



## TEACHER LESSON MATERIALS

### GRADE 1

# M4 Add and Subtract Bigger Numbers



## GRADE 1

# Mission 4

## Add and Subtract Bigger Numbers

This Mission builds on the foundations of counting on, decomposing, and counting strategies that were established in Mission 1 and Mission 2. This gives students the opportunity to work with numbers up to 40. Students will learn many new strategies to identify tens and ones, and they'll compare, add, and subtract numbers up to 40. Reinforce this new content by using the provided word problem each day.

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CURRICULUM MAP

WEEK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
K	M1 Numbers to 10									M2 2D & 3D Shapes	M3 Comparison of Length, Weight, Capacity, & Numbers to 10						M4 Number Pairs, Addition, & Subtraction to 10						M5 Numbers 10–20; Count to 100 by Ones and Tens				M6 Analyzing, Comparing, & Composing Shapes									
	Numbers to 5   Digital Activities (50)											Numbers to 10   Digital Activities (50)											Numbers to 15   Digital Activities (35)					Numbers to 20   Digital Activities (35)								
G1	M1 Add & Subtract Small Numbers									M2 Meet Place Value						M3 Measure Length	M4 Add & Subtract Big Numbers					M5 Work with Shapes			M6 Add & Subtract to 100											
G2	M1 Add & Subtract Friendly Numbers		M2 Explore Length		M3 Counting & Place Value				M4 Add, Subtract, & Solve					M5 Add & Subtract Big Numbers			M6 Equal Groups			M7 Length, Money, & Data				M8 Shapes, Time, & Fractions												
G3	M1 Multiply & Divide Friendly Numbers					M2 Measure It					M3 Multiply & Divide Tricky Numbers					M4 Find the Area		M5 Fractions as Numbers					M6 Display Data		M7 Shapes & Measurement											
G4	M1 Add, Subtract, & Round				M2 Measure & Solve	M3 Multiply & Divide Big Numbers						M4 Construct Lines, Angles, & Shapes			M5 Equivalent Fractions						M6 Decimal Fractions			M7 Multiply & Measure												
G5	M1 Place Value with Decimal Fractions				M2 Base Ten Operations						M3 Add & Subtract Fractions			M4 Multiply and Divide Fractions & Decimals					M5 Volume, Area, & Shapes			M6 The Coordinate Plane														
G6	M1 Area and Surface Area				M2 Introducing Ratios			M3 Rates and Percentages		M4 Dividing Fractions			M5 Arithmetic in Base Ten		M6 Expressions and Equations		M7 Rational Numbers			M8 Data Sets and Distributions			M9 Putting it ALL Together													
G7	M1 Scale Drawings		M2 Introducing Proportional Relationships			M3 Measuring Circles		M4 Proportional Relationships and Percentages			M5 Rational Number Arithmetic		M6 Expressions, Equations, and Inequalities				M7 Angles, Triangles, and Prisms			M8 Probability and Sampling			M9 Putting It ALL Together													
G8	M1 Rigid Transformations and Congruence				M2 Dilations, Similarity, and Introducing Slope			M3 Linear Relationships			M4 Linear Equations and Linear Systems		M5 Functions and Volume			M6 Associations in Data		M7 Exponents and Scientific Notation			M8 Pythagorean Theorem and Irrational Numbers			M9 Putting it ALL Together												

Key

Whole Numbers and Operations

Expanding Whole Numbers and Operations to Fractions and Decimals

Algebraic Thinking and Reasoning Leading to Functions

Geometry

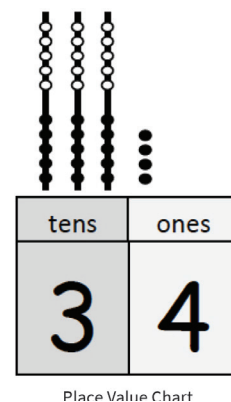
Measurement, Statistics and Probability

## TOPIC A

# Tens and Ones

Mission 4 builds on students' work with teen numbers to now work within 40. Working within 40 helps students focus on the units, tens and ones, which can be easily modeled pictorially and concretely with these smaller numbers. The smaller numbers also allow students to count all while having an important experience with its inefficiency. Students' innate ability to subitize to 4 keeps the numbers friendly when adding and subtracting tens for the first time and managing the new, complex task of considering both tens and ones when adding. Through their work within 40, students develop essential skills and concepts that generalize easily to numbers to 100 in Mission 6.

In Lesson 1, students are presented with a collection of 20 to 40 items. They discuss and decide how to count the items and then compare the efficiency of counting individual ones with counting tens and ones. Through this exploration, students come to understand the utility of ten as a unit, both as a method for counting and for efficiently recording a given number. Students keep their own set of 40 linking cubes, organized as a kit of 4 ten-sticks, to use as they progress through the mission.



In Lesson 2, students represent and decompose two-digit numbers as tens and ones and record their findings on a place value chart, supported by the familiar Hide Zero cards. Students share thoughts such as, “The 3 in 34 stands for 3 tens. And, the 4 in 34 is just 4 ones!” Up to this point, students have worked with representations of ten where 10 ones are clearly visible (e.g., as two 5-groups). While the digit 3 in 34 may appear less than the digit 4, its value is determined by its position. Use of the place value chart represents students' first experience with this additional layer of abstraction.

Lesson 3 allows students to explore two-digit numbers as tens and ones, as well as just ones. Students use their fingers to represent *bundled* tens and *unbundled* ones by clasping and unclasping their fingers. For example, students model 34 with 3 students showing their hands clasped to make a ten and a fourth student showing 4 fingers to represent 4 ones. Taking student understanding of place value a step further, Lesson 4 asks students to decompose and compose two-digit numbers as addition equations. Students develop an understanding that “34 is the same as 30 + 4” as they move between writing the number when given the equations and writing the *equations* when given a number. Throughout these lessons, students use concrete objects and/or drawings to support their understanding and explain their thinking.

Topic A concludes with Lessons 5 and 6, where students use materials and drawings to find 10 more, 10 less, 1 more, and 1 less than a given number. In Lesson 5, students use the familiar linking cubes (organized into tens) and 5-group columns. They engage in conversation about patterns they observe: “I see that 10 less than 34 is just 1 less ten, so it must be 24.” Students represent how the number changed using arrow notation, or the arrow way, as shown to the right. Lesson 6 then introduces the dime and penny as representations of ten and one, respectively.<sup>1</sup> Students make the connection between the familiar representations of tens and ones to the dime and the penny and work to find 10 more, 10 less, 1 more, and 1 less.

$$\begin{array}{ll}
 34 \xrightarrow{+1} 35 & 34 \xrightarrow{-1} 33 \\
 34 \xrightarrow{+10} 44 & 34 \xrightarrow{-10} 24
 \end{array}$$

arrow notation

Objective	
Topic A	Tens and Ones
Lesson 1	Compare the efficiency of counting by ones and counting by tens.
Lesson 2	Use the place value chart to record and name tens and ones within a two-digit number.
Lesson 3	Interpret two-digit numbers as either tens and some ones or as all ones.
Lesson 4	Write and interpret two-digit numbers as addition sentences that combine tens and ones.
Lesson 5	Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number.
Lesson 6	Use dimes and pennies as representations of tens and ones.

<sup>1</sup> Integrates the 1.MD.3 standard for dime and penny. This standard becomes a focal standard in Mission 6, when all 4 coins have been introduced.

# Lesson 1

YOUR NOTES:

Compare the efficiency of counting by ones and counting by tens.


---

## Warm-Up

### FLUENCY PRACTICE

#### Break Apart Numbers


**Materials:** (S) Personal white board, break apart numbers (Fluency Template)

 **NOTE:** This fluency activity reviews decomposing numbers 5–9 and supports Grade 1’s expected fluency of adding and subtracting within 10. It is an essential skill to apply the Level 3 addition strategy of making ten. If students struggle with this activity, consider repeating it in lieu of some of the fluency activities that provide practice with numbers to 20 and beyond.

Students complete as many *different* number bonds as they can in one minute. Take a poll of how many students completed all decompositions for 5, 6, etc., and celebrate accomplishments.

#### Change 10 Pennies for 1 Dime


**Materials:** (S) 10 pennies, 1 dime (S) 10 pennies and 1 dime per pair

 **NOTE:** This activity helps students understand that 10 cents is equal to 1 dime, just as 10 ones are equal to 1 ten. This fluency activity is necessary to prepare students for utilizing coins as abstract units that represent tens and ones in Mission 4 Lesson 6.

Lay out 10 pennies into 5-groups as students count (1 cent, 2 cents, etc.). Make sure students include the unit as they count.









Change the 10 pennies for 1 dime and say, “10 pennies is equal to 10 cents.” Repeat the exact same process, but this time, say, “10 pennies is equal to 1 dime.” Students repeat the activity with a partner.

#### Happy Counting by Tens

 **NOTE:** Reviewing Happy Counting by Tens prepares students to recognize the efficiency of counting groups of 10 in today’s lesson.

**YOUR NOTES:**


Happy Count by Tens the regular way and Say Ten way from 0 to 120. To really reinforce place value, try alternating between counting the regular way and the Say Ten way.


T:          

T/S: 0 10 20 (pause) 10 0 (pause) 10 20 30 (etc.)

**WORD PROBLEM**

Joy is holding 10 marbles in 1 hand and 10 marbles in the other hand. How many marbles does she have in all?


 **NOTE:** This problem applies a doubles fact that is familiar to most students. Circulate and notice students who may need to count on to add the 2 tens.



$10 + 10 = 20$   
Joy has 20 marbles.

**Concept Exploration**

**Materials:** (T) 40 linking cubes (2 colors, 20 of each), projector (S) Resealable plastic bag with 40 separated linking cubes (2 colors, 20 of each), personal white board

 **NOTE:** When preparing these bags, be sure to use the same two colors for every partner/pair. In the later lessons, partners combine their cubes to represent numbers greater than 20 with a single color

Students sit at their tables with their bags of linking cubes.

T: You will make your own math toolkit today! Look in your bag. How many cubes do you think are in your bag?

S: (Look in bag and make a prediction.)

T: Wow, there are a lot of cubes in our bags. What do you think is the best way to count them?

S: Count by ones. → Don't count by ones. There are too many cubes. → Count them by twos. → We can put them in 5-groups and count by fives. → Put them in 5-groups and count them by tens!

T: Arranging these cubes in 5-groups is a great idea! Arrange your cubes, and then count to see how many cubes there are.

As students arrange their linking cubes and count, circulate, taking note of students' methods.

T: How many linking cubes did you count?

S: 40 linking cubes.

T: Many of you did a great job putting your cubes in 5-groups and counting by fives or tens. Let's count by ones to make sure we have 40 cubes.

**YOUR NOTES:**

**T/S:** (Count by ones.)

**T:** Now, let's count them by tens by making them into sticks of 10 cubes. Use the same color cubes for each ten-stick.

**S:** (Make 4 ten-sticks.)

**T:** Now that we have these ten-sticks, we can count by...?

**S:** Tens!

**T:** Great! Point or move each ten to the side as you count.

**S:** 10, 20, 30, 40.

**T:** Did we still count 40 cubes?

**S:** Yes!

**T:** No matter how we count, by ones or by tens, we get to the same number. But which way was more efficient to count?

**S:** Organizing our cubes so we could count by tens was more efficient.

**T:** Sometimes, when I count by ones and get distracted, I lose count. Then, it takes even longer to count by ones because I have to start over. But if I make tens, I don't have to start all over again.

**T:** (Show 12 scattered individual cubes on the projector. Have another scattered set of 12 individual cubes set aside for later.) How can I make these quicker to count?

**S:** Organize them into 5-groups. → Organize them into ten-sticks.

**T:** Let's use ten-sticks. (Invite a student volunteer to demonstrate.)

**T:** Show me this same number of cubes using your own set. Organize them efficiently, like the ones on the board.

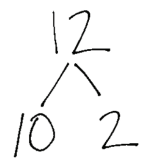
**S:** (Show one stick of 10 and 2 individual cubes.)

**T:** (Take out second set of scattered cubes.) Look at the 12 scattered cubes that I have and the 12 cubes you have in front of you. Which makes it easier for you to see 12 quickly?

**S:** The ones on my desk. → The ten-stick and 2 cubes are easier to see 12 quickly.

I don't even need to count it. I can just see that it's 12.

**T:** Let's make a number bond to show the cubes we grouped and the extra cubes that we added to the grouped cubes. 12 is made of 10 and 2 extra ones.



Repeat the process with 22 scattered cubes. Next, simply call out numbers from 11 to 40, and invite students to show the number using their ten-sticks and extra ones in the suggested sequence: 3 tens 2 ones, 15, 25, 35, 3 tens 7 ones, 1 ten 7 ones, 1 ten 8 ones, 29, and 36.

Each time, have students create a number bond, representing the cubes that were grouped together as tens and the extra ones. Ask student volunteers to show how they counted their cubes to check their work. For example, for 35, one student may count, "10, 20, 30, 31, 32, 33, 34, 35." Another student may count, "10, 20, 30, and 5 is 35." Accept different ways of counting the ones, but always guide the students to count the tens first.

**YOUR NOTES:** At the end of any lesson using the 40 linking cubes, students should regroup the cubes into 4 ten-sticks and store them in the resealable bag for use during future lessons. These become a part of their math toolkit for Mission 4.

**MULTIPLE MEANS OF REPRESENTATION**

While calling out numbers from 11 to 40 for students to show the number using their ten-sticks, be sure to write the numbers so students can also see them. This helps students who are hearing impaired or visual learners, as well as those who may fall behind while assembling their ten-sticks.

**Independent Digital Lesson**



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 1

G1 M:4

Count by Tens

ZEARN STUDENT NOTES

Name: \_\_\_\_\_

Complete: ☐

Date: \_\_\_\_\_

1

SHOW YOUR WORK

🍏🍏🍏🍏🍏🍏🍏🍏

🍏🍏🍏🍏🍏🍏🍏🍏

🍏🍏🍏🍏🍏

27

20

7



## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- What are the different ways we can group objects to make counting easier?
- How does organizing objects in groups of 10 help us?

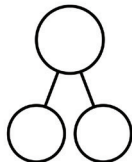
### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

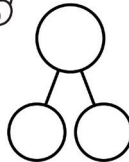
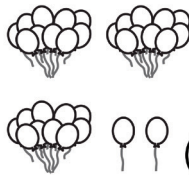
### Task

Complete the number bonds.

1.



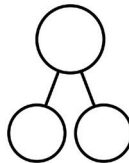
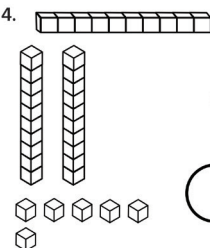
2.



3.



4.



### Answers

1. Number bond shows that 20 and 8 is 28.
2. Number bond shows that 30 and 2 is 32.
3. Number bond shows that 40 and 0 is 40.
4. Number bond shows that 30 and 6 is 36.

**BREAK APART NUMBERS (FLUENCY TEMPLATE)**

# Lesson 2

**YOUR NOTES:**

Use the place value chart to record and name tens and ones within a two-digit number.

---

## Warm-Up

### FLUENCY PRACTICE

#### Core Addition Fluency Review

**Materials:** (S) Core Addition Fluency Review



**NOTE:** This addition review sheet contains the majority of addition facts within 10 (excluding some +0 and +1 facts), which are part of the expected core fluency for Grade 1. Students are likely to do well with this activity at this point in the year. If not, repeat some addition fluency activities from Mission 1, and use this activity as an assessment tool to monitor progress.

Students complete as many problems as they can in three minutes. Choose a counting sequence for early finishers to practice on the back of their papers, such as counting by ones from 46 or counting by tens from 3. When time runs out, read the answers aloud so students can correct their work. Encourage students to remember how many they completed so they can try to improve their scores on future Core Addition Fluency Reviews.

#### 3, 4, and 5 More



**NOTE:** This fluency activity provides practice with addition within 20 while reinforcing the relationship between single-digit sums and their analogous teen sums.

**T:** On my signal, say the number that is 3 more.

**T:** 3. (Signal.)

**S:** 6.

**T:** 13. (Signal.)

**S:** 16.

Continue reviewing 3 more. Then, review 4 and 5 more.

#### Change 10 Pennies for 1 Dime

**Materials:** (S) 10 pennies and 2 dimes for each pair of students

**YOUR NOTES:**

**NOTE:** This fluency activity is necessary to prepare students for utilizing coins as abstract representations of tens and ones in Lesson 6.

Students work in pairs. Partner A begins with 10 pennies. Partner B begins with 2 dimes. Both partners whisper-count as Partner A counts 10 pennies into 5-groups (1 cent, 2 cents, etc.). Partner B changes 10 cents for 1 dime and says, “10 cents equals 1 dime.” Students count on, “11 cents, 12 cents, 13 cents, etc.,” replacing the second set of 10 pennies with a dime and saying, “20 cents equals 2 dimes.” Then, Partners A and B switch roles.

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### MULTIPLE MEANS OF ACTION AND EXPRESSION

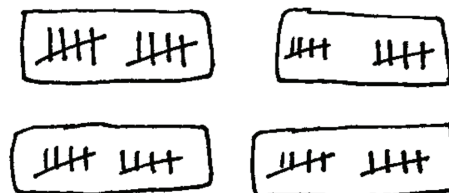
Adjust written fluency games for students with motor delays. Give written fluency activities orally to students who may be slowed due to challenges with motor skills, allowing them to experience success with the math skills being addressed.

### WORD PROBLEM

Ted has 4 boxes with 10 pencils in each box. How many pencils does he have altogether?



**NOTE:** This problem applies the objective from Lesson 1 of counting by tens. As students depict this problem with a drawing, circulate and notice students who are counting all, counting on, or counting by tens.



Ted has 4 tens.

$$10 + 10 + 10 + 10 = 40$$

He has 40 pencils altogether.

---

## Concept Exploration

**Materials:** (T) Hide Zero cards (Template 1), chart paper (S) 4 ten-sticks from personal math toolkit (Lesson 1), personal white board, place value chart (Template 2)

Students sit at their desks with their materials.

**T:** (Show 17 using Hide Zero cards.) When I pull apart these Hide Zero cards, 17 will be in two parts. What will they be?

## YOUR NOTES:

S: 10 and 7.

T: (Pull apart 17 into 10 and 7.) You are right! Show me 17 using your linking cubes.

S: (Show 1 ten-stick and 7 extra cubes. If students count out 17 cubes and break them apart separately, ask them to try to make as many tens as possible.)

T: How many tens, or ten-sticks, do you have?

S: 1 ten.

T: How many extra ones do you have?

S: 7 extra ones.

Repeat the process following the suggested sequence: 27, 37, 23, and 32.

T: (Show 17 with Hide Zero cards and linking cubes again. Make a blank t-chart on the chart paper.) I can write 1 ten here in this chart. (Write 1 on the left side of the t-chart, which will become the tens place.) How many extra ones do you have?

S: 7 ones.

T: Point to where you think I should write 7.

S: (Point to the second column.)

T: (Write 7 in the ones place.)

T: (Point to the 1 in the tens place.) What does this 1 stand for? Show me with your cubes.

S: (Hold up a ten-stick.) 1 ten.

T: I can write *tens* here because this 1 stands for 1 *ten*. (Label the place value chart with *tens*.)

T: Point to the set of cubes that tells us what this 7 stands for.

S: (Point to 7 loose cubes.) 7 ones!

T: I can write *ones* here because this 7 stands for...?

S: 7 ones.

T: (Point to the place value chart.) Look at our new chart, which is called a **place value chart**. What is 1 ten and 7 ones?

S: 17.

T: The Say Ten way?

S: 1 ten 7.

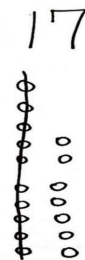
T: Looking at the cubes in front of you, how many tens and ones are in 17?

S: 1 ten 7 ones.

T: Before we go on to other numbers, let's make a drawing to show 17.

1	7

tens	ones
1	7



Repeat the process using the following sequence: 27, 37, 14, 24, 34, 13, 31, 30, 12, 21, and 20.

For the first two numbers (27 and 37), have students represent the number with their linking cubes, 5-group column drawings, and place value charts. For the remaining numbers, have students use only their linking cubes and place value charts. Making pictorial representations becomes inefficient as the numbers increase.

YOUR NOTES:

MULTIPLE MEANS OF REPRESENTATION

Because the Hide Zero cards are familiar from Mission 3, students have an easy transition into the use of the place value chart. Just as some students have needed to use various tools for more support, allow the Hide Zero cards and place value chart to be used throughout the mission as needed.

Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 2

G:1 M:4

How Many Tens and Ones?

ZEARN STUDENT NOTES

Name: \_\_\_\_\_

Complete: ☐

Date: \_\_\_\_\_

1

SHOW YOUR WORK

tens

ones

2

6

There are 26 strawberries.

12

ZEARN MATH Teacher Edition

YOUR NOTES:

# Wrap-Up

## LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

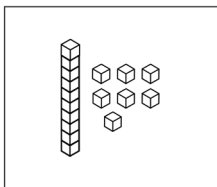
- How many tens and how many ones are in the number 29? What amount is greater-2 tens or 9 ones? Explain your thinking. Use your cubes and your place value chart.
- What new math tool did we use to show how many tens and ones are in a number? (Place value chart.) How does the place value chart help us? (It helps us see numbers taken apart into tens and ones.)

## EXIT TICKET

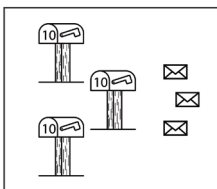
After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

### Task

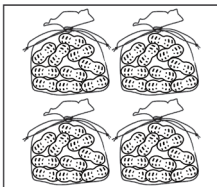
Match the picture to the place value chart that shows the correct tens and ones.



tens	ones
4	0



tens	ones
1	7



tens	ones
3	3

### Answers

Cubes: 1 ten 7 ones; mail: 3 tens 3 ones; peanuts: 4 tens 0 ones.

**CORE ADDITION FLUENCY REVIEW**

<b>1.</b> $2 + 0 =$ _____	<b>16.</b> $1 + 6 =$ _____	<b>31.</b> $5 + 3 =$ _____
<b>2.</b> $2 + 1 =$ _____	<b>17.</b> $6 + 1 =$ _____	<b>32.</b> $3 + 5 =$ _____
<b>3.</b> $2 + 2 =$ _____	<b>18.</b> $6 + 2 =$ _____	<b>33.</b> $3 + 4 =$ _____
<b>4.</b> $4 + 0 =$ _____	<b>19.</b> $5 + 2 =$ _____	<b>34.</b> $3 + 3 =$ _____
<b>5.</b> $0 + 4 =$ _____	<b>20.</b> $4 + 3 =$ _____	<b>35.</b> $4 + 4 =$ _____
<b>6.</b> $0 + 3 =$ _____	<b>21.</b> $2 + 3 =$ _____	<b>36.</b> $5 + 4 =$ _____
<b>7.</b> $0 + 0 =$ _____	<b>22.</b> $2 + 4 =$ _____	<b>37.</b> $4 + 6 =$ _____
<b>8.</b> $3 + 1 =$ _____	<b>23.</b> $4 + 2 =$ _____	<b>38.</b> $2 + 7 =$ _____
<b>9.</b> $1 + 3 =$ _____	<b>24.</b> $3 + 2 =$ _____	<b>39.</b> $2 + 8 =$ _____
<b>10.</b> $1 + 4 =$ _____	<b>25.</b> $9 + 1 =$ _____	<b>40.</b> $2 + 5 =$ _____
<b>11.</b> $1 + 5 =$ _____	<b>26.</b> $8 + 2 =$ _____	<b>41.</b> $5 + 5 =$ _____
<b>12.</b> $5 + 1 =$ _____	<b>27.</b> $7 + 2 =$ _____	<b>42.</b> $4 + 5 =$ _____
<b>13.</b> $1 + 7 =$ _____	<b>28.</b> $7 + 3 =$ _____	<b>43.</b> $2 + 6 =$ _____
<b>14.</b> $7 + 1 =$ _____	<b>29.</b> $6 + 3 =$ _____	<b>44.</b> $3 + 6 =$ _____
<b>15.</b> $1 + 8 =$ _____	<b>30.</b> $6 + 4 =$ _____	<b>45.</b> $3 + 7 =$ _____



**HIDE ZERO CARDS (TEMPLATE 1)**

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b><u>6</u></b>	<b>7</b>
<b>8</b>	<b><u>9</u></b>		

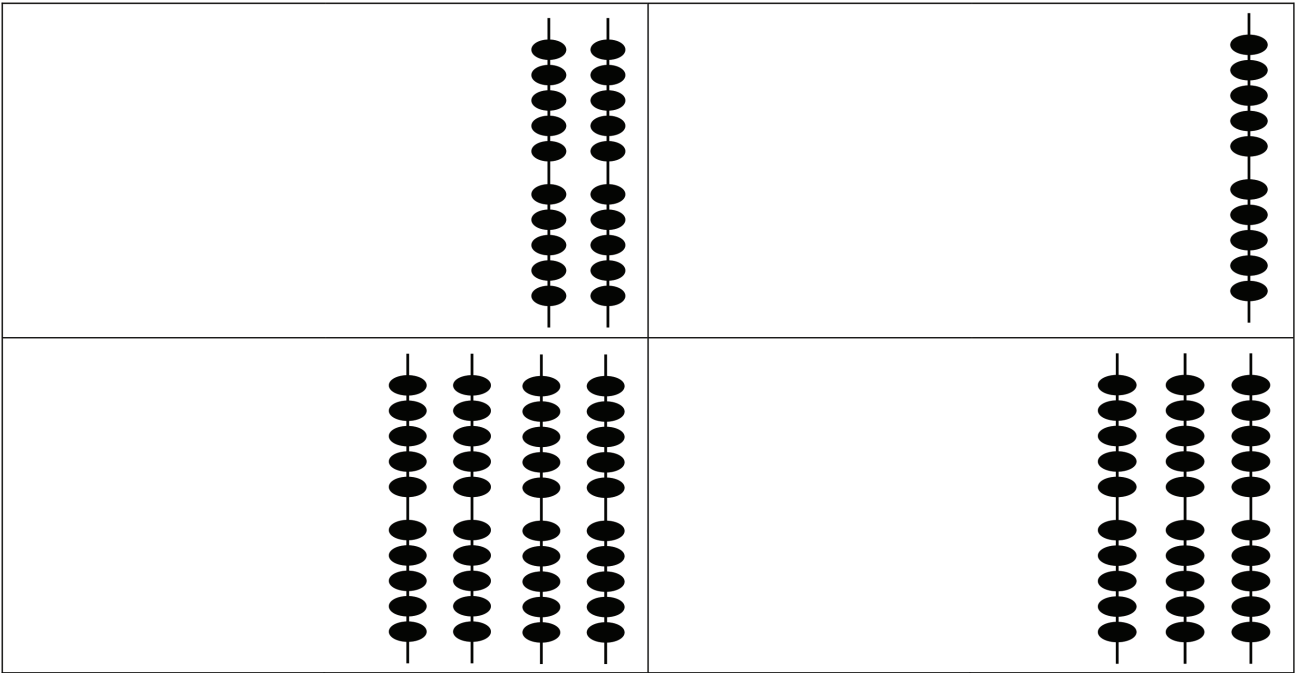
Hide Zero cards, dot side of ones digits (copy double-sided with next page.)

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Hide Zero cards, dot side of ones digits (copy double-sided with previous page.)

<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>
<b>3</b>	<b>0</b>	<b>4</b>	<b>0</b>

Hide Zero cards, numeral side of tens digits, 10–40 (copy double-sided with next page.)



Hide Zero cards, dot side of tens digits, 10–40 (copy double-sided with previous page.)

PLACE VALUE CHART (TEMPLATE 2)

tens	ones

HIDE ZERO CARDS (TEMPLATE)

0	1	2	3
4	5	<u>6</u>	7
8	<u>9</u>		

Hide Zero cards, dot side of ones digits (copy double-sided with next page.)

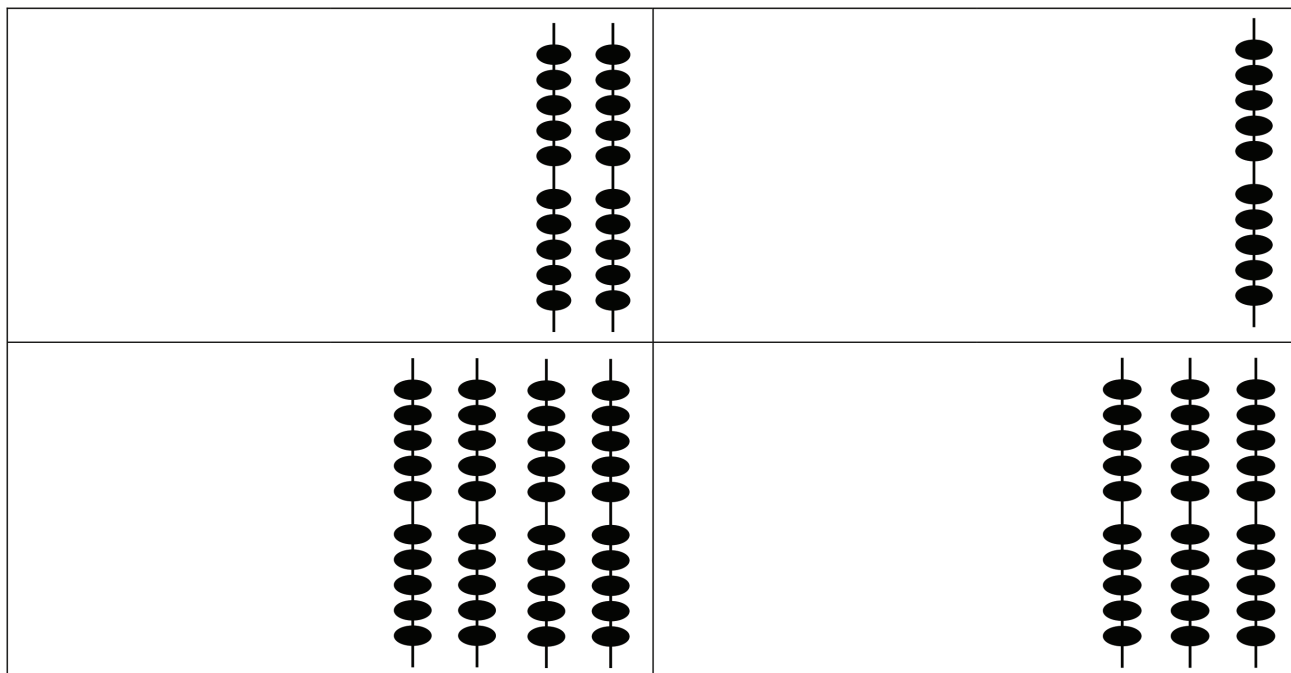
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Hide Zero cards, dot side of ones digits (copy double-sided with next page.)

1	0	2	0
3	0	4	0

Hide Zero cards, dot side of tens digits, 10–40 (copy double-sided with previous page.)





Hide Zero cards, dot side of tens digits, 10–40 (copy double-sided with previous page.)

PLACE VALUE CHART (TEMPLATE)

tens	ones

# Lesson 3

YOUR NOTES:

Interpret two-digit numbers as either tens and some ones or as all ones.

---

## Warm-Up

### FLUENCY PRACTICE

#### Core Addition Fluency Review

**Materials:** (S) Core Addition Fluency Review (Lesson 2 Core Addition Fluency Review)



**NOTE:** This activity assesses students' progress toward understanding of the expected addition fluency for first graders. Since this is the second day of this activity, encourage students to remember how many problems they answered during the last lesson and celebrate improvement.

Students complete as many problems as they can in three minutes. Choose a counting sequence for early finishers to practice on the back of their papers. When time runs out, read the answers aloud so students can correct their work and celebrate improvement.

#### Dime Exchange

**Materials:** (T) 20 pennies and 2 dimes



**NOTE:** This activity provides students practice with recognizing pennies and dimes and identifying their values. This fluency activity is necessary to prepare students to utilize coins as abstract representations of tens and ones in Lesson 6.

**T:** (Lay out 2 dimes.) What coins do you see?

**S:** 2 dimes.

**T:** Let's count by tens to see how much money I have. (Students count aloud.) I want to exchange 1 dime for some pennies. What is the correct number of pennies?

**S:** 10 pennies.

**T:** (Replace a dime with 10 pennies in 5-group formation.) How much money do I have now?

**S:** 20 cents.

**T:** You're right! I still have 20 cents. Count backward with me.

**S:** (Count from 20 cents to 10 cents, removing 1 penny at a time.)

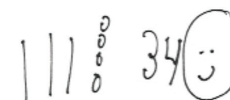
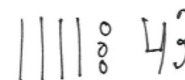
Change the other dime for a penny, and students count from 10 cents to 0 cents.

**YOUR NOTES:**      **Magic Counting Sticks****Materials:** (T) Hide Zero cards (Lesson 2 Template 1)**NOTE:** This activity reviews the concept of ten as a unit and as 10 ones, which prepares students for today's lesson.**T:** (Divide students into partners, and assign Partners A and B. Show 13 with Hide Zero cards.) How many tens are in 13?**S:** 1 ten.**T:** (Point to the 1 in 13.) Partner A, show 1 ten with your magic counting sticks. (Partner A holds up a bundled ten.) How many ones should Partner B show?**S:** 3 ones.**T:** (Point to the 3.) Partner B, show 3 ones. 1 ten and 3 ones is 13. Partner A, open up your ten. How many fingers do you have?**S:** 10 fingers.**T:** (Take apart the Hide Zero cards to show 10 and 3.) 10 fingers + 3 fingers is...?**S:** 13 fingers.

Alternate partners, and repeat with other teen numbers.

**WORD PROBLEM**

Sue is writing the number 34 on a place value chart. She cannot remember if she has 4 tens and 3 ones or 3 tens and 4 ones. Use a place value chart to show how many tens and ones are in 34. Use a drawing and words to explain this to Sue.

**NOTE:** This problem invites students to write or discuss their understanding of tens and ones based on what they learned in Lesson 2. For students who find it challenging to create written explanations, have them share orally with a partner and use drawings to support their thinking.**Concept Exploration****Materials:** (T) Hide Zero cards (Lesson 2 Template 1), personal math toolkit of 4 ten-sticks (S) Personal math toolkit of 4 ten-sticks

Students gather in the meeting area in a semicircle formation.

**YOUR NOTES:**

T: Show me your magic counting sticks. Wriggle them in the air. Now, show me 1 ten.

S: (Clasp hands together.)

T: Show me 10 ones.

S: (Unclasp hands and show individual fingers.)

T: How can we show 34 using our magic counting sticks?

S: We can't. We only have 10 magic sticks. → We need more people to show 34. → We need 4 people—3 people to show 3 tens, and 1 more person to show 4 extra ones.

T: Great idea! (Call up four volunteers.) Show us 34.

S: (Three students clasp their hands together, while the last student on the right facing the class shows four fingers.)

T: How many tens and ones make up 34?

S: 3 tens and 4 ones.

T: How many ones is the number 34 made of?

S: I see 3 tens and 4 ones. So, there are just 4 ones. → I see 34 ones. Each ten is made of 10 ones. So, I counted on by tens to get to 30, and I counted by ones to get to 34.

T: I heard some students say that there are 4 ones. Think again. If we only use ones to make 34, how many will it take? Open your hands to show your fingers, volunteers!

S: (The first three students unclasp their hands and show all fingers.)

T: How many ones make up 34?

S: 34 ones.

T: How many ones is the same as 3 tens 4 ones?

S: 34 ones.

T: Let's count to check. How should we count?

S: We can count the fingers by ones. → Let's count them by tens first. That will be much faster.

T: Great idea. Let's count by grouping the 10 ones. Start with Student A. How many ones are here?

S: 10 ones.

T: Keep counting!

S: 20 ones, 30 ones, 34 ones.

T: Great. Let's do some more. (Call up three volunteers.) Show me 27 ones.

S: (Show individual fingers.)

T: If you are able to make a ten, clasp your hands.

S: (Two students clasp hands.)

T: 27 ones is the same as how many tens and ones?

S: 2 tens and 7 ones.

T: How many ones?

S: 27 ones!

Repeat the process using the following sequence: 37, 14, 24, 34, 13, 31, 10, and 40.

**YOUR NOTES:**

When students demonstrate a solid understanding with the finger work, move on to representing the numbers with Hide Zero cards.

**T:** (Show 24 using Hide Zero cards.) How many tens and ones make up 24?

**S:** 2 tens 4 ones.

**T:** How many ones are in 2 tens? (Pull apart 24 into 20 and 4.)

**S:** 20 ones.

**T:** How many extra ones are there?

**S:** 4 ones.

**T:** How many ones is the same as 2 tens and 4 ones?

**S:** 24 ones.

**T:** How many tens and ones is the same as 24 ones? (Put 24 back together.)

**S:** 2 tens 4 ones.

Repeat the process using the following sequence: 13, 23, 16, 26, 36, 29, 20, and 30 using Hide Zero cards. For the first two or three, have students work with a partner to represent the number with their linking cubes, first with as many tens as possible, and then decomposed into all ones. Support students in seeing that there are the same number of cubes and connecting this with the mathematical idea that, for instance, 1 ten 3 ones is the same amount as 13 ones.

---

**MULTIPLE MEANS OF ACTION AND EXPRESSION**

By introducing each number in a different way, students are held accountable for understanding place value no matter how the number is presented. Doing it this way can be a challenge for some students, so make sure that students who need information presented a specific way are still getting the information they need.

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## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

YOUR NOTES:

Lesson 3 G:1 M:4	All Ones ZEARN STUDENT NOTES
---------------------	---------------------------------

Name: \_\_\_\_\_

Complete: ☐ Date: \_\_\_\_\_

1

SHOW YOUR WORK

26

→

tens	ones
2	6

→

26

ones

→

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Student A says 2 tens and 9 ones only has 9 ones. Do you agree? Why or why not? How can you help her understand her mistake?
- Explain how 4 tens is the same as 40 ones. You may use linking cubes or the place value chart to support your thinking.


### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

YOUR NOTES: Task

Count as many tens as you can. Complete each statement. Say the numbers and the sentences.

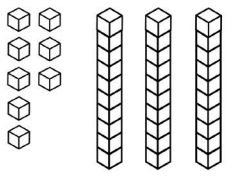
1.



\_\_\_\_\_ tens \_\_\_\_\_ ones

is the same as \_\_\_\_\_ ones.

2.



\_\_\_\_\_ tens \_\_\_\_\_ ones

is the same as \_\_\_\_\_ ones.

Fill in the missing numbers.

3.

27

→

tens	ones

→

\_\_\_\_\_ ones

Answers

1. 2, 4, 24
2. 3, 8, 38
3. 2, 7; 27



## Lesson 4

YOUR NOTES:

Write and interpret two-digit numbers as addition sentences that combine tens and ones.

---

### Warm-Up

#### FLUENCY PRACTICE

##### Subtraction with Cards

**Materials:** (S) 1 pack of numeral cards 0–10 per set of partners (Fluency Template)



**NOTE:** This fluency activity strengthens students' abilities to subtract within 10, which is an expected core fluency for Grade 1.

Students sit in partnerships. Students shuffle or mix their numeral cards. Each partner places her deck of cards face down. Each partner flips over two cards and subtracts the smaller number from the larger one. The partner with the smallest difference keeps the cards played by both players that round. For example Player A draws 4 and 5 and gives the difference of 1. Player B draws 9 and 4 and gives the difference of 5. Since  $1 < 5$ , Player A keeps the cards. If the differences are equal, the cards are set aside, and the winner of the next round keeps the cards from both rounds. At the end of the game, the players will each be left with 1 card. They each flip their last card over and the player with the highest card says the difference and collects the cards. Students continue to play as time allows.

##### Dime Exchange

**Materials:** (S) 10 pennies and 2 dimes per pair



**NOTE:** This fluency activity is necessary to prepare students to utilize coins as abstract representations of tens and ones in Lesson 6. If there are not enough coins to do this activity in pairs, it may be done as a teacher-directed activity.

Students work in pairs. Partner A begins with 2 dimes. Partner B begins with 10 pennies. Partner A whisper-counts as she lays 2 dimes, “10 cents, 20 cents.” Partner B exchanges 1 dime for 10 pennies, lays them out in 5-groups, and says, “1 dime is equal to 10 pennies.” Students whisper-count as Partner A takes away 1 penny at a time (20 cents, 19 cents, etc.). When they get to 10, they exchange the dime for 10 pennies and whisper-count to 0. Partners A and B switch roles and repeat.

## YOUR NOTES:

## 10 More



**NOTE:** This fluency activity reviews adding 10 to a single-digit number, which prepares students for today's lesson.

T: What's 10 more than 5?

S: 15.

T: Say 15 the Say Ten way.

S: Ten 5.

T: Say it as an addition sentence, starting with 5.

S:  $5 + 10 = 15$ .

T: Say the addition sentence, starting with 10.

S:  $10 + 5 = 15$ .

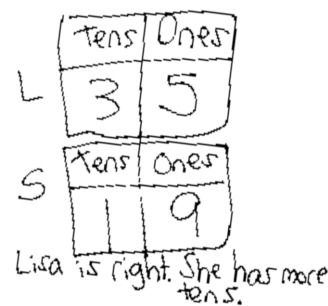
Repeat, beginning with other numbers between 0 and 10.

## WORD PROBLEM

Lisa has 3 boxes of 10 crayons, as well as 5 extra crayons. Sally has 19 crayons. Sally says she has more crayons, but Lisa disagrees. Who is right?



**NOTE:** In this problem, students use what they learned in Lesson 3 about interpreting a two-digit number in terms of tens and ones and apply this to a problem involving a comparison of two quantities. To decide which is larger, students really only need to compare how many tens Lisa and Sally each have. Be sure to note which students understand and which do not understand that Sally has a larger number of ones than Lisa does, but that Lisa still has a larger amount of crayons because she has more tens.



## Concept Exploration

**Materials:** (T) 40 linking cubes, chart paper with a place value chart, Hide Zero cards (Lesson 2 Template 1), piece of blank paper to cover sections (S) Personal math toolkit of 4 ten-sticks, personal white board, place value chart (Lesson 2 Template 2), numeral cards (Template)

Students gather in the meeting area in a semicircle formation with their personal white boards. The toolkits of 4 ten-sticks are at their individual desks or tables.

T: (On the floor, lay out 3 ten-sticks and 7 individual cubes.) Say this number as tens and ones.

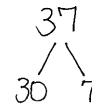
S: 3 tens 7 ones.

T: Which is the same as the number...?

S: 37.

T: (Fill in the place value chart.) 3 is the **digit** in the tens place.  
7 is the digit in the ones place. (Point to each digit in the chart.)

Tens	Ones
3	7



**YOUR NOTES:**

T: On your personal white board, make a number bond that shows the tens and the ones.

S: (Take apart 37 into 30 and 7.)

T: (Record the number bond on the chart.) Write as many addition sentences as you can that use your number bond.

$$30 + 7 = 37$$

$$7 + 30 = 37$$

$$37 = 30 + 7$$

$$37 = 7 + 30$$

7 more than 30 is 37.

30 more than 7 is 37.

Circulate and ensure that students are only using the three numbers from this bond: 37, 30, and 7. If students begin writing subtraction sentences, remind them of the directions. Perhaps challenge some students to consider subtraction sentences, but these sentences are not addressed during the course of the lesson.

T: Say a number sentence that matches this number bond. Start with the part that represents the tens. (Record on the chart as students answer.)

S:  $30 + 7 = 37$ .

T: Start your number sentence with the ones. (Record on the chart.)

S:  $7 + 30 = 37$ .

T: 37 is the same as...? (Write  $37 = \dots$ , and complete the number sentence as students answer.)

S: 30 plus 7.

T: This time, start with the ones. 37 is the same as...? (Write  $37 = \dots$ , and complete the number sentence.)

S: 7 plus 30.

T: Talk to your partner. What do you notice about the addends in all of these number sentences?

S: There is one that tells how many tens there are, and the other tells how many ones there are. → You can switch the addends around, and the total is still the same. → That was true with smaller numbers, too! → The larger number also tells how many ones are in the tens.

T: Great. (Point to 7.) 7 more than 30 is...? Say the whole sentence.

S: 7 more than 30 is 37. (Record on the chart.)

T: (Point to 30.) 30 more than 7 is...? Say the whole sentence.

S: 30 more than 7 is 37. (Record on the chart.)

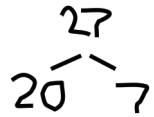
Repeat the process following the suggested sequence: 18, 28, 38, 12, 21, 23, 32, 30, and 40.

When appropriate, switch to modeling with Hide Zero cards, and then have students write their responses on their personal white boards. Use different language to elicit a variety of answers for each number (e.g., 18 is the same as...; 10 plus 8 is...; 8 more than 10 is...; 10 more than 8 is...).

For the remainder of time, have partners play Combine Tens and Ones using the directions below. Leave the chart for 37 up on the board as a reference to support students.

**YOUR NOTES:**

- Prepare two decks by combining numeral cards 0–9 from both players. The first deck comprises one set of digits 1–3. The rest of the cards are in the second deck.
- Pick a card from the first deck. This number is placed in the tens place on the place value chart (e.g., 2 is drawn and placed in the tens place).
- Pick a card from the second deck. This number is placed in the ones place on the place value chart (e.g., 7 is drawn and placed in the ones place).
- Partners A and B make a number bond decomposing the number into tens and ones.
- Partner A writes two addition number sentences (e.g.,  $20 + 7 = 27$ ,  $7 + 20 = 27$ ,  $27 = 20 + 7$ ,  $27 = 7 + 20$ ).
- Partner B writes a *more than* statement that combines tens and ones (e.g., 20 more than 7 is 27; 7 more than 20 is 27; 27 is 7 more than 20; 27 is 20 more than 7).
- Switch roles for the next set of cards drawn.

**MULTIPLE MEANS OF ENGAGEMENT**

To support students, it is very important to model how games are played. Oral instructions alone cannot help all of the class understand how the game is played. Have two students demonstrate Partner A and Partner B roles so that all students see and hear the way the game is played.

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## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

There are no notes for this digital lesson. Go online to see the full digital lesson.

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## Wrap-Up

**LESSON SYNTHESIS**

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Based on our work today, what do you think the word **digit** means? (Digits are the symbols 0–9 that can be used to create any number. 32 is a two-digit number. The numeral 3 is the digit in the tens place, and the numeral 2 is the digit in the ones place.)
- When you played Combine Tens and Ones, did you ever pick a 0 card? What did you write for your number sentences and number bond?


**YOUR NOTES:**

## EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

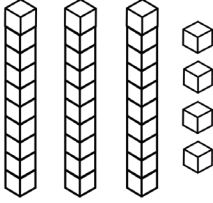
### Task

Write the tens and ones. Then, write an addition sentence to add the tens and ones.

1. 

tens	ones

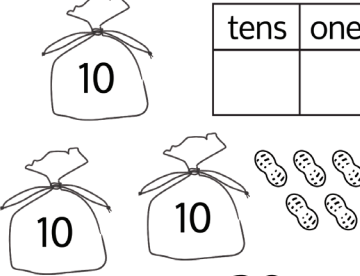
10 +    =

2. 

tens	ones

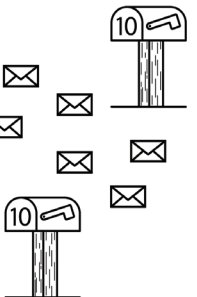
   + 4 =

---

3. 

tens	ones

   = 30 +

4. 

tens	ones

   = 6 +

### Answers

- 1, 3; 3, 13
- 3, 4; 30, 34
- 3, 5; 35, 5
- 2, 6; 26, 20

NUMERAL CARDS (TEMPLATE)

0	1	2	3
4	5	<u>6</u>	7
8	<u>9</u>	10	11
12	13	14	15

**NUMERAL CARDS (FLUENCY TEMPLATE)**

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>4</b>	<b>5</b>	<b><u>6</u></b>	<b>7</b>
<b>8</b>	<b><u>9</u></b>	<b>10</b>	<b>11</b>
<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>





# Lesson 5

YOUR NOTES:

Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number.

## Warm-Up

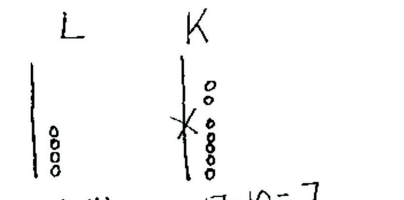
### FLUENCY PRACTICE

No additional fluency activities for this lesson.

### WORD PROBLEM

Lee has 4 pencils and buys 10 more. Kiana has 17 pencils and loses 10 of them. Who has more pencils now? Use drawings, words, and number sentences to explain your thinking.

**NOTE:** This problem gives students a chance to add and subtract 10 using their own methods. At this point in the year, students should feel quite comfortable adding and subtracting 10 with numbers within 20. Circulate and notice students' understanding. Link this to today's lesson as students notice ways to more quickly add and subtract 10 to and from larger numbers.

L      K  
  
 $10 + 4 = 14$        $17 - 10 = 7$   
 Lee has more pencils.

## Concept Exploration

**Materials:** (T) 4 Rekenrek bracelets stretched into a straight line as shown, 5 additional red beads, 5 additional white beads, 4 ten-sticks, 2 pieces of chart paper with two pairs of place value charts as shown (S) Personal math toolkit of 4 ten-sticks of linking cubes, personal white board, double place value charts (Template)



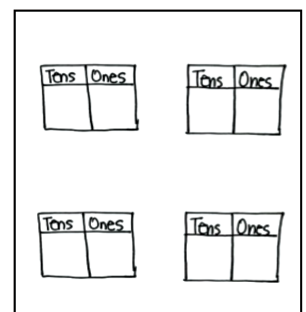
Rekenrek bracelet

Students sit at their desks with all of the materials.

**T:** (Show the Rekenrek bracelet stretched out as a vertical line.)  
 When we made drawings to show this Rekenrek bracelet stretched out, we called it a...?

**S:** 5-group column!

**T:** You're right! We drew 10 circles showing the beads. We also drew a line through it to show that there are 10 circles or beads. (Draw a 5-group column on the board.)



**YOUR NOTES:**

**T:** (Place 4 individual beads next to the Rekenrek bracelet.) How many beads are there?

**S:** 14 beads.

**T:** Say an addition sentence that represents how many beads there are, starting with 10.

**S:**  $10 + 4 = 14$ .

**T:** Draw the number of beads using 5-group columns.

**S:** (Draw one 5-group column and four beads.)

**T:** (Add two more Rekenrek bracelets representing 34.) How many beads are here now? Let's count.

**S/T:** (Point to each bracelet while counting by tens, and then to each bead for the last four beads.) 10, 20, 30. (Pause.) 31, 32, 33, 34.

**T:** Draw the number of beads using 5-group columns. (Give 10 seconds to draw.) Your time is up!

**S:** I didn't have enough time to draw all 34 beads!

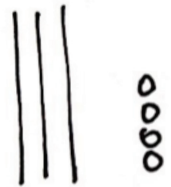
**T:** Wow, drawing 34 beads would take us a long time! Let me show you a shortcut to drawing tens. Watch how quickly I can represent 34. (Draw 3 quick tens and 4 circles.)

**T:** Now, you try drawing 34 using quick tens.

**S:** (Draw.)

**T:** We call each of these lines a **quick ten**. How do you think it got its name?

**S:** It's a line that holds 10 beads. → It represents a ten, so we don't have to draw all the beads! → It's so quick to draw a ten now!



Have students practice representing numbers with quick tens for two minutes. Show or call out using numbers from 11 to 40 in varied ways (e.g., using Rekenrek bracelets and extra beads, ten-sticks and extra linking cubes, place value chart, the Say Ten way, an addition expression, a more than statement, and a number bond with two parts filled in). For the next minute, switch roles. Draw quick tens, and have students say what number they represent.

**T:** Draw 15.

**S:** (Draw a quick ten and 5 circles.)

**T:** How many tens and ones are there?

**S:** 1 ten and 5 ones.

**T:** (Write 15 on the double place value chart.)

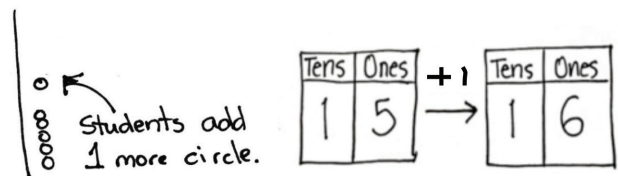
**T:** Show me 1 more than 15.

**S:** (Draw 1 more circle.)

**T:** What is 1 more than 15? Say the whole sentence.

**S:** 1 more than 15 is 16. (Write 16 on the place value chart.)

**T:** So, from 15 to 16, we added 1 more. (Draw an arrow from the first place value chart to the second, and then write + 1 above the arrow.)



**T:** Look at the place value chart. What changed, and what didn't? Turn and talk to your partner about why this is so.

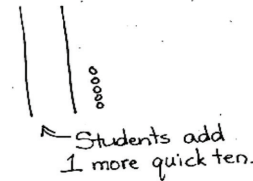
**YOUR NOTES:**

**S:** The tens didn't change. They both stayed as 1 ten because we only added 1 more. The ones changed from 5 to 6 because we added 1 more. 6 is 1 more than 5. To figure out 1 more, I just have to add 1 more to the number in the ones place!

**T:** Great thinking! Show me 15 with your drawing again.

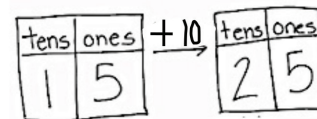
**S:** (Show 15.)

**T:** (Write 15 on a new place value chart.) Now, how can you show 10 more than 15? (Draw an arrow, and write + 10 above it.) Turn and talk to your partner, and then show with your cubes.



**S:** Just draw one more quick ten!

**T:** That's an efficient way to show 10 more! Let's have everyone show 10 more this way, drawing just one more quick ten. What is 10 more than 15? Say the whole sentence.



**S:** 10 more than 15 is 25.

**T:** I'm about to write the new number on the place value chart to show 10 more than 15. Talk to your partner about what you think will change and what will remain the same.

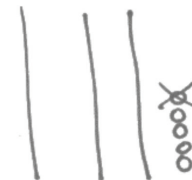
**S:** The tens changed this time from 1 ten to 2 tens because we added 10 more. The ones didn't change because we just added a ten-stick. We could add 10 extra ones, but once you get 10, we make them into a ten-stick, so why bother? We can add a ten quickly. I just have to add 1 more to the number in the tens place!

**T:** We added 10 more to 15 to get 25. (Complete the second place value chart with 2 and 5.)

Repeat the process using *1 less* (as shown to the right) and *10 less* with 35.

Then, follow the suggested sequence:

- 1 more/10 more than 14
- 1 less/10 less than 16
- 1 more/1 less than 36
- 10 more/10 less than 38
- 1 more/1 less than 32
- 10 more/10 less than 23
- 1 more than 29
- 1 less than 30



### MULTIPLE MEANS OF ENGAGEMENT

Some students may not be able to imagine adding or subtracting a ten at this point. Support these students with all of the materials used in the lesson, and give them plenty of practice. Their path to abstract thinking may be a little longer than those of other students.

**YOUR NOTES:** Other students may be able to visualize adding and subtracting ones and tens. Since these students have moved from concrete to abstract thinking, challenge them by giving problems that consist of adding or subtracting 2 ones/tens or 3 ones/tens.

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 5  
G:1 M:4

1 More, 10 More, 1 Less, 10 Less  
ZEARN STUDENT NOTES

Name: \_\_\_\_\_

Complete: ☐

Date: \_\_\_\_\_

1

SHOW YOUR WORK

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1 less than 36 is 35.

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today’s lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- What does the word digit mean?
- What new math drawing did we use to work more efficiently? (**Quick ten** drawings.)

**YOUR NOTES:**

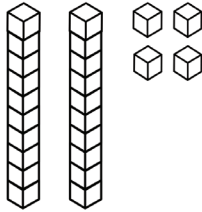
## EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

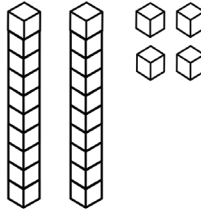
### Task

Draw 1 more or 10 more. You may use a quick ten to show 10 more.

1.



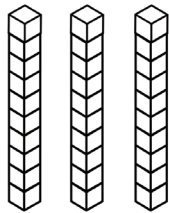
2.



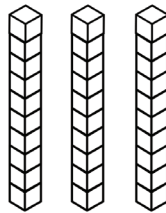
1 more than 24 is \_\_\_\_\_. 10 more than 24 is \_\_\_\_\_.

Cross off (x) to show 1 less or 10 less.

3.



4.



10 less than 30 is \_\_\_\_\_. 1 less than 30 is \_\_\_\_\_.

### Answers

1. 1 more drawn; 25
2. 10 more or quick 10 drawn; 34
3. 10 crossed off; 20
4. 1 crossed off; 29

DOUBLE PLACE VALUE CHART (TEMPLATE)

tens	ones

tens	ones

double place value charts

# Lesson 6

Use dimes and pennies as representations of tens and ones.

---

## Warm-Up

### FLUENCY PRACTICE

#### Quick Tens

**Materials:** (T) Variety of materials to show tens and ones (e.g., 100-bead Rekenrek, linking cubes with ten-sticks and extra cubes, place value chart)



**NOTE:** *This fluency activity reinforces place value because quick tens are an abstract representation of the unit ten.*

Show and say numbers from 11 to 40 in varied ways for two minutes. Students draw the number with quick tens and circles (in 5-group columns). Use the materials listed above to show numbers. Choose different ways to say the numbers:

- The Say Ten way
- As an addition expression
- As a *more than* statement
- As a number bond with two parts filled in

Then represent numbers using quick tens and ones. Students say the numbers aloud.

#### Count Coins

**Materials:** (T) 10 pennies and 4 dimes



**NOTE:** *This fluency activity provides practice with recognizing pennies and dimes and counting with abstract representations of tens and ones, which prepares students for today's lesson.*


Lay out 2 dimes. Students count up from 20 by ones as the teacher lays out 10 pennies into 5-groups. Repeat, but this time, change the 10 pennies for another dime once 40 has been reached.

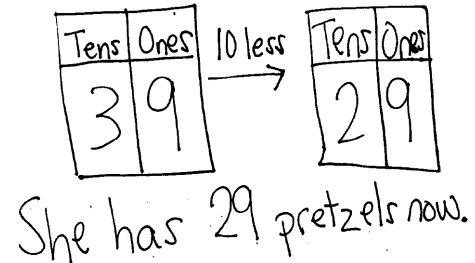
## YOUR NOTES:

## WORD PROBLEM

Sheila has 3 bags with 10 pretzels in each bag and 9 extra pretzels. She gives 1 bag to a friend. How many pretzels does she have now?

**Extension:** John has 19 pretzels. How many more pretzels does he need to have as many as Sheila has now?

 **NOTE:** Depending on their strategies for solving, students may subtract in quantities larger than within 20. Some students may subtract 1 bag from 3 bags as their method for solving, while others may recognize that sharing 1 bag of 10 pretzels means that they have to find what number is 10 less than 39.



## Concept Exploration

**Materials:** (T) Personal math toolkit with 4 ten-sticks of linking cubes, 4 dimes and 10 pennies, projector (S) 4 dimes and 10 pennies, personal white board, coin and place value charts (Template)

Students gather in the meeting area with their personal math toolkits in a semicircle formation.

**T:** (Lay a ten-stick on the floor.) How many ones, or individual cubes, are in a ten-stick?

**S:** 10 ones.

**T:** (Lay 10 individual cubes into 5-groups next to the ten-stick.) What is the same or different about these two groups of cubes?

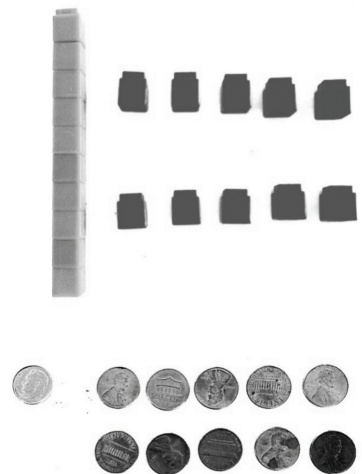
**S:** They are different because one of them is a ten, and the other is 10 ones. → They are the same amount. The ten-stick is made up of 10 cubes. The 10 ones are also made of 10 cubes. → If you put 10 ones together, they'll become a ten-stick.

**T:** You are right! They are worth the same amount; they have the same value. Also, they are both made of 10 cubes. (Lay a dime underneath the ten-stick.) How many pennies have the same value as 1 dime?

**S:** 10 pennies.

**T:** (Lay 10 pennies into 5-groups next to the dime directly below the 10 individual cubes.) What is the same or different about these two groups of coins?

**S:** A dime is 10 cents. 10 pennies are worth 10 cents. → The dime is only made of 1 coin. The pennies group is made up of 10 coins. → The coins are different.





**YOUR NOTES:**

- T: Great observations! So, 1 ten-stick has the same value as 10 individual cubes. And 1 dime has the same value as...?
- S: 10 pennies!
- T: I can take a ten-stick and break it apart into 10 individual cubes. Can I do the same with a dime?
- S: No. A dime is just 1 coin.
- T: That's another difference. The ten-stick has a value of 10 ones, and we can see why. It's actually made up of 10 ones, and we can see them. The dime has the same value as 10 pennies, but it's just 1 coin. There are no pennies hiding inside. But it still has the same value as 10 pennies.
- T: (Project a ten-stick and 3 single cubes.) How many tens and ones are there?
- S: 1 ten 3 ones.
- T: How can I use my coins to show the same number as the cubes? Show 1 ten 3 ones with your coins, and then share with your partner.

Students discuss as the teacher circulates. While circulating, be sure to address any misconceptions. Some students may want to put down 13 pennies but won't be able to since each student is only given 10 pennies.

- T: I noticed that some students wanted to lay down 13 pennies but found that they didn't have enough. What can we do to help?
- S: Use 1 dime for 1 ten, and then use 3 pennies for 3 ones.
- T: Great idea! It's just like using the ten-stick to represent 1 ten. (Choose a student volunteer to show 1 dime and 3 pennies directly below the linking cubes.)

Repeat the process using the suggested sequence: 15, 18, 28, 38, 31, 13, 40.

- T: (Show 39 cents with 3 dimes and 9 pennies.)
- T: How many dimes?
- S: 3 dimes.
- T: (Fill in the dimes and pennies place value chart.) How many pennies?
- S: 9 pennies.
- T: (Fill in the dimes and pennies place value chart.) How many tens?
- S: 3 tens.
- T: (Fill in the tens and ones place value chart.) How many ones?
- S: 9 ones.
- T: (Fill in the tens and ones place value chart.) What is the value of 3 dimes and 9 pennies?
- S: 39 cents.
- T: Give a number sentence to show the total of 39 cents by adding your dimes and pennies.
- S: 30 cents + 9 cents = 39 cents.

dimes	pennies
3	9

Repeat the process using the following sequence: 1 dime and 4 pennies, 1 dime and 5 pennies, 2 dimes and 5 pennies, 3 dimes, 6 pennies and 3 dimes, and 2 dimes and 8 pennies. Additionally, have students use the place value chart on their personal white boards to write down the value of these coins. Be sure to flip the coins in order for the students to become familiar with both heads and tails.

**YOUR NOTES:**

Give students one minute to study their 4 dimes and 10 pennies, noticing the similarities and differences of these coins.

T: Show 15 cents.

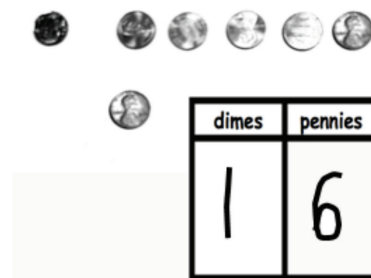
S: (Show 1 dime 5 pennies.)

T: Now, show me 1 more penny, and write how much you have in the place value chart.

S: (Add a penny, and write 16.)

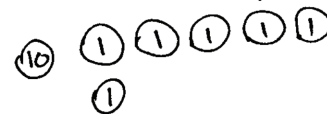
T: So, what is 1 more than 15? Say it in a whole sentence.

S: 1 more than 15 is 16.



### Optional for flex day: repeat the process

Repeat the process using the same number for 10 more, 1 less, and 10 less. For further practice, use the following suggested sequence: 3 tens 5 ones, 27, 1 ten 9 ones, 31, and 1 ten 3 ones. When appropriate, have students move on to drawing instead of using the coins as shown.



**NOTE:** As students share their work with the coins, remind them to use the unit cents. Have students add their dimes and pennies to their personal math toolkits.

### MULTIPLE MEANS OF ENGAGEMENT

Remember to adjust the lesson structure to suit specific learning needs. Some students may have more success working with a partner since this lesson calls for a great deal of counting and manipulation of materials.

### MULTIPLE MEANS OF REPRESENTATION

Dimes are an abstract representation of tens, particularly because they are smaller than pennies, rather than 10 times the size of a penny. For students who are struggling to grasp quantities of tens and ones, continue to use linking cubes or bundled straws to visually present the comparative quantities.

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

YOUR NOTES:

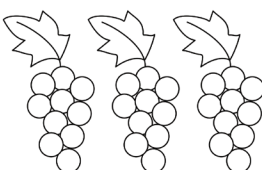
<b>Lesson 6</b> G:1 M:4	<b>1 More, 10 More</b> <b>ZEARN STUDENT NOTES</b>
----------------------------	------------------------------------------------------

Name: \_\_\_\_\_


Complete: ☐ Date: \_\_\_\_\_

**1**

SHOW YOUR WORK



1 more than 35 is 36.



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## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- How are the tools that represent 1 ten different from one another? (Project the ten-stick and the dime.)
- What are some ways that a dime is different from a penny?

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

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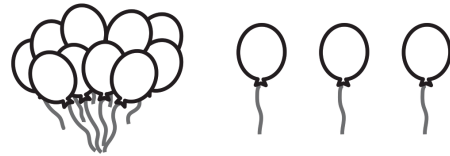
**YOUR NOTES: Task**

Fill in the blank. Draw or cross off tens or ones as needed.

1.



2.



10 more than 23 is \_\_\_\_\_. 1 more than 13 is \_\_\_\_\_.

3.



4.



10 less than 31 is \_\_\_\_\_. 1 less than 14 is \_\_\_\_\_.

**Answers**

1. 33; 10 more drawn
2. 14; 1 more drawn
3. 21; 1 dime crossed off
4. 13; 1 penny crossed off

COIN AND PLACE VALUE CHARTS (TEMPLATE)

dimes	pennies

tens	ones

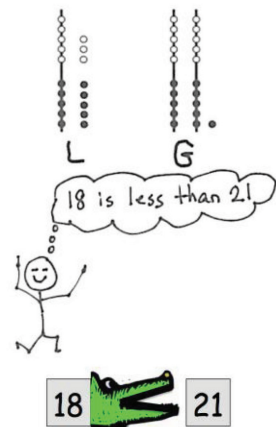
# TOPIC B

## Comparison of Pairs of Two-Digit Numbers

Topic B begins with Lesson 7, where students identify the greater or lesser of two given numbers. They first work with concrete materials, whereby they build each quantity and find the greater or lesser number through direct comparison. They progress to the more abstract comparison of numerals using their understanding of place value to identify the greater or lesser value. Students begin with comparing numbers such as 39 and 12, where the number of both units in the greater number is more than in the smaller number. They then compare numbers such as 18 and 40, where they must realize that the place of the 4 explains the greater value of 40. 4 tens is greater than 1 ten 8 ones.

In Lesson 8, students continue to practice comparing, with the added layer of saying the comparison sentence from left to right. First, they order a group of numerals so that they are reading the set from least to greatest and then greatest to least, always reading from left to right. Then, as students compare two quantities or numerals, they place an L below the lesser quantity and a G below the greater quantity. When they read, they simply say the first numeral, the comparison word under the numeral, and then the second numeral. This prepares students for using the symbols in later lessons.

The topic closes with Lessons 9 and 10, where students use the comparison symbols  $>$ ,  $=$ , and  $<$  to compare pairs of two-digit numbers. In Lesson 9, students focus on the quantity that is greater as they use the alligator analogy to eat and identify the amount that's greater. Within this same lesson, students use the alligator analogy to then identify the amount that is less. Lastly, in Lesson 10, students write the appropriate mathematical symbol to compare two numerals and then apply their knowledge of reading from left to right. For example,  $18 < 40$  is read as "18 is less than 40."



Objective	
Topic B	Comparison of Pairs of Two-Digit Numbers
Lesson 7	Compare two quantities, and identify the greater or lesser of the two given numerals.
Lesson 8	Compare quantities and numerals from left to right.
Lesson 9	Use the symbols $>$ , $=$ , and $<$ to compare quantities and numerals.
Lesson 10	Use the symbols $>$ , $=$ , and $<$ to compare quantities and numerals.

### Note on Pacing for Differentiation

If you are using the Zearn Math recommended weekly schedule that consists of four “Core Days” when students learn grade-level content and one “Flex Day” that can be tailored to meet students’ needs, we recommend omitting the optional lessons in this mission during the Core Days. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed. This schedule ensures students have sufficient time each week to work through grade-level content and includes built-in weekly time you can use to differentiate instruction to meet student needs.

#### **Optional lessons for Topic B**

Lesson 8 and Lesson 10.





# Lesson 7

YOUR NOTES:

Compare two quantities, and identify the greater or lesser of the two given numerals.



## TIP

**There is no Independent Digital Lesson** corresponding to today's Concept Exploration. Students should use digital time to complete other digital lessons in this Mission. If a student has already completed 4 digital lessons this week, they should complete digital bonuses from this Mission.

## Warm-Up

### FLUENCY PRACTICE

#### 1 More/Less, 10 More/Less

**Materials:** (S) Personal math toolkit (4 ten-sticks, 4 dimes, and 10 pennies), personal white board, large place value chart (Fluency Template)



**NOTE:** This fluency activity provides practice with both proportional (linking cubes) and non-proportional (coins) representations of tens and ones. Students review the connection between place value and adding or subtracting ten or one.

T: Show 20 cubes. Add 1. Say the addition sentence, starting with 20.

S:  $20 + 1 = 21$ .

T: Add 10. Say the addition sentence, starting with 21.

S:  $21 + 10 = 31$ .

T: Subtract 1. Say the subtraction sentence, starting with 31.

S:  $31 - 1 = 30$ .

T: Show 39. Add 1. Say the addition sentence, starting with 39.


S:  $39 + 1 = 40$ .

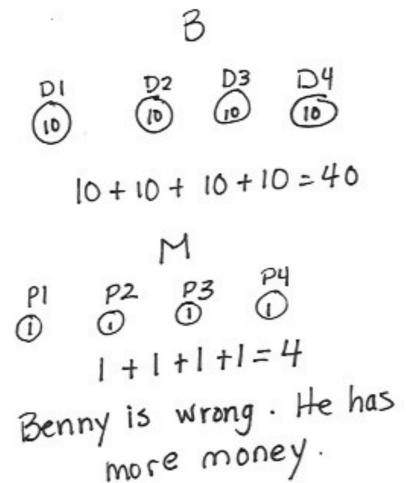
Continue adding or subtracting 10 or 1, choosing different start numbers within 40, as appropriate. After three minutes, use coins instead of linking cubes. When using coins, be careful not to ask students to subtract 1 from a multiple of 10, as students have not yet learned to subtract by decomposing a dime into 10 pennies.

## YOUR NOTES:

## WORD PROBLEM

Benny has 4 dimes. Marcus has 4 pennies. Benny says, “We have the same amount of money!” Is he correct? Use drawings or words to explain your thinking.

 **NOTE:** This problem enables a teacher to identify which students understand, or are beginning to understand, the importance of the value of a unit. Differentiating between the two types of coins and their values is the most essential understanding gained from this problem.



## Concept Exploration

**Materials:** (T) Enlarged dimes and pennies for display, large place value chart (Fluency Template) (S) Numeral cards 0–10 (Lesson 4 Fluency Template), dimes and pennies from personal math toolkit

Students gather in the meeting area with their materials.

**T:** Look at the Word Problem. Which boy has the **greater** total value of money?

**S:** Benny does! → 40 cents is more than 4 cents.

**T:** (Write *greater* under the 4 dimes and circle this side of the work.) Correct. The word *greater* means more. 40 is more than 4. 40 is greater than 4.

**T:** How could you describe 4 (circle Marcus's pennies with a finger) compared to 40? 4 is...?

**S:** Smaller than 40. → Less than 40. → Fewer than 40.

**T:** Yes, we would say 4 is **less** than 40. Let's compare some more numbers. Let's find the greater number in each pair of numbers.

Write the following suggested sequence of number pairs one at a time:

- 5 and 12
- 39 and 21
- 23 and 32
- 17 and 15
- 14 and 40
- 30 and 13
- 1 ten 9 ones and 2 tens 1 one
- 3 tens 1 one and 1 ten 3 ones



**NOTE:** 17 and 15 above is the first example in which the ones place must be considered to compare the numbers; it is discussed in the Lesson Synthesis.

**YOUR NOTES:**

Use ten-sticks or quick ten drawings. Each time, ask students to explain how they know which number is greater. Encourage students to use the language of tens and ones as they compare the tens and the ones in each number.

Repeat the process, next finding the number that is less in each pair.

**T:** (Display 28 and 38 in place value charts.) Which number is greater?

**S:** 38.

**T:** Look at the place value charts. Do you look at the tens place or the ones place to help you find the greater number? Turn and talk with a partner.

**S:** There is an 8 in the ones place for both numbers. → You look at the tens place first, though.

**T:** (Point to each digit while explaining.) Yes, 3 tens is greater than 2 tens. 38 is greater than 28.

**T:** (Display 29 and 32 in place value charts.) Which number is greater?

**S:** 32.

**T:** Look at the place value charts. 9 is a lot greater than either of the digits in 32. Does that mean 29 is greater than 32? Turn and talk to your partner.

**S:** We still have to look at the tens place first. Tens are greater than ones. → There are only 2 tens in 29, and there are 3 tens in 32. The tens place is where you have to look.

**T:** (Point to each digit while explaining.) Yes, 3 tens is greater than 2 tens. Let's remember the *value* of the digits when comparing!

## Comparison with Cards Game

Partner A and Partner B

1. Each partner turns over two cards.
2. Add the two numbers together and find the total.
3. Partner A says a sentence to compare the totals using the words greater than or equal to.
4. The partner with the greater total wins the cards. (If the totals are equal, leave the cards until the next round when one student does have a greater total.)
5. Repeat with Partner B making the comparison statement.

## MULTIPLE MEANS OF ENGAGEMENT

Challenge advanced students with more questions about the 4 pennies and 4 dimes, such as the following:

- How much money do the boys have together?
- How many more cents does Benny have than Marcus?
- Do you know of any other combinations of coins that could make 40 cents?

**YOUR NOTES:** Some students may have difficulty comparing numbers that have similar digits, such as 12 and 21, or numbers that sound similar, such as 14 and 40 or 13 and 30. Use linking cubes along with the place value chart so students can see the comparison with manipulatives.

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## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The prompts below may be used to lead the discussion.

- Turn to a partner. Talk about why you must sometimes look to the ones place to compare numbers.
- Share your answer to today's Word Problem with a partner. Restate your answer using the words greater or less.
- How are dimes and pennies similar to tens and ones?
- Take out the cards you kept from today's Comparison with Cards game. What is the total of each pair of cards? Write your total in a place value chart on your personal white board and compare with your partner.

### EXIT TICKET

#### Answers

1. 34, 25; set of 34 circled; 34, 25
2. 24, 34; set of 24 circled; 24, 34
3. Set of 2 dimes circled
4. Set of 1 dime and 4 pennies circled

LARGE PLACE VALUE CHART (TEMPLATE)

tens	ones

LARGE PLACE VALUE CHART (FLUENCY TEMPLATE)

tens	ones

YOUR NOTES:

# Lesson 8



## TIP

**The teacher materials are optional for this lesson** Students explore these concepts in their Independent Digital Lesson and we recommend that you continue your instruction with the next lesson. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed.

Compare quantities and numerals from left to right.

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## Warm-Up

### FLUENCY PRACTICE

#### Subtraction with Cards

**Materials:** (S) 1 pack of numeral cards 0–10 per set of partners (Lesson 4 Fluency Template)



**NOTE:** This fluency activity reviews Lesson 7 and provides practice with subtraction within 10. Students' fluency with these facts is assessed after this game.

Students sit in partnerships. Students shuffle or mix their numeral cards. Each partner places her deck of cards face down. Each partner flips over two cards and subtracts the smaller number from the larger one. The partner with the smallest difference keeps the cards played by both players that round. For example Player A draws 4 and 5 and gives the difference of 1. Player B draws 9 and 4 and gives the difference of 5. Since  $1 < 5$ , Player A keeps the cards. If the differences are equal, the cards are set aside, and the winner of the next round keeps the cards from both rounds. At the end of the game, the players will each be left with 1 card. They each flip their last card over and the player with the highest card says the difference and collects the cards. Students continue to play as time allows.

#### Core Subtraction Fluency Review

**Materials:** (S) Core Subtraction Fluency Review

## YOUR NOTES:



**NOTE:** This subtraction review sheet contains the majority of subtraction facts within 10 (excluding some  $-0$  and  $-1$  facts), which are part of the expected core fluency for Grade 1. Consider using this sheet to monitor progress toward full understanding.

Students complete as many problems as they can in three minutes. Choose a counting sequence for early finishers to practice on the back of their papers. When time runs out, read the answers aloud so students can correct their work. Encourage students to remember how many they got correct today, so they can try to improve their scores on future Core Subtraction Fluency Reviews.

### Beep Counting by Ones and Tens

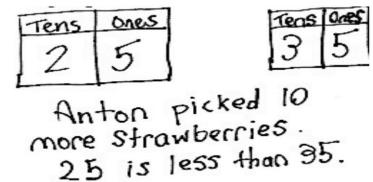
Say a series of four numbers, but replace one of the numbers with the word beep (e.g., 1, 2, 3, beep). When signaled, students say the number that was replaced by the word beep in the sequence. Scaffold number sequences, beginning with easy sequences and moving to more complex ones. Choose sequences that count forward and backward by ones and tens within 40.

Suggested sequence type: 10, 11, 12, beep; 20, 21, 22, beep; 20, 19, 18, beep; 30, 29, 28, beep; 0, 10, 20, beep; 1, 11, 21, beep; 40, 30, 20, beep; 39, 29, 19, beep. Continue with similar sequences, changing the sequential placement of the beep.

### WORD PROBLEM

Anton picked 25 strawberries. He picked some more strawberries. Then, he had 35 strawberries.

- Use a place value chart to show how many more strawberries Anton picked.
- Write a statement comparing the two amounts of strawberries using one of these phrases: *greater than*, *less than*, or *equal to*.



**NOTE:** In this add to with change unknown problem, students are now asked to use their understanding of place value to identify how many more strawberries Anton picked and compare the beginning and ending quantities.

## Concept Exploration



**Materials:** (T) Comparison cards (Template) (S) Comparison cards (Template), personal white board, ten-sticks and coins from personal math toolkit

**YOUR NOTES:**



**NOTE:** For this lesson, use the word *side* of the comparison cards. The symbol side is used in future lessons.

Project the following two sequences on the board: 10, 11, 12, 13 and 40, 30, 20, 10.

**T:** Look at these two sequences. What is different about them?

**S:** One set goes up, and one set goes down. → In one set, we count up by ones, and in the other, we count down by tens.

**T:** What does “goes up” mean?

**S:** The numbers get bigger.

**T:** Let’s use our math language to explain that. Who remembers the words we used yesterday when we were comparing two numbers?

**S:** Greater than. → Less than. → Equal to.

**T:** Are you saying this number (point to 10) is less than or greater than 11 (point to 11)?

**S:** Less than.

**T:** What about the next numbers? 11 is...?

**S:** Less than 12.

**T:** Let’s say the whole sequence and use the comparison words as we compare each number in the set.

**S/T:** (Continue pointing to each number.) 10 is less than 11.  
11 is less than 12. 12 is less than 13.

**T:** When we compare numbers using words, we read from left to right, just like when we are reading a sentence in a book or when we are reading a number sentence.

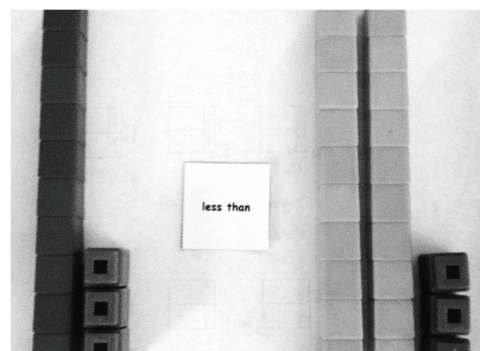
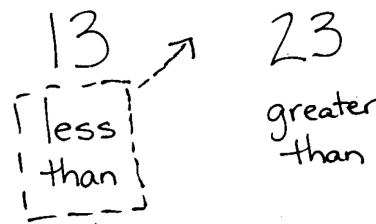
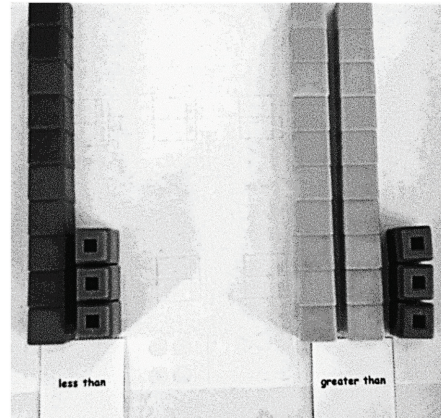
**T:** 40, 30, 20, 10 is in a different order. Turn to your partner, and discuss which word we will use when comparing them. Remember, we start with 40.

**S:** (Discuss.) Greater than!

**T:** Let’s read the whole sequence, using greater than to compare the number pairs as we go.

**S/T:** 40 is greater than 30. 30 is greater than 20. 20 is greater than 10.

**T:** Today, we are reading left to right when we compare numbers. (Distribute comparison cards to students. Write 13 and 23 on the board.) Partner A (seated on the left), show 13 with your ten-sticks. Partner B, show 23 with your ten-sticks. Find the card with the comparison words that



**YOUR NOTES:**

show how your number compares to your partner's number, and put it below your ten-sticks.

S: (Partners place cubes and cards.)

T: I see these cards under your numbers. (Write *less than* under 13 and *greater than* under 23.) To read this from left to right, we would say 13 is...?

S: Less than 23.

T: Yes, less than. Let's move the less than card **between** our numbers. We'll read together. (Move card between 13 and 23.)

S/T: 13 is less than 23

Repeat the process with the following suggested sequence: 15 and 19, 21 and 19, 3 tens 5 ones and 2 tens 8 ones, 21 and 31, 18 and 9, 38 and 12, and 27 and 19. Move quickly to quick ten drawings or no visual supports as appropriate for the group of students. Grouping students by readiness levels makes this easier.

T: Does anyone else notice something interesting about which card we have been using when we read the comparison from left to right?

S: We always use Partner A's card!

T: Do we even *need* Partner B's card to say our comparison sentence?

S: No!

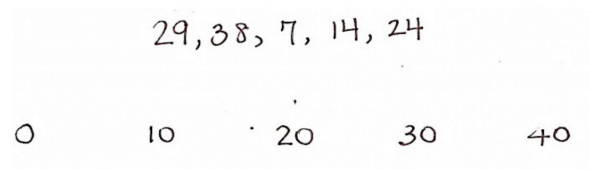
T: Okay, switch spots so that we can use Partner B's card. (Partners switch spaces so that Partner B is sitting on the left.)

Repeat the process with the following suggested sequence: 14 and 17, 3 tens and 2 tens, 2 tens 9 ones and 3 tens, 24 and 38, and 34 and 28. This time, only Partner B should use the comparison cards, since it has been determined that only the comparison card on the left gets moved into the middle to read the comparison sentence.

T: (Leave 34 and 28 on display.) Which digit in each number did you look at first to compare them?

S: We looked at the digit in the tens place!

T: Why do we look at the tens place first when we compare two numbers? Turn and talk to your partner.



S: The digit 3 in 34 stands for 30. The digit 2 in 24 stands for 20. 30 is greater than 20. Even if there were 9 ones, that's still less than a ten.

T: (Write the multiples of 10 from 0 to 40 across the board, with space in between the numbers. Write the following five numbers above the sequence: 29, 38, 7, 14, and 24.) If I want to place these numbers into this set of numbers, in order, where would they go? Where would I put 29?

S: In front of the 30. It's less than 30. (Write 29 between 20 and 30.)

T: Where would I put 38?

S: Between 30 and 40. It's greater than 30 and less than 40. (Write 38 between 30 and 40. Continue with this process until all the numbers are placed.)

**YOUR NOTES:**

**T:** (Leave this sequence on the board. Write the numbers 40, 30, 20, 10, and 0 on the board with space in between the numbers.) Let's put those same numbers, in order, into *this* set.

**T:** Where does 29 go now?

**S:** Between the 30 and 20. 29 is less than 30. It's greater than 20. (Place the numbers in order in the sequence.)

**T:** Let's read the first sequence we made, starting on the...?

**S:** Left!

**S/T:** (Point to the numbers as students read the sequence.) 0 is less than 7. 7 is less than 10. (Continue through the sequence.)

**T:** What will we say when we are comparing the numbers in the second set?

**S:** Greater than!

**S/T:** (Point to the numbers as students read the sequence.) 40 is greater than 38. 38 is greater than 30. (Continue through the sequence.)

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### **MULTIPLE MEANS OF REPRESENTATION**

Be sure English language learners understand the word *compare*. Remind students about comparing the length of objects as they did in Mission 3, and show some concrete examples. Help students make the connection between comparing length and comparing numbers.

Highlight the critical vocabulary for English language learners while teaching the lesson by showing objects as a visual. In this lesson, vocabulary that must be highlighted includes *in order*, *in front of*, *before*, and *between*. Without understanding these words, English language learners have difficulty placing numbers into the tens sequence.

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### **MULTIPLE MEANS OF ACTION AND EXPRESSION**

Some students may still need concrete models after others are ready to move on. When moving to using numbers only, ask the students who need more concrete support to be class helpers by modeling the numbers with linking cubes.

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## **Independent Digital Lesson**



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

There are no notes for this digital lesson. Go online to see the full digital lesson.

## YOUR NOTES:

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Use math drawings, materials, or place value charts to prove that 36 equals 3 tens and 6 ones.
- Put these numbers in order from least to greatest: 9, 40, 32, 13, 23. How can you use that answer to help you order those same numbers from greatest to least?

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

#### Task

- Write the numbers in order from greatest to least.

	40	
39		29
	30	

\_\_\_\_\_

- Complete the sentence frames using the phrases from the word bank to compare the two numbers.
  - 17 \_\_\_\_\_ 24
  - 23 \_\_\_\_\_ 2 tens 3 ones
  - 29 \_\_\_\_\_ 20

#### Word Bank

is greater than

is less than

is equal to

#### Answers

- 40, 39, 30, 29
- is less than;
  - is equal to;
  - is greater than

## CORE SUBTRACTION FLUENCY REVIEW

<b>1.</b> $8 - 0 =$ _____	<b>16.</b> $9 - 3 =$ _____	<b>31.</b> $5 - 5 =$ _____
<b>2.</b> $8 - 1 =$ _____	<b>17.</b> $10 - 3 =$ _____	<b>32.</b> $6 - 5 =$ _____
<b>3.</b> $7 - 7 =$ _____	<b>18.</b> $10 - 4 =$ _____	<b>33.</b> $7 - 5 =$ _____
<b>4.</b> $3 - 3 =$ _____	<b>19.</b> $10 - 2 =$ _____	<b>34.</b> $8 - 5 =$ _____
<b>5.</b> $3 - 2 =$ _____	<b>20.</b> $10 - 8 =$ _____	<b>35.</b> $8 - 4 =$ _____
<b>6.</b> $4 - 2 =$ _____	<b>21.</b> $10 - 7 =$ _____	<b>36.</b> $10 - 5 =$ _____
<b>7.</b> $5 - 2 =$ _____	<b>22.</b> $10 - 6 =$ _____	<b>37.</b> $9 - 5 =$ _____
<b>8.</b> $5 - 3 =$ _____	<b>23.</b> $6 - 6 =$ _____	<b>38.</b> $9 - 4 =$ _____
<b>9.</b> $9 - 2 =$ _____	<b>24.</b> $7 - 7 =$ _____	<b>39.</b> $6 - 3 =$ _____
<b>10.</b> $8 - 2 =$ _____	<b>25.</b> $7 - 6 =$ _____	<b>40.</b> $6 - 4 =$ _____
<b>11.</b> $7 - 2 =$ _____	<b>26.</b> $8 - 8 =$ _____	<b>41.</b> $7 - 3 =$ _____
<b>12.</b> $4 - 4 =$ _____	<b>27.</b> $8 - 7 =$ _____	<b>42.</b> $7 - 4 =$ _____
<b>13.</b> $4 - 3 =$ _____	<b>28.</b> $9 - 9 =$ _____	<b>43.</b> $8 - 6 =$ _____
<b>14.</b> $5 - 4 =$ _____	<b>29.</b> $9 - 8 =$ _____	<b>44.</b> $9 - 6 =$ _____
<b>15.</b> $8 - 3 =$ _____	<b>30.</b> $10 - 9 =$ _____	<b>45.</b> $9 - 7 =$ _____

COMPARISON CARDS (TEMPLATE)

<div><div>&gt;</div><div></div></div>	<div><div>&lt;</div><div></div></div>	<div><div>=</div><div></div></div>	<div><div>&lt;</div><div></div></div>
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<div><div>&gt;</div><div></div></div>	<div><div>&lt;</div><div></div></div>	<div><div>=</div><div></div></div>	<div><div></div><div></div></div>

comparison cards, p. 1. print double-sided on cardstock. distribute each of the three cards to students.

less than	equal to	less than	greater than
greater than	equal to	less than	greater than
equal to	equal to	less than	greater than
	equal to	less than	greater than

comparison cards, p. 2. print double-sided on cardstock. distribute each of the three cards to students.





# Lesson 9

YOUR NOTES:

Use the symbols  $>$ ,  $=$ , and  $<$  to compare quantities and numerals.



## TIP

**There is no independent digital lesson** corresponding to today's Concept Exploration. Students should use digital time to complete other digital lessons in this Mission. If a student has already completed 4 digital lessons this week, they should complete digital bonuses from this Mission.

## Warm-Up

### FLUENCY PRACTICE

#### Core Subtraction Fluency Review

**Materials:** (S) Core Subtraction Fluency Review (Lesson 8 Core Subtraction Fluency Review)



**NOTE:** This fluency activity assesses students' progress toward full understanding of the expected subtraction fluency for first graders. If students have done this activity before, encourage them to remember how many problems they answered yesterday and celebrate improvement.

Students complete as many problems as they can in three minutes. Choose a counting sequence for early finishers to practice on the back of their papers. When time runs out, read the answers aloud so students can correct their work and celebrate improvement.

#### Digit Detective

**Materials:** (T/S) Personal white board, place value chart (Lesson 2 Template 2)



**NOTE:** This activity reviews the term *digit* and relates it to place value.

The teacher writes a number on a personal white board but does not show students.

T: The digit in the tens place is 2. The digit in the ones place is 3. What's my number? (Signal.)

S: 23.

T: What's the value of the 2? (Signal.)

S: 20.

T: What's the value of the 3? (Signal.)

S: 3.

**YOUR NOTES:**

Repeat the sequence with a ones digit of 1 and a tens digit of 3.

**T:** The digit in the tens place is 1 more than 2. The digit in the ones place is 1 less than 2.  
What's my number? (Signal.)

**S:** 31.

**T:** The digit in the ones place is equal to  $8 - 4$ . The digit in the tens place is equal to  $9 - 7$ .  
What's my number? (Signal.)

**S:** 24.

As with the above example, begin with easy clues, and gradually increase the complexity. Give students the option to write the digits on their place value chart as the teacher says the clues.

**Sequence Sets of Numbers**

**Materials:** (S) Personal white board



**NOTE:** This activity reviews Lesson 8.

Write sets of four numbers within 40 (e.g., 23, 13, 32, 22). Students write and read the numbers from least to greatest and then from greatest to least. Ask questions such as the following:

- How could you use the words greater than or less than to compare 32 and 23?
- Which number has the same digit in the tens place and ones place?
- Which two numbers have the same digit in the tens place?
- Which two numbers have the same digit in the ones place?
- Which number is less than 23?

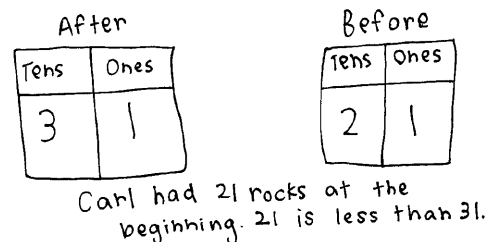
Continue with similar questions and different sets of numbers.

Suggested sets: 13, 11, 31, 1; 17, 27, 21, 12; 38, 18, 25, 35; etc.

**WORD PROBLEM**

Carl has a collection of rocks. He collects 10 more rocks. Now he has 31 rocks. How many rocks did he have in the beginning?

- Use place value charts to show how many rocks Carl had at the beginning.
- Write a statement comparing how many rocks Carl started and ended with, using one of these phrases: *greater than*, *less than*, or *equal to*.




**NOTE:** In this add to with start unknown problem, students are asked to mentally determine what number is 10 less than 31. For students who struggle, a place value chart or manipulatives would be helpful.

## YOUR NOTES:

## Concept Exploration

**Materials:** (T) Double-sided alligator card (Template), comparison cards (Lesson 8 Template)  
(S) Comparison cards (Lesson 8 Template), personal white board

 **NOTE:** When comparing numbers, most students tend to express the comparison by starting with the greater number, regardless of the order of the numbers on the page. For instance, if the numbers 3 and 30 were displayed on the board, students may say 30 is greater than 3. The statement is true, even though the student was not comparing from left to right. The best support for students is to affirm their true remark, and ask them to now compare the numbers starting with the one on the left, pointing to the 3. Examples of this are embedded in the dialogue below.

Gather students in the meeting area with their materials.

**T:** (Project or draw a group of 2 fish and a group of 10 fish with enough room in between the groups to place the alligator picture.) Here is an alligator. He is really hungry. Notice his open mouth. (Trace the shape of the mouth with a finger.) Would this hungry alligator rather eat 2 fish or 10 fish for dinner?

**S:** 10 fish!

**T:** Why would he rather eat the group of 10 fish?

**S:** 10 fish is more than 2 fish! → 10 is greater than 2.

**T:** Yes, terrific. What would we say if we started comparing the numbers from the left, starting with the number 2?

**S:** 2 is less than 10. (Place Alligator A between the fish, showing the alligator facing the group of 10 fish.)

**T:** (Project or draw a group of 15 fish and a group of 10 fish in the same manner.) Which group of fish will the hungry alligator want to eat this time?

**S:** The group of 15 fish!

**T:** Why?

**S:** 15 fish is greater than 10 fish.

**T:** Show or explain how you know that.

**S:** 15 is made of 1 ten and 5 ones. That's more than just 1 ten. → I can show it with my ten-sticks! See? 1 ten and 5 ones is more than 1 ten.

**T:** (Draw a number bond under 15 to show 10 and 5. Turn the card over to Alligator B to show the alligator facing the 15 fish.)

**T:** Now, I will post only numbers. We'll continue to compare them and decide which number the alligator would prefer.

Repeat the process from above with the following suggested sequence of numbers:

- 1 ten and 1 ten 6 ones
- 30 and 20
- 4 tens and 3 tens 8 ones

**YOUR NOTES:**

- 39 and 32
- 14 and 40
- 23 and 32

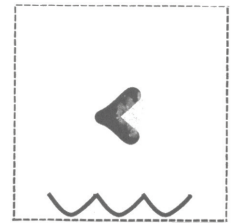
When appropriate, the teacher may want to use the alligator cards to cover up the words *greater than* and *less than* to encourage students to rely on using just the symbols.

With each pair of numbers, encourage students to explain their reasoning. Ask the students to express each number in tens and ones, comparing the tens and the ones in each number as they explain why one number is greater than or less than the other number.

**T:** Now, it's your turn to do this with a partner. Take out your comparison cards. Hold up the card that says less than.

**S:** (Hold up less than card, showing the words.)

**T:** Turn the card over. The wavy water lines should be at the bottom of your card. You will see a part of the alligator's mouth. If you'd like, use a yellow colored pencil to add some teeth to your alligator's mouth. (Demonstrate by adding teeth on the teacher comparison card. In tomorrow's lesson, students erase teeth.)



Repeat this process for the *greater than* card

**T:** Now, we're ready to play Compare It!

**T:** Each of you will write a number from 0 to 40 on your personal white board, without showing your partner. When you are both ready, put them down next to each other. For the first round, Partner A uses her comparison cards to put the alligator picture between the boards, always having the alligator's mouth open to the greater number. Then, Partner B will read the expression from left to right. Each round will last one minute. The object of the game is to see how many different comparisons you can make within each round. You can use tally marks to keep track.

At the end of the first round, have partners use Partner B's comparison cards. Alternate for each round until the students have played for four minutes. During that time, circulate and notice which students are successful and which may need more support. Encourage students to make the game more challenging by varying how they represent the number, using quick tens, place value charts, and writing the numbers as tens and ones. Grouping students by readiness levels facilitates this opportunity to differentiate.

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### **MULTIPLE MEANS OF EXPRESSION**

English language learners may benefit from having sentence frames to refer to, on the board or in their personal white boards, as they read comparison statements from left to right.

\_\_\_\_\_ is greater than \_\_\_\_\_

\_\_\_\_\_ is less than \_\_\_\_\_

As they become more familiar with reading the statement, remove the sentence frame.

YOUR NOTES:

## Wrap-Up

### LESSON SYNTHESIS

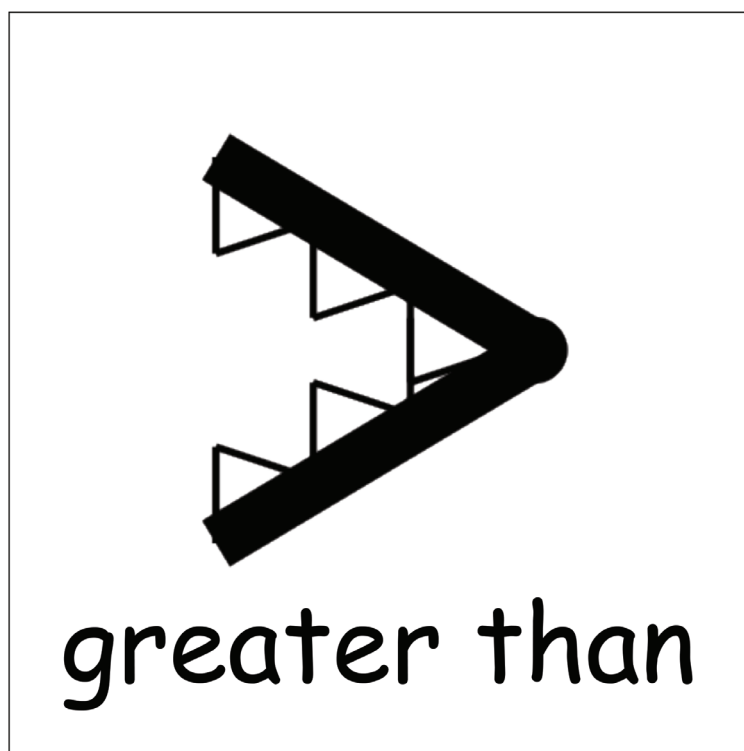
Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- What new math symbols did we use today to compare different numbers? ( $>$  for greater than,  $<$  for less than.)
- What digit could go in the ones place to make this statement true? 12 is greater than 1 \_\_\_\_\_. Can there be more than one answer? Why?
- What digit could go in the tens place to make this statement true? 14 is greater than \_\_\_\_\_ 4. Can there be more than one answer? Why?

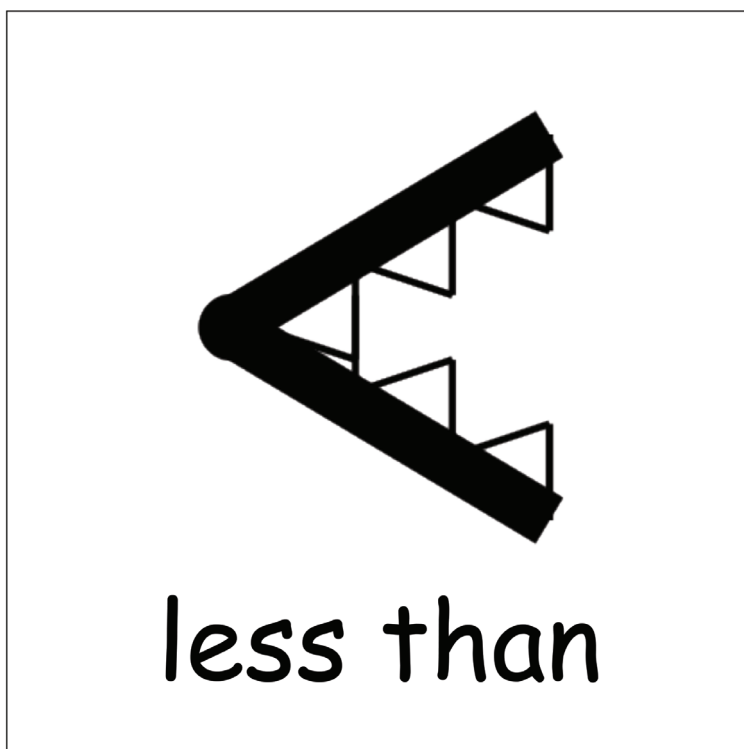
### EXIT TICKET

#### Answers

- |           |           |           |
|-----------|-----------|-----------|
| a. 12, 10 | d. 13, 3  | g. 21, 12 |
| b. 22, 24 | e. 28, 27 | h. 13, 31 |
| c. 25, 17 | f. 21, 30 | i. 23, 32 |

**DOUBLE SIDED ALLIGATOR CARD (TEMPLATE)**

double-sided alligator card. print on cardstock with next page. one copy for teacher only







YOUR NOTES:

# Lesson 10



## TIP

**The teacher materials are optional for this lesson** Students explore these concepts in their Independent Digital Lesson and we recommend that you continue your instruction with the next lesson. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed.

Use the symbols  $>$ ,  $=$ , and  $<$  to compare quantities and numerals.

## Warm-Up

### FLUENCY PRACTICE

#### Digit Detective

**Materials:** (T/S) Personal white board, place value chart (Lesson 2 Template 2)



**NOTE:** This activity was conducted as a teacher-directed fluency in Lesson 9's Fluency Practice. Today, students practice in pairs and compare their numbers using inequality symbols.

Students work in pairs. Each student writes a number from 0 to 40 in his place value chart but does not show his partner. Partners then can either tell which digit is in each place or give addition or subtraction clues about the digits. Partners guess each other's numbers, and then write and say an inequality sentence comparing them. Circulate and ask questions to encourage students to realize that their inequality sentences may be different, but both may be true (e.g.,  $14 < 37$  and  $37 > 14$ ).

### WORD PROBLEM

Elaine and Mike were picking blueberries. Elaine had 19 blueberries and ate 10. Mike had 13 and picked 7 more. Compare Elaine and Mike's blueberries after Elaine ate some and Mike picked some more.

Handwritten student work showing a place value chart for Elaine and Mike, calculations, and a comparison sentence.

Elaine's place value chart: Tens: 1, Ones: 9. Calculation:  $19 - 10 = 9$ .

Mike's place value chart: Tens: 1, Ones: 3. Calculation:  $13 + 7 = 20$ .

Comparison sentence: 9 is less than 20. Elaine has less than Mike.

- YOUR NOTES:**
- Use words and pictures to show how many blueberries each person has.
  - Use the term *greater than* or *less than* in your statement.

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## Concept Exploration

**Materials:** (T) Double-sided alligator card (Lesson 9 Template), comparison cards (Lesson 8 Template), projector (S) Comparison cards (Lesson 8 Template), erasers, personal white board

Gather students in the meeting area with their materials.

**T:** (Project 28 and 37 in place value charts.) Which number would the hungry alligator want to eat?

**S:** 37.

**T:** (Project or hold up the greater than alligator symbol.) Why?

**S:** 37 is greater than 28. → There are more tens in 37 than in 28. → The digit 3 in 37 shows there are more tens in 37 than there are in 28.

**T:** Today, we will use math symbols to compare numbers. You just said that 37 is greater than 28. (Hold up the greater than card with the symbol side showing.) I will use this math symbol to make the number sentence 37 is greater than 28. (Tape card below the alligator, and rewrite the numbers on either side of the symbol.)

**T:** What do you notice is similar between the alligator and the math symbol? Turn and talk with a partner.

**S:** The symbol looks like the alligator's mouth. → The symbol is open on the side that the alligator likes to eat.

**T:** We call this symbol the *greater than* sign.

**T:** (Project 15 and 18 in place value charts.) Can you figure out the symbol we will use between these numbers? Talk with a partner.

**S:** (Share quickly.) The *less than* sign!

**T:** We need to place the *less than* sign because 15 is *less than* 18. What does this sign look like? Draw it in the air.

**S:** (Draw in the air.)

**T:** Yes, it looks like this. (Draw or tape the *less than* symbol between 15 and 18.) How did you know?

**S:** It is like the alligator's mouth. It should be opened toward the greater number. → The smaller end points to the smaller number. → The open part faces the greater number.

**T:** Today, let's erase the teeth we made on our comparison cards and try to use the math symbol to make true number sentences like the two we just made.

**T:** We will play Compare It! again today. We need someone to remind us of the rules.

- S:** We play with a partner. Each of us writes a number from 0 to 40 on our personal white board, without showing our partner. When we are both ready, we put them down next to each other. For the first round, Partner A uses the cards to put the symbol between the boards.
- T:** Today, Partner B then reads the true number sentence that you made. Remember that we always read the number sentences from left to right. (Demonstrate with the number sentence on the board.)

**YOUR NOTES:**

At the end of the first round, have partners use Partner B's cards. Alternate for each round until the students have played for four minutes. During that time, circulate and notice which students are successful and which may need more support. Encourage students to make the game more challenging by varying how they represent the number, using quick tens, place value charts, and writing the numbers as tens and ones.

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**MULTIPLE MEANS OF ENGAGEMENT**

Connect learning to areas of interest. Students who enjoy writing can be given the challenge to write their own Word Problem using tens and ones. Practicing writing skills during math is a great cross-curricular activity. Students can also present their problems to the class to solve.

A few students should keep the teeth on their alligators while the rest of the class removes their teeth. This helps the class see that the symbols are the same with or without teeth. The students who initially keep their teeth can be those who may need additional support reading the statements correctly. At some point during the lesson, switch the job to other students to support movement toward greater independence.

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## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

## YOUR NOTES:

<b>Lesson 10</b> G:1 M:4	<b>The Hungry Alligator</b> <b>ZEARN STUDENT NOTES</b>
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Name: \_\_\_\_\_

Complete: ☐ Date: \_\_\_\_\_

1

SHOW YOUR WORK

27

is greater than

is less than

is equal to

1 ten 7 ones.

27 > 17

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- What are some different ways you can remember each of the symbols?
- Compare 12 and 21 and write a sentence using the greater than sign. What makes it tricky to compare these two numbers?
- Write a true number sentence using the numbers 24 and 21 and the greater than sign. Then write a true number sentence using the numbers 24 and 21 and the less than sign. How are the strategies you use for these two problems different?

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

## Task

## YOUR NOTES:

Circle the correct words to make the sentences true. Use  $>$ ,  $<$ , or  $=$  and numbers to write a true number sentence.

a.

29

is greater than  
is less than  
is equal to

2 tens 6 ones

\_\_\_\_\_ ○ \_\_\_\_\_

b.

1 ten 8 ones

is greater than  
is less than  
is equal to

19

\_\_\_\_\_ ○ \_\_\_\_\_

c.

2 tens 9 ones

is greater than  
is less than  
is equal to

40

\_\_\_\_\_ ○ \_\_\_\_\_

d.

39

is greater than  
is less than  
is equal to

4 tens 0 ones

\_\_\_\_\_ ○ \_\_\_\_\_

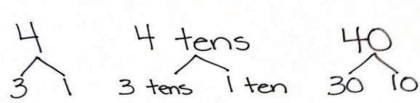
## Answers

- a. circled is greater than;  $29 > 26$
- b. circled is less than;  $18 < 19$
- c. circled is less than;  $29 < 40$
- d. circled is less than;  $39 < 40$

TOPIC C

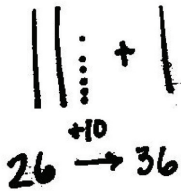
Addition and Subtraction of Tens

In Topic C, students continue from their previous work with 10 more and 10 less to extend the concept to adding and subtracting multiples of 10.



In Lesson 11, students represent the addition of ten more with concrete objects and number bonds, first using the numeral and then writing as *units* of ten, as shown to the right. After creating such number bonds for several examples, students notice that only the *unit* has changed (e.g., 3 bananas + 1 banana = 4 bananas, just as 3 tens + 1 ten = 4 tens). As students explore, they see that this relationship is present, even when adding more than 1 ten. They come to realize that 2 tens + 2 tens = 4 tens, just as 2 + 2 = 4. Students also explore this relationship with subtraction, seeing that 4 tens can be decomposed as 3 tens and 1 ten and that 4 tens – 3 tens = 1 ten, just as 4 – 3 = 1. Students see that the arrow is used to show the addition or subtraction of an amount, regardless of whether the number is increasing (adding) or decreasing (subtracting). This provides an important foundation for applying strategies such as the make ten strategy, which is described in Topic D.

In Lesson 12, students add multiples of 10 to two-digit numbers that include both tens and ones. They recognize that, when tens are added to a number, the ones remain the same. Students use the cubes within their kits of 4 ten-sticks, as well as the more abstract manipulatives of dimes and pennies, to explore the concept. They represent their computation in familiar ways such as number bonds, quick ten drawings, arrow notation, and by using the place value chart to organize the quantities as tens and ones.



Objective	
Topic C	Addition and Subtraction of Tens
Lesson 11	Add and subtract tens from a multiple of 10.
Lesson 12	Add tens to a two-digit number.

Note on Pacing for Differentiation

If you are using the Zearn Math recommended weekly schedule that consists of four “Core Days” when students learn grade-level content and one “Flex Day” that can be tailored to meet students’ needs, we recommend omitting the optional lessons in this mission during the Core Days. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed. This schedule ensures students have sufficient time each week to work through grade-level content and includes built-in weekly time you can use to differentiate instruction to meet student needs.

Optional lesson for Topic C

Lesson 11.

YOUR NOTES:

# Lesson 11

Add and subtract tens from a multiple of 10.



## TIP

**The teacher materials are optional for this lesson.** Students explore these concepts in their Independent Digital Lesson and we recommend that you continue your instruction with the next lesson. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed.

## Warm-Up

### FLUENCY PRACTICE

#### Compare Numbers

**Materials:** (S) Personal white board



**NOTE:** In this fluency activity, students review Lesson 10 and use their understanding of place value to compare numbers.

Say and write sets of numbers from 0 to 40 in various ways (e.g., as numerals, as tens and ones, the Say Ten way). Students write a number sentence in the same order it is written on the board and then read their sentences aloud.

Suggested sets:

- 5 and 8, 15 and 18, 25 and 28
- 6 and 3, ten 6 and ten 3, 2 tens 6 and 2 tens 3
- 3 and 3, 3 tens and 3 tens, 3 tens and 3 ones
- 3 and 4, 3 tens 4 ones and 4 tens 3 ones, 3 ones 4 tens and 4 ones 3 tens

Teacher:

5 ○ 8  
15 ○ 8  
25 ○ 28

Student:

5 < 8  
15 < 8  
25 < 28

Teacher:

6 ○ 3  
ten 6 ○ ten 3  
2 tens 6 ○ 2 tens 3


Student:

6 > 3  
16 > 13  
26 > 23

## YOUR NOTES:

## Number Bond Addition and Subtraction


Materials: (S) Personal white board

 **NOTE:** By reviewing the relationship between addition and subtraction within 10, students approach today's problem types with familiar strategies. In today's lesson, students make the connection that differences for multiples of 10 such as  $40 - 30$  can be viewed as 4 tens – 3 tens.

$$\begin{array}{r} 4 \\ \wedge \\ 3 \end{array} \quad \begin{array}{l} 4 - 3 = \boxed{1} \\ 3 + \boxed{1} = 4 \end{array}$$

Write a number bond for a number between 0 and 10 with a missing part. Students write an addition and a subtraction sentence to find the missing part and solve.


## Happy Counting by Tens

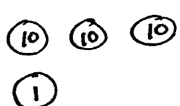
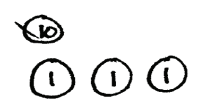
 **NOTE:** Reviewing Happy Counting by Tens prepares students to recognize the efficiency of counting groups of 10 in today's lesson.

Happy Count by tens the regular way and Say Ten way from 0 to 120 (see Lesson 1). To reinforce place value, try alternating between counting the regular way and the Say Ten way.

## WORD PROBLEM

Sharon has 3 dimes and 1 penny. Mia has 1 dime and 3 pennies. Whose amount of money has a greater value?

 **NOTE:** Money is used in this problem as a way to extend place value concepts and continue to familiarize students with coins and their value.

<p>S</p>  <p>31 cents</p>	<p>M</p>  <p>13 cents</p>
<p>Sharon has more dimes. She has the greater value.</p>	

## Concept Exploration

**Materials:** (T) Chart paper (S) Personal white board, number bond/number sentence set (Template)

Students sit in the meeting area in a semicircle formation.

**T:** (Write  $2 + 1$  on the chart. Call up two volunteers.) Using your magic counting sticks, show us  $2 + 1$ .

**S:** (Student A shows 2 fingers. Student B shows 1 finger.)

**T:** How many fingers are there? Say the number sentence.

**S:**  $2 + 1 = 3$ .

$$\begin{array}{r} 2 + 1 = 3 \\ 00 + 0 \end{array} \quad \begin{array}{r} 3 \\ \swarrow \searrow \\ 2 \quad 1 \end{array}$$



T: (Complete the number sentence on the chart.)



**YOUR NOTES:**

On their personal white boards, have students write the number sentence, use math drawings to show  $2 + 1 = 3$ , and make a number bond as the teacher records the information in a chart.

T: Let's pretend these circles stand for bananas! Say the number sentence using bananas as the unit.

S: 2 bananas + 1 banana = 3 bananas.

T: (Call for an additional volunteer to join the two volunteers.) Show us 2 tens + 1 ten using your magic counting sticks.

S: (Clasp hands to show 2 tens and 1 ten.)

T: (Help the first two students stand closer together to show 20.)

T: (Point to the first two students.) How many tens do we have here?

S: 2 tens.

T: (Point to the third student.) How many tens do we have here?

S: 1 ten.

T: How many tens are there in all?

S: 3 tens.

T: Say the number sentence using the unit tens.

(If students struggle, say, "Say the number sentence starting with 2 tens.")

S: 2 tens + 1 ten = 3 tens.

T: (Record the number sentence on the chart.)

$$\begin{array}{r}
 2 + 1 = 3 \\
 \text{oo} + \text{o} \\
 \hline
 2 \text{ tens} + 1 \text{ ten} = 3 \text{ tens} \\
 \begin{array}{c} || + | \\ \hline \end{array}
 \end{array}
 \quad
 \begin{array}{c}
 3 \\
 \swarrow \searrow \\
 2 \quad 1 \\
 \hline
 3 \text{ tens} \\
 \swarrow \searrow \\
 2 \text{ tens} \quad 1 \text{ ten}
 \end{array}$$

Have students write the number sentence, use math drawings, and make a number bond. Chart their responses as shown to the right.

Repeat the process, and record the following suggested sequence on the chart: 3 tens + 1 ten, 2 tens + 2 tens, and 1 ten + 3 tens. Progress through the units from ones to bananas to tens (e.g.,  $3 + 1 = 4 \rightarrow 3 \text{ bananas} + 1 \text{ banana} = 4 \text{ bananas} \rightarrow 3 \text{ tens} + 1 \text{ ten} = 4 \text{ tens}$ ). Have students write the number sentence, make math drawings, and write the number bond (using the same format from the teacher-generated chart) for each problem. These charts are used later in this lesson.

T: (Point to the first problem on the chart.) Hmmm, how can knowing  $2 + 1 = 3$  help us with 2 tens + 1 ten? Turn and talk to your partner.

S: 2 tens + 1 ten = 3 tens is just like  $2 + 1 = 3$ .  $\rightarrow$  It's 2 things and 1 thing make 3 things. 2 circles and 1 circle make 3 circles. 2 bananas and 1 banana make 3 bananas. 2 tens and 1 ten make 3 tens!

$2 + 1 = 3$ $\text{oo} + \text{o}$	$\begin{array}{c} 3 \\ \swarrow \searrow \\ 2 \quad 1 \end{array}$
<hr/>	
$2 \text{ tens} + 1 \text{ ten} = 3 \text{ tens}$ $\begin{array}{c}    +   \\ \hline \end{array}$	$\begin{array}{c} 3 \text{ tens} \\ \swarrow \searrow \\ 2 \text{ tens} \quad 1 \text{ ten} \end{array}$
<hr/>	
$20 + 10 = 30$ Chart 1	$\begin{array}{c} 30 \\ \swarrow \searrow \\ 20 \quad 10 \end{array}$

**YOUR NOTES:**

T: The numbers stay the same. The numbers, 2 and 1 and 3, stay the same, but the *units* change.



T: (Call up three volunteers to show 2 tens + 1 ten = 3 tens again.) Now, unbundle your magic counting sticks.

S: (Open hands to show 10 fingers.)

T: (Point to the first two students.) What did 2 tens become?

S: 20.

T: (Point to the third student.) What did 1 ten become?

S: 10.

T: What is  $20 + 10$ ? Say the number sentence.

S:  $20 + 10 = 30$ .

T: (Write the number sentence on the chart.) When we say  $20 + 10 = 30$ , we'll call this the regular way. When we say the place value units, 2 tens plus 1 ten equals 3 tens, we call this the unit way.

T: Did we change the number of magic counting sticks when we had 2 tens + 1 ten = 3 tens?

S: No.

Elicit responses to make a number bond, and chart responses as shown on Chart 1. Have students fill in the last part of the template on their boards.

Repeat the process by revisiting the previous problems written on the charts, and write them again using only numerals. For example, 1 ten + 3 tens = 4 tens is now written as  $10 + 30 = 40$ .

Next, repeat the process following the suggested sequence for solving subtraction problems as shown on Chart 2:  $30 - 10$ ,  $30 - 20$ ,  $40 - 20$ ,  $40 - 40$ , and  $40 - 0$ . Introduce each expression starting with ones and bananas, then tens, and finally as numerals (e.g.,  $2 - 1 = 1 \rightarrow 2 \text{ bananas} - 1 \text{ banana} = 1 \text{ banana} \rightarrow 2 \text{ tens} - 1 \text{ ten} = 1 \text{ ten} \rightarrow 20 - 10 = 10$ ).

T: (Write 4 tens – 3 tens on the chart.) What parts of the number bond can we fill in with these numbers?

S: 4 tens on top, with 3 tens as one of the parts.  
(Show the number bond with 1 ten still missing.)

T: What addition sentence can we write to match this number bond? Remember, we can say “unknown” or “mystery number” for the part we don’t know yet.

S: 3 tens + “the mystery number” = 4 tens.  
(Record on the chart.)

T: What is the missing part?

S: 1 ten!

T: (Add the missing part to each section.) Say the subtraction sentence and the related addition sentence we created.

S: 4 tens – 3 tens = 1 ten. 3 tens + 1 ten = 4 tens.

$3 - 1 = 2$

$3$

---

3 tens – 1 ten = 2 tens

3 tens

---

$30 - 10 = 20$

Chart 2

30

T: Let's say it the regular way, too.

S:  $40 - 30 = 10$ .  $30 + 10 = 40$ .

Repeat the process as needed to support students' understanding.

**YOUR NOTES:**

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### MULTIPLE MEANS OF REPRESENTATION

The use of charts in the next few lessons provides students with visual guides to use as resources in the classroom as they learn more about place value. Some students may benefit from having a smaller version of the charts in their personal white boards or folders to refer to as needed.

Students demonstrate a true understanding of math concepts when they apply them in a variety of situations. Some students may not be able to make the connection between different number bonds as seen in this lesson. Their path to abstract thinking may be a little longer than others'. Support these students with use of manipulatives and ample practice on their personal white boards.

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## Independent Digital Lesson



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There are no notes for this digital lesson. Go online to see the full digital lesson.

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## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The prompts below may be used to lead the discussion.

- Look at these two number sentences:  $1 \text{ ten} + 2 \text{ tens}$ , and  $3 \text{ tens} - 1 \text{ ten}$ . Use math drawings to explain how these two number sentences are similar.
- Write an addition and subtraction sentence that are related.

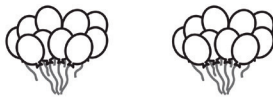
**YOUR NOTES: EXIT TICKET**

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task**

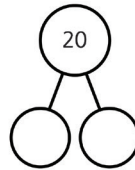
Complete the number bonds and number sentences.

1.

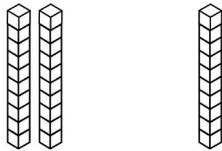


$$1 \text{ ten} + 1 \text{ ten} = \underline{\hspace{2cm}} \text{ tens}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = 20$$

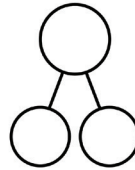


2.



$$\underline{\hspace{2cm}} \text{ tens} = \underline{\hspace{2cm}} \text{ tens} + \underline{\hspace{2cm}} \text{ ten}$$

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

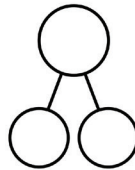


3.

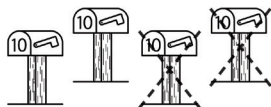


$$\underline{\hspace{2cm}} \text{ tens} - \underline{\hspace{2cm}} \text{ ten} = \underline{\hspace{2cm}} \text{ tens}$$

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

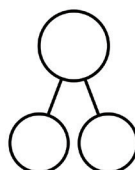


4.



$$\underline{\hspace{2cm}} \text{ tens} - \underline{\hspace{2cm}} \text{ tens} = \underline{\hspace{2cm}} \text{ tens}$$

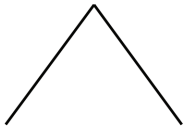
$$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



**Answers****YOUR NOTES:**

1. 2;  $10 + 10$ ; 10, 10
2. 3, 2, 1; 30, 20, 10; 30, 20, 10
3. 3, 1, 2; 30, 10, 20; 30, 20, 10
4. 4, 2, 2; 40, 20, 20; 40, 20, 20

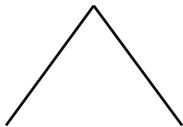
NUMBER BOND/NUMBER SENTENCE SET (TEMPLATE)



ten

ten

ten



# Lesson 12

YOUR NOTES:

Add tens to a two-digit number.

**TIP**

**There is no Independent Digital Lesson** corresponding to today's Concept Exploration. Students should use digital time to complete other digital lessons in this Mission. If a student has already completed 4 digital lessons this week, they should complete digital bonuses from this Mission.

## Warm-Up

### FLUENCY PRACTICE

#### Add and Subtract Tens Within 40

**Materials:** (S) Personal white board



**NOTE:** This fluency activity strengthens students' understanding of the relationship between addition and subtraction while providing practice with adding and subtracting multiples of 10.

Write two related addition and subtraction sentences using 0–4 tens in unit form (e.g., 4 tens – 3 tens =  $\square$  ten(s) and 3 tens +  $\square$  ten(s) = 4 tens). Students convert the number sentences to numeral form and solve (e.g.,  $40 - 30 = 10$  and  $30 + 10 = 40$ ).

#### Count by Tens with Coins

**Materials:** (T) Enlarged pennies and dimes (Fluency Template)



**NOTE:** Reviewing counting by tens prepares students to add multiples of 10 in today's lesson.

Print and prepare 10 enlarged dimes and 6 enlarged pennies. Sit in a circle with students. Lay out and remove dimes to direct students to count forward and backward by tens within 100. Then, lay out 6 pennies, and add and remove dimes to count by tens, starting at 6 (e.g., 6, 16, 26,...).

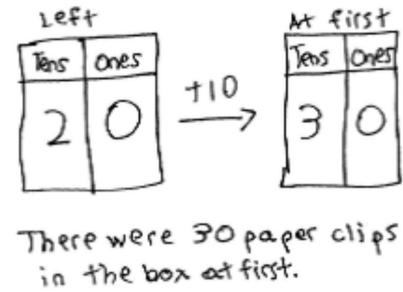
## YOUR NOTES:

## WORD PROBLEM

Thomas has a box of paper clips. He used 10 of them to measure the length of his big book. There are 20 paper clips still in the box. Use the arrow way to show how many paper clips were in the box at first.



**NOTE:** This take apart with start unknown problem allows students to review the concept of mentally adding or subtracting 10 and using arrow notation to express their understanding. Some students may show their solution as  $20 + 10 = 30$ , while others may solve using  $30 - 10 = 20$ . Accept both solutions.



## Concept Exploration

**Materials:** (T) 4 ten-sticks, 4 dimes, and 10 pennies from personal math toolkit, double place value chart drawn on chart paper (S) 4 ten-sticks, 4 dimes, and 10 pennies from personal math toolkit, personal white board, addition and subtraction cards (Template)



**NOTE:** The cards for the game Addition and Subtraction with Cards are labeled with the letter *c* to indicate that these cards correspond with the concepts taught in Topic C. Additional cards are created in future topics with their corresponding topic letters.

Have students gather in the meeting area in a semicircle formation with their materials.

T: Using your linking cubes, show me 13.

S: (Show 1 ten-stick and 3 ones.)

T: (Point to the chart.) Let's fill out the place value chart. How many tens and ones are here?

S: 1 ten 3 ones.

T: (Write +10 above the arrow.) Do what the arrow shows, and show how many cubes we'll have next.

S: (Add a stick of 10.)

T: How many cubes are there now?

S: 23.

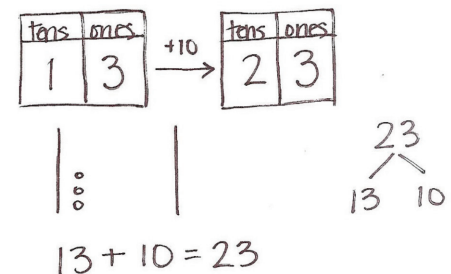
T: Say the number sentence, beginning with the number of cubes we started with.

S:  $13 + 10 = 23$ .

T: Use the quick ten drawing to show how we got 23.

S: (Draw.)

T: (Draw after the students have shown their work.) Which digit changed, and which digit remained the same? Turn and talk to your partner, and explain your thinking.





**YOUR NOTES:**

**S:** The digit in the tens place changed because we added 1 ten. We didn't touch the ones.  
 → 1 ten more than 1 ten is 2 tens. That's why we have 2 in the tens place. We didn't add anything to the ones, so the ones digit stays at 3.

**T:** Write the number bond that shows how we changed 13 to make 23.

**S:** (Write 23 as the whole with 13 and 10 as the parts.)

Continue the process following the suggested sequence where the unknown is in the sum:  $16 + 10$ ,  $26 + 10$ ,  $15 + 20$ , and  $20 + 18$ . Next, have students use their ten-sticks and drawings to solve problems in which the unknown appears as the change or the starting number:  $13 + \underline{\hspace{1cm}} = 23$ ,  $16 + \underline{\hspace{1cm}} = 36$ ,  $\underline{\hspace{1cm}} + 10 = 35$ , and  $\underline{\hspace{1cm}} + 20 = 37$ .

**T:** Show me 24 using your dimes and pennies.

**S:** (Show 2 dimes and 4 pennies.)

**T:** How many tens and ones are in 24?

**S:** 2 tens 4 ones.

**T:** (Fill in the place value chart. Write + 10 above the arrow.) Do what the arrow way says.

**S:** (Add 1 dime.)

**T:** How many tens are there now?

**S:** 3 tens.

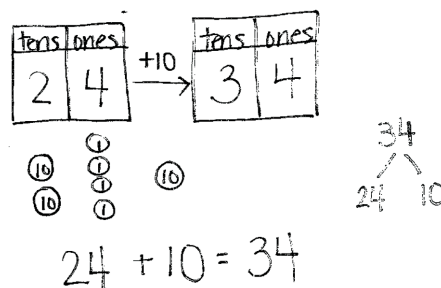
**T:** How many ones are there?

**S:** 4 ones.

**T:** Let's use coin drawings to show what you did. (Model by using circles marked with 10 or 1 to show dimes and pennies.)

**T:** Say the number sentence.

**S:**  $24 + 10 = 34$ .



Continue the process following the suggested sequence:

$15 + 10$ ,  $15 + 20$ ,  $17 + 20$ ,  $10 + 17$ ,  $20 + 14$ ,  $18 + \underline{\hspace{1cm}} = 28$ , and  $18 + \underline{\hspace{1cm}} = 38$ .

Have students play a game called Addition and Subtraction with Cards.

1. Students place the deck of cards facedown between them.
2. Each partner flips over one card, solves the problem, and then says the number sentence.
3. The partner with the greater total wins the cards. (If the totals are equal, leave the cards until the next round when one student does have a greater total.)

After the first minute of play, change the rules so that the person with the total that is less wins the cards. Alternate between the two rules for the remaining time.

**YOUR NOTES:****MULTIPLE MEANS OF REPRESENTATION**

Students may still struggle with coin values. With more frequent opportunities to engage students and relate the value of these coins to tens and ones, students have more success making the connections.

Moving forward in small steps is what some students need. It may be necessary to explicitly connect coin drawings to quick ten drawings so that students start to see the relationship between coins and quick ten drawings. Displaying a chart that shows the quick ten and coin relationship may benefit some students.

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## Independent Digital Lesson



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There are no notes for this digital lesson. Go online to see the full digital lesson.

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## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Draw 2 dimes and 3 pennies. Which coins represent the tens place? Which coins represent the ones place? If you add 1 dime to your 2 dimes and 3 pennies, will the ones place change? Why or why not?

### EXIT TICKET

#### Answers

1. 38; quick tens, the arrow way, or coins drawn
2. 34; quick tens, the arrow way, or coins drawn

**ENLARGED PENNIES AND DIMS (FLUENCY TEMPLATE)**





**ADDITION AND SUBTRACTION CARDS (TEMPLATE)**

$$39 + 1$$

$$30 - 1$$

C

C

$$20 + 20$$

$$10 + 30$$

C

C

$$40 - 20$$

$$40 - 30$$

C

C

$$30 - 20$$

$$30 - 10$$

C

C

$$40 - 40$$

$$30 - 30$$

C

C

$$10 + 14$$

C

$$15 + 20$$

C

$$12 + 20$$

C

$$27 + 10$$

C

$$29 + 10$$

C

$$20 + 19$$

C

$$20 + 16$$

C

$$12 + 20$$

C

**ADDITION AND SUBTRACTION (TEMPLATE)**

<b>39 + 1</b> C	<b>30 - 1</b> C
<b>20 + 20</b> C	<b>10 + 30</b> C
<b>40 - 20</b> C	<b>40 - 30</b> C
<b>30 - 20</b> C	<b>30 - 10</b> C
<b>40 - 40</b> C	<b>30 - 30</b> C

<div><div><div>10 + 14</div><div>C</div></div></div>	<div><div><div>15 + 20</div><div>C</div></div></div>
<div><div><div>12 + 20</div><div>C</div></div></div>	<div><div><div>27 + 10</div><div>C</div></div></div>
<div><div><div>29 + 10</div><div>C</div></div></div>	<div><div><div>20 + 19</div><div>C</div></div></div>
<div><div><div>20 + 16</div><div>C</div></div></div>	<div><div><div>12 + 20</div><div>C</div></div></div>



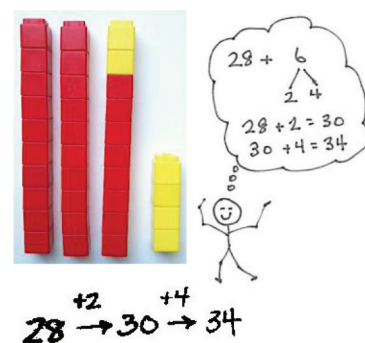
## TOPIC D

# Addition of Tens or Ones to a Two-Digit Number

Topic D begins with students applying the Mission 2 strategies of counting on and making ten to larger numbers, this time making a ten that is built on a structure of other tens. In Lesson 13, students use linking cubes as a concrete representation of the numbers, write a matching number sentence, and write the total in a place value chart. As they add cubes, students see that sometimes a new ten can be made, for example,  $33 + 7 = 40$ , or 4 tens.

In Lesson 14, students use arrow notation to reach the next ten, and then add the remaining amount when adding across ten. For example, when adding  $28 + 6$ , students recognize that they started with 2 tens 8 ones and, after adding 6, had 3 tens 4 ones. Students also use the number bond notation from Mission 2 to represent how they are breaking apart the second addend to make the ten.

Lesson 15 provides the chance to notice the ways smaller addition problems can help with larger ones. Students add  $8 + 4$ ,  $18 + 4$ , and  $28 + 4$  and notice that  $8 + 4$  is embedded in all three problems, which connects to their previous work in Topic C.



Lessons 16, 17, and 18 focus on adding ones with ones or adding tens with tens. During Lesson 16, students recognize single-digit addition facts as they solve  $15 + 2$ ,  $25 + 2$ , and  $35 + 2$ . When adding  $33 + 4$ , students see that they are adding 4 ones to 3 ones, while the tens remain unchanged, to make 3 tens 7 ones or 37. When adding  $12 + 20$ , students see that they are adding 2 tens to 1 ten to make 3 tens 2 ones or 32. In both cases, one unit remains unchanged. Students work at a more abstract level by using dimes and pennies to model each addend. For instance, students model 14 cents using 1 dime and 4 pennies, and add 2 additional dimes or 2 additional pennies.

In Lesson 17, students continue working with addition of like units and making ten as a strategy for addition. They use quick tens and number bonds as methods for representing their work.

During Lesson 18, students share and critique strategies for adding two-digit numbers. They reexamine all of the strategies used thus far in the Mission, including arrow notation, quick tens, and number bonds. Projecting varying correct work samples, students compare for clarity, discussing questions such as the following: Which drawing best shows the tens? Which drawings make it easier to *not* count all? Which number sentence is easiest to relate to the drawing? What is a compliment you would like to give [the student]? What is a way that [the student] might improve his work? How are [Partner A's] methods different from or the same as yours?

$$19 + 2 = 21$$

$$19 + 2 = 21$$

$$\begin{array}{r} 10 \\ 9 \end{array} + 2 = 11$$

$$11 + 10 = 21$$

Adding Ones with Ones

Objective	
Topic D	Addition of Tens or Ones to a Two-Digit Number
Lesson 13	Use counting on and the make ten strategy when adding across a ten.
Lesson 14	Use counting on and the make ten strategy when adding across a ten.
Lesson 15	Use single-digit sums to support solutions for analogous sums to 40.
Lesson 16	Add ones and ones or tens and tens.
Lesson 17	Add ones and ones or tens and tens.
Lesson 18	Share and critique peer strategies for adding two-digit numbers.

Note on Pacing for Differentiation

If you are using the Zearn Math recommended weekly schedule that consists of four “Core Days” when students learn grade-level content and one “Flex Day” that can be tailored to meet students’ needs, we recommend omitting the optional lessons in this mission during the Core Days. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed. This schedule ensures students have sufficient time each week to work through grade-level content and includes built-in weekly time you can use to differentiate instruction to meet student needs.

Optional lessons for Topic D

Lessons 15-16.

YOUR NOTES:

# Lesson 13

Use counting on and the make ten strategy when adding across a ten.

---

## Warm-Up

### FLUENCY PRACTICE

#### Addition and Subtraction with Cards

**Materials:** (S) Addition and subtraction cards (Lesson 12 Template)

 **NOTE:** This fluency game was played during Lesson 12. It reviews adding and subtracting multiples of 10 within 40.


Have students play a game called Addition and Subtraction with Cards.

1. Students place the deck of cards facedown between them.
2. Each partner flips over one card, solves the problem, and then says the number sentence.
3. The partner with the greater total wins the cards. (If the totals are equal, leave the cards until the next round when one student does have a greater total.)

After the first minute of play, change the rules so that the person with the total that is less wins the cards. Alternate between the two rules for the remaining time.

#### Race and Roll Addition

**Materials:** (S) 1 die for each set of partners

 **NOTE:** In this fluency activity, students practice adding and subtracting within 20. The competitive nature of Race and Roll Addition and Subtraction promotes students' engagement while increasing their brains' ability to retain information (since the partners are trying to stand quickly).

All students start at 0. Partners take turns rolling a die, saying a number sentence, and adding the number rolled to the total. For example, Partner A rolls 6 and says, " $0 + 6 = 6$ ," then Partner B rolls 3 and says, " $6 + 3 = 9$ ." They continue rapidly rolling and saying number sentences until they get to 20, without going over. Partners stand when they reach 20. For example, if the partners are at 18 and roll 5, they take turns rolling until one of them rolls a 2 or rolls 1 twice, and then both stand.

## YOUR NOTES:

## Core Addition Fluency Review

**Materials:** (S) Core Addition Fluency Review (Lesson 2 Core Addition Fluency Review)



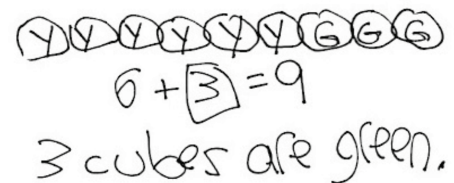
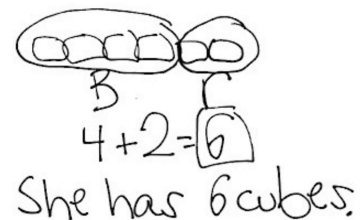
**NOTE:** This fluency activity assesses students' progress toward proficiency in the expected addition fluency for first graders. Differentiated Practice Sets can be found in the appendix for Lesson 23, which may be helpful in supporting students toward these goals.

Students complete as many problems as they can in three minutes. Choose a counting sequence for early finishers to practice on the back of their papers. When time runs out, read the answers aloud so students can correct their work and celebrate improvement.

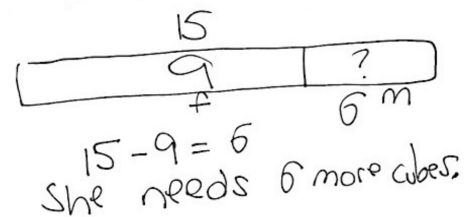
## WORD PROBLEM

Use linking cubes as you read, draw, and write (RDW) to solve the problems.

1. Emi had a linking cube train with 4 blue cubes and 2 red cubes. How many cubes were in her train?
2. Emi made another train with 6 yellow cubes and some green cubes. The train was made of 9 linking cubes. How many green cubes did she use?
3. Emi wants to make her train of 9 linking cubes into a train of 15 cubes. How many cubes does Emi need?



**NOTE:** Throughout Topic D, the Word Problem contains three word problems, sequenced from simple to complex. Limit students' work time to five minutes. The problems are designed to pinpoint student strengths and challenges prior to Topic E, which focuses on word problems. Take note of students who typically struggle to solve the Word Problem but who are successful with the problems in the corresponding Lessons. They may need support moving from concrete to pictorial problem-solving strategies. Also notice which students struggle when the position of the unknown changes.



## Concept Exploration

**Materials:** (T) 4 ten-sticks from the personal math toolkit, place value chart drawn on chart paper (S) 4 ten-sticks from the personal math toolkit, personal white board

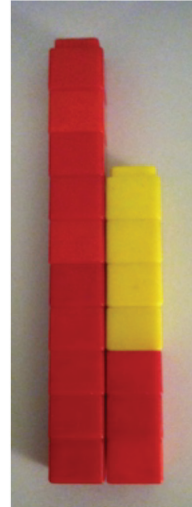
Have students sit in semicircle formation in a meeting area with their personal math toolkits.

**T:** (Show 13 as 1 ten and 3 ones using linking cubes.) How many linking cubes are there?

**S:** 13 linking cubes.

## YOUR NOTES:

- T: (Add 4 more linking cubes of a different color.) How many linking cubes are there now? Turn and talk to your partner about how you know.
- S: There are 17 cubes. I started with 13 and counted on. Thirteeeen, 14, 15, 16, 17. → I added 3 ones and 4 ones. That makes 7 ones. 1 ten and 7 ones is 17. → 4 more than 13 is 17.
- T: Nice thinking! Let's try counting on to find our solution.
- S: (Point as students count.) Thirteeeen, 14, 15, 16, 17.
- T: Now, add the ones first. How many are in the ones place in 13?
- S: 3 ones.
- T: (Point to 3 cubes.) 3 ones and 4 ones is...?
- S: 7 ones.
- T: (Snap the ones cubes together to make 7. Write 7 in the ones place in the place value chart.) How many tens do we have?
- S: 1 ten.
- T: (Write 1 in the tens place in the place value chart.)
- T: 1 ten 7 ones is...?
- S: 17.



**NOTE:** Since there were no changes in tens, another option is to write 1 in the tens place first, and then 7 in the ones place.

- T: What are some different addition sentences we could use to put together 13 cubes and 4 cubes?

S:  $13 + 4 = 17$ . →  $10 + 7 = 17$ . →  $10 + 3 + 4 = 17$ .

- T: Use quick tens to draw the number of linking cubes we started with.

S/T: (Draw 1 quick ten and 3 dots for 3 ones.)

- T: Draw to show the number of cubes we added to 13 using Xs in 5-group column formation.

S/T: (Draw 4 Xs above the 3 circles.)

- T: Say the number sentence using your drawing.

S:  $13 + 4 = 17$ .

- T: Let's use a number bond. (Write  $13 + 4$ .) 13 cubes is 1 ten and 3 ones. (Break 13 apart into 10 and 3.) We next added 3 ones and 4 ones. Use this number bond to solve the problem on your personal white board. Turn and talk to your partner about what you did.

S: First, I added 3 and 4 and got 7. Then, I added 10 and 7 and got 17.

- T: Let's record how we added as 2 number sentences. (Write  $3 + 4 = 7$  and  $10 + 7 = 17$ .) Let's solve another problem. Use your cubes to show 13.



$$\begin{array}{r}
 13 + 4 \\
 \swarrow \quad \searrow \\
 10 \quad 3
 \end{array}$$

$$\begin{array}{r}
 3 + 4 = 7 \\
 10 + 7 = 17
 \end{array}$$

**YOUR NOTES:**

S: (Show 1 ten-stick and 3 individual cubes in a 5-group column.)

T: Using a different color, add 7 more.

S: (Add 7 more cubes using a different color.)

T: How many cubes do you have now? Show your partner what you did, and talk about how you got the answer.

S: I put the 7 cubes next to 13 cubes. I know 3 and 7 is 10. And 10 and 10 is 20. → I stacked 7 cubes on top of the other 3. It made another ten-stick! → Now I see 2 ten-sticks. That's 20.

T: (Model with cubes.) You are right! 3 ones and 7 ones is...?

S: 10 ones.

T: 10 ones is the same as...?

S: 1 ten.

T: How many tens are there now? (Hold up each ten.)

S: 2 tens.

T: Where does the digit 2 go in our place value chart?

S: In the tens place.

T: (Write 2 in the tens place.) Since 3 ones and 7 ones make 1 ten, which we recorded in the tens place (point to place value chart), how many ones do we have now?

S: 0.

T: So we write 0 in the...?

S: Ones place.

T: (Write 0 in the ones place.) Say the number sentence.

S:  $13 + 7 = 20$ .

T: Draw quick tens to show the addition. Explain your drawing to your partner.

S: I framed my 7 crosses and 3 circles to show that I made a ten. ⑧ I drew a long line through my 10 ones to make it look like a quick ten.

T: I love the idea of drawing a line through the new ten to make it look more like a quick ten! (Model.)

T: Make a number bond to show how you added the ones together.

S: (Write  $13 + 7 = 20$  by taking apart 13 into 10 and 3.)

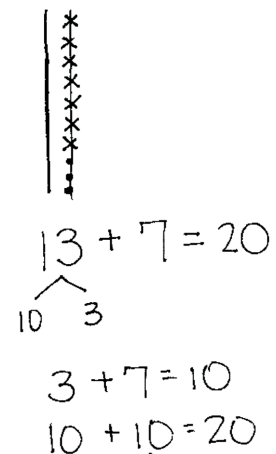
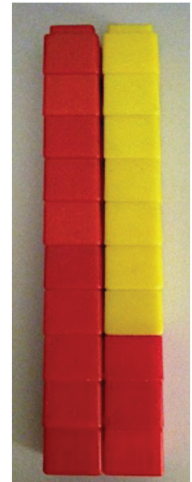
T: How does making the number bond help you solve the problem?

S: I can see easily that I can add 3 and 7. That's 10. Then, I add 10 and 10 and get 20.

T: (Write two number sentences.) Great! Now let's try some more!

Repeat the process using the following sequence:  $17 + 2$ ,  $18 + 2$ ,  $28 + 2$ ,  $23 + 6$ ,  $33 + 6$ ,  $23 + 7$ , and  $33 + 7$ .

As soon as possible, write the addition expression on the board, and have students use quick ten math drawings and number bonds to solve rather than working with linking cubes. Some



students may count on when adding 1 and 2. Counting on becomes less efficient as the second addend increases. When the second addend is larger than 3, encourage students to use Level 3 strategies such as thinking of doubles or using the make ten strategy.

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**YOUR NOTES:****MULTIPLE MEANS OF ACTION AND EXPRESSION**

Students love listening to and learning from music. Find a song on iTunes about place value. One suggestion is “The Place Value Song” by Math Fiesta.

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**MULTIPLE MEANS OF REPRESENTATION**

Often students learn math concepts in an isolated fashion. Although they may be able to use them with familiar problems, they do not see how to transfer their application to new situations. Be sure to incorporate math at other times in the students’ day.

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## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

There are no notes for this digital lesson. Go online to see the full digital lesson.

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## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today’s lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- What strategies did we use today to solve addition problems?
- How does your fluency work with the sums to ten help you in today’s lesson?

### EXIT TICKET

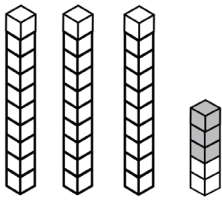
After today’s lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students’

**YOUR NOTES:** understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

### Task

Fill in the place value chart and write a number sentence to match the picture.


1.



tens	ones

\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

2.



tens	ones


\_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_

Draw quick tens, ones, and number bonds to solve. Complete the place value chart.

3.

tens	ones


33 + 6 = \_\_\_\_\_



4.

tens	ones

23 + 7 = \_\_\_\_\_



### Answers

1. 3, 5; 32, 3, 35
2. 3, 0; 26, 4, 30
3. 30, 3; 39; 3, 9; quick ten drawing
4. 20, 3; 30; 3, 0; quick ten drawing



# Lesson 14

YOUR NOTES:

Use counting on and the make ten strategy when adding across a ten.

**TIP**

**There is no Independent Digital Lesson** corresponding to today's Concept Exploration. Students should use digital time to complete other digital lessons in this Mission. If a student has already completed 4 digital lessons this week, they should complete digital bonuses from this Mission.

## Warm-Up

### FLUENCY PRACTICE

#### Addition Within 40: Counting On



**NOTE:** This fluency activity reviews Lesson 13. Some students may count on, as they learned to do in Lesson 13. Others may already make the connection between the single-digit addition facts and their analogous addition sentences. As always, pause to provide thinking time.

T:  $5 + 2$  is...? (Snap.) Give me the number sentence.

S:  $5 + 2 = 7$ .

T:  $10 + 7$  is...? (Snap.)

S:  $10 + 7 = 17$ .

T:  $15 + 2$  is...? (Snap.)

S:  $15 + 2 = 17$ .

Continue with  $25 + 2$  and  $35 + 2$ . Repeat, beginning with other single-digit addition facts with sums to 10. Make sure one addend is conducive to counting on (e.g., 1, 2, or 3).

#### Get to 10

**Materials:** (T) Rekenrek



**NOTE:** In this fluency activity, students apply their knowledge of partners to ten to find analogous partners to 20, 30, and 40, which prepares them for today's lesson.

For the first minute, say numbers 0–10. Students say partners to ten on your snap. Then, take out the Rekenrek.


**YOUR NOTES:**

T: (Show 9.) Say the number.  
S: 9.  
T: Give me the number sentence to make ten.  
S:  $9 + 1 = 10$ .  
T: (Move 1 bead to make 10. Show 19.)  
T: Say the number.  
S: 19.  
T: Give me the number sentence to make 20.  
S:  $19 + 1 = 20$

Suggested sequence: 29, 39; 5, 15, 25, 35; 8, 18, 28, 38; 7, 17, 27, 37; etc.

Make Ten Addition with Partners

**Materials:** (S) Personal white board

 **NOTE:** This fluency activity reviews how to use the Level 3 strategy of making ten to add two single-digit numbers. In today’s lesson, students learn how to apply this strategy when adding a one-digit number to a two-digit number.

- Assign partners of equal ability.
- Partners choose an addend from 1 to 10 for each other.
- On their personal white boards, students add their number to 9, 8, and 7. Remind students to write the two addition sentences they learned in Mission 2.
- Partners then exchange boards and check each other’s work.

$\begin{array}{r} 9 + 5 = 14 \\ 1 \quad \nearrow \quad 4 \end{array}$	$\begin{array}{r} 8 + 5 = 13 \\ 2 \quad \nearrow \quad 3 \end{array}$	$\begin{array}{r} 7 + 5 = 12 \\ 3 \quad \nearrow \quad 2 \end{array}$
$\begin{array}{l} 9 + 1 = 10 \\ 10 + 4 = 14 \end{array}$	$\begin{array}{l} 8 + 2 = 10 \\ 10 + 3 = 13 \end{array}$	$\begin{array}{l} 7 + 3 = 10 \\ 10 + 2 = 12 \end{array}$

MULTIPLE MEANS OF ENGAGEMENT


Carefully selecting pairs for collaborative work is essential to achieving expected outcomes. Some lessons lend themselves to groupings of students with similar skill sets, while others work better when students are heterogeneously grouped. Some students might benefit from the opportunity to work independently and share with the teacher or another pair after they have completed the task.

WORD PROBLEM

- Use linking cubes and the RDW process to solve one or more of the problems.
- a. Emi had a linking cube train of 7 cubes. She added 4 cubes to the train. How many cubes are in her linking cube train?

- b. Emi made another train of linking cubes. She started with 7 cubes and added some more cubes until her train was 9 cubes long. How many cubes did Emi add?
- c. Emi made one more train of linking cubes. It was made of 8 linking cubes. She took some cubes off, and then her train was 4 linking cubes long. How many cubes did Emi take off?

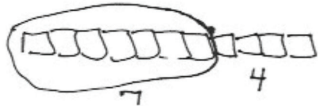
**YOUR NOTES:**

 **NOTE:** Each problem is successively more challenging. Remind children that they are not expected to complete all three, but instead to do their best during the five-minute time frame.

Notice which students are successful with the first problem, where the unknown number is the result, or total, but who struggle with later problems where the unknown number is in a different position. Keep track of this analysis in preparation for Topic E instruction, where it might be useful to select or emphasize particular problem types.

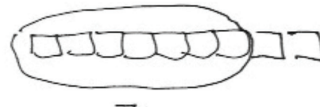
The similarity to Lesson 13's problems is intended to promote perseverance and confidence for students who may be struggling with Word Problems at this point in the year. For students who are successful with all problems, challenge them to find the total of all the cubes used, ask how many more cubes the first train has than the last, or encourage them to write their own additional linking cube train story.

a




$7 + 4 = 11$   
She has 11 cubes

b



$7 + 2 = 9$   
She added 2 cubes


c



$8 - 4 = 4$   
Emi took off 4 cubes

## Concept Exploration

**Materials:** (T) 4 ten-sticks, chart paper (S) 4 ten-sticks from the math toolkit, personal white board

 **NOTE:** During today's lesson, the make ten strategy is used. This requires students to break apart the single-digit addend, as in Mission 2, whereas in the last lesson they broke apart the double-digit addend. This is part of how students gain confidence in using number bonds flexibly.

Have students sit in a semicircle formation in the meeting area with their materials.

T: (Write  $19 + 3$  on the chart.) How many cubes do I start with?

S: 19 cubes. → 1 ten-stick and 9 ones. → You also need 3 ones.

T: (Show  $19 + 3$  with cubes.) Turn and talk to your partner about how you can solve  $19 + 3$ .

While students discuss, circulate and listen for sharing of both counting on and make ten strategies.

T: (Ask student volunteers to share their strategies.)

**YOUR NOTES:**

**S:** I can count on. Nineteen, 20, 21, 22. → You can make another ten. 9 plus 1 more makes 10. 2 tens, and then you still have 2 ones left. → 19 and 1 is 20. 20 + 2 is 22.

**T:** Just like we did yesterday, we can make a new ten-stick! How many more ones to make 19 get to the next ten, 20?

**S:** 1.

**T:** From where can we get the 1?

**S:** From the 3.

**T:** (Hold up 3 cubes. Break off 1 cube, and complete a ten-stick.) How many tens are there now?

**S:** 2 tens.

**T:** How many ones are left?

**S:** 2 ones.

**T:** What is 2 tens and 2 ones?

**S:** 22.

**T:**  $19 + 3$  is...?

**S:** 22.

**T:** Excellent work! Let's try some more!

Have students collaborate with their partners and combine their linking cubes to find the sum for each addition expression following the suggested sequence:  $18 + 4$ ,  $28 + 4$ ,  $26 + 5$ ,  $26 + 7$ , and  $15 + 8$ . When appropriate, have students also draw quick tens to show how they solved the problems. (See image to the right.)

**T:** (Write  $19 + 3$  on the board again and represent the expression using linking cubes.) Let's record what we did to solve  $19 + 3$  using a number bond. Can we make a ten?

**S:** Yes.

**T:** How many more do we need to get to the next ten from 19?

Where can we get that amount?

**S:** Take 1 from the 3.

**T:** (Ask a student volunteer to take 1 from 3 using the linking cubes.)

Look at what we did with 3 to make the next ten. We broke 3 into...?

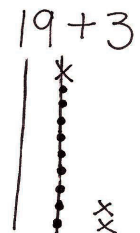
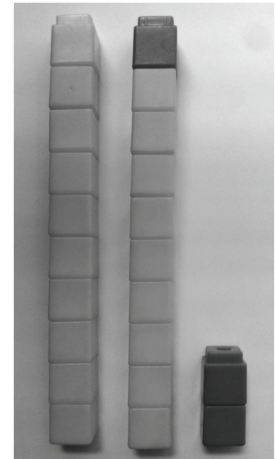
**S:** 1 and 2.

**T:** (Make a number bond as shown to the right.) What is 19 and 1?

**S:** 20.

**T:** (Write  $19 + 1 = 20$ .) 20 and 2 is...?

**S:** 22.



$$19 + 3 = 22$$

$\swarrow \searrow$   
 1    2

$$19 + 1 = 20$$

$$20 + 2 = 22$$

$$19 \xrightarrow{+1} 20 \xrightarrow{+2} 22$$

**YOUR NOTES:**

**T:** (Write  $20 + 2 = 22$ .) Let's use the arrow way to record what we did. (Write 19 and model the arrow way while talking through the notation.) We started with 19 and then added 1 to make the next ten, which is 20. Then, we had 2 left over, so we added 2 to 20 to get to 22.

**T:** So,  $19 + 3 = \dots$ ?

**S:** 22.

Repeat the process following the suggested sequence:  $29 + 3$ ,  $19 + 5$ ,  $18 + 3$ ,  $17 + 3$  (use 1 arrow),  $26 + 3$  (use 1 arrow),  $26 + 7$ , and  $28 + 7$ .

When appropriate, have students choose to use only number bonds with two number sentences or the arrow way to solve instead of using the linking cubes. When sharing solutions, students should show their notations and explain their choices.

---

### **MULTIPLE MEANS OF ACTION AND EXPRESSION**

Giving students an opportunity to share their thinking allows them to evaluate their process and practice. English language learners also benefit from hearing other students explain their thinking.

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## **Wrap-Up**

### **LESSON SYNTHESIS**

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- How did we record the ways we added today?
- (Post the chart using a number bond and the arrow way to solve  $19 + 3$ .) Do you notice any similarities in our number bond and the arrow way?

### **EXIT TICKET**

#### **Answers**

**YOUR NOTES:**

1. Quick ten drawing; 18; 1, 8
2. Quick ten drawing; 20; 2, 0
3. Quick ten drawing; 23; 2, 3
4. 30, 2; 39; 3, 9; work shown may vary.
5. 4, 5; 35; 3, 5; work shown may vary.



YOUR NOTES:

# Lesson 15



## TIP

**The teacher materials are optional for this lesson.** Students explore these concepts in their Independent Digital Lesson and we recommend that you continue your instruction with the next lesson. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed.

Use single-digit sums to support solutions for analogous sums to 40.

## Warm-Up

### FLUENCY PRACTICE

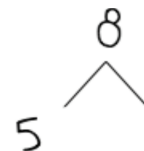
#### Number Bond Addition and Subtraction

**Materials:** (S) Personal white board



**NOTE:** This fluency activity builds a student's ability to add and subtract within 10 while reinforcing the relationship between addition and subtraction.

Write a number bond for a number between 0 and 10, with a missing part or whole. Students write an addition and a subtraction sentence with a box for the missing number in each equation. They then solve for the missing number.



$$5 + \boxed{3} = 8$$

$$8 - 5 = \boxed{3}$$

#### Make Ten Addition with Partners

**Materials:** (S) Personal white board



**NOTE:** This fluency activity reviews how to use the Level 3 strategy of making ten to add two single-digit numbers. Reviewing the make ten strategy prepares students for today's lesson, in which they systematically connect these problem types to analogous problems within 40 (e.g., students make ten to solve  $9 + 5$  and then apply the same strategy to solve  $19 + 5$  and  $29 + 5$ ).



**YOUR NOTES:** Repeat the activity from Lesson 14.

## Add Tens



**NOTE:** This fluency activity reviews adding multiples of 10, which helps prepare students for today's lesson.

**T:** (Flash 3 on fingers. Pause.) Add ten. The total is...?

**S:** 13.

**T:** (Flash 3 again.) Add 2 tens. The total is...?

**S:** 23.

Continue flashing numbers from 0 to 10 and instructing students to add multiples of 10. After a minute, say the multiples of 10 the regular way (e.g., 20 instead of 2 tens). For the last minute, say teen numbers and instruct students to add 10 or 2 tens or 20.

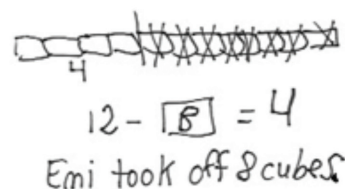
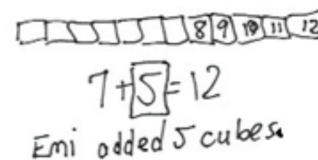
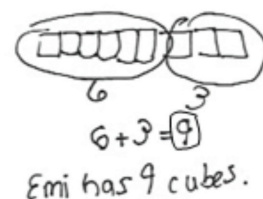
## WORD PROBLEM

Today, students should focus on pictorial representations. They should solve without using linking cubes. They read, draw, and write (RDW) to solve one or more of the problems.

1. Emi had a linking cube train of 6 cubes. She added 3 cubes to the train. How many cubes are in her linking cube train?
2. Emi made another train of linking cubes. She started with 7 cubes and added some more cubes until her train was 12 cubes long. How many cubes did Emi add?
3. Emi made one more train of linking cubes. It was made of 12 linking cubes. She took some cubes off, and her train became 4 linking cubes long. How many cubes did Emi take off?



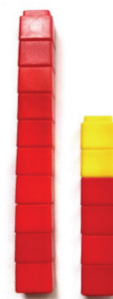
**NOTE:** Continue to notice students' strengths and challenges with each problem type presented. Encourage students who seem to struggle when the linking cubes have been removed to visualize, imagine, or draw the cubes, as shown in the student work to the right.



## Concept Exploration

**Materials:** (T) 5 ten-sticks (e.g., 4 red and 1 yellow), chart paper (S) 4 ten-sticks from the math toolkit, personal white board

Students gather in the meeting area with their materials.



## YOUR NOTES:

T: (Show 4 red and 2 yellow cubes in a stick.) What is the addition sentence that matches the cubes?

S:  $4 + 2 = 6$ .

T: (Record on the chart. Place a red ten-stick to the left of 4 and 2 cubes, showing  $14 + 2$ .) How many linking cubes are there now?

S: 16.

T: What is the number sentence to add these red and yellow cubes?

S:  $14 + 2 = 16$ .

T: (Record on the chart. Add another red ten-stick, showing  $24 + 2$ .) How many linking cubes are there now? Say the number sentence. (Allow time for students to think of their answers.)

$$4 + 2 = 6$$

$$14 + 2 = 16$$

S:  $24 + 2 = 26$ .

$$24 + 2 = 26$$

T: (Record on the chart.) What do you think I'll do next? Turn and talk to your partner.

$$34 + 2 = 36$$

S: You'll add another ten-stick. → The next problem will be  $34 + 2$ .

T: You're right. (Add another red ten-stick, showing  $34 + 2$ .) How many linking cubes are there now? Say the number sentence. (Allow time for students to think of their answers.)

S:  $34 + 2 = 36$ .

T: (Record on the chart.) Many of you got the answer to these questions very quickly. Why? Turn and talk to your partner.

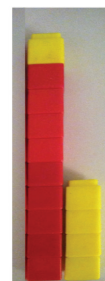
S: The digit in the tens place in the first addend keeps going up. The same thing is happening to the answers, too. → This reminds me of when we added only tens to a number. The ones digit stayed the same, but the tens digit changed. → We're always adding 4 and 2. In every problem, the tens are changing, but the ones are not because we are not touching the ones.

T: Great observations! Let's try another problem.

T: (Write and show  $9 + 5$  with 9 red and 5 yellow linking cubes.) Talk to your partner about how you can solve  $9 + 5$ .

S: I can count every cube. → I can count on from 9. → I can make ten first.  $10 + 4 = 14$ .

T: (Call up a volunteer to show 10 and 4 with linking cubes, as shown to the right. Record the answer.)

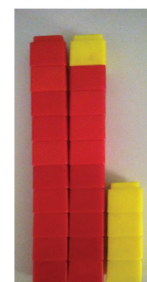


T: (Add another red ten-stick, and show  $19 + 5$ .) What is the new addition problem starting with 19?

S:  $19 + 5$ .

T: (Record on the chart.) Turn and talk to your partner about how you can figure out how many cubes there are now.

S: I can see the cubes. There are 2 tens and 4 ones. That's 24. → I knew that  $9 + 5$  was 14. That's the simpler problem. We added 10 more to 14. That's 24.



T: The strategy of using what we already know is a very important math strategy for solving problems. (Cover 1 ten-stick with a hand.) We know that  $9 + 5 = 14$ .  $19 + 5$  is just 10 more than  $9 + 5$ . (Reveal the ten-stick.) 10 more than 14 is...

**YOUR NOTES:**

S: 24.

T: When you show 19 as tens and ones, you can easily see the simpler problem,  $9 + 5$ . (Write the number bond for 19 as 10 and 9.)  $9 + 5$  is...?

$$\begin{array}{r}
 19 + 5 = 24 \\
 \swarrow \searrow \\
 10 \quad 9 \\
 9 + 5 = 14 \\
 14 + 10 = 24
 \end{array}$$

S: 14.

T: (Create a chart like the one shown to the right.  $9 + 5 = 14$ .) 10 more than 14 is...?

S: 24.

T: (Write  $14 + 10 = 24$ . Add another red ten-stick, and show  $29 + 5$ .) Write down the new addition problem on your personal white board, starting with 29.S: (Write  $29 + 5$ .)

T: (Record on the chart.) Break apart 29 into tens and ones. What is the simpler problem?

S: (Make a number bond with 29.)  $9 + 5$ .T:  $9 + 5$  is...?

S: 14.

T: 20 more than 14 is...?

S: 34.

T:  $29 + 5$  is...?

S: 34.

T: Using your number bond, let's write the two number sentences that helped us solve this problem.

T/S: Write  $9 + 5 = 14$ ,  $14 + 20 = 34$ .

T: (Create a chart, as shown to the right.) Turn and talk to your partner about the patterns you notice.

$$\begin{array}{r}
 29 + 5 = 34 \\
 \swarrow \searrow \\
 20 \quad 9 \\
 9 + 5 = 14 \\
 14 + 20 = 34
 \end{array}$$

$$\begin{array}{r}
 9 + 5 = 14 \\
 19 + 5 = 24 \\
 29 + 5 = 34
 \end{array}$$

S: The ones stayed the same. But the tens changed because we kept adding more tens. → Every time we add 10 more, the answer also shows 10 more. →  $9 + 5 = 14$  is always the simpler problem. We solved  $9 + 5$ , which is 14 first. When we added 1 more ten, the answer went up by 1 more ten.

Repeat the process, and have student pairs work with their linking cubes and record their work using the following sequence:

- $5 + 4$ ,  $15 + 4$ ,  $25 + 4$ ,  $35 + 4$
- $4 + 6$ ,  $14 + 6$ ,  $24 + 6$ ,  $34 + 6$
- $2 + 7$ ,  $12 + 7$ ,  $22 + 7$ ,  $32 + 7$
- $9 + 3$ ,  $19 + 3$ ,  $29 + 3$
- $8 + 6$ ,  $18 + 6$ ,  $28 + 6$
- $8 + 8$ ,  $18 + 8$ ,  $28 + 8$
- $5 + 7$ ,  $5 + 17$ ,  $5 + 27$

Next, follow the suggested sequence, and have students identify the *simpler problem* before solving the given problem:  $17 + 2$ ,  $19 + 2$ ,  $28 + 2$ ,  $28 + 4$ ,  $27 + 6$ , and  $25 + 7$ .

**YOUR NOTES:**

### MULTIPLE MEANS OF REPRESENTATION

Provide opportunities for students to practice their math facts within 10 throughout the day. Students struggling with understanding of the grade-level fluency goal benefit from focused extra practice. Elicit from them which facts they find harder to understand in order to determine that focus. Keep parents informed of these details, and offer effective ways they can support the students.

### MULTIPLE MEANS OF ENGAGEMENT

Choose just right numbers to provide ample opportunities for students to experience success and build confidence in their math skills.

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 15 G:1 M:4	Tens Change, Ones Don't ZEARN STUDENT NOTES
----------------------	------------------------------------------------

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Complete: ☐ \_\_\_\_\_

**1**

$7 + 5 = \underline{12}$

$17 + 5 = \underline{22}$

$27 + 5 = \underline{32}$

YOUR NOTES:

Wrap-Up

LESSON SYNTHESIS

Guide students in a conversation to process today’s lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.




- What new strategy did you learn to solve addition problems when one addend is a two-digit number?
- Solve  $5 + 3$ ,  $15 + 3$ ,  $25 + 3$  and  $35 + 3$ . What patterns can help you solve these more easily?
- Solve  $36 + 2$ . How does that number sentence help you solve  $36 + 3$ ? How does it also help you solve  $26 + 2$ ?

EXIT TICKET

After today’s lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students’ understanding of the concepts explored in today’s lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

Task

1. Solve the problems.

a.		$7 + 5 = \underline{\hspace{2cm}}$
b.		$17 + 5 = \underline{\hspace{2cm}}$
c.		$27 + 5 = \underline{\hspace{2cm}}$

Solve the problems.

**YOUR NOTES:**

2. a.  $5 + 3 =$  \_\_\_\_\_

b.  $15 + 3 =$  \_\_\_\_\_

c.  $25 + 3 =$  \_\_\_\_\_

d.  $35 + 3 =$  \_\_\_\_\_

3. a.  $5 + 8 =$  \_\_\_\_\_

b.  $15 + 8 =$  \_\_\_\_\_

c.  $25 + 8 =$  \_\_\_\_\_

### Answers

1. a. 12

b. 22

c. 32

2. a. 8

b. 18

c. 28

d. 38

3. a. 13

b. 23

c. 33



YOUR NOTES:

# Lesson 16



TIP

**The teacher materials are optional for this lesson.** Students explore these concepts in their Independent Digital Lesson and we recommend that you continue your instruction with the next lesson. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed.

Add ones and ones or tens and tens.

## Warm-Up

### FLUENCY PRACTICE

#### Analogous Addition Sentences

**Materials:** (S) Personal white board, one die



**NOTE:** This fluency activity reviews Lesson 15. Some students may wish to show their work with number bonds, while others may choose to work mentally.

Students work in pairs. For students who struggle, consider replacing the 6 on the die with a 0 so the sums do not cross ten.

1. Each student rolls one die and writes the number rolled. They then make a list, adding 1 ten to their number on each new line up to 3 tens. (See diagram to the right.)
2. Students write equations, adding the number on their partner’s die to each line.
3. Partners exchange boards and check each other’s work.

As students work, make sure to circulate and monitor their understanding of recently introduced concepts.

STEP 1	
Partner A	Partner B
4	3
14	13
24	23
34	33

STEP 2	
Partner A	Partner B
$4 + 3 = 7$	$3 + 4 = 7$
$14 + 3 = 17$	$13 + 4 = 17$
$24 + 3 = 27$	$23 + 4 = 27$
$34 + 3 = 37$	$33 + 4 = 37$



## YOUR NOTES:

## Digit Detective

**Materials:** (T/S) Personal white board



**NOTE:** This activity reviews place value, which prepares students for adding ones to ones or tens to tens in today's lesson. As always, pause to give students enough time to think and write before signaling.

Write a number on a personal white board, but do not show students.

**T:** The digit in the tens place is 3. The digit in the ones place is 1. What's my number? (Signal.)

**S:** 31.

**T:** What's the value of the 3? (Signal.)

**S:** 30.

**T:** What's the value of the 1? (Signal.)

**S:** 1.

Repeat the sequence with a ones digit of 3 and a tens digit of 3.

**T:** The digit in the tens place is 1 more than 2. The digit in the ones place is equal to  $7 - 4$ . What's my number? (Snap.)

**S:** 33.

**T:** The digit in the ones place is equal to  $2 + 6$ . The digit in the tens place is equal to  $8 - 6$ . What's my number? (Snap.)

**S:** 28.

As with the above example, begin with easy clues, and gradually increase the complexity.

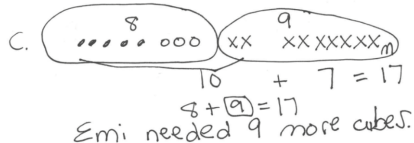
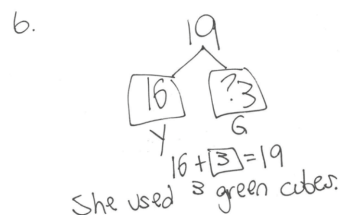
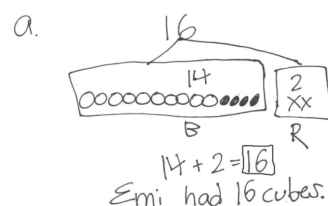
## WORD PROBLEM

Use the RDW process to solve one or more of the problems without using linking cubes.

- Emi had a linking cube train with 14 blue cubes and 2 red cubes. How many cubes were in her train?
- Emi made another train with 16 yellow cubes and some green cubes. The train was made of 19 linking cubes. How many green cubes did she use?
- Emi wants to make her train of 8 linking cubes into a train of 17 cubes. How many cubes does Emi need?



**NOTE:** Today, students use larger numbers to solve problems that are similar to the Word Problems solved throughout the past few lessons. Make note of students who were successful with the earlier sets but struggled with the problem today. These students may have difficulty envisioning the relationships between the larger quantities. Encourage these students to change from empty circles to filled-in circles at the ten, as shown in the first image, to help them break down and visualize the larger numbers.



## YOUR NOTES:

## Concept Exploration

**Materials:** (T) 4 ten-sticks, 4 dimes, 10 pennies, chart paper (S) 4 ten-sticks, 4 dimes, and 10 pennies from the math toolkit, personal white board

Students gather in the meeting area with their partners and materials.

**T:** (Write  $16 + 2$  and  $16 + 20$  on the board.) Partner A, using your linking cubes, show how you would solve  $16 + 2$ . Partner B, show how you would solve  $16 + 20$ .

**S:** (Solve.)

**T:** Share your work with your partner. How are they similar? How are they different?

**S:** We both started with the same number—16. → We added a different number to 16. I added 2, but my partner added 20. → But we both added 2 more things to 16. I added 2 ones. My partner added 2 tens. → I added my 2 ones to 6 ones. My partner added his 2 tens to 1 ten.

**T:** Excellent job comparing. Let's make quick ten drawings to show how we can solve these problems. Start by drawing 16.

**S:** (Draw 16 on personal white board.)

**T:** Let's add 2 ones. Should we add to the ones or to the tens? Why?

**S:** To the 6 ones, because we are adding 6 ones and 2 ones. → We can add to the tens or the ones. We can do  $10 + 2 = 12$  and then  $12 + 6 = 18$ . → But it's much easier to add the ones. 6 and 2 is 8. 10 and 8 is 18. → The ones!

**T:** You're right. Adding the ones together is much easier. Add 2 to your ones. (Wait.) 6 ones and 2 ones is...?

**S:** 8 ones.

**T:** How many tens are there?

**S:** 1 ten.

**T:** 1 ten 8 ones is...?

**S:** 18.

**T:** (Make a number bond for 16.) Turn and talk to your partner about why 16 is broken apart into 10 and 6.

**S:** We added 6 ones and 2 ones, so it's smart to break apart 16 into 10 and 6. → That makes it easy for me to see the ones. → I like adding  $6 + 2$ . It's easy for me.  $10 + 6$  is easy, too. That's 16.

**T:** 6 and 2 is...? (Write  $6 + 2 = 8$  once students have answered.)

**S:** 8.

**T:** 10 and 8 is...? (Write  $10 + 8 = 18$  once students have answered.)

**S:** 18.

$$16 + 2 = 18$$

$$16 + 2 = 18$$

$$16 + 20 = 36$$

$$16 + 20 = 36$$

**YOUR NOTES:**

- T:** (Point to  $16 + 20$ .) This time, what's different?
- S:** Instead of adding 2 ones, we are adding 2 tens.
- T:** In our drawing, should we add 2 tens to the tens or the ones? Turn to your partner, and explain your reason.
- S:** To the tens!  $\rightarrow 1 \text{ ten} + 2 \text{ tens} = 3 \text{ tens}$ . That's easy.  $\rightarrow$  We can add it to the ones. But we'll have to think, "What's  $16 + 20$ ?" That's not so easy. But if we add to the tens, it's much easier.  $\rightarrow$  When you see 3 ten-sticks, it's easy to see that it's 30.  $30 + 6$  is easy, too.
- T:** You are right! Adding tens to tens is much easier. Show what that looks like in your drawing. Add 20, or 2 tens. (Wait.) How many tens are there?
- S:** 3 tens.
- T:** How many ones?
- S:** 6 ones.
- T:** 3 tens 6 ones is...?
- S:** 36.
- T:** Turn and talk to your partner about breaking apart to add 2 tens to the tens first.
- S:** Break apart 16 into 10 and 6.  $\rightarrow$  It takes out the ten that we need to add to the 2 tens. 20 and 10 is 30. Then, we add 6 more to get 36.
- T:** Write down two number sentences to show how we add the tens first, and then the rest, to solve.
- S:** (Write  $10 + 20 = 30$  and  $30 + 6 = 36$ .)
- T:** When we have an addition problem, what is a good question to ask ourselves before adding the second addend? (Point to the chart.) Think about how we solved  $16 + 2$  and  $16 + 20$ .
- S:** Ask and decide, "Should we add to the ones or to the tens?"  $\rightarrow$  When you add ones to ones or tens to tens, it makes the problem easier to solve.

Repeat the process, having Student A solve  $18 + 20$  and Student B solve  $18 + 2$  using cubes and quick ten drawings. Then, compare their work.

- T:** Everyone, show 18 with your cubes. (Wait.) Let's add 2. But first, we need to ask...?
- S:** Should we add to the ones or to the tens?
- T:** What should we add the 2 to?
- S:** The ones!
- T:** Add 2 to the ones. (Wait.)  $18 + 2$  is...?
- S:** 20.
- T:** Turn and tell your partner how you got your answer.
- S:** I added 2 cubes to the 8 cubes. It made another ten-stick!  $\rightarrow$  I now have 2 ten-sticks. 10 and 10 is 20.  $\rightarrow 8 \text{ plus } 2 \text{ equals } 10$ ; 10 plus 10 equals 20.
- T:** Use a quick ten drawing and a number bond to show how you added ones and ones together.
- S:** (Complete drawings and number bonds.)

$$18 + 2 = 20$$

$$18 + 2 = 20$$

$$10 \quad 8$$

$$8 + 2 = 10$$

$$10 + 10 = 20$$

Repeat the process as partner work following the suggested sequence:

**YOUR NOTES:**

- $17 + 20$  and  $17 + 2$
- $19 + 1$  and  $19 + 10$
- $15 + 20$  and  $15 + 2$

To help students see the relationship between tens and ones and dimes and pennies, have every student use coins, coin drawings, and number bonds to solve:  $14 + 2$ ,  $14 + 20$ ,  $26 + 10$ , and  $26 + 4$ .

---

### **MULTIPLE MEANS OF REPRESENTATION**

Students working below grade level might benefit from place value charts as well as concrete models to help them determine whether to add to the tens or ones.

---

### **MULTIPLE MEANS OF ENGAGEMENT**

Adjust the lesson structure based on the needs of students. Some students may be ready for challenging problems, while others may need to develop one method of representation at a time. Provide challenging problems for students who are ready, while spending time with students who may be struggling with one or more of the ways to represent their work (e.g., number bonds, quick ten drawings, and coin drawings).

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## **Independent Digital Lesson**



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

## YOUR NOTES:

<b>Lesson 16</b> G1 M:4	<b>Ones + Ones, Tens + Tens</b> <b>ZEARN STUDENT NOTES</b>
----------------------------	---------------------------------------------------------------

Name: \_\_\_\_\_

Complete: ☐ Date: \_\_\_\_\_

1

SHOW YOUR WORK

$$\begin{array}{r}
 10 \quad 8 \\
 \hline
 18 + 20 = 38
 \end{array}$$

➔

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- How did you determine whether to add to the ones place or tens place?
- Share a quick ten drawing for  $6 + 30$  with your partner. What did you draw first? Why?
- A student says  $3 + 14 = 44$ . How can you help him understand his mistake?

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task****YOUR NOTES:**

Solve using quick ten drawings to show your work.

1. $24 + 5$	2. $14 + 20$
-------------	--------------

Draw number bonds to solve.

3. $19 + 20$	4. $36 + 3$
--------------	-------------

**Answers**

1. Quick ten drawing; 29
2. Quick ten drawing; 34
3. 10, 9; 39
4. 30, 6; 39



# Lesson 17

Add ones and ones or tens and tens.


---

## Warm-Up

### FLUENCY PRACTICE

#### Core Addition Fluency Review: Missing Addends


**Materials:** (S) Core Addition Fluency Review: Missing Addends

 **NOTE:** This review sheet contains the majority of addition facts with sums of 5–10, which is part of the expected core fluency for Grade 1. The focus on missing addends strengthens students' ability to count on, a Level 2 strategy that first graders should be proficient in. Keep this activity for students to use during the fluency activity *Relating Addition and Subtraction* in Lesson 17.

Students complete as many problems as they can in three minutes. Choose a counting sequence for early finishers to practice on the back of their papers. When time runs out, read the answers aloud so students can correct their work. Encourage students to remember how many problems they answered correctly in the allotted time so they can work to improve their scores on future Missing Addends Core Addition Fluency Reviews.

#### Relating Addition and Subtraction


**Materials:** (S) Core Addition Fluency Review: Missing Addends

 **NOTE:** This fluency activity targets the Grade 1 core fluency expectation. Reviewing the relationship between addition and subtraction is especially beneficial for students who continue to find subtraction challenging.

Students choose a column from the review sheet and rewrite each problem as a subtraction equation, seeing how many they can complete in two minutes.

#### Analogous Addition Sentences

**Materials:** (S) Personal white board, one die per student

 **NOTE:** This is the second day students are performing this partner activity. As students work, ask if it is easier the second day.



**YOUR NOTES:** Follow instructions in Lesson 16.


### MULTIPLE MEANS OF ENGAGEMENT

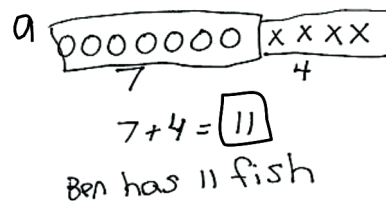
Encourage students to set goals for improvement on Sprints and fluency reviews. Provide scaffolds, strategies, and opportunities for practice to help them reach their personal goals.

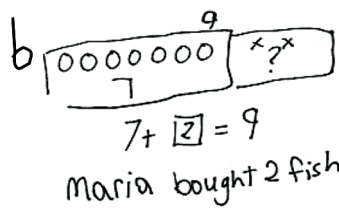
### WORD PROBLEM

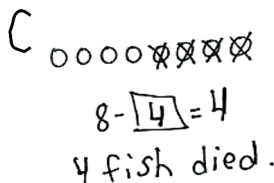
Use the RDW process to solve one or more of the problems.

- Ben had 7 fish. He bought 4 fish at the store. How many fish does Ben have?
- Maria had 7 fish in her tank this morning. She bought some more fish, and now she has 9. How many did she buy?
- Anton had 8 fish. Some of the fish died, and now Anton has 4 fish. How many fish died?

 **NOTE:** Today, students solve similar math stories within a new context. Notice students who easily solved the problems with cubes but found today's problems more challenging. These students may need support visualizing story contexts.

a 

b 

c 

## Concept Exploration

**Materials:** (T) Ten-sticks, chart paper (S) Ten-sticks from math toolkit, personal white board, addition and subtraction cards set 2 (Template)

Students gather in the meeting area with their partners and materials.

**T:** (Write  $19 + 2$  on chart paper, and show 19 red cubes on the floor.) What are we adding to 19?

**S:** 2.

**T:** 2 what?

**S:** 2 ones.

**T:** Where should we add the 2 ones—to the tens or the ones? Turn and talk to your partner about why.

**S:** The ones! → To 9 ones! → It's easier to add ones together.

**T:** Use your cubes to solve  $19 + 2$

**T:** (Circulate to observe the different strategies students are using, and select students to demonstrate.)

**S:** We knew that 19 needs 1 more to make the next ten. So, we took 1 from the 2 and made a ten. Now, we have 20 and 1. That's 21. → We saw 10 ones in  $9 + 1$ . We now have 2 tens and 1 one. That's 21. → We added the ones together.  $9 + 2 = 11$ . One more ten is 21.



**YOUR NOTES:**

T: Excellent strategies! Just like we did yesterday, let's add the ones together. 9 and 2 is...?

S: 11.

T: What more do we still have to add?

S: 1 ten.

T: 11 and 10 is...?

S: 21.

T: Say the number sentence starting with 19.

S:  $19 + 2 = 21$ .

Have students represent their work in quick ten drawings.

T: Let's represent our work using a number bond. Which number did we break apart?

S: We broke apart 19 into 10 and 9. That makes it easier to see the ones. I can add 9 and 2 first, and then add 10.

T: Great. (Chart the number bond, and complete the number sentence. Point to each number as you say it.) 9 and 2 is...?

S: 11.

T: 11 and 10 is...?

S: 21.

T:  $19 + 2$  is...?

S: 21.

T: (Write  $19 + 20$  on the chart.) Show 19 using your cubes or quick ten drawings.

S: (Show or draw 1 ten-stick and 9 ones.)

T: Before adding the next addend with your cubes, we should ask...?

S: Am I adding tens, or am I adding ones?

T: Correct! So, which are we adding? Tens or ones?

S: Tens.

T: Yes. Add 2 tens. (Pause.) 1 ten and 2 tens is...?

S: 3 tens.

T: How many ones are there?

S: 9 ones.

T: 3 tens 9 ones is...?

S: 39.

Guide students as they make the number bond to represent  $19 + 20$  and write two addition sentences. Repeat the process following the suggested sequence:

- $16 + 2$  and  $16 + 20$
- $2 + 13$  and  $20 + 13$

$$19 + 2 = 21$$



$$\begin{array}{r}
 19 + 2 = 21 \\
 \begin{array}{c} 10 \quad 9 \\ \diagup \quad \diagdown \end{array} \\
 9 + 2 = 11 \\
 11 + 10 = 21
 \end{array}$$

**YOUR NOTES:**

- $10 + 28$  and  $28 + 1$
- $8 + 27$

Have students practice asking, “Do I add to the ones or add to the tens?” before representing their work with cubes or quick tens and the number bond with two sentences. When appropriate, have students choose just one method to solve and explain their choice to their partner or to the whole group. For more challenging examples, have students add dimes and pennies when using the sequence above.

For the remainder of time, have partners play Addition and Subtraction with Cards (Lesson 12) with the new cards labeled *D*.

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**MULTIPLE MEANS OF REPRESENTATION**

Highlight the critical vocabulary such as *quick ten drawings*, *number bonds*, *tens*, *ones*, and *addends*, and use pictorial representations to support student understanding. Have students use these terms as they share their thinking. This supports vocabulary development.

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## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

There are no notes for this digital lesson. Go online to see the full digital lesson.

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## Wrap-Up

**LESSON SYNTHESIS**

Guide students in a conversation to process today’s lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- When do you use quick tens and ones to solve? When do you use a number bond to solve? How do you decide which strategy to use?
- Solve  $4 + 26$  using either strategy. How does your work help you solve  $4 + 28$ ?

**EXIT TICKET****YOUR NOTES:**

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task**

Find the totals using quick ten drawings or number bonds.

1. $17 + 8 = \underline{\hspace{2cm}}$	2. $28 + 7 = \underline{\hspace{2cm}}$
3. $24 + 10 = \underline{\hspace{2cm}}$	4. $19 + 20 = \underline{\hspace{2cm}}$

**Answers**

1. 25; quick ten or number bond drawings
2. 35; quick ten or number bond drawings
3. 34; quick ten or number bond drawings
4. 39; quick ten or number bond drawings

**CORE ADDITION FLUENCY REVIEW: MISSING ADDENDS**

- |                                               |                                               |                                                |
|-----------------------------------------------|-----------------------------------------------|------------------------------------------------|
| <b>1.</b> $5 + \underline{\hspace{1cm}} = 5$  | <b>16.</b> $6 + \underline{\hspace{1cm}} = 7$ | <b>31.</b> $9 + \underline{\hspace{1cm}} = 9$  |
| <b>2.</b> $4 + \underline{\hspace{1cm}} = 5$  | <b>17.</b> $1 + \underline{\hspace{1cm}} = 7$ | <b>32.</b> $0 + \underline{\hspace{1cm}} = 9$  |
| <b>3.</b> $2 + \underline{\hspace{1cm}} = 5$  | <b>18.</b> $0 + \underline{\hspace{1cm}} = 7$ | <b>33.</b> $1 + \underline{\hspace{1cm}} = 9$  |
| <b>4.</b> $3 + \underline{\hspace{1cm}} = 5$  | <b>19.</b> $7 + \underline{\hspace{1cm}} = 7$ | <b>34.</b> $2 + \underline{\hspace{1cm}} = 9$  |
| <b>5.</b> $0 + \underline{\hspace{1cm}} = 5$  | <b>20.</b> $3 + \underline{\hspace{1cm}} = 7$ | <b>35.</b> $7 + \underline{\hspace{1cm}} = 9$  |
| <b>6.</b> $1 + \underline{\hspace{1cm}} = 5$  | <b>21.</b> $4 + \underline{\hspace{1cm}} = 7$ | <b>36.</b> $6 + \underline{\hspace{1cm}} = 9$  |
| <b>7.</b> $1 + \underline{\hspace{1cm}} = 6$  | <b>22.</b> $4 + \underline{\hspace{1cm}} = 8$ | <b>37.</b> $5 + \underline{\hspace{1cm}} = 9$  |
| <b>8.</b> $0 + \underline{\hspace{1cm}} = 6$  | <b>23.</b> $5 + \underline{\hspace{1cm}} = 8$ | <b>38.</b> $3 + \underline{\hspace{1cm}} = 9$  |
| <b>9.</b> $6 + \underline{\hspace{1cm}} = 6$  | <b>24.</b> $6 + \underline{\hspace{1cm}} = 8$ | <b>39.</b> $4 + \underline{\hspace{1cm}} = 9$  |
| <b>10.</b> $5 + \underline{\hspace{1cm}} = 6$ | <b>25.</b> $2 + \underline{\hspace{1cm}} = 8$ | <b>40.</b> $4 + \underline{\hspace{1cm}} = 10$ |
| <b>11.</b> $3 + \underline{\hspace{1cm}} = 6$ | <b>26.</b> $3 + \underline{\hspace{1cm}} = 8$ | <b>41.</b> $5 + \underline{\hspace{1cm}} = 10$ |
| <b>12.</b> $4 + \underline{\hspace{1cm}} = 6$ | <b>27.</b> $0 + \underline{\hspace{1cm}} = 8$ | <b>42.</b> $6 + \underline{\hspace{1cm}} = 10$ |
| <b>13.</b> $2 + \underline{\hspace{1cm}} = 6$ | <b>28.</b> $8 + \underline{\hspace{1cm}} = 8$ | <b>43.</b> $3 + \underline{\hspace{1cm}} = 10$ |
| <b>14.</b> $2 + \underline{\hspace{1cm}} = 7$ | <b>29.</b> $7 + \underline{\hspace{1cm}} = 8$ | <b>44.</b> $1 + \underline{\hspace{1cm}} = 10$ |
| <b>15.</b> $5 + \underline{\hspace{1cm}} = 7$ | <b>30.</b> $1 + \underline{\hspace{1cm}} = 8$ | <b>45.</b> $2 + \underline{\hspace{1cm}} = 10$ |

**ADDITION AND SUBTRACTION CARD SET 2 (TEMPLATE)**

$$35 + 4$$

D

$$24 + 3$$

D

$$24 + 6$$

D

$$28 + 4$$

D

$$35 + 5$$

D

$$22 + 8$$

D

$$17 + 7$$

D

$$31 + 6$$

D

$$24 + 9$$

D

$$8 + 28$$

D

$$26 + 8$$

D

$$3 + 33$$

D

$$7 + 32$$

D

$$29 + 7$$

D

$$3 + 18$$

D

$$18 - 3$$

D

$$17 - 4$$

D

$$19 - 5$$

D

**ADDITION AND SUBTRACTION CARDS SET 2 (TEMPLATE)**

<b>35 + 4</b> D	<b>24 + 3</b> D
<b>24 + 6</b> D	<b>28 + 4</b> D
<b>35 + 5</b> D	<b>22 + 8</b> D
<b>17 + 7</b> D	<b>31 + 6</b> D
<b>24 + 9</b> D	<b>8 + 28</b> D



$$26 + 8$$

D

$$3 + 33$$

D

$$7 + 32$$

D

$$29 + 7$$

D

$$3 + 18$$

D

$$18 - 3$$

D

$$17 - 4$$

D

$$19 - 5$$

D

# Lesson 18

YOUR NOTES:

Share and critique peer strategies for adding two-digit numbers.



## TIP

**There is no Independent Digital Lesson** corresponding to today's Concept Exploration. Students should use digital time to complete other digital lessons in this Mission. If a student has already completed 4 digital lessons this week, they should complete digital bonuses from this Mission.

## Warm-Up

### FLUENCY PRACTICE

#### Core Addition Fluency Review: Missing Addends

**Materials:** (S) Core Addition Fluency Review: Missing Addends (Lesson 17 Core Addition Fluency Review)



**NOTE:** This review sheet contains the majority of addition facts with sums of 5–10, which is part of the expected core fluency for Grade 1. The focus on missing addends strengthens students' ability to count on, a Level 2 strategy that first graders should be proficient in.

Students complete as many problems as they can in three minutes. Choose a counting sequence for early finishers to practice on the back of their papers. When time runs out, read the answers aloud so students can correct their work. Celebrate improvement by having students compare yesterday's total correct with today's total correct. Share a class cheer for the student(s) with the most improved score.

#### Relating Addition and Subtraction

**Materials:** (S) Core Addition Fluency Review: Missing Addends (from previous activity)




**NOTE:** This fluency activity targets the Grade 1 core fluency expectation.

Students choose a column from the review sheet and rewrite each problem as a subtraction equation, seeing how many they can complete in two minutes.

## YOUR NOTES:

## Analogous Addition Sentences

**Materials:** (S) Personal white board, die or numeral cards 0–10.


-  **Note:** Today, assign partners of equal ability. Give students who have a strong understanding of sums and differences to 12 numeral cards instead of dice. The cards go up to 10, so they are more of a challenge since there are more opportunities to make ten.

Repeat the activity from Lesson 16.

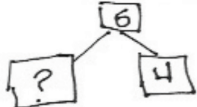
## WORD PROBLEM


Use the RDW process to solve one or both of the problems.

- Some ducks were in a pond. 4 baby ducks joined them. Now, there are 6 ducks in the pond. How many ducks were in the pond at first?
- Some frogs were in the pond. Three jumped out, and now there are 5 frogs in the pond. How many frogs were in the pond at first?

-  **NOTE:** Today's Word Problems use add to and take from problems with the unknown in the starting position. For most students, this is a difficult problem type, so the numbers in the stories are small.

Notice how students attempt the problem. Those who simply add the two numbers in the first problem or subtract the two numbers in the last problem may need additional reinforcement in reading one sentence at a time as they review their drawings to find the matching story parts.

a.   
 $4 + 2 = 6$   
 2 ducks were in the pond.

b.   
 $5 + 3 = 8$   
 8 frogs were in the pond first.

## Concept Exploration

**Materials:** (T) Student work samples (Template), projector (S) Personal white board


Have students come to the meeting area and sit in a semicircle.

- T:** (Write  $17 + 4$  on the board.) Turn and talk to your partner about how you would solve this problem.

- S:** (Discuss as the teacher circulates and listens.)

- T:** (Project Student A work.) Turn and talk to your partner about how he showed his solution to  $17 + 4$ , and think about how we can label his work.

**Student A**  
 $17 + 4 = 21$   
 $17 \xrightarrow{+3} 20 \xrightarrow{+1} 21$

**Student B**  
 $17 + 4 = 22$   


## YOUR NOTES:

S: Let's label it the arrow way. → He got to the next ten by adding 3. Then, he added the 1 that was left and got 21.

T: Yes! The arrow way and the number sentences clearly show what he was thinking.  
I am going to label this work The Arrow Way. (Label work A.)

T: (Project Student B work.) How did this student show how to solve  $17 + 4$ ?

S: She drew quick tens.

T: (Label this work *Quick Ten Drawing*.)

S: (Continue.) It looks like she added the ones together. She showed how she made a ten by drawing a line through the 10 ones. → She added 2 tens and 2 ones and got 22. → I noticed a mistake! She drew 18 first instead of 17. She drew an extra circle. She added 4 correctly using Xs; but because she started out by drawing the wrong number, her answer is wrong. → She should have drawn 17 and 4. She should have gotten 21 as the answer.

T: What are some ways this student can improve her work?

S: She needs to count carefully, especially when she's drawing her ones. → She should check her work with her partner. Then, she might have caught her mistake.

T: Even though drawing is easy for many of you, it's not always the best way to get the correct answer, because sometimes you have to make so many circles and Xs. Somewhere along the way, you can lose count and make a mistake.

T: Work carefully, and show  $17 + 4$  using the quick ten drawing on your personal white board. Then, check your work with your partner.

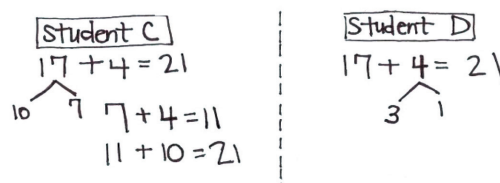
S: (Make a quick ten drawing showing 21 as the sum, and check with a partner.)

T: (Project Student C and D work.) Let's compare Student C's work and Student D's work. Did they solve the problem in the same way? What similarities and differences do you notice? Turn and talk to your partner.

S: They both used number bonds.

T: (Label these works *Number Bond*.)

S: (Continue.) They used number bonds but broke apart different numbers. → Student C added the ones first. → Student D made the next ten.



T: Turn and talk to your partner about which student work best shows the tens.

S: I think Student D shows the tens the best because I can see that  $17 + 3 = 20$  and that is 2 tens. → I think Student C shows the tens the best because I can see that 17 is 10 and 7. I see the 10 in 17.

T: Can both students' work be correct, even though they broke apart different numbers?

S: Yes. → You can break apart different numbers and get the correct answer, as long as you add every part.

T: What is a compliment you can give to each of these students?

S: They drew correct number bonds. → Student C added the ones together first. She clearly showed her two steps by writing both addition sentences. → Student D made the next ten from 17. He did a good job breaking apart 4 into 3 and 1 so that he could make 20 with 17 and 3.

**YOUR NOTES:**

**T:** What are some ways they could improve their work?

**S:** Student D could have written two addition sentences to show how he got 21.

**T:** (Write  $19 + 5$  on the board.) It's your turn to solve a problem. You may use any method to solve, but you must show your work. When you are finished, swap your work with your partner and study it. Give her a compliment and a suggestion about how to improve her work.

Have students swap boards with their partners and discuss the following:

- How did your partner show his solution?
- How was his work different from your work?
- How was your work the same?
- Give your partner a compliment on his work.
- Give a suggestion for how he could improve his work.

**T:** (Project 3 work samples from the class, showing each of the methods: a quick ten drawing, a number bond, and the arrow way.) Which student work best helps you not have to count all?

**S:** The number bond, because I counted on. → The arrow way, because I got to the next ten and counted on.

**T:** Good thinking! Why does the quick ten allow you to count all?

**S:** The drawing shows all the numbers, so I can count them all instead of counting on.

**T:** How is the student work shown different from your partner's work?

**S:** My partner drew the quick tens. → My partner drew circles and Xs for the ones. → My partner bonded a different number. → My partner started with a different number to get to 20 using the arrow way.

If time allows, have students solve  $18 + 6$ , and share another set of student work from the class.

**MULTIPLE MEANS OF REPRESENTATION**

Facilitate student discussions to provide multiple opportunities for comprehension. Guide students to recognize strategies that can make math easier—for example, breaking a larger number into number bonds as well as looking for patterns and structures in their work.

---

**YOUR NOTES:**

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- (Project Student Work A-D from today's lesson.) Which student work best helps you not count all?
- Solve  $17 + 5$ . Compare your work with your partner. Did you solve the same way? Do you think her way was easier or harder to solve? Explain why.

### EXIT TICKET

#### Answers

- Circled
- Not circled
- Circled
- Circle 10 dots

STUDENT WORK SAMPLES (TEMPLATE)

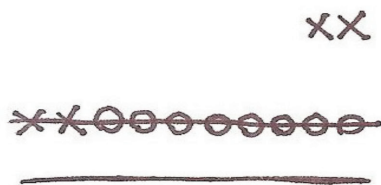
Student A

$$17 + 4 = 21$$

$$17 \xrightarrow{+3} 20 \xrightarrow{+1} 21$$

Student B

$$17 + 4 = 22$$



Student C

$$17 + 4 = 21$$

$$17 \begin{matrix} \nearrow 10 \\ \searrow 7 \end{matrix} \quad 7 + 4 = 11$$

$$11 + 10 = 21$$

Student D

$$17 + 4 = 21$$

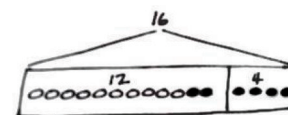
$$17 \begin{matrix} \nearrow 10 \\ \searrow 7 \end{matrix} \quad 3 + 1 = 4$$

## TOPIC E

# Varied Problem Types Within 20

As students begin working with larger numbers in word problems, representing each item and drawing it individually can become cumbersome. In previous work with problem types, the two parts have been almost exclusively single-digit numbers. For example, students were adding 9 and 6 or subtracting 8 from 14 to solve.

During Topic E, students begin to represent quantities in larger groupings while still visualizing the relationship between the numbers. For example, students may be adding a two-digit number and a one-digit number, such as 12 and 4, or subtracting a two-digit number from a two-digit number, such as  $16 - 12$ , represented in the tape diagram to the right.



Tape Diagram

In Lesson 19, students are presented with *put together/take apart with total unknown* and *add to with result unknown* word problems within 20. As they solve, they draw and box the two parts and then include the numeral label within the box, producing tape diagrams. This enables them to quickly identify where the quantity can be found within the drawing. Students begin adding a bracket as shown to identify the total.

Lessons 20 and 21 allow students to explore number relationships as they solve *put together/take apart with addend unknown* and *add to with change unknown* word problems within 20. As they do so, they explore number relationships as they notice and discuss how the size of the boxes relate to the size of each part. For example, when adding  $12 + 4$ , students notice that the part in their tape diagram that contains 12 is much longer than the part that contains 4. They also notice that, when adding  $10 + 10$ , the two parts are the same size.

During these lessons, students share their strategies for drawing when a part is unknown. For example, to solve the problem, “Maria has 15 playing cards in her hand. She has 8 black cards. If the rest are red, how many red cards does she have?” Some students may draw all 15 cards first, and then place a box around the 8 black cards Maria already has. Other students may draw the 8 black cards, and then count on as they draw to 15. Still other students may label 15 for the total, draw one part labeled 8, and then work toward identifying the missing part. Students continue to work on recognizing what kind of unknown they are looking for—a part or a total.

During Lesson 22, students use their experiences and understanding to write their own word problems of varied types based on given tape diagrams.

While the addition and subtraction within the problems for Topic E are within 20, fluency work continues to support students’ skill and understanding from Topics A through D using numbers to 40. This fluency work prepares them for the increased complexity of addition in the final topic—Topic F.



Objective	
Topic E	Varied Problem Types Within 20
Lesson 19	Use tape diagrams as representations to solve <i>put together/take apart with total unknown</i> and <i>add to with result unknown</i> word problems.
Lesson 20	Recognize and make use of part-whole relationships within tape diagrams when solving a variety of problem types.
Lesson 21	Recognize and make use of part-whole relationships within tape diagrams when solving a variety of problem types.
Lesson 22	Write word problems of varied types.

Note on Pacing for Differentiation

If you are using the Zearn Math recommended weekly schedule that consists of four “Core Days” when students learn grade-level content and one “Flex Day” that can be tailored to meet students’ needs, we recommend omitting the optional lessons in this mission during the Core Days. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed. This schedule ensures students have sufficient time each week to work through grade-level content and includes built-in weekly time you can use to differentiate instruction to meet student needs.

Optional lesson for Topic E  
Lesson 21.

YOUR NOTES:

# Lesson 19

Use tape diagrams as representations to solve *put together/take apart with total unknown* and *add to with result unknown* word problems.

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## Warm-Up

### FLUENCY PRACTICE

No additional fluency activities for this lesson.

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## Concept Exploration

**Materials:** (T) Document camera (S) Problem Set



**NOTE:** During this lesson, students complete the Problem Set as the teacher guides instruction. This method allows students to alternately practice a problem and then analyze both the process and solution before moving on to their next practice problem. Although today's Problem Set includes both put together and add to problem types, all the problems have an unknown result or total. The focus of today's lesson is to support the use of the tape diagram within the RDW process:

- Read.
- Draw and label.
- Write a number sentence and a statement

In Lesson 20, students grapple with solving both addition and subtraction Problem types. Students should keep their Problem Sets in a folder, along with the Word Problems from Lessons 13–18.

Distribute Problem Sets, and have students work with a partner.

### PROBLEM 1



**This problem is optional**

**T:** (Project Problem 1 on the board.) Let's read the problem together.

**S/T:** Lee saw 6 yellow squashes and 7 pumpkins growing in his garden. How many vegetables did he see growing in his garden?

**YOUR NOTES:**

**T:** On your own, work on solving the problem. Remember that we always read the problem, draw and label, and write the number sentence and the statement that answers the question.

**S/T:** (Reread the problem as students begin to solve. Provide a maximum of two minutes for students to draw and label.)

**T:** How did you use drawing to make sense of the problem? Talk with a partner and explain your drawing.

**S:** (Provide students 30–45 seconds to share with a partner.) I drew the 6 squashes in a straight line, and then 7 pumpkins. I figured out that was 13. (Project students' work as they describe their drawings to the class. Choose student work that most closely resembles the tape diagram shown to the right.)

**T:** Look at this student's work. Where in the drawing can I find the squashes?

**S:** (Point to the picture.)

**T:** (If the 6 squashes are not inside a rectangle or circle to show the part, include this next sentence.) The label helps find this part of the drawing. Let's put a rectangle around it, so I can keep track of this part more easily.

**T:** How many are there?

**S:** 6.

**T:** How can I tell quickly? (If the number is not labeled in the drawing or is not near the picture, reword the second question to, "What can I do so I can tell quickly?")

**S:** He wrote 6 next to his picture.

Repeat the process asking about the pumpkins using the same student work example.

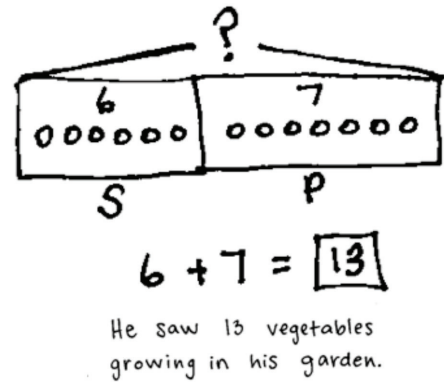
**T:** (Ask a student to read the question from the story again for the class.) How many vegetables are there?

**S:** 13 vegetables.

**T:** So, from here (pointing to one end of the squashes) to here (pointing to the other end of the pumpkins), we have 13 vegetables?

**S:** Yes!

**T:** Let's show that above our drawing, so we can keep track. (Draw as shown, so that the bracket, or arms, represent that everything from one end to the other has a total of 13. Label with 13.) When we connect our two parts like this and show the total, we call it a **tape diagram**. If you didn't show this in your drawing, add it now.



**Problem 1:** Lee saw 6 squashes and 7 pumpkins growing in his garden. How many vegetables did he see growing in his garden?

## PROBLEMS 2-6

Repeat the process for each of the next problems. Use the questions to move students toward placing rectangles around each part and labeling with the number inside the part, as well

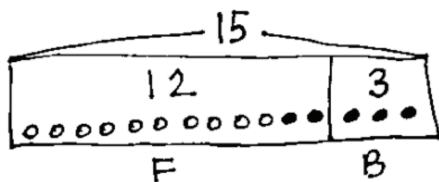
as using a letter label outside of the shape. Encourage students to make their rectangles touch, so that they have one large rectangle for showing the total—the whole.

When discussing Problem 3, after students have had a chance to solve it, include the following question.

- How could using a color change at 10 help you keep track of the number of soccer balls on the field?

Before moving on to the next problem, ensure that all students have added labels to each part of their drawings, written the number sentence, and completed the statement.

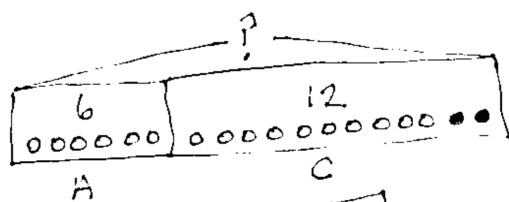
Choose probing questions appropriate to the successes and challenges of the class. Encourage early finishers to write their own word problems on another sheet of paper. They can write the problem on one side and then write the solution using a drawing, number sentence, and statement on the other side.



$$12 + 3 = 15$$

Anton's team has 15 soccer balls.

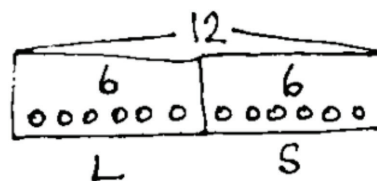
**Problem 3:** Anton's team has 12 soccer balls on the field and 3 soccer balls in the coach's bag. How many soccer balls does Anton's team have?



$$6 + 12 = 18$$

There were 18 people swimming in the lake.

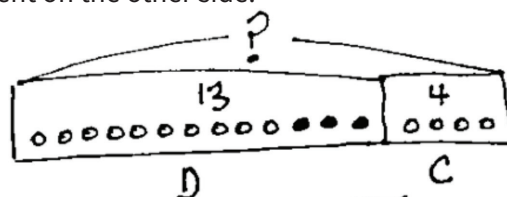
**Problem 5:** 6 adults and 12 children were swimming in the lake. How many people were swimming in the lake?



$$6 + 6 = 12$$

They have 12 reptiles altogether.

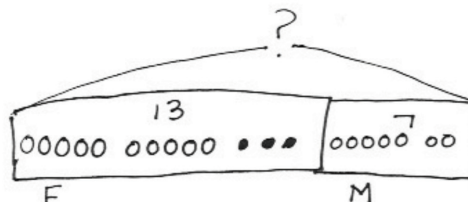
**Problem 2:** Kiana caught 6 lizards. Her brother caught 6 snakes. How many reptiles do they have altogether?



$$13 + 4 = 17$$

Emi had 17 friends come over to her house.

**Problem 4:** Emi had 13 friends over for dinner. 4 more friends came over for cake. How many friends came over to Emi's house?



$$13 + 7 = 20$$

There are 20 flowers in the vase.

**Problem 6:** Rose has a vase with 13 flowers. She puts 7 more flowers in the vase. How many flowers are in the vase?

**YOUR NOTES:**

YOUR NOTES:

MULTIPLE MEANS OF ENGAGEMENT

Appropriate scaffolds help all students feel successful. Students may use translators, interpreters, or sentence frames to present their solutions or respond to feedback. Models shared may include concrete manipulatives.

If anticipating that students will struggle with the problems because of the size of the numbers or the complexity of the language, follow up with a similar problem that uses either smaller quantities or less complex language as a scaffold step. Be sure to provide at least one challenging problem to all students to help them build stamina and perseverance in problem solving.

Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 19

G:1 M:4

Tape Time

ZEARN STUDENT NOTES

Name: \_\_\_\_\_

Complete: ☐ Date: \_\_\_\_\_

1

Emily's team has 12 soccer balls on the field and 3 soccer balls in the coach's bag.

R

How many soccer balls does Emily's team have?

12

3

○○○○○○○○○○○○●●●●

F

B

?

= 15

W

12

+

3

=

15

Emily's team has 15 soccer balls.

→

## YOUR NOTES:

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Today, we called our drawings **tape diagrams**. Think about the diagrams we draw in science class. Why might we use the word *diagram* here? What are the important parts of our tape diagram?
- Look at Problem 2. What do you notice about the size of each rectangle around the parts? Why is that?
- Look at Problem 5. How is the tape diagram similar to the one you made for Problem 2? How is it different? Compare the size of the two rectangles around each part of Problem 5. What do you notice?

### EXIT TICKET

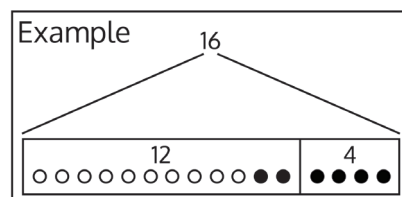
After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

### Task

**R**ead the word problem.

**D**raw a tape diagram and label.

**W**rite a number sentence and a statement that matches the story.



Peter counted 14 ladybugs in a garden and Lee counted 6 ladybugs outside of the garden.  
How many ladybugs did they count in all?

**YOUR NOTES:**

They counted \_\_\_\_\_ ladybugs.

**Answers**

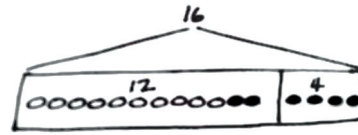
20;  $14 + 6 = 20$ ; labeled tape diagram

## PROBLEM SET

**R**ead the word problem.

**D**raw a tape diagram and label.

**W**rite a number sentence and a statement that matches the story.



- Lee saw 6 squashes and 7 pumpkins growing in his garden.  
How many vegetables did he see growing in his garden?

Lee saw \_\_\_\_\_ vegetables.

- Kiana caught 6 lizards. Her brother caught 6 snakes. How many reptiles do they have altogether?

Kiana and her brother have \_\_\_\_\_ reptiles.

- Anton's team has 12 soccer balls on the field and 3 soccer balls in the coach's bag.  
How many soccer balls does Anton's team have?

Anton's team has \_\_\_\_\_ soccer balls.

- Emi had 13 friends over for dinner. 4 more friends came over for cake. How many friends came over to Emi's house?

There were \_\_\_\_\_ friends.



5. 6 adults and 12 children were swimming in the lake. How many people were swimming in the lake?

There were \_\_\_\_\_ people swimming in the lake.

6. Rose has a vase with 13 flowers. She puts 7 more flowers in the vase. How many flowers are in the vase?

There are \_\_\_\_\_ flowers in the vase.

YOUR NOTES:

## Lesson 20

Recognize and make use of part-whole relationships within tape diagrams when solving a variety of problem types.

---

### Warm-Up

#### FLUENCY PRACTICE

##### Beep Counting by Ones and Tens



**NOTE:** This fluency activity allows students to practice their counting sequences as well as practicing mentally adding 10 and subtracting 10 from a given number.

Say a series of four numbers, but replace one of the numbers with the word “beep” (e.g., “1, 2, 3, beep”). When signaled, students say the number that was replaced by the word “beep” in the sequence. Scaffold number sequences, beginning with easy sequences and moving to more complex ones. Choose sequences that count forward and backward by ones and tens within 40.

Suggested sequence type: 10, 11, 12, beep; 20, 21, 22, beep; 20, 19, 18, beep; 30, 29, 28 beep; 0, 10, 20, beep; 1, 11, 21, beep; 40, 30, 20, beep; 39, 29, 19, beep. Continue with similar sequences, changing the sequential placement of the beep.

##### Number Bond Addition and Subtraction

**Materials:** (S) Personal white board



**NOTE:** This fluency activity builds students’ ability to add and subtract within 10 or 20, while reinforcing the relationship between addition and subtraction. The first two to three minutes should be spent reviewing the core fluency within 10. In the last one to two minutes, allow students who are very strong with sums and differences to 10 to work with a partner and choose totals between 10 and 20.

Write a number bond for a number between 0 and 10, with a missing part or whole. Students write an addition and a subtraction sentence with a box for the missing number in each equation. They then solve for the missing number.

**YOUR NOTES:****Addition and Subtraction with Cards**

**Materials:** (S) Addition and subtraction cards (Lesson 12 Template), addition and subtraction cards set 2 (Lesson 17 Template)



**NOTE:** This fluency game reviews the problem types presented in Topics A–D, as well as subtraction from Mission 2.

Follow the directions in Lesson 13’s Fluency.

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## Concept Exploration

**Materials:** (S) Problem Set, highlighter



**NOTE:** During Lesson 20, the suggested delivery of instruction is an integration of student work on the Problem Set with guided instruction interspersed between each problem. Today, the unknown in each problem varies between a part and the total. The sequence of problems has been designed to support students in using the RDW process particularly to keep track of information as they determine whether they are looking for a part or the total—and to use the visual representation of the information to support calculations.

## Suggested Delivery of Instruction for Solving Word Problems

### 1. Model the problem, calculate, and write a statement.

Choose two pairs of students who have been accurately solving the Word Problems from Topic D and using simple shapes in a straight line when drawing. Invite these two pairs of students to work on chart paper while the others work independently or in pairs at their seats. Vary the selected students as the problems become more complex. Review the following questions before beginning the first problem:

- Can you draw something?
- What can you draw?
- What can you tell from looking at your drawing?

As students work, circulate. Reread Problem 1 and reiterate the questions above. After a maximum of two minutes, have the pairs of students share their labeled diagrams. Give the students two to three minutes to finish work on that question, sharing their work and thinking with a peer. All should write their equations and statements of the answer.

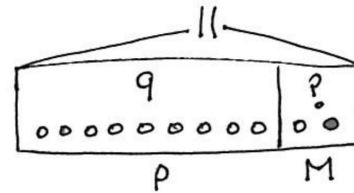
### 2. Assess the solution for reasonableness.

Give students one to two minutes to assess and explain the reasonableness of their solution. For about one minute, have the demonstrating students receive and respond to feedback and questions from their peers.

### 3. As a class, notice the ways the drawing depicts the story and the solution.

Ask questions to help students recognize how each part of their drawing matches the story and solution. This helps students begin to see how the same process can help them solve varying word problems. Keep at least one chart paper sample of each solution for reference later in the lesson.

**YOUR NOTES:**



$$9 + \boxed{2} = 11$$

Two more dogs  
came to the park.

## PROBLEM 1

 **This problem is optional**

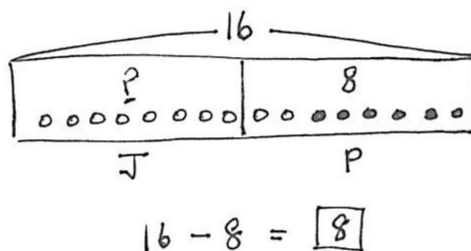
9 dogs were playing at the park. Some more dogs came to the park. Then, there were 11 dogs. How many more dogs came to the park?

Problem 1: 9 dogs were playing at the park. Some more dogs came to the park. Then, there were 11 dogs. How many more dogs came to the park?

To support students' methods for keeping track of their information, ask some of the following questions:

- What labels did the student use to show the part consisting of the dogs that were playing at first?
- How did she separate them from the part consisting of the dogs that came later?
- What label did she use for the total number of dogs?
- Where did she put the label for the total number of dogs? How did that help?

Be sure to discuss the solution and the number sentence, noting which number from the number sentence is the solution number. This number should have a rectangle around it, as shown.



$$16 - 8 = \boxed{8}$$

There are 8 for  
Julio to eat.

Problem 2: 16 strawberries are in a basket for Peter and Julio. Peter eats 8 of them. How many are there for Julio to eat?

YOUR NOTES:



This problem is optional

16 strawberries are in a basket for Peter and Julio. Peter eats 8 of them. How many are there for Julio to eat?

PROBLEM 3

13 children are on the roller coaster. 3 adults are on the roller coaster. How many people are on the roller coaster?

Have the class read one sentence of the problem at a time while the students at the board show where the information is within their drawings, pointing out the number and letter labels. Discuss where they can find the solution within the number sentence, and ensure that everyone has placed a rectangle around this number.

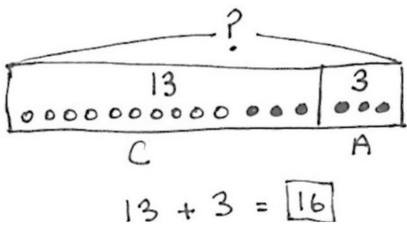
Some students may initially assume this problem requires subtraction. The process of walking through each sentence to ask, “Is this a new part, or does this include the part I already drew?” can support students who are internalizing a process for making sense of word problems.

PROBLEM 4

13 people are on the roller coaster now. 3 adults are on the roller coaster, and the rest are children. How many children are on the roller coaster?

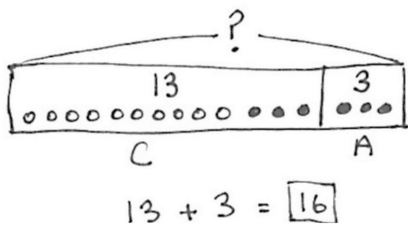
While this problem uses the same context as Problem 3, the problem type is different. As students consider the question, “Is this a new part, or is this a part of what I already drew?” they recognize that in this problem the unknown number is a part of the total 13.

During the Lesson Synthesis, Problems 3 and 4 are compared.



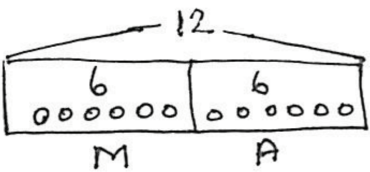
There are 16 people on the rollercoaster.

Problem 3: 13 children are on the roller coaster. 3 adults are on the roller coaster. How many people are on the roller coaster?



There are 16 people on the rollercoaster.

Problem 4: 13 people are on the roller coaster now. 3 adults are on the roller coaster, and the rest are children. How many children are on the roller coaster?



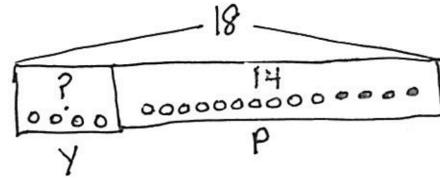
6 + 6 = 12 Ben has 12 baseball practices.

Problem 5: Ben has 6 baseball practices in the morning this month. If Ben also has 6 practices in the afternoon, how many baseball practices does Ben have?

**PROBLEM 5****YOUR NOTES:**

Ben has 6 baseball practices in the morning this month. If Ben also has 6 practices in the afternoon, how many baseball practices does Ben have?

Choose probing questions appropriate to the successes and challenges of the class. Notice students who are improving, and ask them to share their increasing understanding.

**PROBLEM 6**

Some yellow beads were on Tamra's bracelet. After she put 14 purple beads on the bracelet, there were 18 beads. How many yellow beads did Tamra's bracelet have at first?

$$\begin{array}{l} \boxed{4} + 14 = 18 \\ 14 + \boxed{4} = 18 \\ 18 - 14 = \boxed{4} \end{array}$$

As an *add to with start unknown* problem type, this is most likely the most challenging problem of the set.

Tamra's bracelet had 4 yellow beads at first.

In this example, the student approaches the problem by first drawing an empty box for the yellow beads and putting the question mark in it. Next, the 14 are drawn, and the total of 18 is labeled. Finally, the student counts up from 14 to 18 while drawing in the additional 4 beads to find the missing part.

Problem 6: Some yellow beads were on Tamra's bracelet. After she put 14 purple beads on the bracelet, there were 18 beads. How many yellow beads did Tamra's bracelet have at first?

The number sentences are written. The most probable solution equation would be the center one,  $14 + \underline{\hspace{2cm}} = 18$ . Not many first graders will opt to start with a part unknown or subtract 14 from 18.

**MULTIPLE MEANS OF EXPRESSION**

Grouping students in pairs and asking them to explain their work to each other can support students' language development. Students can ask each other the same questions that the teacher asks. Be sure to have students switch roles so that all students have the opportunity to practice verbalizing their thinking and listening.

**MULTIPLE MEANS OF ENGAGEMENT**

**YOUR NOTES:**

Appropriate scaffolds help all students feel successful. Students may use translators, interpreters, or sentence frames to present their solutions or respond to feedback. Models shared may include concrete manipulatives.

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## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

There are no notes for this digital lesson. Go online to see the full digital lesson.

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## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- How are Problems 3 and 4 alike? How are they different? How did your drawings help you to solve each problem?
- In which problems could making ten help you? Explain your thinking.
- Look at Problem 2 and Problem 3. What is similar, and what is different between the two problems? What do you notice about the size of the rectangles around each part in Problem 2? What do you notice in Problem 3?
- Look at Problem 6. How did you solve this problem? What did you draw first? Next? Did anyone do it a different way? Using a highlighter, underline the question in each problem. Highlight the part of the tape diagram that shows the answer to the question. What do you notice?
- Some people only write numbers and not circles inside the parts of a tape diagram. Why do we draw the circles sometimes? Why do we just use numbers at times?

### EXIT TICKET

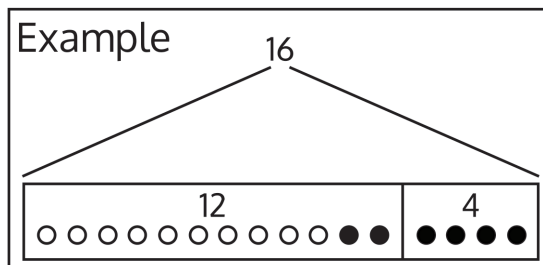
After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**YOUR NOTES:****Task**

**R**ead the word problem.

**D**raw a tape diagram and label.

**W**rite a number sentence and a statement that matches the story.



There were 6 turtles in the tank. Dad bought some more turtles. Now, there are 12 turtles.  
How many turtles did Dad buy?

Dad bought \_\_\_\_\_ turtles.



## Answers

6;  $6 + 6 = 12$  or  $12 - 6 = 6$ ; labeled tape diagram

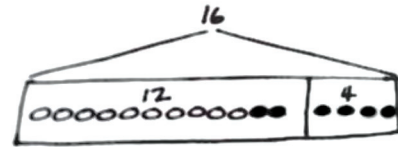
## PROBLEM SET

**R**ead the word problem.

**D**raw a tape diagram and label.

**W**rite a number sentence and a statement that matches the story.

- 9 dogs were playing at the park. Some more dogs came to the park. Then, there were 11 dogs. How many more dogs came to the park?



\_\_\_\_\_ more dogs came to the park.

- 16 strawberries are in a basket for Peter and Julio. Peter eats 8 of them. How many are there for Julio to eat?

Julio has \_\_\_\_\_ strawberries to eat.

- 13 children are on the roller coaster. 3 adults are on the roller coaster. How many people are on the roller coaster?

There are \_\_\_\_\_ people on the roller coaster.

4. 13 people are on the roller coaster now. 3 adults are on the roller coaster, and the rest are children. How many children are on the roller coaster?

There are \_\_\_\_\_ children on the roller coaster.

5. Ben has 6 baseball practices in the morning this month. If Ben also has 6 practices in the afternoon, how many baseball practices does Ben have?

Ben has \_\_\_\_\_ baseball practices.

6. Some yellow beads were on Tamra's bracelet. After she put 14 purple beads on the bracelet, there were 18 beads. How many yellow beads did Tamra's bracelet have at first?

Tamra's bracelet had \_\_\_\_\_ yellow beads

**YOUR NOTES:**

YOUR NOTES:

# Lesson 21

Recognize and make use of part-whole relationships within tape diagrams



## TIP

**The teacher materials are optional for this lesson.** Students explore these concepts in their Independent Digital Lesson and we recommend that you continue your instruction with the next lesson. Students who demonstrate a need for further support can explore these concepts with you and peers as part of a flex day as needed.

when solving a variety of problem types.

## Warm-Up

### FLUENCY PRACTICE

#### Race and Roll Addition

**Materials:** (S) 1 die per set of partners

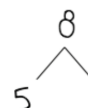


**NOTE:** In this fluency activity, students practice adding and subtracting within 20 by means of the Core Fluency Practice Sets during Whole Group Fluency time and Sprints during Independent Digital Lessons. The competitive nature of Race and Roll Addition and Subtraction promotes students' engagement while increasing their brains' ability to retain information (since the partners are trying to stand quickly).

All students start at 0. Partners take turns rolling a die, saying a number sentence, and adding the number rolled to the total. For example, Partner A rolls 6 and says, "0 + 6 = 6." Then, Partner B rolls 3 and says, "6 + 3 = 9." They continue rapidly rolling and saying number sentences until they get to 20 without going over. Partners stand when they reach 20. For example, if they are at 18 and roll 5, they would take turns rolling until one of them rolls a 2 or a 1 and a 1. Then, they would both stand.

#### Number Bond Addition and Subtraction

**Materials:** (S) Personal white board



$$5 + \boxed{3} = 8$$

$$8 - 5 = \boxed{3}$$

$$\boxed{3} + 5 = 8$$

$$8 - \boxed{3} = 5$$

## YOUR NOTES:



**NOTE:** This fluency activity builds a student's ability to add and subtract within 10. Reviewing the relationship between addition and subtraction is especially beneficial for students who continue to find subtraction challenging.

Write a number bond for a number between 0 and 10, with a missing part or whole. Today, students write two addition and two subtraction sentences with a box for the missing number in each equation. They then solve for the missing number.

## Take Out 1 or 10



**NOTE:** This activity reviews place value to prepare students for Topic F.

Choose numbers between 10 and 20 and follow the paradigm below.

**T:** Say 15 the Say Ten way.

**S:** Ten 5.

**T:** Take out 1.

**S:** Ten 4.

Repeat for 25 and 35. Then, take out 10 from 15, 25, and 35, respectively.

## Longer/Shorter

**Materials:** (T) Board or document camera



**NOTE:** Working with visualizing proportional relationships between numbers can support students' number sense development. By using tape diagram models, students can recognize methods for representing numbers in relation to other numbers.

Write one pair of numbers on the board at a time (e.g., 5 and 5). Draw a rectangle under the first number.

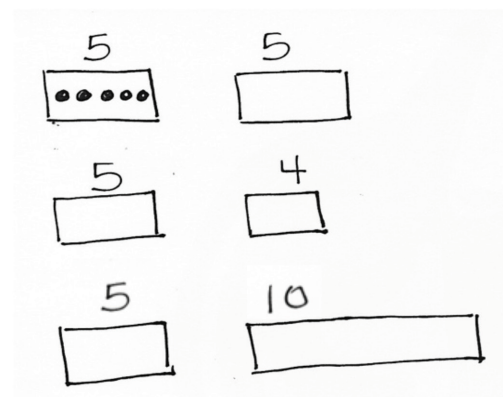
**T:** This rectangle is long enough to hold this row of 5 dots. (Draw 5 dots so that they fill the space.)

**T:** (Point to the second number, which in this first example is also 5.) I'm going to start drawing a rectangle that is long enough to hold a row of 5 dots of the same size. Tell me when to stop.

**T/S:** (Begin drawing a rectangle, and give students the chance to say "Stop!" when it is approximately the same size as the first rectangle.)

**T:** Why did you say "stop" there?

**S:** It is about the same size as the first rectangle.



Repeat this process for the following sequence of numbers: 5 and 4, 5 and 10, 1 and 3, 4 and 6, 10 and 20. Only draw the dots for the first example. Have students talk about how the first number relates to the second number using language such as *a little longer*, *a little shorter*, *much longer*, *double*, etc. Have students who find this challenging use a number line with their left pointer finger on zero and their right pointer finger on the number (endpoint).

**YOUR NOTES:**

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## Concept Exploration

**Materials:** (S) Problem Set



**NOTE:** As in Lessons 19 and 20, the suggested delivery of instruction for Lesson 21 is an integration of student work on Problem Sets with guided instruction interspersed between each problem. If students have been highly successful with the past days' lessons, have them try representing the quantities in each part using the number and label without including the shapes inside each part. The goal is to support students in identifying a process for making sense of a problem today.

By working with the tape diagrams as drawings related to the varying problem types, students can internalize an entry point into any problem. *Can you draw something? What can you draw? What can you tell from looking at your drawing?* Tape diagrams, even without shapes inside each part, can be considered a type of drawing. Remember to have students hold on to the Problem Sets so they can use them as a reference later in the topic

## Suggested Delivery of Instruction for Solving Word Problems

### 1. Model the problem, calculate, and write a statement.

Choose two pairs of students who have been accurately solving the Word Problems from Topic D and using simple shapes in a straight line when drawing. Invite these two pairs of students to work on chart paper while the others work independently or in pairs at their seats. Vary the selected students as the problems become more complex. Review the following questions before beginning the first problem:

- Can you draw something?
- What can you draw?
- What can you tell from looking at your drawing?

As students work, circulate. Reread Problem 1, and reiterate the questions above. After a maximum of two minutes, have the pairs of students share their labeled diagrams. Give the students two to three minutes to finish work on that question, sharing their work and thinking with a peer. All should write their equations and statements of the answer.

### 2. Assess the solution for reasonableness.

**YOUR NOTES:**

Give students one to two minutes to assess and explain the reasonableness of their solution. For about one minute, have the demonstrating students receive and respond to feedback and questions from their peers.

$$7 + \boxed{11} = 18$$

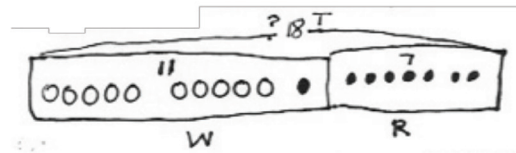
**3. As a class, notice the ways the drawing depicts the story and the solution.**

Ask questions to help students recognize how each part of their drawing matches the story and solution. This helps students begin to see how the same process can help them solve varying word problems. Keep at least one chart paper sample of each solution for reference later in the lesson.

## PROBLEM 1

Rose drew 7 pictures, and Willie drew 11 pictures. How many pictures did they draw altogether?

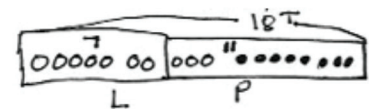
This problem, a *put together with total unknown*, is one of the easiest problem types. After the students have explained their drawings and solutions accurately, point to sections of the tape diagram, and ask the class questions such as, “What does this part represent? How do you know? What did the student draw or write to help us remember?”



For the next five problems, move quickly from one to the next, having only the students at the board share their work, so that students have time to work through and discuss all six problems. Choose one or two probing questions similar to Problems 1 and 2 to support student development as needed.

## PROBLEM 2

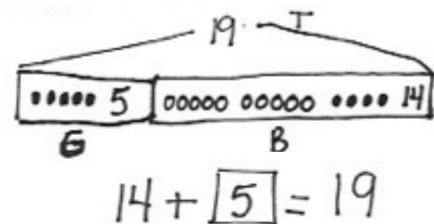
Darnel walked 7 minutes to Lee's house. Then, he walked to the park. Darnel walked for a total of 18 minutes. How many minutes did it take Darnel to get to the park?



$$7 + \boxed{11} = 18$$

## PROBLEM 3

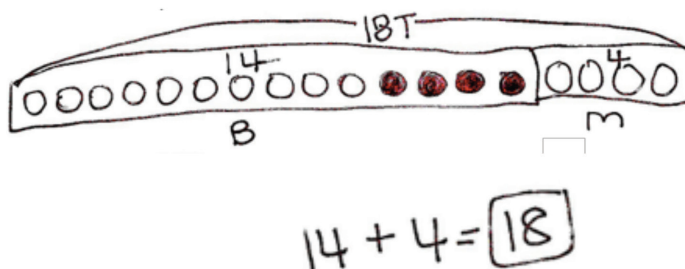
Emi has some goldfish. Tamra has 14 betta fish. Tamra and Emi have 19 fish in all. How many goldfish does Emi have?



$$14 + \boxed{5} = 19$$

**PROBLEM 4**

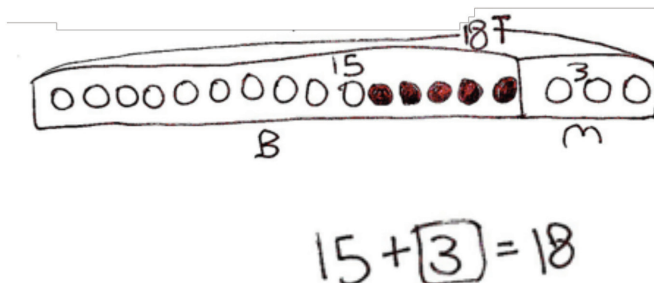
Shanika built a block tower using 14 blocks. Then, she added 4 more blocks to the tower. How many blocks are there in the tower now?



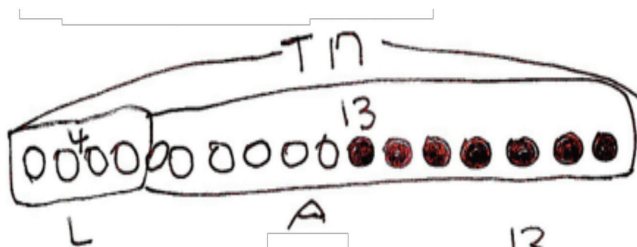
YOUR NOTES:

**PROBLEM 5**

Nikil's tower is 15 blocks tall. He added some more blocks to his tower. His tower is 18 blocks tall now. How many blocks did Nikil add?

**PROBLEM 6**

Ben and Peter caught 17 tadpoles. They gave some to Anton. They have 4 tadpoles left. How many tadpoles did they give to Anton?



$$17 - 4 = 13$$

**MULTIPLE MEANS OF ACTION AND EXPRESSION**

If students do not have experience with a context such as the one used in Problem 2, act out the problem with a few student volunteers before having the class begin to draw and solve the problem.

**MULTIPLE MEANS OF REPRESENTATION**

Encourage students who have difficulty moving to the tape diagram representation as the position of the unknown changes to draw a number bond as part of their work. Some students more easily relate to the tape diagram through its similarities with number bonds.



## YOUR NOTES:

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

<b>Lesson 21</b> G:1 M:4	<b>Tape Together</b> <b>ZEARN STUDENT NOTES</b>
-----------------------------	----------------------------------------------------

Name: \_\_\_\_\_  
 Complete: ☐ Date: \_\_\_\_\_

**1** Emily walked 7 minutes to the library. Then, she walked to the park. Emily walked for a total of 18 minutes.  
 How many minutes did it take Emily to get to the park?

It took Emily 11 minutes to walk to the park.

➔

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- In an earlier lesson, we were looking at smaller, single-digit addition facts inside two-digit addition problems. Can you find any simpler addition facts inside your number sentences? Share your examples. How can you draw your tape diagrams in ways that help you see simple problems inside the larger ones?

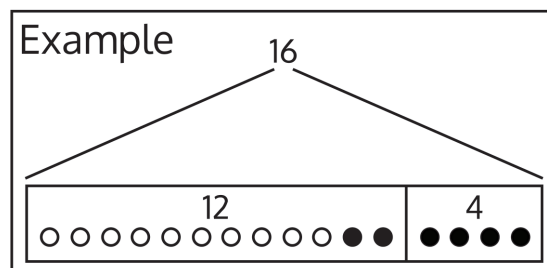
**YOUR NOTES:**

- Using a highlighter, underline the question in each problem. Highlight the part of the tape diagram that shows the answer to the question. What do you notice?
- Some people write only numbers and not circles inside the parts of a tape diagram. Why might we want to include the circles in each part? Why might we choose sometimes to use only the number and leave out the circles in each part?
- Look at Problem 1. What did you draw? How did your drawing help you solve the problem?
- Look at Problem 2. What did you draw first? How is your drawing similar or different from the drawing you made for Problem 1?
- Look at Problem 3. How did you draw this problem? How is your drawing similar to or different from your partner's drawing?
- Look at Problem 5. Did you solve this the same way you solved Problem 3, or did you solve it in a different way? Share your drawing, and explain your thinking.

**EXIT TICKET**

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts

explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task**

**R**ead the word problem.

**D**raw a tape diagram and label.

**W**rite a number sentence and a statement that matches the story.

Shanika read some pages on Monday. On Tuesday, she read 6 pages. She read 13 pages during the 2 days. How many pages did she read on Monday?

Shanika read \_\_\_\_\_ pages on Monday.

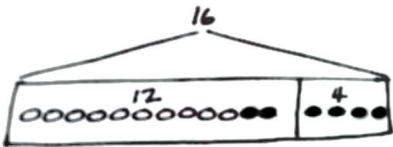
Answers

7;  $6 + 7 = 13$  or  $13 - 6 = 7$ ; labeled tape diagram

PROBLEM SET

Read the word problem.  
Draw a tape diagram and label.  
Write a number sentence and a statement that matches the story.

1. Rose drew 7 pictures, and Willie drew 11 pictures. How many pictures did they draw all together?



They drew \_\_\_\_\_ pictures.

2. Darnel walked 7 minutes to Lee’s house. Then, he walked to the park. Darnel walked for a total of 18 minutes. How many minutes did it take Darnel to get to the park?

It took Darnel \_\_\_\_\_ minutes to get to the park.

3. Emi has some goldfish. Tamra has 14 betta fish. Tamra and Emi have 19 fish in all. How many goldfish does Emi have?

Emi has \_\_\_\_\_ goldfish.

4. Shanika built a block tower using 14 blocks. Then, she added 4 more blocks to the tower. How many blocks are there in the tower now?

The tower is made of \_\_\_\_\_ blocks.

5. Nikil's tower is 15 blocks tall. He added some more blocks to his tower. His tower is 18 blocks tall now. How many blocks did Nikil add?

Nikil added \_\_\_\_\_ blocks.

**YOUR NOTES:**

6. Ben and Peter caught 17 tadpoles. They gave some to Anton. They have 4 tadpoles left. How many tadpoles did they give to Anton?

They gave Anton \_\_\_\_\_ tadpoles.

**YOUR NOTES:**

# Lesson 22

YOUR NOTES:

Write word problems of varied types.



## TIP

**There is no Independent Digital Lesson** corresponding to today's Concept Exploration. Students should use digital time to complete other digital lessons in this Mission. If a student has already completed 4 digital lessons this week, they should complete digital bonuses from this Mission.

## Warm-Up

### FLUENCY PRACTICE

#### Race and Roll Addition

**Materials:** (S) 1 die per set of partners



**NOTE:** In previous Race and Roll Addition games, students raced to 20. Today, change the target number to 10, and practice both addition and subtraction. As students play, pay attention to their automaticity. When students demonstrate strong fluency to 10, increase the target number to 12.

Repeat Race and Roll Addition from Lesson 21. Instead of racing to 20 and stopping, students start at 0 and roll and add until they hit 10. Once they do, they roll to get back to 0 by subtracting.

#### Longer/Shorter

**Materials:** (T) Board or document camera



**NOTE:** This fluency activity enables students to practice visualizing quantities in relationship to other quantities.

Write one pair of numbers on the board at a time (e.g., 10 and 20). Draw a rectangle under the first number.

**T:** This rectangle can fit a row of 10 dots.

**T:** (Point to the second number, which in this example is 20.) I'm going to start to draw a rectangle that can fit a row of 20 dots of the same size. Tell me when to stop.



**YOUR NOTES:**

**T/S:** (Begin drawing a rectangle, and give students the chance to say “Stop!” when it is approximately twice the size of the first rectangle.)

**T:** Why did you say “stop” there?

**S:** It is about double the length of the first rectangle. A rectangle for 20 has to fit  $10 + 10$ .

Repeat this process for the following sequence of numbers: 10 and 5, 4 and 4, 4 and 8, 4 and 2, 8 and 10, 10 and 9. Only draw the actual dots for the first example. With each example, help students talk about how the first number compares, or relates, to the second number using language such as *a little longer*, *a little shorter*, *much longer*, *double*, etc.

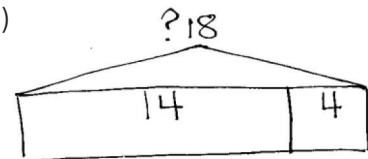
## Concept Exploration

**Materials:** (T) Chart paper (S) Folder with Word Problems from Lessons 13–18 and Problem Sets from Lessons 19–21, personal white board

Have students bring all materials to the meeting area.

**T:** (Display the tape diagram shown in the image to the right.)

I found this drawing on a piece of paper on the floor. It went with someone’s word problem from this week. Does anyone know which one it went to? Look through your Problem Sets with a partner, and see if you can figure it out.



### Talk about how you know.

**S:** (Look back at Problem Sets with a partner, and discuss what is the same about the problem and the tape diagram.)

**T:** Which problem does this tape diagram go with?

**S:** This tape diagram goes with the problem about Shanika’s tower (Problem 4 in Lesson 21). (Explains how the referents align with the problem story.) → I think it goes with the one about Tamra’s yellow and purple beaded bracelet (Problem 6 in Lesson 20). (Explains how the referents align with the problem story.)

**T:** Hmm. They both sound like they could match this tape diagram.

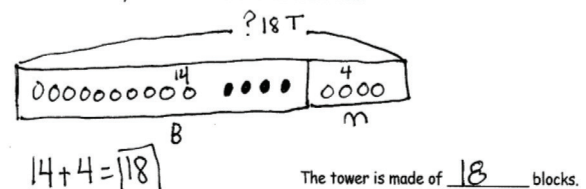
**T:** (Draw the tape diagram shown in the image on the right.)

This is a tape diagram for a problem from yesterday’s lesson. Which problem does this match?

**S:** (Look back at the Problem Set for Lesson 21 with a partner, and discuss what is the same about the problem and the tape diagram.)

**T:** Which problem does the tape diagram go with?

4. Shanika built a block tower using 14 blocks. Then, she added 4 more blocks to the tower. How many blocks are there in the tower now?



Lesson 21 Problem 4



## YOUR NOTES:

S: It's the one where Nikil builds a tower with 15 blocks and then adds some more. It's Problem 5. (Explains how the referents align with the problem story.)

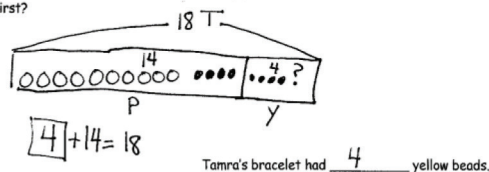
T: With your partner, try to come up with a different story that could go with this tape diagram. You can use your tape diagram template as you discuss your idea.

T: (While students are discussing, circulate and listen.)

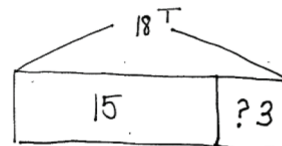
Listen to students as they generate their story ideas, and choose three student math stories to use as samples for the class. Present the stories in the following order:

- A story that parallels the examples using a different topic. (An add to with a change unknown problem type, where the 3 is the unknown number, e.g.,  $15 + ? = 18$ .)
- An add to with a result unknown problem type, for example,  $15 + 3 = ?$
- A different add to or take from with a change unknown problem or an add to with the start unknown problem, for example,  $3 + ? = 18$ ,  $18 - ? = 15$ , or  $? + 15 = 18$ .

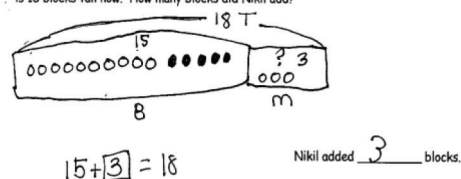
6. Some yellow beads were on Tamra's bracelet. After she put 14 purple beads on the bracelet, there were 18 beads. How many yellow beads did Tamra's bracelet have at first?



Lesson 20 Problem 6



5. Nikil's tower is 15 blocks tall. He added some more blocks to his tower. His tower is 18 blocks tall now. How many blocks did Nikil add?



Lesson 21 Problem 5

As the students share the problem with the class, redraw the tape diagram, label appropriately for the given story, and write the accompanying number sentences and statement.

T: What was similar in all of these problems?

S: All of our problems used the same tape diagram.

T: What was different in each story problem?

S: The topic was different. → Sometimes, the unknown or mystery number was different. Sometimes, my number sentence was an addition sentence, and sometimes it was a subtraction sentence. → The statement answered the question, and the question was different for each story problem.

T: How could knowing the answer to one story problem help you with a different story problem?

S: Sometimes, they do use the same number sentence. → Even when the number sentences were different, they used a related fact, like  $15 + 3 = 18$  can still help you with  $18 - 15 = 3$ , since they use the same number bond.

### MULTIPLE MEANS OF ACTION AND EXPRESSION

Giving students an opportunity to share their thinking allows them to evaluate their process and practice. English language learners also benefit from hearing others explain their thinking.

**YOUR NOTES:****MULTIPLE MEANS OF REPRESENTATION**

Highlight the vocabulary used in the Problem Set to ensure understanding of all words. This supports vocabulary development, especially with English language learners.

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## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Share an “add to with a change unknown” story problem that you wrote with your partner (e.g.  $15 + ? = 18$ ). What is the unknown number in your partner's question? What number sentence would help you solve the question?
- Share an “add to with a result unknown” story problem that you wrote with your partner (e.g.  $15 + 3 = ?$ ). What is the unknown number in your partner's question? What number sentence would help you solve the question?
- Share an “add to with the start unknown” story problem that you wrote with your partner (e.g.  $? + 15 = 18$ ). What is the unknown number in your partner's question? What number sentence would help you solve the question?

### EXIT TICKET

**Answers**

Stories A and C match the tape diagram.

## TOPIC F

# Addition of Tens and Ones to a Two-Digit Number



In Topic F, students begin adding like units within pairs of two-digit numbers. Lesson 23 focuses on taking interpretations of two-digit numbers a step further, having students interpret numbers such as 25 as 1 ten and 15 ones, as well as 2 tens and 5 ones and as 25 ones. Working with this concept supports student understanding in the next lessons when students add pairs such as  $14 + 16$  and initially make 2 tens and 10 ones.

During Lessons 24 and 25, students interchangeably add sets of two-digit numbers, where the ones digits produce a sum less than or equal to 10. For example, when adding  $17 + 13$ , students decompose the second addend into 10 and 3. They then add 10 to 17, making 27, and then add the remaining ones. In Lesson 25, students also practice adding ones to the first addend and then adding the remaining ten.

In Lessons 26 and 27, students add tens and ones when the ones digits have a sum greater than 10, such as  $19 + 15$ . Students continue to decompose the second addend, alternating between adding on the ten first and making the next ten, as shown to the right. In Lesson 27, students solve the same problem using the varying strategies taught throughout the topic. Students continue to strengthen their use of Level 3 strategies for adding numbers to 40.

The mission closes with Lessons 28 and 29, wherein students solve Problem Sets of varied types to support flexibility in thinking as they add any pair of two digits whose sum is within 40. In Lesson 29, students again share methods and representations for finding the sums.

$$17 + 13 = 30 \quad 17 + 13 = 30$$

$\begin{array}{c} \diagup \quad \diagdown \\ 10 \quad 3 \end{array}$ 
 $\begin{array}{c} \diagup \quad \diagdown \\ 3 \quad 10 \end{array}$

$$17 + 10 = 27 \quad 17 + 3 = 20$$

$$27 + 3 = 30 \quad 20 + 10 = 30$$

Lesson 24

Lesson 25

$$19 + 15$$

$\begin{array}{c} \diagup \quad \diagdown \\ 10 \quad 5 \end{array}$

$$19 + 10 = 29$$

$$29 + 5 = 34$$

$\begin{array}{c} \diagup \quad \diagdown \\ 1 \quad 4 \end{array}$

Adding to Make the Next Ten First

**Adding to Make the Next Ten First**

$$19 + 15$$

$\begin{array}{c} \diagup \quad \diagdown \\ 1 \quad 14 \end{array}$

$$19 + 1 = 20$$

$$20 + 14 = 34$$

$\begin{array}{c} \diagup \quad \diagdown \\ 10 \quad 4 \end{array}$

Adding to Make the Next Ten First

**Adding to Make the Next Ten First**

Objective	
Topic F	Addition of Tens and Ones to a Two-Digit Number
Lesson 23	Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.
Lesson 24	Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.
Lesson 25	Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.
Lesson 26	Add a pair of two-digit numbers when the ones digits have a sum greater than 10.
Lesson 27	Add a pair of two-digit numbers when the ones digits have a sum greater than 10.
Lesson 28	Add a pair of two-digit numbers with varied sums in the ones.
Lesson 29	Add a pair of two-digit numbers with varied sums in the ones.

YOUR NOTES:

# Lesson 23

Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.


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## Warm-Up

### FLUENCY PRACTICE

#### Grade 1 Core Fluency Differentiated Practice Sets

**Materials:** (S) Core Fluency Practice Sets


 **NOTE:** Throughout Topic F and for the remainder of the year, each day's fluency activity includes an opportunity for review and deeper understanding of the sums and differences with totals through 10 by means of the Core Fluency Practice Sets or Sprints. Five options are provided in this lesson for the Core Fluency Practice Set, with Sheet A being the simplest addition fluency of the grade and Sheet E being the most complex. Start all students on Sheet A. Keeping a record of student progress is suggested to move students to more complex sheets as they are ready.

Students complete as many problems as they can in 90 seconds. Reaching 100% accuracy and completion is recommended before moving students to the next level. Collect any Practice Sheet that has been completed within the 90 seconds, and check the answers. The next time Core Fluency Practice Sets are used, students who have successfully completed their set today can be provided with the next level.

For early finishers, assign a counting pattern and start number. Celebrate improvement as well as advancement. Students should be encouraged to compete with themselves rather than their peers. Interview students on practice strategies. Notify caring adults of each student's progress.

#### Count by 10 with Dimes

**Materials:** (T) 10 dimes

 **NOTE:** This fluency activity strengthens students' ability to recognize a dime and identify its value, while providing practice with counting forward and back by 10.

Lay out and take away dimes in 5-group formation as students count by 10 both the regular way and the Say Ten way.

## YOUR NOTES:

## Tens and Ones

**Materials:** (T) 100-bead Rekenrek



**NOTE:** This fluency activity reviews how to decompose two-digit numbers into tens and ones with the Rekenrek, so students can see alternate decompositions in today's lesson.

**T:** (Show a 16 on the Rekenrek.) How many tens do you see?

**S:** 1 ten.

**T:** How many ones?

**S:** 6 ones.

**T:** Say the number the Say Ten way.

**S:** Ten 6.

**T:** Good. 1 ten plus 6 ones is...?

**S:** 16.

**T:**  $16 + 10$  is...?

**S:** 26.

Slide over the next row, and repeat for 26, and then 36. Continue with the following suggested sequence: 15, 25, 35, 45, 55, 65, 75; 17, 27, 37, 57, 97. Then, follow the same script, but ask students to subtract 10 instead of add 10, using the following suggested sequence: 39, 29, 19, 9; 51, 41, 31, etc.

## WORD PROBLEM

Kim picks up 10 loose pencils and puts them in a cup. Ben has 1 package of 10 pencils that he adds to the cup. How many pencils are now in the cup? Use the RDW process to solve the problem.



**NOTE:** This problem bridges the objectives from Lessons 19 through to Lesson 23. As in Topic D, throughout Topic F the Word Problem starts the lesson so fluency activities flow into the lesson.



10 ones and 1 ten  
20 pencils are in  
the cup.

---

## Concept Exploration

**Materials:** (T) Chart paper, place value chart (Lesson 2 Template 2) (optional) (S) Personal white board, ten-sticks from math toolkit

Have students gather in the meeting area in a semicircle formation.

## YOUR NOTES:

T: (Ask three student volunteers to come to the front.) Show us 3 tens using your magic counting sticks.

S: (Each student shows clasped hands.)

T: How many tens do you see?

S: 3 tens.

T: How many loose ones do you see?

S: 0 ones.

T: What is the value of 3 tens?

S: 30.

T: (Write  $30 = 3$  tens, and fill in the place value chart. Continue to chart student responses as they make other combinations of 30 using tens and ones.)

T: (Ask one student to unclasp her hands.) How many tens do you see?

S: 2 tens.

T: How many loose ones do you see?

S: 10 ones.

T: Do we still have 30? Explain how you know.

S: Yes! → We didn't add anything or take anything away. → 1 ten became 10 ones, but they are the same amount. → They have the same value.

T: How is 30 made here? (Chart the students' answers.)

S: With 2 tens and 10 ones.

Repeat the process and ask the remaining students to unbundle their tens one at a time to show 1 ten 20 ones and, finally, 30 ones.

T: Let's look at the chart. The number 30 can be represented in many different ways. 30 can be made of...?

S: 3 tens, 2 tens 10 ones, 1 ten 20 ones, or 30 ones!

T: Get together with your partner and another pair of students. Show as many tens as you can using your magic counting sticks. (Allow time for group work.)

T: What is the largest amount of tens you can make?

S: 4 tens.

T: What is 4 tens?

S: 40.

T: Show more ways to make 40 and record them on your personal white board.

S: We made 3 tens 10 ones. → 2 tens 20 ones. → 1 ten 30 ones. → 40 ones.

T: (Ask four volunteers to come to the front.) Show 37 using your magic counting sticks with as many tens as possible.

S: (Show 3 tens 7 ones.)

Combinations of **30**  
in tens and ones

tens	ones
3	0

$30 = 3$  tens 0 ones

tens	ones
2	10

$30 = 2$  tens 10 ones

tens	ones
1	20

$30 = 1$  ten 20 ones

tens	ones
0	30

$30 = 30$  ones

**YOUR NOTES:**

**T:** (Tap the third student on the shoulder.) If Student 3 unbundles his ten, how many tens and ones will we have?

**S:** 2 tens 17 ones.

**T:** Let's check. Student 3, unbundle your magic counting sticks! Were we correct? Are there 2 tens and 17 ones?

**S:** Yes!

**T:** Explain to your partner how 2 tens 17 ones is the same as 37.

**S:** 17 ones is the same as 1 ten and 7 ones. 2 tens and 1 ten is 3 tens. 7 more ones is 37.

**T:** Show 37 as 3 tens 7 ones again. If only 1 student shows 1 ten, how many ones will there be to make 37? 37 is the same as 1 ten and how many ones?

**S:** 1 ten 27 ones.

**T:** How did you know?

**S:** (Point to each student with unclasped hands.) 10, 20, 7 is 27. → 2 students will have to unbundle their sticks, so that's 20. 20 ones and 7 ones is 27 ones.

**T:** Let's check. Student 1, keep your hands clasped. The other students with tens, unbundle and show 10 ones. (Wait.) 37 is the same as how many tens and how many ones?

**S:** 1 ten 27 ones.

Repeat the process, showing 0 tens 37 ones.

Have students work in pairs using linking cubes or working in groups of four using magic counting sticks to make all combinations of tens and ones to make 13, 23, 27, 34, and 38.

Next, write a number in the tens and ones place using the place value chart template (see image below), and ask students to determine the total value:

**T:** (Write 1 ten 15 ones on a place value chart.)  
What is the value of 1 ten 15 ones? You may use your cubes or work with your classmates and their magic counting sticks to show your thinking.

tens	ones
1	15

1 ten 15 ones = 25

**S:** 10 plus 15 is 25. → 1 ten is 10 ones. 10 ones and 15 ones is 25 ones. → 15 ones is the same as 1 ten 5 ones. Add another 1 ten, and I have 2 tens 5 ones; that's 25.

**T:** So, the value of 1 ten 15 ones is...?

**S:** 25.

**Optional for flex day**

Repeat the process with the following sequence:

- 1 ten 15 ones, 25 ones
- 3 tens 5 ones, 2 tens 15 ones, 1 ten 25 ones
- 31 ones, 2 ten 11 ones, 1 ten 21 ones, 3 tens 1 one



- 2 ten 16 ones, 3 tens 6 ones
- 1 ten 29 ones, 3 tens 9 ones

**YOUR NOTES:**

Students may work in pairs and use their linking cubes or in groups of 4 using fingers to solve while others visualize every 10 ones as 1 ten.

### MULTIPLE MEANS OF REPRESENTATION

Careful selection of pairs for collaborative work is essential to achieving expected outcomes. This lesson works well with heterogeneous groupings of students. Pair one student who possesses a clear understanding of the concept with another student who might need more practice with tens and ones. Pair an English language learner with another student who expresses his reasoning especially well.

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 23 G:1 M:4	Unbundle Ten, Same Value <b>ZEARN STUDENT NOTES</b>
----------------------	--------------------------------------------------------

Name: \_\_\_\_\_

Complete: ☐ Date: \_\_\_\_\_

1

<div style="display: flex; justify-content: space-around; font-size: 24px; font-weight: bold;"> <span>2</span> <span>4</span> </div> <div style="display: flex; justify-content: space-around;"> <span>tens</span> <span>ones</span> </div>	<div style="display: flex; justify-content: space-around; font-size: 24px; font-weight: bold;"> <span>4</span> <span>0</span> </div> <div style="display: flex; justify-content: space-around;"> <span>tens</span> <span>ones</span> </div>
<div style="display: flex; justify-content: space-around; font-size: 24px; font-weight: bold;"> <span>3</span> <span>10</span> </div> <div style="display: flex; justify-content: space-around;"> <span>tens</span> <span>ones</span> </div>	<div style="display: flex; justify-content: space-around; font-size: 24px; font-weight: bold;"> <span>1</span> <span>14</span> </div> <div style="display: flex; justify-content: space-around;"> <span>tens</span> <span>ones</span> </div>

## YOUR NOTES:

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The question below may be used to lead the discussion.

- How can using Say Ten counting help you find your combinations of tens and ones?

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

#### Task

- Match the place value charts that show the same amount.

a.	<table><tr><th>tens</th><th>ones</th></tr><tr><td>2</td><td>12</td></tr></table>	tens	ones	2	12	<table><tr><th>tens</th><th>ones</th></tr><tr><td>2</td><td>16</td></tr></table>	tens	ones	2	16
tens	ones									
2	12									
tens	ones									
2	16									

b.	<table><tr><td>tens</td><td>ones</td></tr><tr><td>2</td><td>8</td></tr></table>	tens	ones	2	8	<table><tr><td>tens</td><td>ones</td></tr><tr><td>1</td><td>18</td></tr></table>	tens	ones	1	18
tens	ones									
2	8									
tens	ones									
1	18									

c.	tens	ones		tens	ones
	3	6		3	2

- Tamra says that 24 is the same as 1 ten 14 ones, and Willie says that 24 is the same as 2 tens 14 ones. Draw quick tens to show if Tamra or Willie is correct.

#### Answers

- 3 tens, 2 ones
  - 1 ten, 18 ones
  - 2 tens, 16 ones
- Draw quick tens to show Tamra is correct.

## CORE FLUENCY PRACTICE SET A

## My Addition Practice

1. $6 + 0 = \underline{\hspace{2cm}}$	11. $7 + 1 = \underline{\hspace{2cm}}$	21. $5 + 3 = \underline{\hspace{2cm}}$
2. $0 + 6 = \underline{\hspace{2cm}}$	12. $\underline{\hspace{2cm}} = 1 + 7$	22. $\underline{\hspace{2cm}} = 5 + 4$
3. $5 + 1 = \underline{\hspace{2cm}}$	13. $3 + 3 = \underline{\hspace{2cm}}$	23. $6 + 4 = \underline{\hspace{2cm}}$
4. $1 + 5 = \underline{\hspace{2cm}}$	14. $3 + 4 = \underline{\hspace{2cm}}$	24. $4 + 6 = \underline{\hspace{2cm}}$
5. $6 + 1 = \underline{\hspace{2cm}}$	15. $\underline{\hspace{2cm}} = 3 + 5$	25. $\underline{\hspace{2cm}} = 4 + 4$
6. $1 + 6 = \underline{\hspace{2cm}}$	16. $6 + 3 = \underline{\hspace{2cm}}$	26. $3 + 4 = \underline{\hspace{2cm}}$
7. $6 + 2 = \underline{\hspace{2cm}}$	17. $7 + 3 = \underline{\hspace{2cm}}$	27. $5 + 5 = \underline{\hspace{2cm}}$
8. $5 + 2 = \underline{\hspace{2cm}}$	18. $\underline{\hspace{2cm}} = 7 + 2$	28. $\underline{\hspace{2cm}} = 4 + 5$
9. $2 + 5 = \underline{\hspace{2cm}}$	19. $2 + 7 = \underline{\hspace{2cm}}$	29. $3 + 7 = \underline{\hspace{2cm}}$
10. $2 + 4 = \underline{\hspace{2cm}}$	20. $2 + 8 = \underline{\hspace{2cm}}$	30. $\underline{\hspace{2cm}} = 3 + 6$

Today, I finished  $\underline{\hspace{2cm}}$  problems.

I solved  $\underline{\hspace{2cm}}$  problems correctly.

## CORE FLUENCY PRACTICE SET B

## My Missing Addend Practice

1. $6 + \underline{\quad} = 6$	11. $3 + \underline{\quad} = 6$	21. $4 + \underline{\quad} = 7$
2. $0 + \underline{\quad} = 6$	12. $4 + \underline{\quad} = 8$	22. $7 = 3 + \underline{\quad}$
3. $5 + \underline{\quad} = 6$	13. $10 = 5 + \underline{\quad}$	23. $2 + \underline{\quad} = 7$
4. $4 + \underline{\quad} = 6$	14. $5 + \underline{\quad} = 9$	24. $2 + \underline{\quad} = 8$
5. $0 + \underline{\quad} = 7$	15. $5 + \underline{\quad} = 7$	25. $9 = 2 + \underline{\quad}$
6. $6 + \underline{\quad} = 7$	16. $8 = 5 + \underline{\quad}$	26. $2 + \underline{\quad} = 10$
7. $1 + \underline{\quad} = 7$	17. $5 + \underline{\quad} = 9$	27. $10 = 3 + \underline{\quad}$
8. $7 + \underline{\quad} = 8$	18. $8 + \underline{\quad} = 10$	28. $3 + \underline{\quad} = 9$
9. $1 + \underline{\quad} = 8$	19. $7 + \underline{\quad} = 10$	29. $4 + \underline{\quad} = 9$
10. $6 + \underline{\quad} = 8$	20. $10 = 6 + \underline{\quad}$	30. $10 = 4 + \underline{\quad}$

Today, I finished  $\underline{\quad}$  problems.

I solved  $\underline{\quad}$  problems correctly.

## CORE FLUENCY PRACTICE SET C

### My Related Addition and Subtraction Practice

1. $5 + \underline{\quad\quad} = 6$	11. $7 + \underline{\quad\quad} = 10$	21. $4 + \underline{\quad\quad} = 8$
2. $1 + \underline{\quad\quad} = 6$	12. $10 - 7 = \underline{\quad\quad}$	22. $8 - 4 = \underline{\quad\quad}$
3. $6 - 1 = \underline{\quad\quad}$	13. $5 + \underline{\quad\quad} = 7$	23. $4 + \underline{\quad\quad} = 7$
4. $9 + \underline{\quad\quad} = 10$	14. $7 - 5 = \underline{\quad\quad}$	24. $7 - 4 = \underline{\quad\quad}$
5. $1 + \underline{\quad\quad} = 10$	15. $5 + \underline{\quad\quad} = 8$	25. $5 + \underline{\quad\quad} = 9$
6. $10 - 9 = \underline{\quad\quad}$	16. $8 - 5 = \underline{\quad\quad}$	26. $9 - 5 = \underline{\quad\quad}$
7. $5 + \underline{\quad\quad} = 10$	17. $4 + \underline{\quad\quad} = 6$	27. $6 + \underline{\quad\quad} = 9$
8. $10 - 5 = \underline{\quad\quad}$	18. $6 - 4 = \underline{\quad\quad}$	28. $9 - 6 = \underline{\quad\quad}$
9. $8 + \underline{\quad\quad} = 10$	19. $3 + \underline{\quad\quad} = 6$	29. $4 + \underline{\quad\quad} = 7$
10. $10 - 8 = \underline{\quad\quad}$	20. $6 - 3 = \underline{\quad\quad}$	30. $7 - 4 = \underline{\quad\quad}$

Today, I finished  $\underline{\quad\quad}$  problems.

I solved  $\underline{\quad\quad}$  problems correctly.

CORE FLUENCY PRACTICE SET D

My Subtraction Practice

1. 6 - 0 = _____	11. 6 - 3 = _____	21. 8 - 4 = _____
2. 6 - 1 = _____	12. 7 - 3 = _____	22. 8 - 3 = _____
3. 7 - 1 = _____	13. 9 - 3 = _____	23. 8 - 5 = _____
4. 8 - 1 = _____	14. 10 - 8 = _____	24. 9 - 5 = _____
5. 6 - 2 = _____	15. 10 - 6 = _____	25. 9 - 4 = _____
6. 7 - 2 = _____	16. 10 - 4 = _____	26. 7 - 3 = _____
7. 9 - 2 = _____	17. 10 - 5 = _____	27. 10 - 7 = _____
8. 10 - 10 = _____	18. 7 - 6 = _____	28. 9 - 7 = _____
9. 10 - 9 = _____	19. 7 - 5 = _____	29. 9 - 6 = _____
10. 10 - 7 = _____	20. 6 - 4 = _____	30. 8 - 6 = _____

Today, I finished \_\_\_\_\_ problems.

I solved \_\_\_\_\_ problems correctly.

## CORE FLUENCY PRACTICE SET E

## My Mixed Practice

1. $4 + 2 = \underline{\hspace{2cm}}$	11. $2 + \underline{\hspace{2cm}} = 6$	21. $8 - 5 = \underline{\hspace{2cm}}$
2. $2 + \underline{\hspace{2cm}} = 6$	12. $6 - 2 = \underline{\hspace{2cm}}$	22. $3 + \underline{\hspace{2cm}} = 8$
3. $6 = 3 + \underline{\hspace{2cm}}$	13. $6 - 4 = \underline{\hspace{2cm}}$	23. $8 = \underline{\hspace{2cm}} + 5$
4. $2 + 5 = \underline{\hspace{2cm}}$	14. $5 + \underline{\hspace{2cm}} = 7$	24. $\underline{\hspace{2cm}} + 2 = 9$
5. $7 = 5 + \underline{\hspace{2cm}}$	15. $7 - 5 = \underline{\hspace{2cm}}$	25. $9 = \underline{\hspace{2cm}} + 7$
6. $4 + 3 = \underline{\hspace{2cm}}$	16. $7 - 4 = \underline{\hspace{2cm}}$	26. $9 - 2 = \underline{\hspace{2cm}}$
7. $7 = \underline{\hspace{2cm}} + 4$	17. $7 - 3 = \underline{\hspace{2cm}}$	27. $9 - 7 = \underline{\hspace{2cm}}$
8. $8 = \underline{\hspace{2cm}} + 4$	18. $8 = 6 + \underline{\hspace{2cm}}$	28. $9 - 6 = \underline{\hspace{2cm}}$
9. $4 + 5 = \underline{\hspace{2cm}}$	19. $8 - 2 = \underline{\hspace{2cm}}$	29. $9 = \underline{\hspace{2cm}} + 4$
10. $9 = \underline{\hspace{2cm}} + 4$	20. $8 - 6 = \underline{\hspace{2cm}}$	30. $9 - 6 = \underline{\hspace{2cm}}$

Today, I finished  $\underline{\hspace{2cm}}$  problems.

I solved  $\underline{\hspace{2cm}}$  problems correctly.





## YOUR NOTES:

# Lesson 24

Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.

## Warm-Up

### FLUENCY PRACTICE

#### Grade 1 Core Fluency Differentiated Practice Sets

**Materials:** (S) Core Fluency Practice Sets (Lesson 23 Core Fluency Practice Sets)



**NOTE:** This activity assesses students' progress toward proficiency in the expected addition fluency for first graders. Give Practice Set B to students who correctly answered all questions on Practice Set A in the previous lesson. All other students should try to improve their scores on Practice Set A.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Set completed within the allotted time.

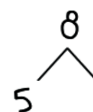
#### Number Bond Addition and Subtraction

**Materials:** (S) Personal white board, die per pair of students



**NOTE:** This fluency activity addresses Grade 1's core fluency expectation and strengthens understanding of the relationship between addition and subtraction.

Repeat the activity from Lesson 21. Today, assign partners of equal ability and an appropriate range of numbers for each pair. Allow partners to choose a number for their whole and roll the die to determine one of the parts. Both students write two addition and two subtraction sentences, with a box for the missing number in each equation, and solve for the missing number. They then exchange personal white boards and check each other's work.



$$\begin{array}{rcl}
 5 + \boxed{3} & = & 8 \\
 \boxed{3} + 5 & = & 8
 \end{array}
 \qquad
 \begin{array}{rcl}
 8 - 5 & = & \boxed{3} \\
 8 - \boxed{3} & = & 5
 \end{array}$$

**YOUR NOTES:****Count by 10 or 1 with Dimes and Pennies****Materials:** (T) 10 dimes and 10 pennies

**NOTE:** This fluency activity uses dimes and pennies as abstract representations of tens and ones to help students become familiar with coins, while simultaneously providing practice with counting forward and back by 10 or 1.

- Minute 1: Place and take away dimes in a 5-group formation as students count along by 10.
- Minute 2: Begin with 2 pennies. Ask how many ones there are. Instruct students to start at 2 and add and subtract 10 as the teacher places and takes away dimes.
- Minute 3: Begin with 2 dimes. Ask how many tens there are. Instruct students to begin at 20 and add and subtract 1 as the teacher places and takes away pennies.

**Add Tens****Materials:** (T) 100-bead Rekenrek

**NOTE:** Reviewing how to add multiples of 10 enables students to utilize their understanding of place value to add 2 two-digit numbers in today's lesson.

T: (Show 14 on the Rekenrek.) Add 10.

S:  $14 + 10 = 24$ .

T: Add 20.

S:  $14 + 20 = 34$ .

Repeat, displaying other teen numbers and instructing students to add 10 and 20. If students find it challenging to mentally add 20, scaffold by asking them to add 2 tens and modeling with the Rekenrek before asking them to add 20.

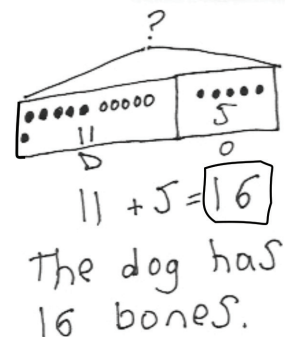
**WORD PROBLEM**

A dog hides 11 bones behind his doghouse. Later, his owner gives him 5 more bones. How many bones does the dog have now? Use the RDW process to share your thinking as you solve the problem.

Extension: All the bones are brown or white. The same number of bones are brown as white. How many brown bones does the dog have?



**NOTE:** This problem reviews the add to with result unknown problem type so that students can focus on the drawing and labeling of the tape diagram. In the extension, students are challenged to consider the relationship between the two parts.



## YOUR NOTES:

## Concept Exploration

**Materials:** (T) 5 ten-sticks (3 red and 2 yellow), chart paper (S) 4 ten-sticks from math toolkit, personal white board

Students gather in the meeting area with their partners and materials.

**T:** (Write  $24 + 13$ .) Partner A, show 24 with your cubes. Partner B, show 13 with your cubes.

**S:** (Show 24 or 13 with cubes.)

**T:** Combine your cubes to show the easiest way to find the total.

**S:** (Add cubes.)

**T:** How did you add 24 and 13?

**S:** We put the tens together and the ones together. → We put 2 tens and 1 ten together. We put 4 ones and 3 ones together. → We have 3 ten-sticks and 7 ones. We made 37.

**T:** I love the way you combined the tens with tens and ones with ones together. 2 tens and 1 ten is...?

**S:** 3 tens.

**T:** 4 ones and 3 ones is...?

**S:** 7 ones.

**T:** 3 tens 7 ones is...?

**S:** 37.

**T:**  $24 + 13$  is...?

**S:** 37.

**T:** (Complete the number sentence. Then, show 24 using red cubes. Have the yellow cubes ready to represent the second addend of 13.) You are experts at working with tens. You know how to add tens to any number, just like we practice often in our fluency time. Let's use that skill to add 24 and 13. Let's add 10 from 13 to 24 first.

**T:** (Place the yellow ten-stick next to 2 ten-sticks.) 1 ten more than 2 tens 4 is...?

**S:** 3 tens 4.

**T:** What do I need to still add?

**S:** 3 ones.

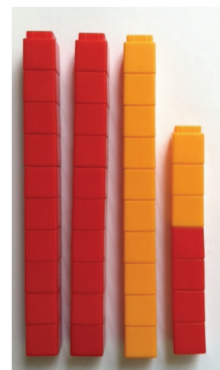
**T:** (Place 3 yellow cubes on top of 4 red cubes.) 34 and 3 is...?

**S:** 37.

**T:** We just used our expertise on tens by adding 1 ten to 24 first.

**T:** Let's use a number bond to do the same thing. How did we break apart 13?

**S:** 10 and 3.



**YOUR NOTES:**

T: (Draw the number bond.) What did we do first? (Point to the number bond.)

S: Add 10. (Write  $24 + 10$ .)

T:  $24 + 10$  is...?

S: 34.

T: Next? (Point to the number bond.)

S: Add 3.

T:  $34 + 3$  is...?

S: 37.

T: Now, you write the two addition sentences to show how we added 1 ten first.

S: (Write  $24 + 10 = 34$  and  $34 + 3 = 37$ .)

T: Let's try a new problem. (Write  $24 + 16$ .) Partner A, make 24 with your linking cubes. Partner B, make 16. (Wait.) What part of 16 did we add first when we added  $24 + 13$ ?

S: 10.

T: Add 10 to 24. What is the result?

S: (Lay down a ten-stick next to 2 ten-sticks.) 34.

T: What more do we have to add?

S: 6.

T: How much do you have altogether?

S: 40.

T: Show us what you did.

S: We made another ten-stick with 4 and 6. Now, we have 4 ten-sticks. That's 40. → 4 ones and 6 ones is 10 ones. 3 tens and 10 ones is the same as 40. That's what we did yesterday!

T: Make a number bond and write two number sentences to record how you solved  $24 + 16$ . We started with 24. Let's break apart 16 into...?

S: 10 and 6. (Break apart 16 into 10 and 6.) If needed, have students represent their process of adding 24 and 16 in quick ten drawings, talking through the steps with their partners. Ask students to also write two addition sentences to record their steps.

Repeat the process following the suggested sequence:  $22 + 14$ ,  $23 + 16$ ,  $23 + 17$ ,  $19 + 21$ ,  $22 + 18$ , and  $12 + 28$  (start with 28, the bigger addend, then add 10 and 2).

$$\begin{array}{r} 24 + 13 \\ \swarrow \searrow \\ 10 \quad 3 \\ 24 + 10 = 34 \\ 34 + 3 = 37 \end{array}$$

$$\begin{array}{r} 24 + 16 \\ \swarrow \searrow \\ 10 \quad 6 \\ 24 + 10 = 34 \\ 34 + 6 = 40 \end{array}$$

**MULTIPLE MEANS OF EXPRESSION**

At this stage of development, students typically start in the highest place—in this case, the tens place. This is an acceptable strategy for addition at any level. Starting with the ones place only makes the standard algorithm easier and is not necessary until students are adding larger numbers with regrouping in multiple places.

**MULTIPLE MEANS OF ENGAGEMENT**

Remember to provide challenging extensions for students working above grade level. Give them one two-digit number and the sum. Have students find the mystery two-digit addend.

## YOUR NOTES:

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 24 G1 M:4	Tens Then Ones ZEARN STUDENT NOTES
---------------------	---------------------------------------

Name: \_\_\_\_\_  
Complete: ☐ Date: \_\_\_\_\_

1

SHOW YOUR WORK

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$$22 + 14 = 36$$

10
4

$$22 + 10 = 32$$

$$32 + 4 = 36$$

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- What new strategy did we use to add 2 two-digit addends?
- When solving  $13 + 26$ , which addend would you break up and why?
- How can setting up  $15 + 15$  help you solve  $15 + 25$ ?
- How can you setting up  $21 + 17$  help you solve  $17 + 23$ ?

**YOUR NOTES:**     **EXIT TICKET**

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task**

Solve using number bonds. Write the two number sentences that show that you added the ten first.

1.  $13 + 26 = \underline{\hspace{2cm}}$



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

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

2.  $19 + 21 = \underline{\hspace{2cm}}$



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

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

**Answers**

1. 10, 3; 39; 26, 10, 36; 36, 3, 39; number sentences may vary
2. 10, 9; 40; 21, 10, 31; 31, 9, 40; number sentences may vary

YOUR NOTES:

## Lesson 25

Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.


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### Warm-Up

#### FLUENCY PRACTICE

##### Get to 10 or 20

**Materials:** (S) 1 dime and 10 pennies

 **NOTE:** This fluency activity uses dimes and pennies as abstract representations of tens and ones to help students become familiar with coins, while simultaneously providing practice with missing addends to ten(s).

For the first two minutes:


1. Lay out 0–10 pennies in 5-group formation, and ask students to identify the amount shown (e.g., 9 ones).
2. Ask for the addition sentence to get to 10 (e.g., 9 ones + 1 one = 10 ones).

For the next two minutes:

3. Repeat Steps 1 and 2. Then, add a dime, and ask students to identify the amount shown (e.g., 1 ten 9 ones = 19 or 9 cents + 10 cents = 19 cents) and a new addition sentence (e.g., 19 cents + 1 cent = 20 cents).

Vary the unit terminology throughout the activity (ones, pennies, cents, tens, dimes).

##### Take Out 1 or 2

 **NOTE:** This anticipatory fluency exercise practices taking out 1 or 2 from two-digit numbers to prepare students to use this skill when adding 2 two-digit numbers in upcoming lessons.

Choose numbers between 0 and 10, and follow the paradigm below.

**T:** Take out 1 from each number. 6. (Signal.)

**S:** 1 and 5.

Continue with other numbers within 10. Then, start again at 6.

**T:** 6.

**S:** 1 and 5.


- YOUR NOTES:**
- T: 16.
  - S: 1 and 15.
  - T: 26.
  - S: 1 and 25.
  - T: 36.
  - S: 1 and 35.

After students take out 1 for a minute, start again, and take out 2.

**WORD PROBLEM**

A chipmunk hides 11 acorns under a tree. Later, he gives 5 of the acorns to his friend. How many acorns does the chipmunk have? Use the RDW process to solve the problem.

Extension: A squirrel has double the number of acorns the chipmunk had to begin with. How many acorns does the squirrel have?

 **NOTE:** Today’s problem challenges students to pay attention to the differences in a story problem.



**Concept Exploration**

**Materials:** (T) 5 ten-sticks (4 red and 1 yellow) (S) 4 ten-sticks from math toolkit, personal white board

Students gather in the meeting area with their materials in a semicircle formation.

The first 10 minutes of Lesson 25 can be used to solidify the learning that has occurred in Lesson 24. Three sets of problems have been provided for students who are ready to extend their double-digit addition skills. The teaching sequence from Lesson 24 may be used to guide instruction. Students should be encouraged to use their cubes, quick ten drawing, or the number bond to solve their problems. Note that Problems 10–12 involve numbers greater than 40. Encourage students to use place value language to describe and compare strategies for solving. Ask questions such as, “What is another way this can be solved? Why did you choose your method?”

**Problems 1–4**

- 15 + 12
- 15 + 13
- 15 + 15
- 16 + 14

**Problems 5–8**

- 24 + 13
- 26 + 13
- 27 + 13
- 12 + 28

**Problems 9–12**

- 37 + 22
- 46 + 23
- 46 + 24
- 53 + 17



After 10 minutes of practice, proceed with the following:

**T:** (Write  $17 + 13$ .) How could we solve this?

**S:**  $17 + 10 = 27$ .  $27 + 3 = 30$ . (While students describe, show the number bond, and write two number sentences.)

**T:** Great job! So far, we have been practicing to add the tens first as an easy way to add two-digit numbers. What if I wanted to add my tens at the end? How else might we start?

**S:** We can add the ones first.  $17 + 3$  is 20, and then  $20 + 10$  is 30. (While students describe, use the number bond and number sentences as shown.)

**T:** Great strategies! Earlier today, we were adding on tens first. This time, we can add the ones first. Let's try some more!

Repeat the process following the suggested sequence:  $18 + 12$ ,  $28 + 12$ ,  $18 + 22$ ,  $16 + 23$ ,  $16 + 24$ , and  $21 + 19$ . Students may choose to continue practicing adding on the tens first, as in the previous exercise. Alternatively, they may start with trying to add the ones using the number bond or the arrow way, and then explain their choice.

$$\begin{array}{r} 17 + 13 = 30 \\ \quad \wedge \\ \quad 10 \quad 3 \end{array}$$

$$\begin{array}{l} 17 + 10 = 27 \\ 27 + 3 = 30 \end{array}$$

$$\begin{array}{r} 17 + 13 = 30 \\ \quad \wedge \\ \quad 3 \quad 10 \end{array}$$

$$17 + 3 = 20$$

$$20 + 10 = 30$$

**YOUR NOTES:**

### MULTIPLE MEANS OF ACTION AND EXPRESSION

More advanced students may choose to show how they solved some problems using the arrow way. This shows that these students are thinking more abstractly while adding two-digit numbers.

Encourage students to explain their thinking about adding or subtracting tens. Students may learn as much from each other's reasoning as from the lesson. The teacher learns more about their level of thinking and ability to express that thinking.

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

There are no notes for this digital lesson. Go online to see the full digital lesson.

## YOUR NOTES:

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- How is the adding the ten strategy both similar and different compared to the adding the ones strategy? How does that show in your number bonds and the two number sentences that follow the number bond?
- Solve  $22 + 18$ . Share your strategy with your partner. How are your strategies similar or different?
- Solve  $14 + 16$ . How can you use the arrow way to show the different ways to solve this problem?

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

#### Task

Solve using number bonds. Write 2 number sentences to record what you did.

a. $12 + 27 = \underline{\hspace{2cm}}$	b. $21 + 19 = \underline{\hspace{2cm}}$

#### Answers

- a. 39; varied number bonds and sentences
- b. 40; varied number bonds and sentences

## YOUR NOTES:

# Lesson 26

Add a pair of two-digit numbers when the ones digits have a sum greater than 10.

## Warm-Up

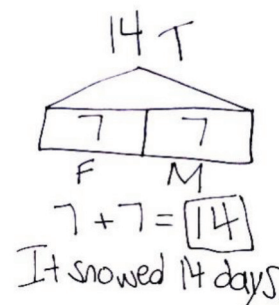
### FLUENCY PRACTICE

No additional fluency activities for this lesson.

### WORD PROBLEM

It snowed 7 days in February and the same number of days in March. How many days did it snow in those 2 months? Use the RDW process to solve the problem.

Extension: It snowed 3 days in January. How many days did it snow in all 3 months? How many more days did it snow in February than in January?



**NOTE:** Today's problem gives students the chance to work with equal parts. Some students may struggle when only one number is given. Circulate and notice which students are reading and making sense of the problem. Students who are struggling may need more support, as they read through the problem, to draw as they go.

## Concept Exploration

**Materials:** (T) 5 ten-sticks (3 red and 2 yellow) (S) 4 ten-sticks from math toolkit, personal white board

Students gather at the meeting area with their partners and materials in a semicircle formation.

**T:** (Write  $19 + 15$  on the chart, and show with 19 red and 15 yellow linking cubes.) Partner A, make 19 with your cubes. Partner B, make 15 with yours.

**S:** (Show cubes in a ten-stick and some ones to match their addend.)

**T:** Let's add on the tens first to solve.

**YOUR NOTES:**

T/S: (Move the yellow ten-stick next to the red ten-stick.)

T: 19 and 10 is...?

S: 29.

T: What do we still have to add?

S: 5.

T: Add 5 to 29. (Wait as students use their cubes to solve.)

T: How did you add 5 to 29?

S: I can keep on counting. Twenty niiiine, 30, 31, 32, 33, 34. → 29

needs 1 more to make 30, so I got 1 from 5. That gave us 30 and 4.

That's 34. → 9 needs 1 more to make 10. 2 tens and 1 ten is 3 tens. Now, we have 3 tens plus 4 ones. That's 34.

T: Let's draw a number bond that shows exactly how we solved  $19 + 15$ . We are starting with 19. Why did we break apart 15 into 10 and 5?

S: We added on the ten first, so we took out 10 from 15. 5 is the other part of 15.

T: So, our first number sentence is...?

S:  $19 + 10 = 29$ .

T: (Record.) Next? (Write  $29 + 5 = \underline{\quad}$ ) How can we record what we did to add 5?

S: Break apart 5 into 1 and 4. We needed the 1 to make the next ten.

T: (Write the number bond.)  $29 + 1$  is...?

S: 30.

T:  $30 + 4$  is...?

S: 34.

T: (Complete the number sentence.)

$$\begin{array}{r} 19 + 15 \\ \swarrow \searrow \\ 10 \quad 5 \end{array}$$

$$\begin{array}{r} 19 + 10 = 29 \\ 29 + 5 = 34 \\ \swarrow \searrow \\ 1 \quad 4 \end{array}$$

**Optional for flex day**

Repeat the process following the suggested sequence, releasing students to work independently, in pairs, or small groups, as possible:  $19 + 16$ ,  $19 + 18$ ,  $18 + 17$ ,  $17 + 15$ ,  $16 + 16$ , and  $15 + 18$ .

Chart the problems with their number bonds and two number sentences, listing them vertically. During the next component of the lesson, these solutions are juxtaposed to solutions completing the ten first.

T: Let's look at  $19 + 15$  again. Partner A, make 19 with your cubes. Partner B, make 15. (Show 19 and 15 with cubes.) Before, we broke 15 into 10 and 5 because adding on the tens is easy. What's another strategy we know that uses ten?

S: Make the next ten!

T: Yes! Use your cubes to make the next ten, and solve  $19 + 15$ .

S: 19 needs 1 more to make 20, so we took 1 from 15 to make 20. That gave us 3 tens and 4 ones. That's 34. → 19 plus 1 is 20. 20 plus 14 is 34. That's 34. (As students describe, make a number bond below the number sentence, showing 15 broken apart into 1 and 14.)

T: 19 needs how many more to make the next ten? (Point to 19 cubes.)

## YOUR NOTES:

S: 1 more.

T: (Take away 1 cube from the 5 in 15, and place with 19 cubes.)  
How many tens did we make from 19?

S: 2 tens.

T: We still need to add 14.  $20 + 14$  is...?

S: 34.

T: How did we break apart 15 this time? Why? (Point to how the yellow cubes are decomposed.)

S: We broke it into 1 and 14. → We took 1 from 15 because 19 needs 1 more to make the next ten. When we took away 1, there was still 14 left from the 15.

T: Work with your partner, and write the two number sentences that show how we made the next ten first to solve.

S: (Write  $19 + 1 = 20$  and  $20 + 14 = 34$ .)

$$\begin{array}{r}
 19 + 15 \\
 \quad \swarrow \searrow \\
 \quad 1 \quad 14 \\
 \\
 19 + 1 = 20 \\
 20 + 14 = 34 \\
 \quad \swarrow \searrow \\
 \quad 10 \quad 4
 \end{array}$$



### Optional for flex day

Repeat the process, modeling with cubes and number bonds using the same sequence from above, and chart the number bonds and two number sentences.

T: (Point to the chart.) Look at the two ways we solved the same addition problem. What do you notice about the difference in how we broke apart one of the addends?

S: When we want to add on the tens first, we always break apart the number to 10 and some ones. But when we want to make the next ten, we break apart the addend to get out the number we need, and then add the rest. → If we start with 19, we take out a 1 from the other addend because 19 and 1 makes 20. If we start with 18, we take out a 2 from the other addend because  $18 + 2 = 20$ .

### MULTIPLE MEANS OF ENGAGEMENT

Some students may need extra time to solidify their understanding of the adding on the ten strategy. Give them another sequence of problems for further practice rather than introducing a new strategy.

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

## YOUR NOTES:

<b>Lesson 26</b> G:1 M:4	<b>Add Ten, Make Ten</b> <b>ZEARN STUDENT NOTES</b>
-----------------------------	--------------------------------------------------------

Name: \_\_\_\_\_

Complete: ☐ Date: \_\_\_\_\_

1

SHOW YOUR WORK

$$\begin{array}{r}
 18 + 17 = 35 \\
 \swarrow \quad \searrow \\
 2 \quad 15 \\
 \hline
 \end{array}$$

$$18 + 2 = 20$$

$$20 + 15 = 35$$

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Using what we learned today, try solving  $49 + 11$ . Which strategy did you use?
- Which strategy is easier for you to use when you add? Adding on the ten first or making the next ten first? Explain why it's easier for you.

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task****YOUR NOTES:**

1. Solve using number bonds to add ten first. Write the 2 number sentences that helped you.

<p>a. <math>15 + 19 = \underline{\quad}</math></p> <div style="text-align: center;"> </div> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>	<p>b. <math>19 + 17 = \underline{\quad}</math></p> <div style="text-align: center;"> </div> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

2. Solve using number bonds to make a ten. Write the 2 number sentences that helped you.

<p>a. <math>15 + 19 = \underline{\quad}</math></p> <div style="text-align: center;"> </div> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>	<p>b. <math>19 + 17 = \underline{\quad}</math></p> <div style="text-align: center;"> </div> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p> <p><math>\underline{\quad} + \underline{\quad} = \underline{\quad}</math></p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**Answers**

1. a. 10, 5; 34;  $19 + 10 = 29$ ;  $29 + 5 = 34$       b. 10, 7; 36;  $19 + 10 = 29$ ;  $29 + 7 = 36$   
 2. a. 14, 1; 34;  $19 + 1 = 20$ ;  $20 + 14 = 34$       b. 1, 16; 36;  $19 + 1 = 20$ ;  $20 + 16 = 36$





YOUR NOTES:

# Lesson 27

Add a pair of two-digit numbers when the ones digits have a sum greater than 10.

---

## Warm-Up

### FLUENCY PRACTICE

#### Grade 1 Core Fluency Differentiated Practice Sets

**Materials:** (S) Core Fluency Practice Sets (Lesson 23 Core Fluency Practice Sets)



**NOTE:** This activity assesses students' progress toward proficiency in the expected addition fluency for first graders. Give the appropriate Practice Set to each student. Students who completed all questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current levels.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Sets completed within the allotted time.

#### Race to the Top

**Materials:** (S) Personal white board, race to the top (Fluency Template)



**NOTE:** This fluency activity primarily targets the core fluency for Grade 1.

Students take turns rolling the dice, saying an addition sentence, and recording the sums on the graph. The game ends when time runs out or one of the columns reaches the top of the graph.

#### Take Out 1 or 2



**NOTE:** This anticipatory fluency exercise practices taking out 1 or 2 from two-digit numbers in order to prepare students to use this skill when adding two two-digit numbers in upcoming lessons.

Choose numbers between 0 and 10, and follow the script below.

**YOUR NOTES:** T: Take out 1 from each number. 6. (Snap.)

S: 1 and 5.

Continue with other numbers within 10. Then, start again at 6.

T: 6.

S: 1 and 5.

T: 16.

S: 1 and 15.

T: 26.

S: 1 and 25.

T: 36.

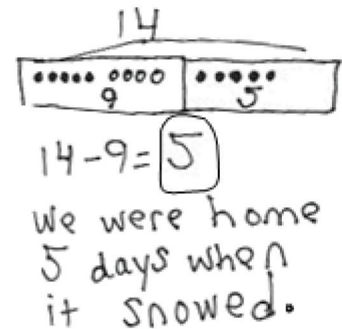
S: 1 and 35.

After students take out 1 for a minute, start again, and take out 2.

## WORD PROBLEM

During the winter, it snowed on 14 different days. On some of the days, we got to stay home. For 9 of the snowy days, we had to go to school. For how many days did we get to stay home? Use the RDW process to solve the problem.

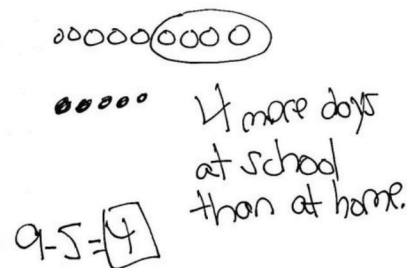
Extension: How many more days did it snow when we were in school compared to when we were home?



**NOTE:** Today's problem poses a take apart with addend unknown problem type. Continue to remind students of the simple questions they can ask themselves as they attempt the problem: Can I draw something? What can I draw? What does my drawing show me that can help me with the question? The goal is for these questions to be internalized by the students over time.

(A)

(S)



## Concept Exploration

**Materials:** (S) Personal white board, 4 ten-sticks from the math toolkit (optional)

The time allotted for Lesson 27 can be used to solidify the learning that occurred in Lesson 26. Three sets of problems have been provided for students to practice and gain accuracy and efficiency when adding a pair of double-digit numbers. The teaching sequence from Lesson 26 may be used to guide instruction. Students should be encouraged to use their cubes, quick ten drawings, and number bonds with pairs of number sentences to solve. Note that

Problems 9–12 involve numbers greater than 40. This is intended to serve as a challenge set for advanced learners.

**YOUR NOTES:**

Encourage students to use place value language as they describe how their strategy works. Challenge them to compare strategies with their partners and look for related problems within the set.

**Problems 1–4**

$19 + 11$

$19 + 13$

$18 + 15$

$17 + 16$

**Problems 5–8**

$18 + 12$

$17 + 17$

$17 + 16$

$16 + 15$

**Problems 9–12**

$17 + 23$

$27 + 25$

$24 + 29$

$34 + 27$

**MULTIPLE MEANS OF ACTION AND EXPRESSION**

Students may choose how they want to solve problems—with drawings, number bonds, or the arrow way. Students should begin to move away from drawing to the more abstract method of adding. However, not all students will be ready to abstractly solve problems, so support students wherever they are in their learning, and guide them as they progress.

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# Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

There are no notes for this digital lesson. Go online to see the full digital lesson.

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# Wrap-Up

## LESSON SYNTHESIS

Guide students in a conversation to process today’s lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Which ten strategy-make the next ten or add on the ten-is easier for you to use when adding? Explain your choice.

**YOUR NOTES:**

- Solve  $19 + 12$ . How can setting up  $19 + 12$  help you solve  $18 + 12$ ?
- Solve  $19 + 13$  and  $18 + 14$ . Explain how these two problems are related. Why do they have the same answer? What are two other number sentences that have the same answer?

**EXIT TICKET**

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task**

Solve using number bonds with pairs of number sentences. You may draw quick tens and some ones to help you.



a. $16 + 15 = \underline{\hspace{2cm}}$	b. $17 + 13 = \underline{\hspace{2cm}}$
c. $16 + 16 = \underline{\hspace{2cm}}$	d. $17 + 15 = \underline{\hspace{2cm}}$

**Answers**

1. Connected number bonds and pairs of number sentences for each
  - a. 32
  - b. 30
  - c. 32
  - d. 32

RACE TO THE TOP (FLUENCY TEMPLATE)

RACE TO THE TOP!



2	3	4	5	6	7	8	9	10	11	12



YOUR NOTES:

# Lesson 28

Add a pair of two-digit numbers with varied sums in the ones.

---

## Warm-Up

### FLUENCY PRACTICE

#### Grade 1 Core Fluency Differentiated Practice Sets

**Materials:** (S) Core Fluency Practice Sets (Lesson 23 Core Fluency Practice Sets)



**NOTE:** This activity assesses students' progress toward proficiency in the expected addition fluency for first graders. Students who completed all questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current levels.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Sets completed within the allotted time.

#### Coin Drop

**Materials:** (T) 4 dimes, 10 pennies, can



**NOTE:** In this activity, students practice adding and subtracting ones and tens.

**T:** (Hold up a penny.) Name my coin.

**S:** A penny.

**T:** How much is it worth?

**S:** 1 cent.

**T:** Listen carefully as I drop coins in my can. Count along in your minds.

Drop in some pennies, and ask how much money is in the can. Take out some pennies, and show them. Ask how much money is still in the can. Continue adding and subtracting pennies for a minute or so. Then, repeat the activity with dimes.

## YOUR NOTES:

## Make Ten: 9 Up



**NOTE:** This fluency activity reviews how to calculate sums within 20 using the make ten strategy students learned in Mission 2.

**T:** When I say “up,” tell me how to get to ten from my number. 9 up.

**S:**  $9 + 1 = 10$ .

Repeat with other numbers within 10.

In the next section, model the first few problems with a number bond, and write the two-step addition sentences.

**T:** (Write  $9 + 3 = \underline{\hspace{2cm}}$ .) 9 up.

**S:**  $9 + 1 = 10$ .

**T:** (Draw a number bond under the 3 with 1 as a part, write  $9 + 1 = 10$ , and then point to the 3.) How much is left to add?

**S:** 2.

**T:** (Write 2 as the other part, and the second addition sentence,  $10 + 2$ .)  $10 + 2$  is...?

**S:** 12.

**T:** So,  $9 + 3$  is...?

**S:** 12.

Repeat with the following suggested sequence:  $9 + 5$ ,  $9 + 6$ ,  $9 + 9$ ,  $9 + 8$ . When students are ready, consider omitting the number bond and number sentences so they can mentally review the make ten strategy.

## Addition Strategies Review



**NOTE:** This review fluency activity helps strengthen students’ understanding of the make ten and add the ones addition strategies, as well as their ability to recognize appropriate strategies based on problem types.

**T:** Partner A, show me 9 on your magic counting sticks. Partner B, show me 6. If I want to solve  $9 + 6$ , how can I *make a 10*?

**S:** Take 1 from the 6, and add 1 to 9.

**T:** Yes. Show me! We changed  $9 + 6$  into an easier problem. Say our new addition sentence with the solution.

**S:**  $10 + 5 = 15$ .

**T:** If we want to add 3 to 15, should we make a ten to help us?

**S:** No. We already have a ten!

**T:** Should we add 3 to our 5 or our 10?

**S:** Our 5.



**T:** Yes! Show me! Say the addition sentence.

**S:**  $15 + 3 = 18$ .

**YOUR NOTES:**

## YOUR NOTES:

## WORD PROBLEM

Anton had some crayons in his desk. His teacher gave him 2 more. When he counted all of his crayons, he had 16 crayons. How many crayons did Anton have in his desk originally? Use the RDW process to solve the problem.



**NOTE:** Today's problem is the challenging add to with start unknown problem type. Although crayons were added within the story because the start is the unknown number, the problem requires subtraction.

Several images are shown below representing students' varied approaches.

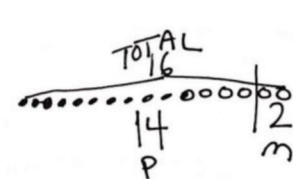
In Model A, the student draws all 16 crayons to begin with, partitioning the last two to find the initial 14.

In Model B, the student may have drawn the part she knows, 2, with the total, 16, drawn below. The student then counts up to add more circles until the quantity matches 16, recounting to find the amount drawn.

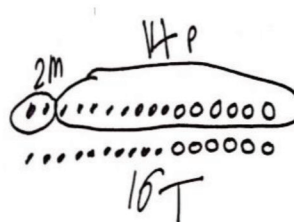
$2 + 14 = 16$   
Anton started with 14 crayons.

Model C, the student represents the unknown with an empty box and builds the chunk of two on the end. This student could use a missing addend number sentence or subtraction number sentence to solve the problem.

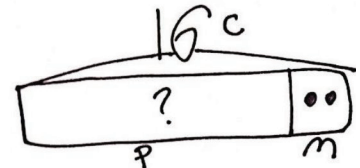
Module A



Module B



Module C



## Concept Exploration

**Materials:** (T) Chart paper (S) Personal white board, 4 ten-sticks from math toolkit (optional)

Have students gather in the meeting area with their materials.

The time allotted for Lesson 28 is set aside to consolidate and solidify the learning that has occurred in Lessons 24–27. Three sets of problems have been provided for practice so students gain accuracy and efficiency when adding a pair of double-digit numbers.

The teaching sequence from earlier lessons may be used to guide remedial instruction. Students should be encouraged to use their number bonds and the arrow way to solve their problems while having full access to drawing materials and manipulatives. Note that Problems 11–15 involve sums greater than 40. This is intended to serve as a challenge set for advanced learners.

Encourage students to use place value language as they describe their methods and strategies for solving. Challenge them to compare strategies with their partners and explain their own method.

**YOUR NOTES:**

Problems 1–5	Problems 6–10	Problems 11–15
15 + 2	14 + 3	13 + 4
15 + 20	14 + 20	23 + 40
28 + 12	17 + 23	28 + 22
18 + 14	17 + 15	26 + 25
17 + 16	16 + 19	36 + 27

**MULTIPLE MEANS OF ENGAGEMENT**

Appropriate scaffolds help all students feel successful. As students are working, keep a close eye to see if any would benefit from some one-on-one problem solving with the teacher.

**MULTIPLE MEANS OF ACTION AND EXPRESSION**

Continue to challenge advanced students. After they have completed Problems 11–15, encourage them to write a word problem to match one of the number sentences. Have students who write a word problem trade papers and solve each other’s problem.

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## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

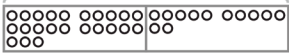
## YOUR NOTES:

<b>Lesson 28</b> G:1 M:4	<b>Fun with Sums</b> <b>ZEARN STUDENT NOTES</b>
-----------------------------	----------------------------------------------------

Name: \_\_\_\_\_  
 Complete: ☐ Date: \_\_\_\_\_

**1** Maya had 23 rocks in her collection. Then she found 12 more.  
 How many rocks does she have now?

She now has ? = 35



She had 23      She found 12

$$\begin{array}{r} 23 \\ + 12 \\ \hline 35 \end{array}$$

$$23 \xrightarrow{+10} 33 \xrightarrow{+2} 35$$

Maya has 35 rocks now.

➔

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- Which method did you use the most to solve today's addition problems? Explain the reason for your choice.
- Solve  $18 + 18$ . How can setting up  $18 + 18$  help you solve  $17 + 18$ ?
- Solve  $17 + 16$ . A student says he solved  $17 + 16$  by adding 2 tens and 13 ones. Is he correct? Explain his strategy for adding.

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

**Task****YOUR NOTES:**

1. Solve using quick tens and ones, number bonds, or the arrow way.

a. $12 + 16 = \underline{\hspace{2cm}}$	b. $26 + 14 = \underline{\hspace{2cm}}$
c. $18 + 16 = \underline{\hspace{2cm}}$	d. $19 + 17 = \underline{\hspace{2cm}}$

**Answers**

1. a. 28; work shown  
b. 40; work shown  
c. 34; work shown  
d. 36; work shown

YOUR NOTES:

# Lesson 29

Add a pair of two-digit numbers with varied sums in the ones.

---

## Warm-Up

### FLUENCY PRACTICE

#### Grade 1 Core Fluency Differentiated Practice Sets

**Materials:** (S) Core Fluency Practice Sets (Lesson 23 Core Fluency Practice Sets)



**NOTE:** Excitement should be building in this third consecutive day of core fluency practice. Students have had two days and on this third day have the chance to look back at their progress. Students who completed all questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current levels.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition or subtraction on the back of their papers. Collect and correct any Practice Sets completed within the allotted time.

#### Coin Drop

**Materials:** (T) 4 dimes, 10 pennies



**NOTE:** In this activity, students practice adding and subtracting ones and tens.

See Lesson 28's fluency practice for instructions.

#### Race to the Top

**Materials:** (S) Personal white board, race to the top (Lesson 27 Fluency Template)




**NOTE:** This fluency activity primarily targets the core fluency for Grade 1.

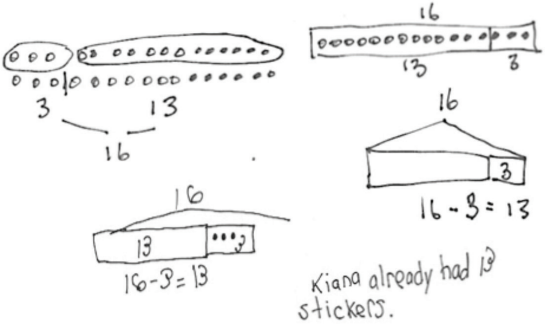
Students take turns rolling the dice, saying an addition sentence, and recording the sums on the graph. The game ends when time runs out or one of the columns reaches the top of the graph.

YOUR NOTES: **WORD PROBLEM**

Kiana’s friend gave her 3 more stickers. Now, Kiana has 16 stickers. How many stickers did Kiana already have? Use the RDW process to solve the problem.

 **NOTE:** This problem allows students to continue practicing the challenging add to with start unknown problem type.

Students may employ a range of diverse strategies to solve the problem, as depicted in the images to the right. If students find solving the problem difficult, they can practice acting out their solution with a partner as a way to check their thinking.



**Concept Exploration**

**Materials:** (T) Chart paper (S) Personal white board, 4 ten-sticks from math toolkit (optional), addition and subtraction cards set 3 (Template)

Have students gather in the meeting area with their materials. The time allotted for Lesson 29’s lesson is also set aside to consolidate and solidify the learning that has occurred in Lessons 24–28. Just as in Lesson 28, three sets of problems have been provided for practice so that students gain accuracy and efficiency when adding a pair of double-digit numbers.

Students should be encouraged to use their number bonds and the arrow way to solve problems while having full access to drawing materials and manipulatives. Note that Problems 11–15 involve sums greater than 40. This is intended to serve as a challenge set for advanced learners.

Challenge students to describe and compare methods, strategies, and written notation with their partners and to explain why they chose to solve the way they did, using terms such as tens, ones, addend, take apart, add on the tens, and make the next ten.

**Problems 1–5**

- 16 + 12
- 28 + 12
- 18 + 15
- 18 + 18
- 17 + 16

**Problems 6–10**

- 26 + 12
- 27 + 13
- 17 + 15
- 16 + 15
- 18 + 17

**Problems 11–15**

- 34 + 23
- 24 + 42
- 23 + 27
- 28 + 25
- 26 + 37

For the last five minutes, partners play Addition and Subtraction with Cards (follow Lesson 12 instructions) with the new cards, labeled *F*.

**YOUR NOTES:**

### MULTIPLE MEANS OF ENGAGEMENT

Appropriate scaffolds help all students feel successful. As students work, keep a close eye to see if any would benefit from some one-on-one problem solving.

### MULTIPLE MEANS OF ACTION AND EXPRESSION

Continue to challenge advanced students. After they have completed Problems 11–15 to the left, encourage them to write a word problem to match one of the number sentences. Have students who write a word problem trade papers and solve each other's problem.

## Independent Digital Lesson



Students also learn the concepts from this lesson in the Independent Digital Lesson. The intentional balance of learning with teachers and peers and learning independently in digital lessons ensures every student has multiple opportunities to represent, engage with, and express their math reasoning.

See the digital lesson notes below for a glimpse of the paper to pencil transfer of these math ideas. Go online to see the full digital lesson.

Lesson 29 G:1 M:4	Sum More Fun ZEARN STUDENT NOTES
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Name: \_\_\_\_\_

Complete: ☐ Date: \_\_\_\_\_

1

SHOW YOUR WORK

Solution 1:

$$23 + 13 = 36$$

$\begin{array}{c} \diagup \quad \diagdown \\ 10 \quad 3 \end{array}$

---

Solution 2:

$$23 \xrightarrow{+7} 30 \xrightarrow{+6} 36$$

➔



## YOUR NOTES:

## Wrap-Up

### LESSON SYNTHESIS

Guide students in a conversation to process today's lesson and surface any misconceptions or misunderstandings. The questions below may be used to lead the discussion.

- For a problem where you need to make a new ten, do you prefer to add on the ten first or make a new ten? Explain your choice.
- Solve  $17 + 17$ . How can you solve  $17 + 17$  using doubles?

### EXIT TICKET

After today's lesson, instruct students to complete the Exit Ticket. A review of their Exit Ticket as well as continuously monitoring your Digital Reports can help you assess your students' understanding of the concepts explored in today's lesson and plan more effectively for future lessons. The questions from the Exit Ticket may be read aloud to the students.

### Task

1. Solve using quick ten drawings, number bonds, or the arrow way.

a. $18 + 14 = \underline{\hspace{2cm}}$	b. $14 + 23 = \underline{\hspace{2cm}}$
c. $28 + 12 = \underline{\hspace{2cm}}$	d. $19 + 21 = \underline{\hspace{2cm}}$

### Answers

1. a. 32; work shown  
b. 37; work shown  
c. 40; work shown  
d. 40; work shown

## ADDITION AND SUBTRACTION CARDS SET 3 (TEMPLATE)

<div>13 + 14</div> <div>F</div>	<div>26 + 13</div> <div>F</div>
<div>17 + 22</div> <div>F</div>	<div>29 + 11</div> <div>F</div>
<div>15 + 15</div> <div>F</div>	<div>16 + 24</div> <div>F</div>
<div>28 + 12</div> <div>F</div>	<div>29 + 11</div> <div>F</div>
<div>19 + 14</div> <div>F</div>	<div>18 + 17</div> <div>F</div>

<div><div><b>17 + 15</b></div><div>F</div></div>	<div><div><b>16 + 15</b></div><div>F</div></div>
<div><div><b>19 + 17</b></div><div>F</div></div>	<div><div><b>18 + 13</b></div><div>F</div></div>
<div><div><b>17 + 16</b></div><div>F</div></div>	<div><div><b>18 - 6</b></div><div>F</div></div>
<div><div><b>17 - 3</b></div><div>F</div></div>	<div><div><b>19 - 4</b></div><div>F</div></div>