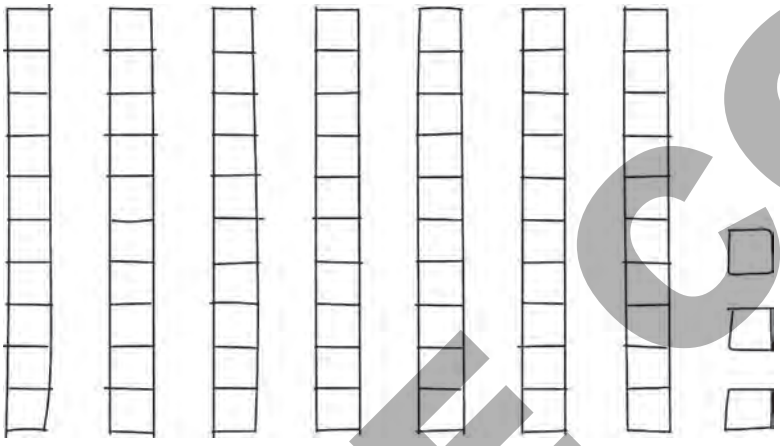
too low	about right	too high

Activity 1

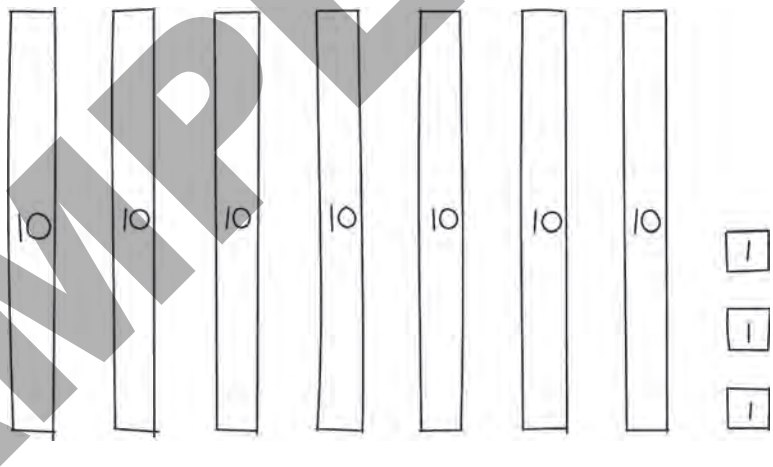
Compare Representations of a Collection

Each student counted and showed a collection.

- Clare drew



- Han drew

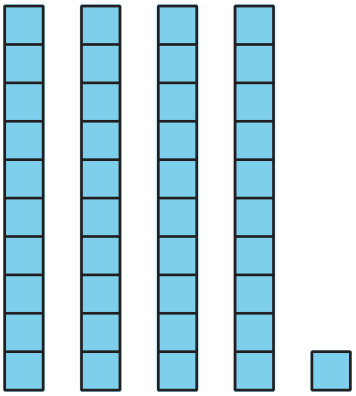


- Kiran wrote 3 ones and 7 tens.
- Priya wrote 70 + 3.

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

Activity 2

Card Sort: Base-Ten Representations



40 + 1

1 ten 4 ones

Sec B

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; practicing MP6

Show Me Your Number

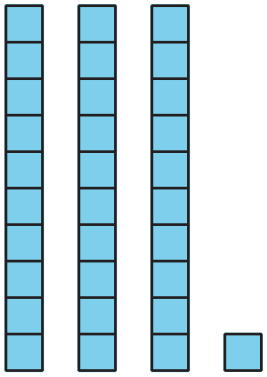
Let's show numbers in different ways.

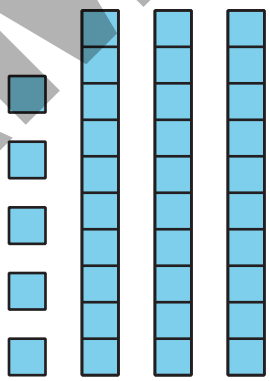
Warm-up

Which Three Go Together: Tens and Ones

Which 3 go together?

A 35

B 

C 

D 3 tens 5 ones

Activity 1

Create a Collection

Show your number in as many ways as you can.

Our number: _____

Activity 2

Show Collections in Many Ways

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

Collection 1

Collection 2

Collection 3

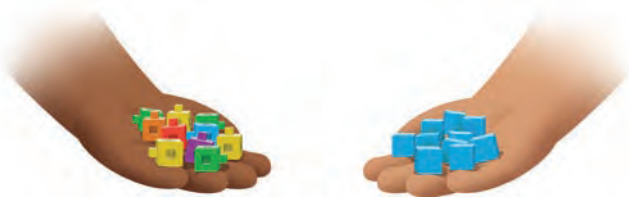
Collection 4

Activity 3

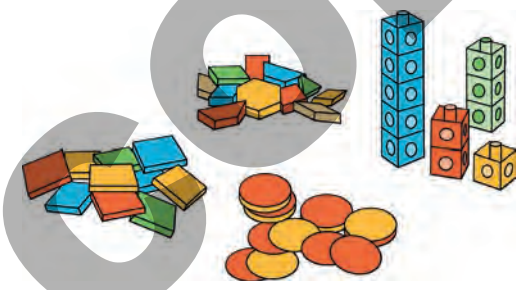
Centers: Choice Time

Choose a center.

Grab and Count



Counting Collections



Shake and Spill

Check It Off

Unit 4, Lesson 10

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; practicing MP6

Write 2-Digit Numbers

Let's write 2-digit numbers.

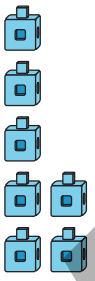
Sec B

Warm-up

Notice and Wonder: Same Digit, Different Place

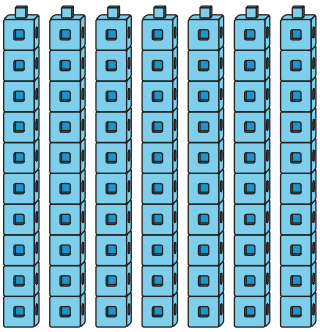
What do you notice?
What do you wonder?

A



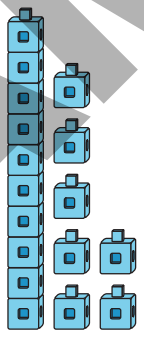
7

B



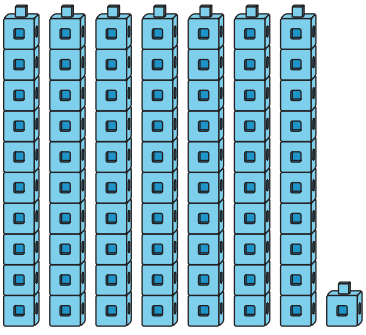
70

C



17

D



71

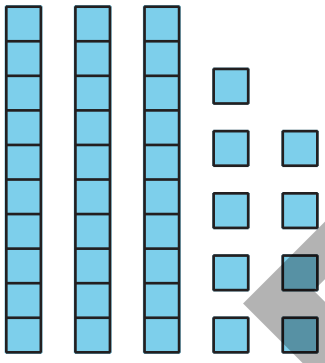
Activity 1

Write Numbers to Match Base-Ten Representations

Write the number that matches each representation.

1. 1 ten 4 ones

   Number: _____

2. 

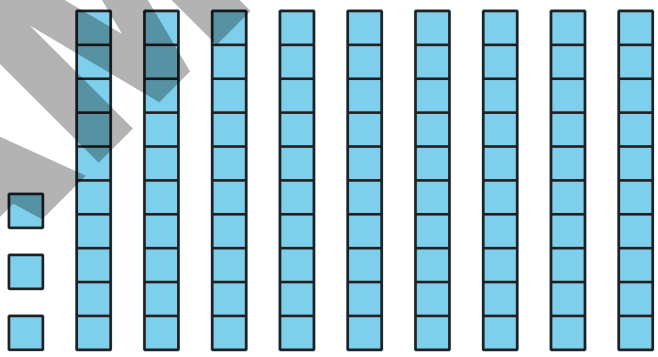
   Number: _____

3. 9 tens

   Number: _____

4. 20 + 5

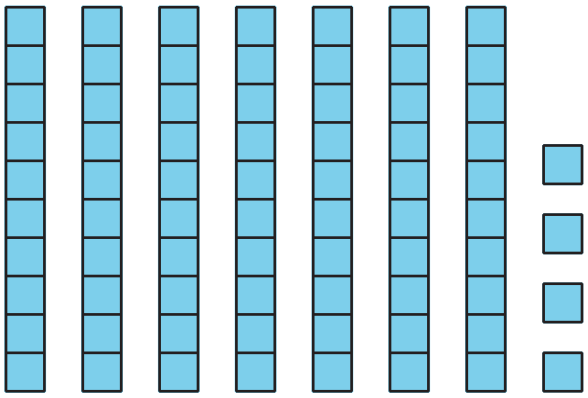
   Number: _____

5. 

   Number: _____

6. 7 + 40 Number: _____

7. 2 ones 8 tens Number: _____

8.  Number: _____

9. 1 + 40 Number: _____

10.  Number: _____

Addressing CA CCSSM 1.NBT.2 and 1.NBT.4; practicing MP3 and MP7

Add Tens to 2-Digit Numbers

Let's add tens to 2-digit numbers.

Warm-up

True or False: Tens and Ones

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

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

Activity 1

Add 2-digit Numbers and Tens

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

Sec B

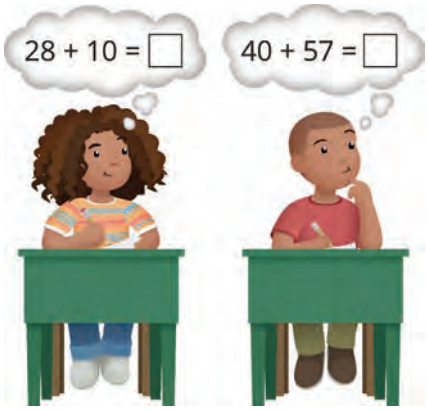
1. $37 + 20 = \square$

2. $60 + 23 = \square$

3. $48 + 50 = \square$

4. $\square = 54 + 20$

5. $30 + 65 =$ ☐



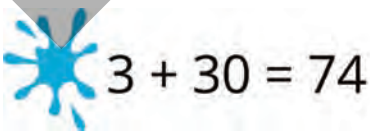
Activity 2

The Unknown Digit

1. This equation is true.

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

2. This equation is not true.



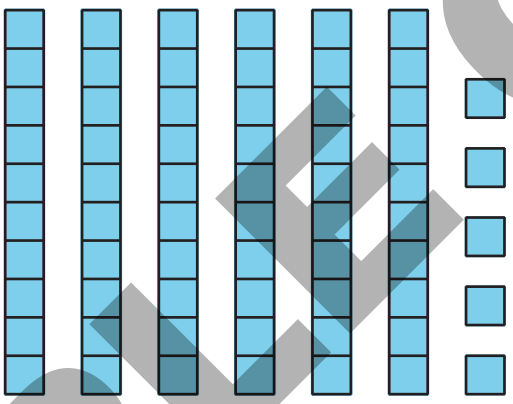
Show why it is not true using drawings, numbers, or words.

Section B Summary

We learned that 2-digit numbers are made up of tens and ones.

6	5
tens	ones

We represented 2-digit numbers in many different ways.



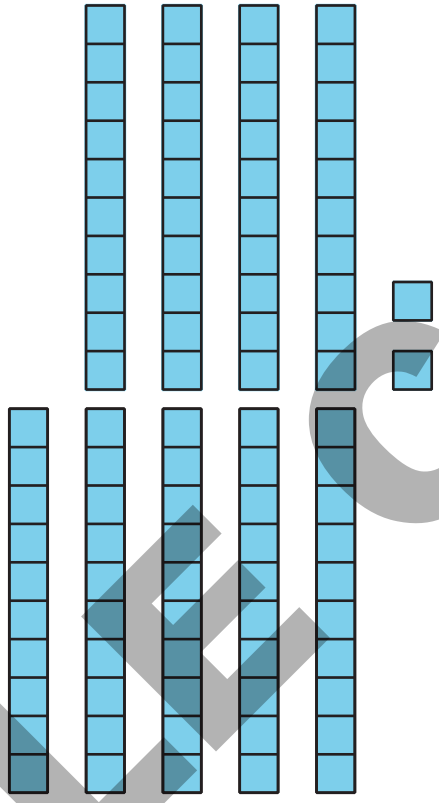
6 tens and 5 ones

$60 + 5$

65

We added 2-digit numbers by thinking about counting on by 10 or adding more tens.

$42 + 50 = \boxed{92}$



Addressing CA CCSSM 1.NBT.1 and 1.NBT.4-6 and 1.OA.6; practicing MP7

Mentally Add and Subtract Tens

Let's add and subtract tens in our heads.

Warm-up

Number Talk: Add and Subtract 10

Find the value of each expression mentally.

- 3 + 10
- 10 + 5
- 13 – 10
- 15 – 10

Activity 2

Add and Subtract 10

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

   a. $67 + 10 = \square$

      $67 - 10 = \square$

   b. $39 + 10 = \square$

      $39 - 10 = \square$

   c. $52 + 10 = \square$

      $52 - 10 = \square$

   d. $75 + 10 = \square$

      $75 - 10 = \square$

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

I notice that when I add 10,

I notice that when I subtract 10,

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

a. $67 + 10 = \square$

$67 + 10 + 10 = \square$

$67 + 10 + 10 + 10 = \square$

I notice that

b. $99 - 10 =$ ☐

$99 - 10 - 10 =$ ☐

$99 - 10 - 10 - 10 =$ ☐

I notice that

_____

_____

c. $45 + 10 + 10 =$ ☐

$45 - 10 - 10 =$ ☐

$45 + 10 - 10 =$ ☐

I notice that

_____

_____

Addressing CA CCSSM 1.OA.6; practicing MP2 and MP6

Center Day 2

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

Warm-up

Number Talk: Within 20

Find the value of each expression mentally.

- 10 + 4
- 9 + 4
- 9 + 6
- 15 – 6

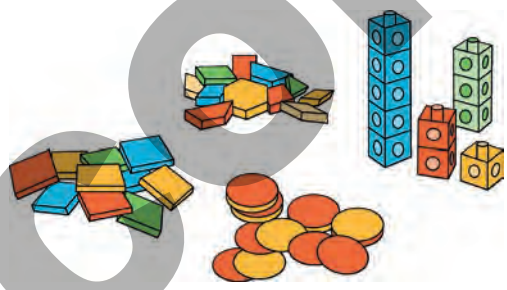
Activity 1

Centers: Choice Time

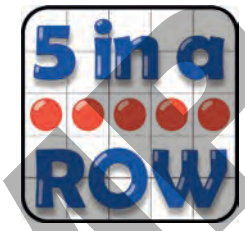
Choose a center.

Grab and Count

Counting Collections



Five in a Row



Check It Off

Activity 2

Centers Choice Time

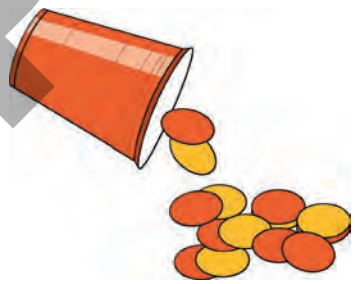
Choose a center.

How Close?

Number Puzzles

14 = 8 +

Shake and Spill

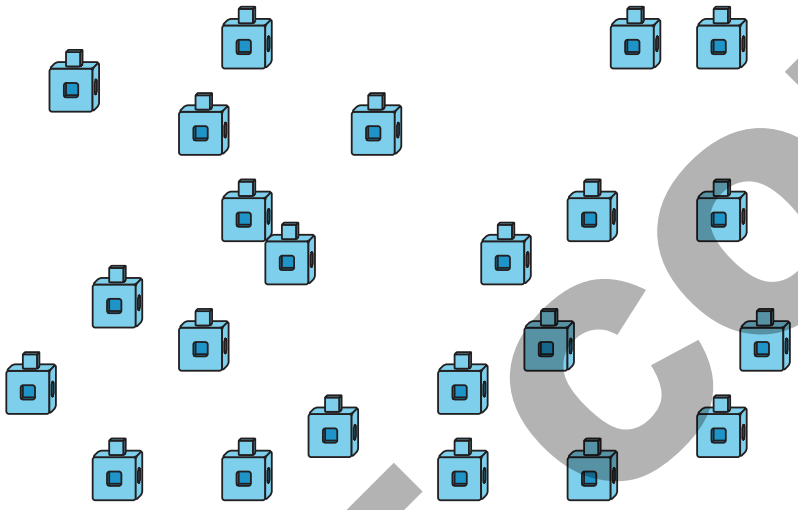


Practice Problems

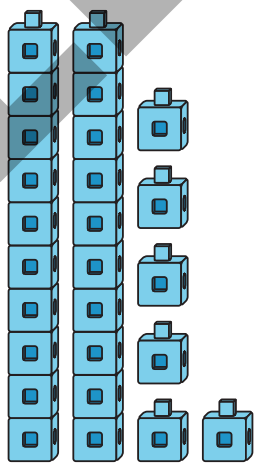
9 Problems

1 from Unit 4, Lesson 6

a. How many connecting cubes are there?



b. How many connecting cubes are there?

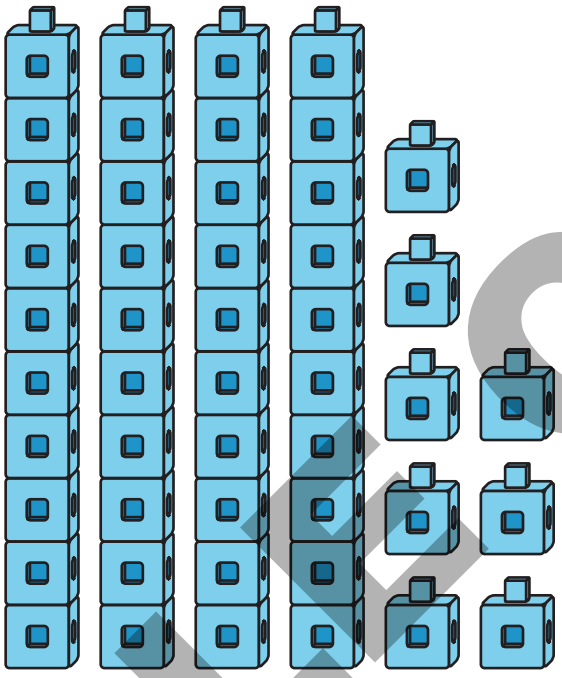


c. Which collection is easier to count? Why?

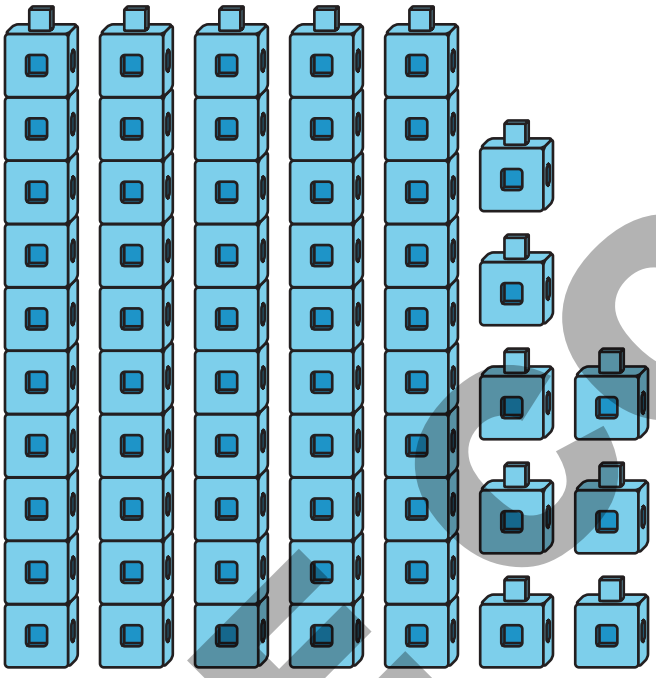
2 from Unit 4, Lesson 7

a. How many connecting cubes are there?

Show your thinking using drawings, numbers, or words.



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

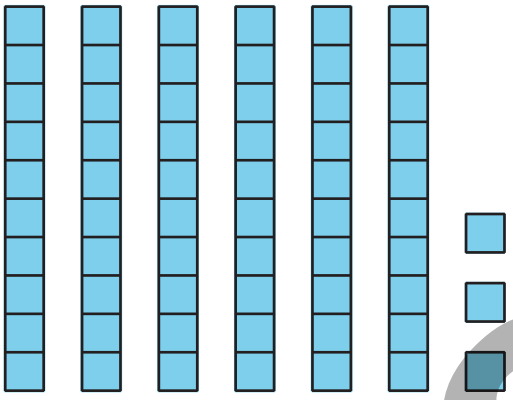


c. How are the numbers alike? How are they different?

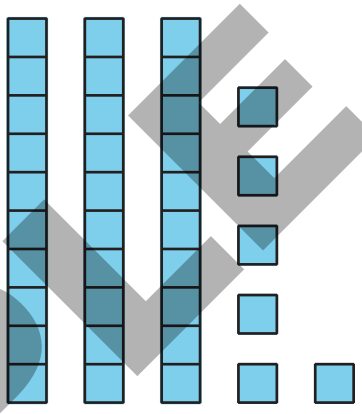
3 from Unit 4, Lesson 8

Circle **3** representations of 63.

A.



B.



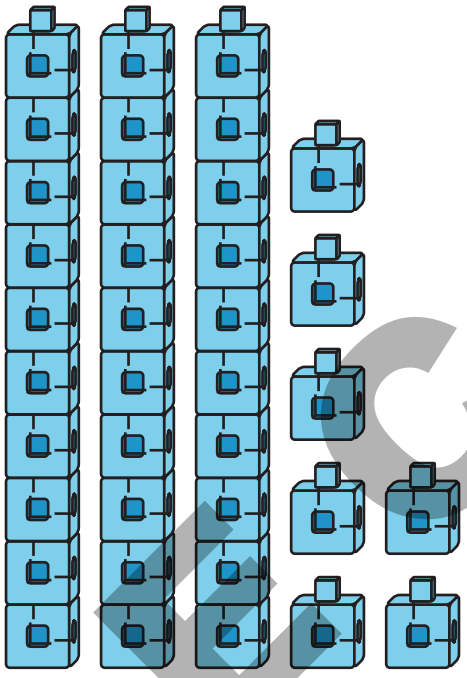
C. 6 tens and 3 tens

D. 6 tens and 3 ones

E. 3 + 60

4 from Unit 4, Lesson 9

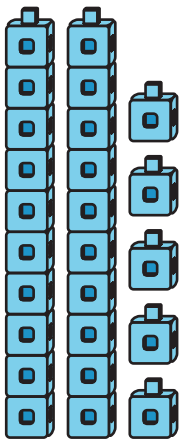
Show the number of connecting cubes in as many ways as you can.



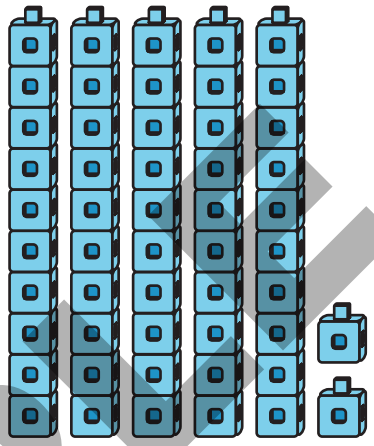
5 from Unit 4, Lesson 10

Write the number that matches each representation.

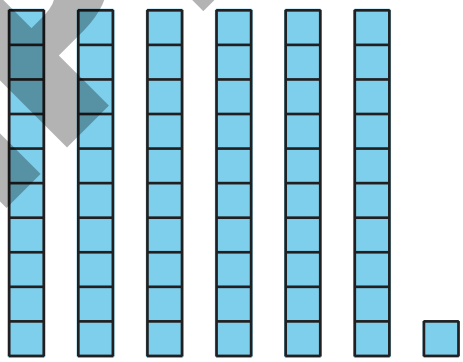
a.



b.



c.



d. $6 + 10$

6 from Unit 4, Lesson 11

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

a. $30 + 50 = \square$

b. $61 + 10 = \square$

c. $14 + 30 = \square$

7 from Unit 4, Lesson 12

Find the value of each expression.

a. $63 + 10$

b. $63 - 10$

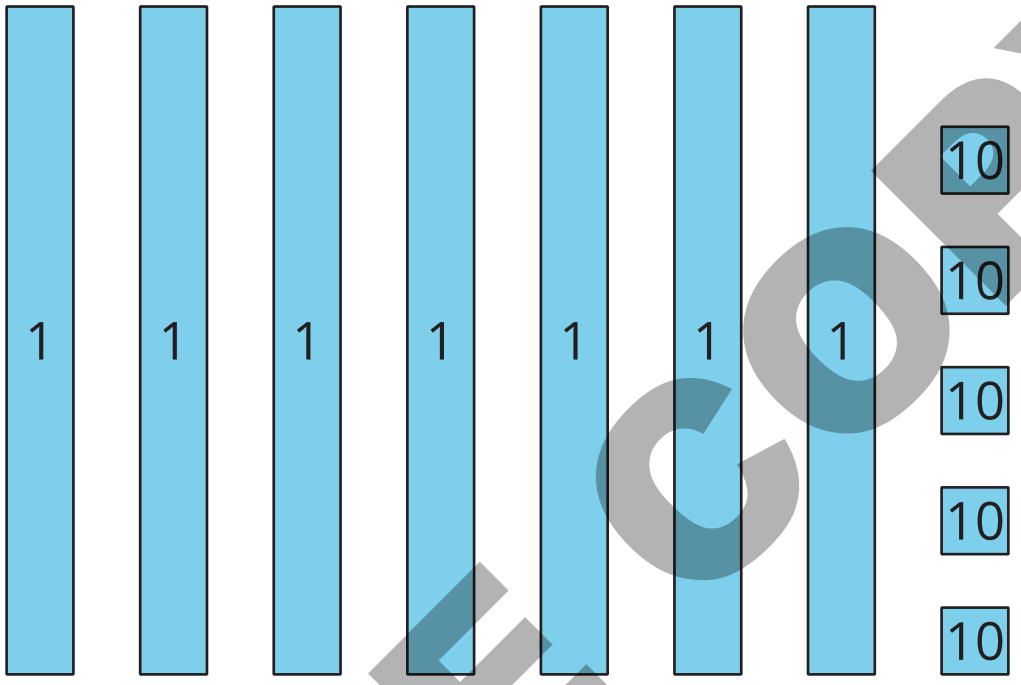
c. $19 + 10$

d. $19 - 10$

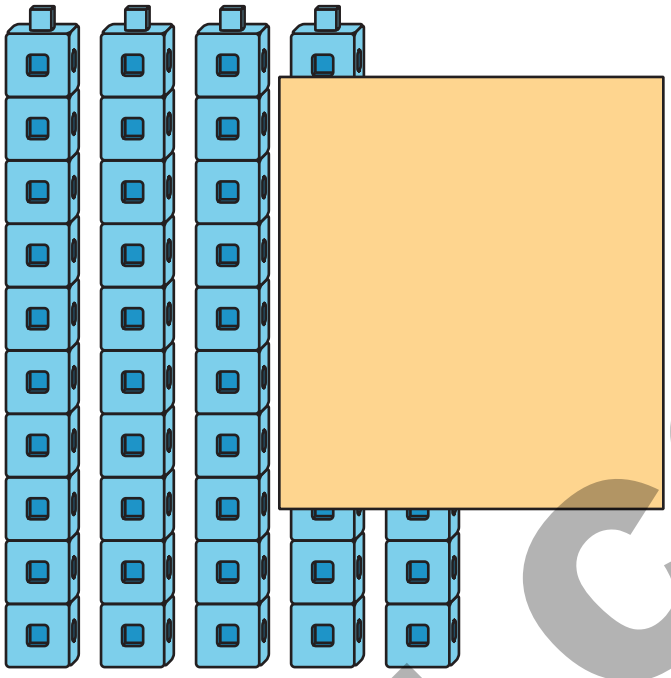
e. What patterns do you notice?

8 Exploration

Tyler drew 57.



What do you think of Tyler's representation?



How many connecting cubes can there be in the image?

Unit 4, Lesson 14

Addressing CA CCSSM 1.NBT.2-3; building towards 1.NBT.5; practicing MP3, MP6, and MP7

Let's Compare

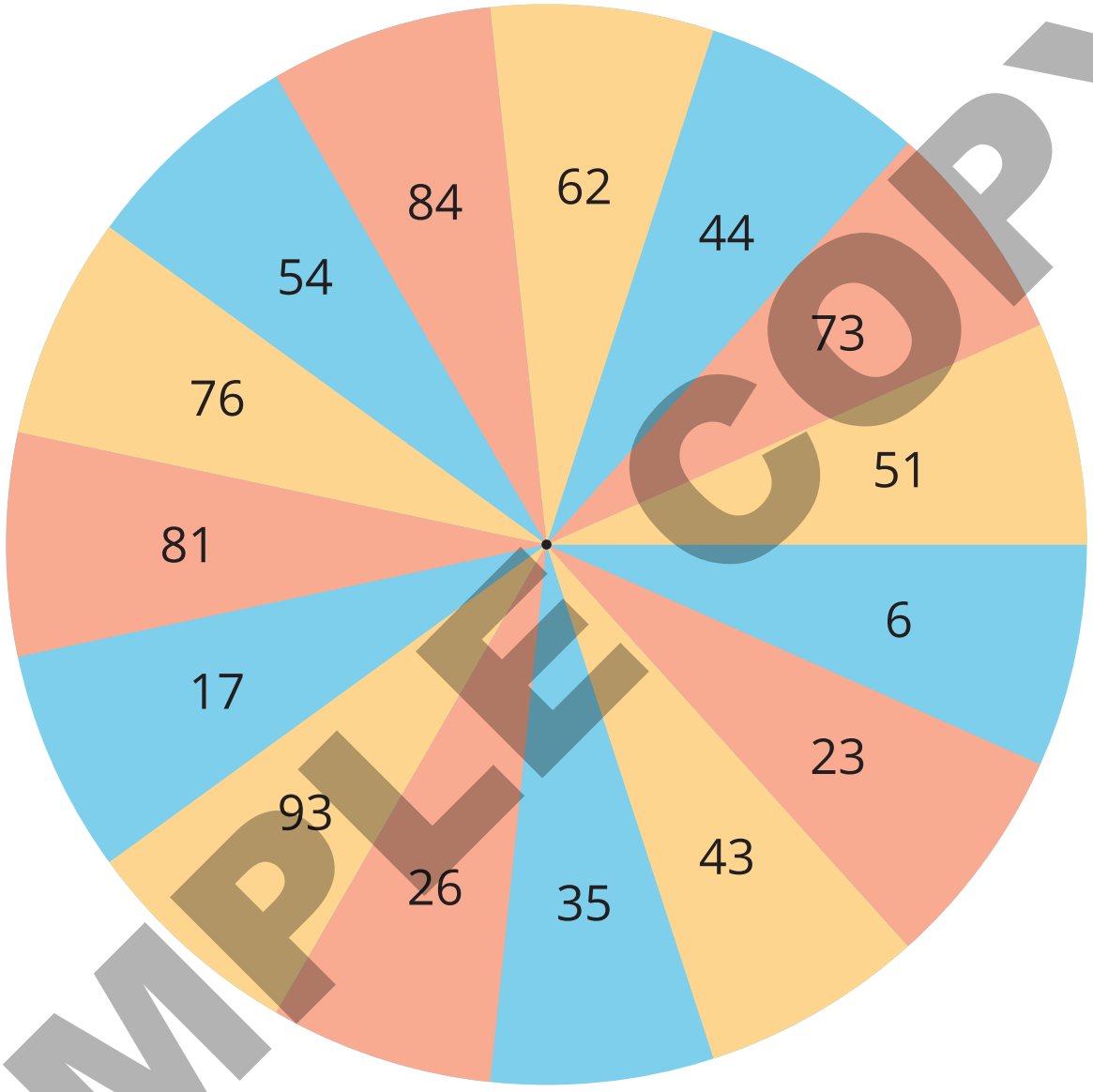
Let's compare numbers.

Activity 1

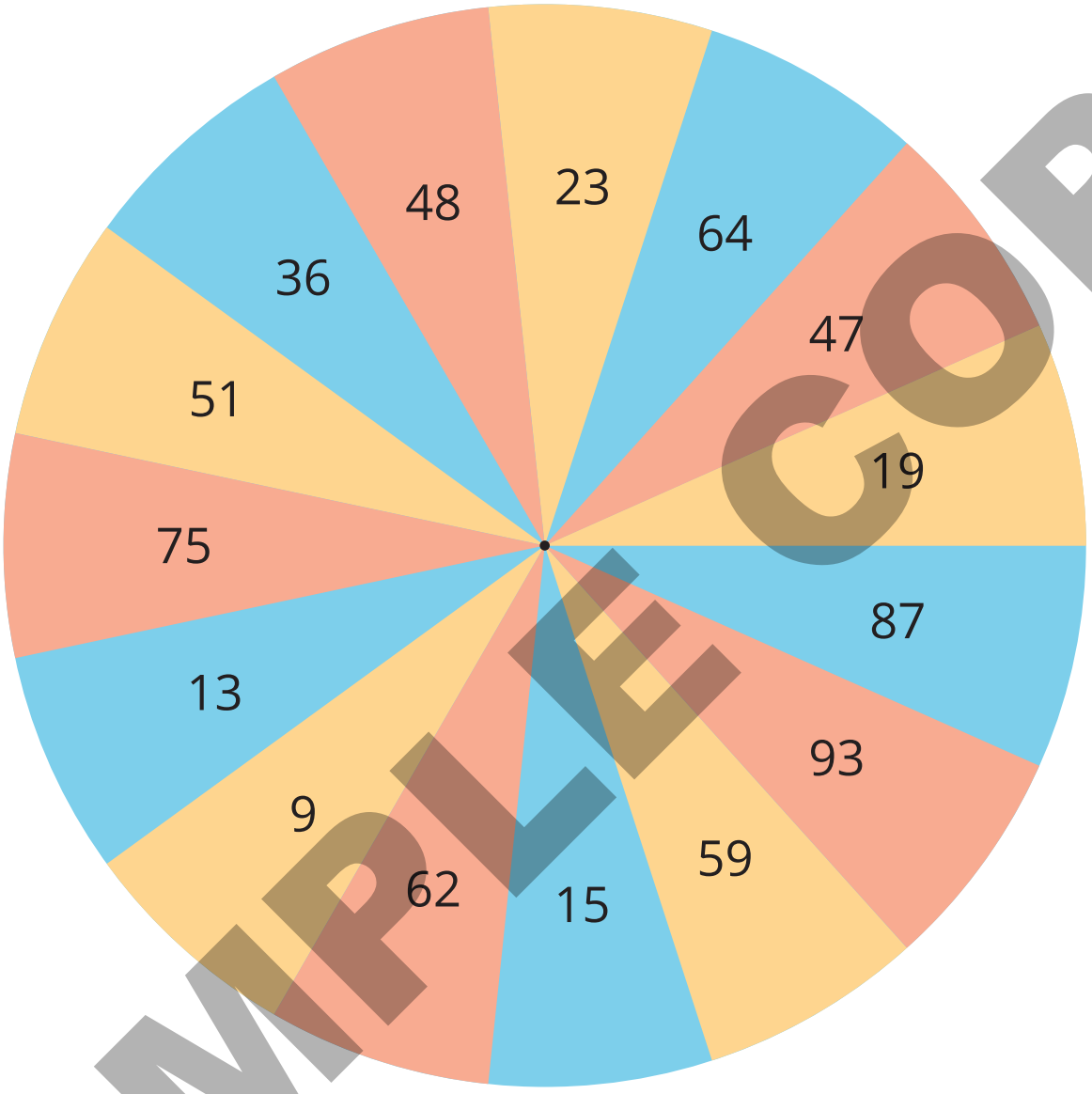
Which Is More?

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

Spinner A:



Spinner B:



Activity 2

Elena and Noah Compare Numbers

1. Elena says 75 is greater than 65. She says 7 is greater than 6.

   What do you think Elena means?

   How can Elena be more clear?

2. Noah says 39 is greater than 41 because 9 is the greatest number.

   Do you agree?

   Help Noah compare these numbers.

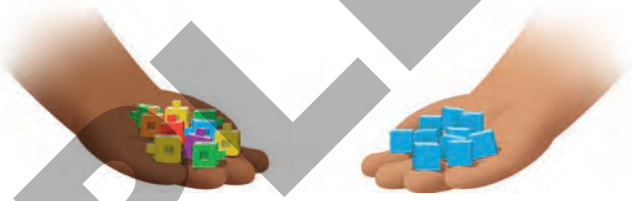
Activity 3

Centers: Choice Time

Choose a center.

Write Numbers

Grab and Count



Five in a Row

Addressing CA CCSSM 1.NBT.3, 1.NBT.5 and 1.OA.7; practicing MP6 and MP7

Greater Than, Less Than

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

Warm-up

Number Talk: Add or Subtract 10

Find the value of each expression mentally.

- 35 + 10
- 52 + 10
- 52 – 10
- 83 – 10

Activity 1

Which is Greater? Which is Less?

Circle the statement that is true in each pair.

Be ready to explain how you know so that others will understand.

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

Activity 2

True or False Comparisons

Read each statement.
Determine whether each statement is true or false.

1. $17 < 47$

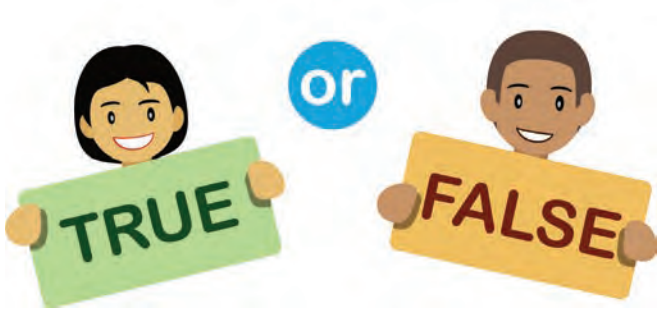
2. $58 = 53$

3. $45 > 63$

4. $39 < 93$

5. $4 = 46$

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



Unit 4, Lesson 16

Addressing CA CCSSM 1.NBT.2-3; MP6 and MP7

Write Comparisons with Symbols

Let's use symbols to write comparisons.

Warm-up

Notice and Wonder: 49 and 45

What do you notice?
What do you wonder?

- $49 > 45$

- $45 < 49$

Activity 2

Make the Statement True

1. Compare the numbers.
   Write <, >, or = in each blank.
   Then read the comparison statement.

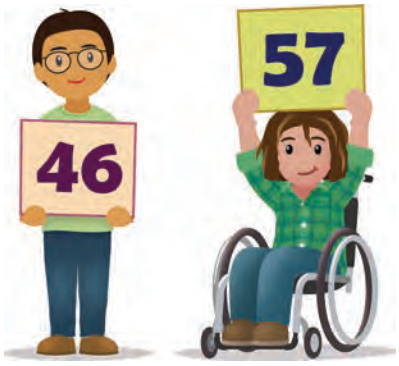
   a. 56_____26

   b. 72_____78

   c. 6_____55

   d. 92_____29

   e. 23_____23



6. Fill in each box with a number to make each statement true.

a. $\square > 78$

b. $39 < \square$

c. $13 = \square$

d. $\square < \square$

e. $\square > \square$

Addressing CA CCSSM 1.NBT.2-3; practicing MP2, MP6, and MP7

Compare and Order Numbers

Let's compare and order numbers.

Warm-up

Which Three Go Together: Comparison Statements

Which 3 go together?

A $5 < 20$

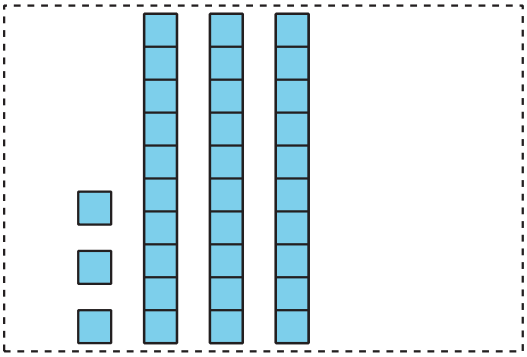
B $25 < 35$

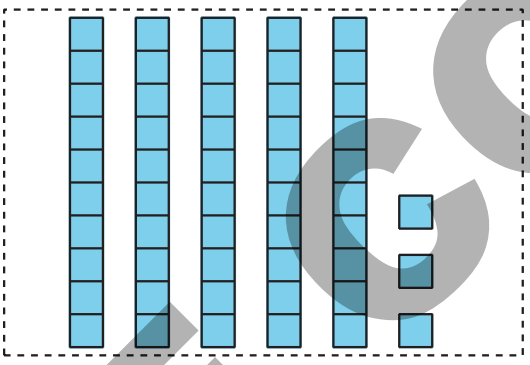
C $35 < 20$

D $30 > 20$

Activity 1

Compare and Order Quantities





Sec C

Pick a set of cards.
Put the cards in order from least to greatest.
Be ready to explain how you ordered your cards.

Write the numbers in order from least to greatest.

Set A: _____

Set B: _____

Set C: _____

Set D: _____

If you have time:

Mix 2 sets of cards together.

Put them in order from least to greatest.

Activity 2

Order Numbers

1. Here are some numbers in order:

   1 5 10 50 99

Add these numbers to the list:

- 49
- 8
- 25
- 98
- 13

Make sure all the numbers are in order from least to greatest.

2. Choose 2 numbers. Explain how you knew where to place them.

   ○ I knew where to place ☐ because

   _____

   ○ I knew where to place ☐ because

   _____

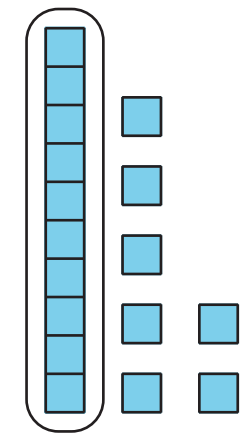
3. Write a number that makes each comparison statement true.

   25 < ☐

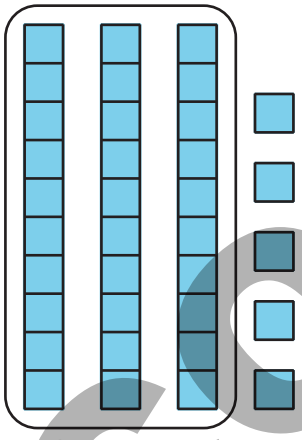
   25 > ☐

Section C Summary

We compared numbers using the number of tens and ones.



1 ten



3 tens

17 has 1 ten and 35 has 3 tens so 17 is less than 35.

$17 < 35$

17 is **less than** 35.

$35 > 17$

35 is **greater than** 17.

$35 = 35$

35 is **equal to** 35.

Addressing CA CCSSM 1.NBT.3 and 1.NBT.4-6; practicing MP2 and MP6

Center Day 3

Let's play games about tens and ones.

Warm-up

Number Talk: Start with 32

Find the value of each expression mentally.

- 32 + 10
- 32 + 10 + 10
- 32 + 20
- 32 – 20

Activity 2

Centers: Choice Time

Choose a center.

Greatest of Them All

Grab and Count

Write Numbers

Practice Problems

6 Problems

1 from Unit 4, Lesson 14

a. Which number is greater, 54 or 36?

Show your thinking using drawings, numbers, or words.

b. Which number is less, 25 or 52?

Show your thinking using drawings, numbers, or words.

2 from Unit 4, Lesson 15

Decide if each statement is true or false.

Show your thinking using drawings, numbers, or words.

a. $35 < 29$

b. $72 = 27$

c. $81 > 77$

3 from Unit 4, Lesson 16

Write <, >, or = in each blank to make the statement true.

a. 47_____43

b. 73_____63

c. 85_____85

d. 9_____96

4 from Unit 4, Lesson 17

Order the numbers from least to greatest:

73 16 84 9 87 75 33

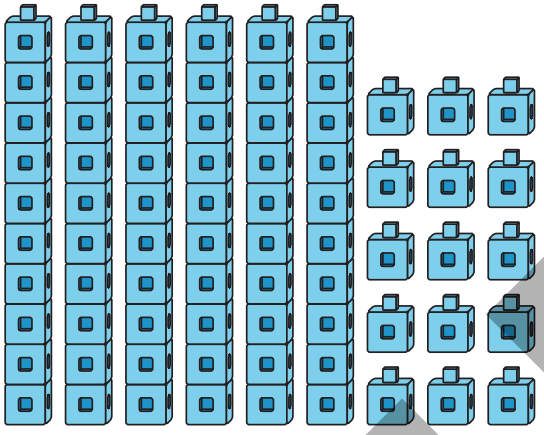
5 Exploration

Noah says that there are more connecting cubes in B because it has more tens than A.

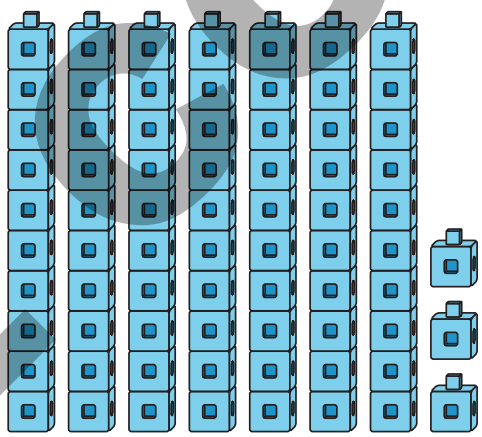
Do you agree with Noah?

Show your thinking using drawings, numbers, or words.

A



B



6 Exploration

Andre correctly solved this problem, but his brother spilled water on some numbers.

Circle the numbers that are

greater than  but less than  .

Andre circled

89 82 77 24 19 68

What numbers might be hidden from view?
Show your thinking using drawings, numbers, or words.

Addressing CA CCSSM 1.NBT.2; building towards 1.NBT.4; practicing MP2 and MP6

Make 2-Digit Numbers

Let's make 2-digit numbers with tens and ones in different ways.

Warm-up

Which Three Go Together: Different Ways to Show a Number

Which 3 go together?

A

5 tens 3 ones

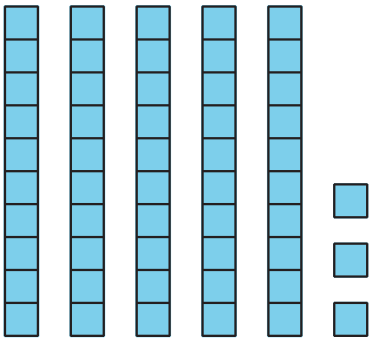
B

30 + 5

C

3 + 50

D



Activity 1

Make 65 Using Tens and Ones

Create a collection of 65.
You may not break apart any towers.
You may not make any new towers.

Show your collection in a way that others will understand.

If you have time, think of another way to make 65 using the cubes in the bag.

Activity 2

Make 37 in Different Ways

How many ways can you make 37?
Show your thinking using drawings, numbers, or words.

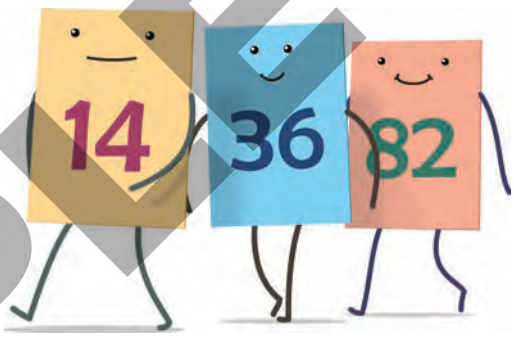
Activity 3

Centers: Choice Time

Choose a center.

Greatest of Them All

Get Your Numbers in Order



Grab and Count

Unit 4, Lesson 20

Addressing CA CCSSM 1.NBT.2; building towards 1.NBT.4; practicing MP7 and MP8

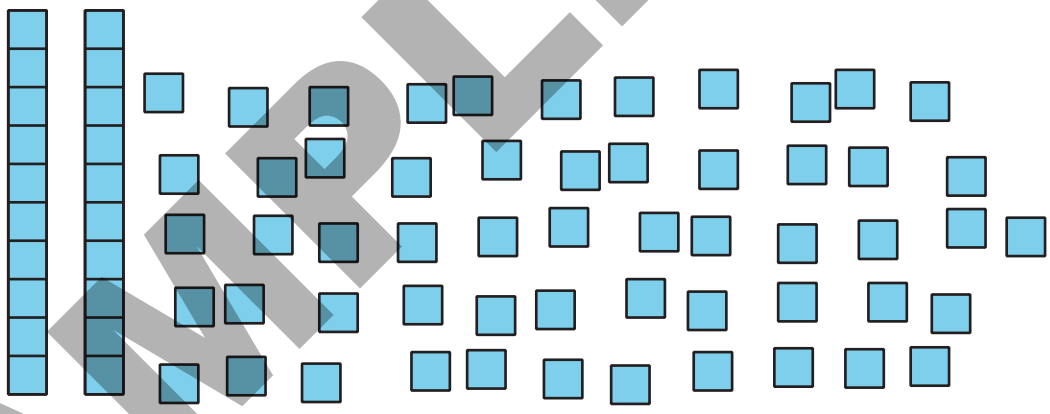
Make 2-Digit Numbers in Different Ways

Let's make 2-digit numbers in different ways.

Warm-up

Estimation Exploration: Tens and Ones

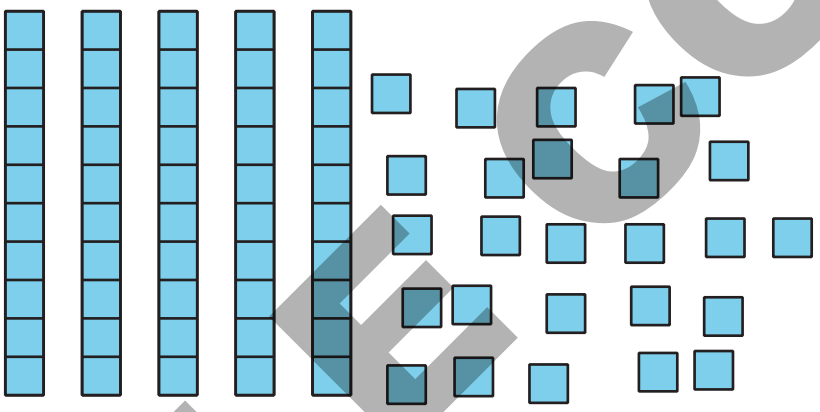
1. How many do you see?



Record an estimate that is:

too low	about right	too high

2. How many do you see?



Record an estimate that is:

too low	about right	too high

Activity 1

All The Ways to Make 94

How many ways can you make 94 using tens and ones? Show your thinking using drawings, numbers, or words.

Activity 2

Mystery Bags

1. Bag A has 2 ones and 5 tens.
   How many cubes are in Bag A?
   Show your thinking using drawings, numbers, or words.

2. Bag B has 4 tens and 25 ones.
   How many cubes are in Bag B?
   Show your thinking using drawings, numbers, or words.

3. Bag C has 49 cubes.

   If there are 29 ones, how many tens are in the bag?

   Show your thinking using drawings, numbers, or words.

4. Bag D has 36 cubes.

   If there are only 2 tens, how many ones are in the bag?

   Show your thinking using drawings, numbers, or words.

If you have time: Write a mystery bag problem about tens and ones.

Switch with your partner.

Solve.

Unit 4, Lesson 21

Addressing CA CCSSM 1.NBT.2-3, 1.NBT.4, and 1.OA.6; practicing MP2 and MP7

Compare 2-Digit Numbers Shown in Different Ways

Let's compare numbers.

Warm-up

Number Talk: Addition within 20

Find the value of each expression mentally.

- 10 + 6
- 9 + 6
- 10 + 7
- 8 + 7

Activity 1

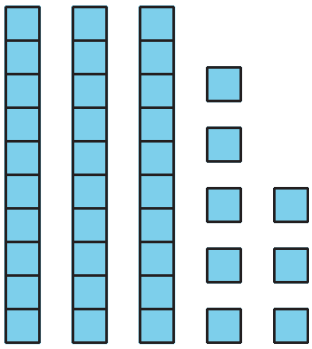
Elena and Kiran Compare Collections

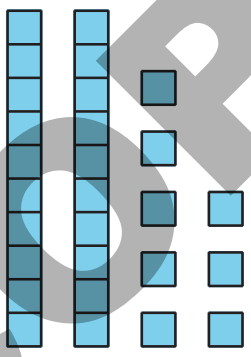
Elena and Kiran are comparing their collections.
Elena says, “I have 5 tens 32 ones.”
Kiran says, “I have 7 tens 2 ones.”
Who has more in their collection?
Show your thinking using drawings, numbers, words, or expressions.

Activity 2

Base-Ten Representation Compare

1. What do you notice?





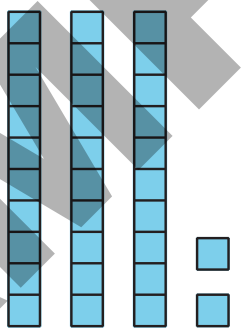
____

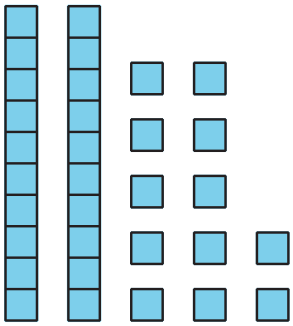
2. Circle the representation that shows the greater number.

   Write a number to match each representation.

   Then write a comparison statement using <, >, or =.

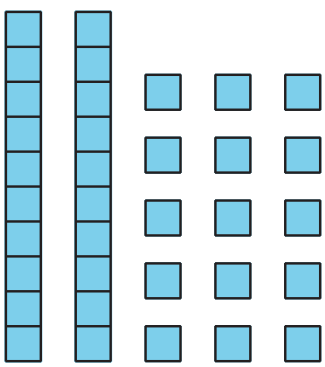
α.

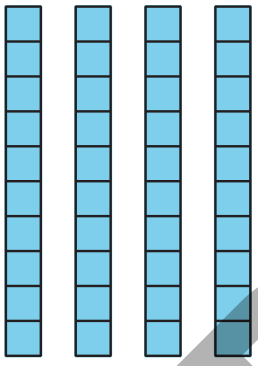




____

β.





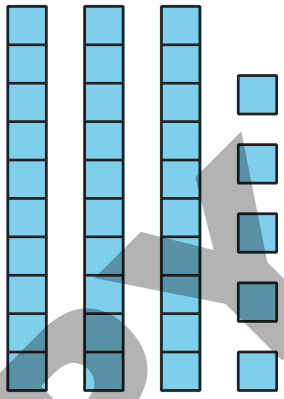
____

c. 5 tens 2 ones

12 ones 3 tens

____

d. 1 ten 25 ones



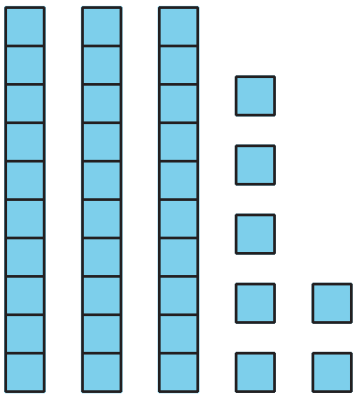
e. 7 tens 29 ones

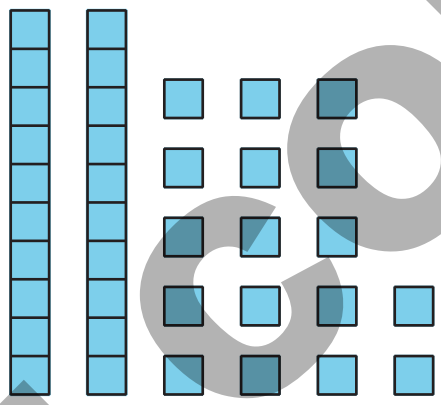
50 + 39

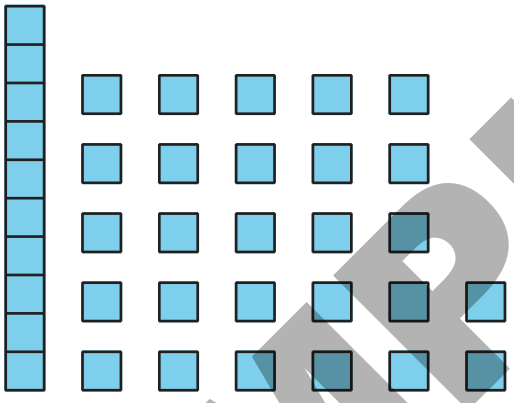
Section D Summary

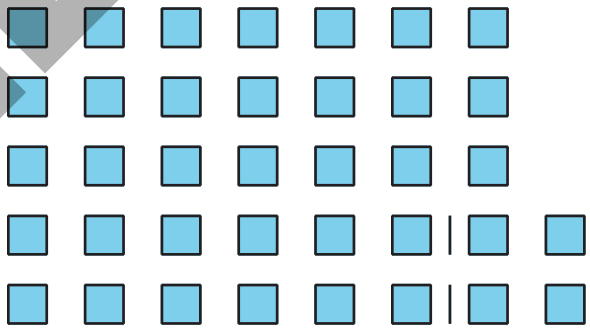
We made 2-digit numbers with different amounts of tens and ones.

Each of these representations shows 37.









We compared 2-digit numbers that were made with tens and ones in different ways.

5 tens 2 ones and 12 ones 3 tens

$52 > 42$

Addressing CA CCSSM 1.NBT.2-3; practicing MP2

Center Day 4

Let's play games about tens and ones.

Warm-up

True or False: Tens and Ones

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

- $92 = 90 + 2$

- $90 + 2 > 80 + 12$

- $20 + 13 < 30 + 13$

Activity 2

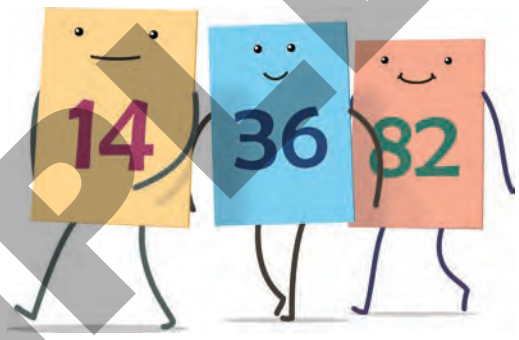
Center: Choice Time

Choose a center.

Mystery Number

Sec D

Get Your Numbers in Order



Greatest of Them All

Addressing CA CCSSM 1.NBT.1 and 1.NBT.2; building towards 1.NBT.2-3; practicing MP2, MP4, and MP7

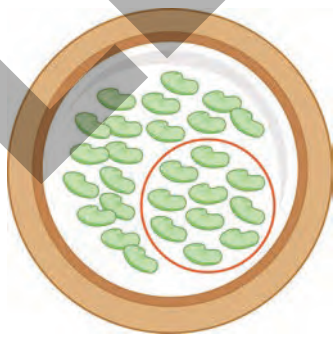
What Happens When You Estimate?

Let's estimate how many objects are in a group.

Warm-up

Estimation Exploration: Beans

How many beans are there?



Record an estimate that is:

too low	about right	too high

Activity 1

Should We Estimate?

1. Mai wants to know how many balloons her mom blew up. She looks at the balloons. She estimates that there are about 10.

estimate

find an exact amount

2. Mai helps her mom bake cupcakes. They estimate that about 15 children are coming to the party. They make 15 cupcakes.

estimate find an exact amount

3. Mai sees the party hats on the table. She estimates that there are about 20 hats. She decides that is enough for everyone to get one.

estimate find an exact amount

4. Mai hangs up a birthday sign with lots of stars on it. She estimates that there are about 50 stars.

estimate find an exact amount

Activity 2

Card Sort: Estimating Quantities

1. Sort the pictures into these 3 categories:

   less than 20 20–50 more than 50

2. Andre's teacher needs at least 25 crayons. Do you think he should count the crayons to get an exact number? Explain your reasoning.

   _____

   _____

3. Andre's teacher needs 15 paper clips. Do you think he should count the paper clips to get an exact number? Explain your reasoning.

   _____

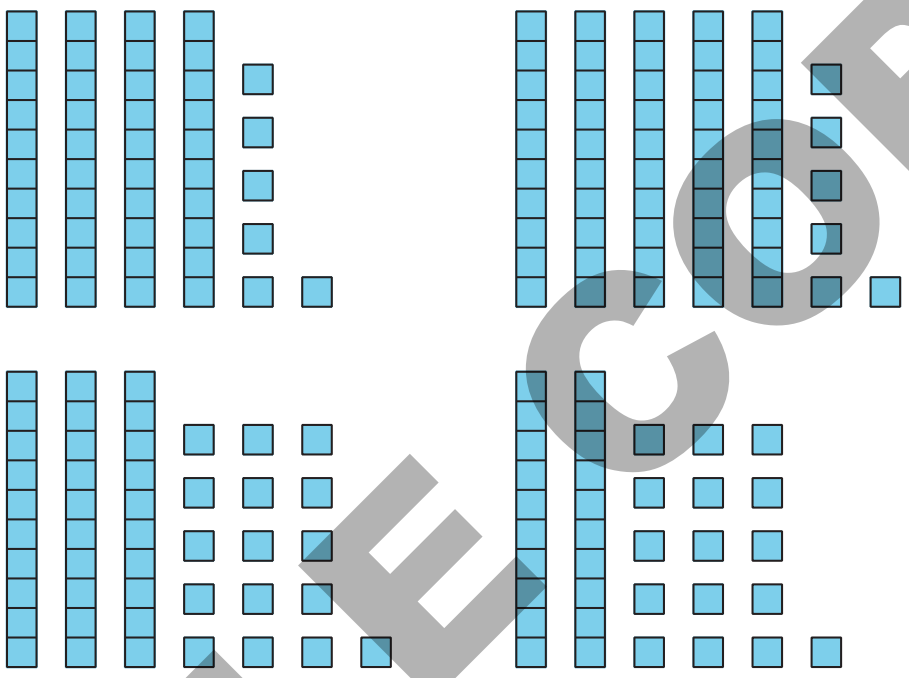
   _____

Practice Problems

6 Problems

1 from Unit 4, Lesson 19

a. Circle **2** pictures that show 46.



b. Show a different way to make 46.

2 from Unit 4, Lesson 20

Show 4 different ways you can make 35 using tens and ones.

3 from Unit 4, Lesson 21

Fill in each blank with , , or to make the equation true.

a. $70 + 12$ _____ 79

b. $30 + 15$ _____ $20 + 25$

c. $40 + 3$ _____ 35

4 Exploration

Andre said he is thinking of a 2-digit number.

He makes the number from tens and ones in 8 different ways.

In one way, there is 1 more ten than there are ones.

What is Andre's number?

Show your thinking using drawings, numbers, or words.

5 Exploration

Fill in the blanks so that all 3 descriptions show the same number.

- 7 tens + _____ ones
- 2 tens + _____ ones
- _____ tens + 35 ones

Is there more than 1 way you can fill in the blanks? Show your thinking using drawings, numbers, or words.

Exploration

Incomplete Number Riddles

Choose digits from the list to put in the blanks in the riddles.

3 6 5 4 2 1

Then solve the riddles.
You can use cubes or other math tools to help you.

a. I have _____ tens and _____ ones. What number am I?

b. I have _____ tens and _____ ones. What number am I?

c. I have _____ tens and 18 ones. What number am I?

d. I have _____ tens and 25 ones. What number am I?

Glossary

- 2-digit number
  A number with 1 digit to show tens and 1 digit to show ones.

  Example:

- category
  A label that tells how objects in a group are alike.

- data
  A collection of facts, such as numbers, measurements, or observations.

  Examples:
  the color of each pencil in a box
  the number of pencils sold each day
  the length of each pencil in a box

- difference
  The result when a number is subtracted from another.

  Example:
  $4 - 1 = 3$
  The difference is 3.

- equal to
  Having the same value.

  Example:
  35 is equal to 35.
  $35 = 35$

- estimate
  To find a value that is close to the actual value.

- greater than
  Having a larger value.

  Example:
  63 is greater than 32.
  $63 > 32$

- less than
  Having a smaller value.

Example:
32 is less than 63.
$32 < 63$

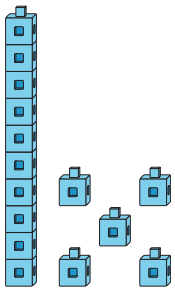
- sum
  The total when 2 or more numbers are added.

  Example:
  $3 + 1 = 4$
  The sum is 4.

- survey
  A way to collect data by asking people the same questions.

- teen number
  A number with 1 ten and between 1 and 9 ones.

  Example:
  15 is 1 ten and 5 ones.
  15 is a teen number.



- ten
  A group of 10 ones.

Attributions

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Citations

Unit 3: Adding and Subtracting within 20

Lesson Grade1.3.C15

Engle, M. (2015). *The Sky Painter: Louis Fuertes, Bird Artist*. (Aliona Bereghici, Illustrator). Two Lions.

Notes

Notes

California Common Core State Standards for Mathematics (CA CCSSM) Reference

1.G: Grade 1 - Geometry

Reason with shapes and their attributes.

1.G.1

Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); build and draw shapes to possess defining attributes.

1.G.2

Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. Students do not need to learn formal names such as “right rectangular prism.”

1.G.3

Partition circles and rectangles into two and four equal shares, describe the shares using the words *halves,*

fourths, and *quarters*, and use the phrases *half of, fourth of*, and *quarter of*. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares.

1.MD: Grade 1 - Measurement and Data

Measure lengths indirectly and by iterating length units.

1.MD.1

Order three objects by length; compare the lengths of two objects indirectly by using a third object.

1.MD.2

Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps.

Tell and write time.

1.MD.3

Tell and write time in hours and half-hours using analog and digital clocks.

Represent and interpret data.

1.MD.4

Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another.

1.NBT: Grade 1 - Number and Operations in Base Ten

Extend the counting sequence.

1.NBT.1

Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Understand place value.

1.NBT.2

Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:

1.NBT.2a

10 can be thought of as a bundle of ten ones--called a "ten."

1.NBT.2b

The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

1.NBT.2c

The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

1.NBT.3

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

Use place value understanding and properties of operations to add and subtract.

1.NBT.4

Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

1.NBT.5

Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

1.NBT.6

Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

1.OA: Grade 1 - Operations and Algebraic Thinking

Represent and solve problems involving addition and subtraction.

1.OA.1

Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. See Glossary, Table 1.

1.OA.2

Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.

Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.3

Apply properties of operations as strategies to add and subtract. Students need not use formal terms for these properties. Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 + 12$. (Associative property of addition.)

1.OA.4

Understand subtraction as an unknown-addend problem. For example, subtract $10 – 8$ by finding the number that makes 10 when added to 8.

Add and subtract within 20.

1.OA.5

Relate counting to addition and subtraction (e.g., by counting on 2 to add 2).

1.OA.6

Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g., 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g., knowing that 8 + 4 = 12 one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g., adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13).

Work with addition and subtraction equations.

1.OA.7

Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? 6 = 6, 7 = 8 – 1, 5 + 2 = 2 + 5, 4 + 1 = 5 + 2.

1.OA.8

Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations 8 + ? = 11, 5 = □ – 3, 6 + 6 = □.

California Common Core State Standards for Mathematics Standards for Mathematical Practice

These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education. The first of these are the NCTM process standards of problem solving, reasoning and proof, communication, representation, and connections. The second are the strands of mathematical proficiency specified in the National Research Council's report *Adding It Up*: adaptive reasoning, strategic competence, conceptual understanding (comprehension of mathematical concepts, operations and relations), procedural fluency (skill in carrying out procedures flexibly, accurately, efficiently and appropriately), and productive disposition (habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy).

MP1. Make sense of problems and persevere in solving them.

Mathematically proficient students start by explaining to themselves the meaning of a problem and looking for entry points to its solution. They analyze givens, constraints, relationships, and goals. They make conjectures about the form and meaning of the solution and plan a solution pathway rather than simply jumping into a solution attempt. They consider analogous

problems, and try special cases and simpler forms of the original problem in order to gain insight into its solution. They monitor and evaluate their progress and change course if necessary. Older students might, depending on the context of the problem, transform algebraic expressions or change the viewing window on their graphing calculator to get the information they need. Mathematically proficient students can explain correspondences between equations, verbal descriptions, tables, and graphs or draw diagrams of important features and relationships, graph data, and search for regularity or trends. Younger students might rely on using concrete objects or pictures to help conceptualize and solve a problem. Mathematically proficient students check their answers to problems using a different method, and they continually ask themselves, "Does this make sense?" They can understand the approaches of others to solving complex problems and identify correspondences between different approaches.

MP2. Reason abstractly and quantitatively.

Mathematically proficient students make sense of quantities and their relationships in problem situations. They bring two complementary abilities to bear on problems involving quantitative relationships: the ability to decontextualize—to abstract a given situation and represent it symbolically and manipulate the

representing symbols as if they have a life of their own, without necessarily attending to their referents—and the ability to contextualize, to pause as needed during the manipulation process in order to probe into the referents for the symbols involved. Quantitative reasoning entails habits of creating a coherent representation of the problem at hand; considering the units involved; attending to the meaning of quantities, not just how to compute them; and knowing and flexibly using different properties of operations and objects.

MP3. Construct viable arguments and critique the reasoning of others.

Mathematically proficient students understand and use stated assumptions, definitions, and previously established results in constructing arguments. They make conjectures and build a logical progression of statements to explore the truth of their conjectures. They are able to analyze situations by breaking them into cases, and can recognize and use counterexamples. They justify their conclusions, communicate them to others, and respond to the arguments of others. They reason inductively about data, making plausible arguments that take into account the context from which the data arose. Mathematically proficient students are also able to compare the effectiveness of two plausible arguments, distinguish correct logic or reasoning from that which is

flawed, and—if there is a flaw in an argument—explain what it is. Elementary students can construct arguments using concrete referents such as objects, drawings, diagrams, and actions. Such arguments can make sense and be correct, even though they are not generalized or made formal until later grades. Later, students learn to determine domains to which an argument applies. Students at all grades can listen to or read the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.

- Students build proofs by induction and proofs by contradiction. CA 3.1 (for higher mathematics only).

MP4. Model with mathematics.

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society, and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. In middle grades, a student might apply proportional reasoning to plan a school event or analyze a problem in the community. By high school, a student might use geometry to solve a design problem or use a function to describe how one quantity of interest depends on another. Mathematically proficient students who can apply what they know are comfortable making assumptions and approximations to simplify a complicated situation, realizing that these

may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

MP5. Use appropriate tools strategically.

Mathematically proficient students consider the available tools when solving a mathematical problem. These tools might include pencil and paper, concrete models, a ruler, a protractor, a calculator, a spreadsheet, a computer algebra system, a statistical package, or dynamic geometry software. Proficient students are sufficiently familiar with tools appropriate for their grade or course to make sound decisions about when each of these tools might be helpful, recognizing both the insight to be gained and their limitations. For example, mathematically proficient high school students analyze graphs of functions and solutions generated using a graphing calculator. They detect possible errors by strategically using estimation and other mathematical knowledge. When making mathematical models, they know that technology can enable them to visualize the results of varying assumptions, explore consequences, and

compare predictions with data. Mathematically proficient students at various grade levels are able to identify relevant external mathematical resources, such as digital content located on a website, and use them to pose or solve problems. They are able to use technological tools to explore and deepen their understanding of concepts.

MP6. Attend to precision.

Mathematically proficient students try to communicate precisely to others. They try to use clear definitions in discussion with others and in their own reasoning. They state the meaning of the symbols they choose, including using the equal sign consistently and appropriately. They are careful about specifying units of measure, and labeling axes to clarify the correspondence with quantities in a problem. They calculate accurately and efficiently, express numerical answers with a degree of precision appropriate for the problem context. In the elementary grades, students give carefully formulated explanations to each other. By the time they reach high school they have learned to examine claims and make explicit use of definitions.

MP7. Look for and make use of structure.

Mathematically proficient students look closely to discern a pattern or structure. Young students, for example, might notice that three and seven more is the same amount as seven and three more, or they may sort a

collection of shapes according to how many sides the shapes have. Later, students will see 7×8 equals the well-remembered $7 \times 5 + 7 \times 3$, in preparation for learning about the distributive property. In the expression $x^2 + 9x + 14$, older students can see the 14 as 2×7 and the 9 as $2 + 7$. They recognize the significance of an existing line in a geometric figure and can use the strategy of drawing an auxiliary line for solving problems. They also can step back for an overview and shift perspective. They can see complicated things, such as some algebraic expressions, as single objects or as being composed of several objects. For example, they can see $5 - 3(x - y)^2$ as 5 minus a positive number times a square and use that to realize that its value cannot be more than 5 for any real numbers x and y.

MP8. Look for and express regularity in repeated reasoning.

Mathematically proficient students notice if calculations are repeated, and look both for general methods and for shortcuts. Upper elementary students might notice when dividing 25 by 11 that they are repeating the same calculations over and over again, and conclude they have a repeating decimal. By paying attention to the calculation of slope as they repeatedly check whether points are on the line through (1, 2) with slope 3, middle school students might abstract the equation $(y - 2)/(x - 1) = 3$. Noticing the regularity in the way terms cancel

when expanding $(x - 1)(x + 1)$, $(x - 1)(x^2 + x + 1)$, and $(x - 1)(x^3 + x^2 + x + 1)$ might lead them to the general formula for the sum of a geometric series. As they work to solve a problem, mathematically proficient students maintain oversight of the process, while attending to the details. They continually evaluate the reasonableness of their intermediate results.

Connecting the Mathematical Practices to the Standards for Mathematical Content

The Standards for Mathematical Practice describe ways in which developing student practitioners of the discipline of mathematics increasingly ought to engage with the subject matter as they grow in mathematical maturity and expertise throughout the elementary, middle and high school years. Designers of curricula, assessments, and professional development should all attend to the need to connect the mathematical practices to mathematical content in mathematics instruction.