OER K–5 Math

EDITION 1

ENGLISH

Grade 1
Module 4

PLACE VALUE, COMPARISON, ADDITION AND SUBTRACTION TO 40

TEACHER EDITION

Teacher Edition

K–5 Math Grade 1 Module 4

PLACE VALUE, COMPARISON, ADDITION AND SUBTRACTION TO 40

Acknowledgment

Thank you to all the Texas educators and stakeholders who supported the review process and provided feedback. These materials are the result of the work of numerous individuals, and we are deeply grateful for their contributions.

Notice

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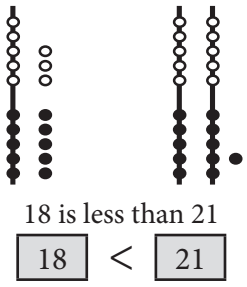
OVERVIEW

Module 4 builds on Module 2's work with place value within 20, focusing on the role of place value when adding and subtracting numbers to 40.

The module opens with Topic A in which students study, organize, and manipulate numbers within 40. After creating a ten and some ones in Module 2, students now recognize multiple tens and ones. Students use their fingers as well as linking cubes, dimes, and pennies to represent numbers to 40 in various ways, from all ones to tens and ones (**1.2A, 1.2B**). They use a place value chart to organize units and write two-digit numbers in expanded form. The topic closes with students identifying 1 more, 1 less, 10 more, and 10 less as they learn to add or subtract like units (**1.5C**).

In Topic B, students compare and order quantities and begin using the symbols for greater than (>) and less than (<) (**1.2E, 1.2F, 1.2G**). Students demonstrate their understanding of place value when they recognize that 18 is less than 21 since 2 tens already have a greater value than 1 ten 8 ones. To support understanding, the first lesson in the topic focuses on identifying the greater or lesser amount. With this understanding, students label each of the quantities being compared and compare them from left to right. Next, students use their understanding of place value and are introduced to using open number lines to order numbers. Finally, students use the mathematical symbols (>, <, =) to compare quantities and numerals after the conceptual foundation has been laid.



In Topic C, students use familiar strategies to add two-digit and single-digit numbers within 40. Students use smaller addition problems to help solve problems with larger numbers **(1.3A, 1.3D, 1.3E)**. For example, when students add 8 + 4, 18 + 4, and 28 + 4, they notice that 8 + 4 is embedded in the latter problems. Each new problem in the sequence is 10 more than the previous problem. Students recognize single-digit addition facts as they solve 16 + 2 by adding the ones to the ones. Students see that they are adding 2 ones to 6 ones, while the tens remain unchanged to make 1 ten 8 ones or 18. Students also work with problems that involve making the next ten, such as 19 + 3. They use concrete models, quick tens, and number bonds as methods for representing their thinking.

The module closes with Topic D in which students consider new ways to represent larger quantities when approaching *join/separate with total or addend unknown* and *add to with result or change unknown* word problems. Students begin labeling drawings with numerals and eventually move to strip diagrams to represent the problems pictorially (**1.3B, 1.5D**). Throughout this topic, students continue developing their skills with adding single-digit and double-digit numbers (introduced in Topic C) during fluency activities.

Collaboratively Troubleshooting Student Misconceptions

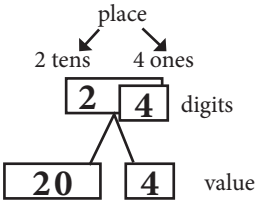
It is common for students to make mistakes as they build their understanding of new or difficult concepts. As noted in the Program and Implementation Guide, collaborative troubleshooting is a routine to help teachers address students' misconceptions. The three steps to collaborative troubleshooting are

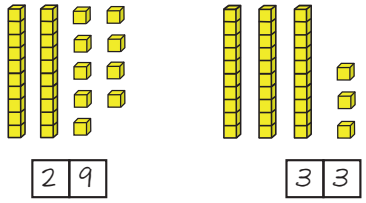
1. (1) surface student thinking;
2. (2) validate what the student did right; and
3. (3) bridge to a better understanding.

The following table presents teachers with guidance on how to collaboratively troubleshoot misconceptions with students. The first three columns of the table outline misconceptions that commonly arise in this module, reasons why students may have the misconceptions, and associated TEKS. Teachers can use this information to help them decide which questions to ask students to surface thinking and to validate what the students understood or did correctly.

The last column of the table provides instructional strategies and sample guided questions that can support students as they build on what they already know and bridge to a better understanding.

Note: Teachers can also refer to the sample teacher–student dialogue in the "Collaboratively Troubleshooting Student Misconceptions" section of the Grade 1 Course Guide for additional guidance on implementing the three-step routine.

Topic	TEKS	Student Misconception	How to Bridge to a Better Understanding
Topic A	1.2C	Students think the digit in a number and the value of that digit is always the same (e.g., "24 is 2 and 4").	Use Hide Zero® cards to represent a number. Pull the cards apart to show the value of each digit separately. Push them back together to unify the values as one number. Make a chart to help students remember new place value terminology. 

Topic	TEKS	Student Misconception	How to Bridge to a Better Understanding
Topic B	1.2E	Students compare numbers based on a digit in isolation rather than by considering the values of the digits in a number (e.g., "9 is greater than 3 so 29 must be greater than 33").	Notice how visual models reinforce the value of each digit in a number and allow students to see the difference in quantity when comparing numbers.  Have students use linking cubes to represent each number. Use the following questions to support number comparison. • Which group has more linking cubes? • What is the value of the digit 9 in 29? Which linking cubes represent the digit 9 in 29? • What is the value of the digit 3 in the tens place? Which linking cubes represent the digit 3 in the tens place? • Which is greater, 3 tens or 9 ones?

Topic	TEKS	Student Misconception	How to Bridge to a Better Understanding
Topic C	1.3E	Students add unlike units (e.g., 1 plus 2 equals 3 so 16 + 2 = 36").	Notice how drawing quick tens and ones models the addition of like units. As each ten or one is added to the drawing, the digit in its corresponding place increases. To highlight this relationship, have students do the following work in pairs. • Partner A draws to represent the number, adding quick tens and ones as applicable. • Partner B records the change with number bonds and/or equations. • Partners switch roles.
Topic D	1.3F	Students create a story problem that does not match the given strip diagram.	Notice that labeled strip diagrams are provided instead of number sentences when students first generate story problems. Providing a pictorial representation with no unknown allows students to focus on matching a context to the number relationship. If students need additional support, provide a story problem that matches the labeled strip diagram. First, ask students to identify the parts and total on the strip diagram, and then have them locate where the parts and total show up in the given story problem. Once students understand how the strip diagram represents the story problem, ask them to write a different story problem that matches the strip diagram.

Focus Grade Level Standards

Number and Operations[1] [2]

The student applies mathematical process standards to represent and compare whole numbers, the relative position and magnitude of whole numbers, and relationships within the numeration system related to place value. The student is expected to:

1.2B use concrete and pictorial models to compose and decompose numbers up to 120 in more than one way as so many hundreds, so many tens, and so many ones;

1.2C use objects, pictures, and expanded and standard forms to represent numbers up to 120;

1.2D generate a number that is greater than or less than a given whole number up to 120;

1.2E use place value to compare whole numbers up to 120 using comparative language;

1.2F order whole numbers up to 120 using place value and open number lines;

1.2G represent the comparison of two numbers to 100 using the symbols >, <, or =.

[1]While pennies and dimes are used throughout the module, 1.4A is not a focus grade level standard in Module 4. Instead, this standard becomes a focal standard in Module 6, when all coins are introduced and used

[2]Focus on numbers to 40.

Number and Operations

The student applies mathematical process standards to develop and use strategies for whole number addition and subtraction computations in order to solve problems. The student is expected to:

1.3A use concrete and pictorial models to determine the sum of a multiple of 10 and a one-digit number in problems up to 99;

1.3B use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as 2 + 4 = [ ]; 3 + [ ] = 7; and 5 = [ ] − 3;

1.3D apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10;

1.3E explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences;

1.3F generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20.

Algebraic Reasoning

The student applies mathematical process standards to identify and apply number patterns within properties of numbers and operations in order to describe relationships. The student is expected to:

1.5A recite numbers forward and backward from any given number between 1 and 120;

1.5B skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set;

1.5C use relationships to determine the number that is 10 more and 10 less than a given number up to 120;

1.5D represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences.

Foundational Standards

The student is expected to:

K.2F generate a number that is one more than or one less than another number up to at least 20;

K.2I compose and decompose numbers up to 10 with objects and pictures.

TEKS Mathematical Process Standards

The student uses mathematical processes to acquire and demonstrate mathematical understanding.
The student is expected to:

1.1C select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

1.1E create and use representations to organize, record, and communicate mathematical ideas;

1.1G display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Overview of Module Topics and Lesson Objectives

TEKS	ELPS	Topics and Objectives			Days
1.2B **1.2C** **1.2D** **1.5A** **1.5B** **1.5C** 1.2A 1.4A	1.B 1.C 1.F 2.C 2.E 2.I 3.E 3.F 4.C 4.G	A	**Tens and Ones**		7
			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.	
			Lesson 7:	Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.	

TEKS	ELPS		Topics and Objectives	Days
1.2E **1.2F** **1.2G** 1.2A 1.2B	1.C 2.C 2.E 2.I 3.E 4.B 4.G 5.B	B	**Comparison of Pairs of Two-Digit Numbers** Lesson 8: Compare two quantities, and identify the greater or lesser of the two given numerals. Lesson 9: Compare quantities and numerals from left to right. Lesson 10: Order whole numbers up to 40 using place value. Lesson 11: Order whole numbers up to 40 using open number lines. Lessons 12–13: Use the symbols >, =, and < to compare quantities and numerals.	6
			Mid-Module Assessment Task: Topics A–B	2
1.3A **1.3D** **1.3E**	1.C 1.E 2.E 2.I 3.E 3.F 4.F 4.G 5.G	C	**Addition of Tens or Ones to a Two-Digit Number** Lesson 14: Use single-digit sums to support solutions for analogous sums to 40. Lessons 15: Add ones and ones or make a new ten.	2
1.3B **1.3E** **1.3F** **1.5D**	1.C 2.C 2.I 3.D 3.E 3.H 4.F 4.G 5.G	D	**Varied Problem Types Within 20** Lesson 16: Use strip diagrams as representations to solve *join/separate with total unknown* and *add to with result unknown* word problems. Lessons 17–18: Recognize and make use of part–whole relationships within strip diagrams when solving a variety of problem types. Lesson 19: Write word problems of varied types.	4
			End-of-Module Assessment Task: Topics A–D	2
Total Number of Instructional Days				**23**

Terminology

A Spanish cognate is included when the term has a similar meaning and spelling in English. Not every term in this module has a Spanish cognate.

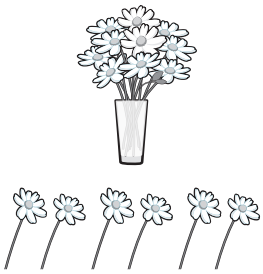
New or Recently Introduced Terms

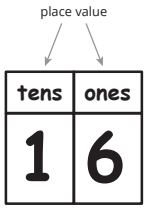
- **Greater than sign**: >
- **Less than sign**: <
- **Expanded form** (*Forma expandida*): a way of writing a number that shows the value of each digit in that number

$$30 + 7 = 37$$

- **Open number line**: a number line with no numbers or tick marks on it

- **Place value** (*Valor posicional*): the value of a digit based on where it is located in a number





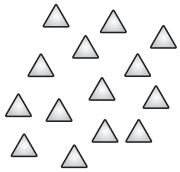
Familiar Terms and Symbols[3]

- **Equal sign**: =
- **Numerals** (*Números*): a symbol that represents a value

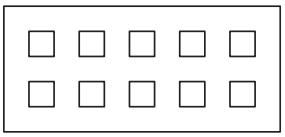
29, 38, 7, 14, 24

0 10 20 30 40

- **Ones**: single units, 10 single units can make a ten



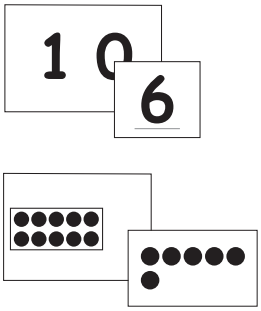
- **Tens**: a unit equal to 10 ones



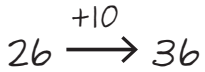
[3] These are terms and symbols students have seen previously.

Suggested Tools and Representations

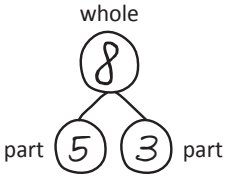
- Arrow notation
- Comparison symbols: >, <, =
- Dime
- Hide Zero cards
- Hundred chart
- Number bond
- Open number line
- Penny
- Place value chart
- Quick Ten
- Rekenrek
- Strip diagram



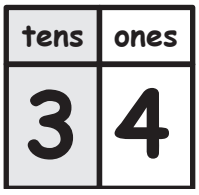
Hide Zero Cards



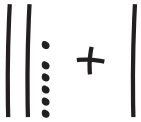
Arrow Notation



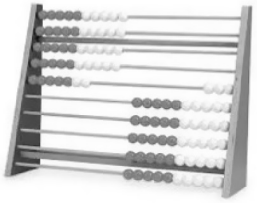
Number Bond



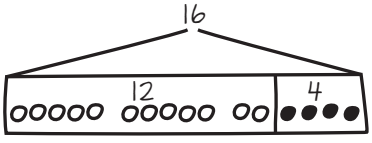
Place Value Chart



Quick Ten



Rekenrek



Strip Diagram

Topic A

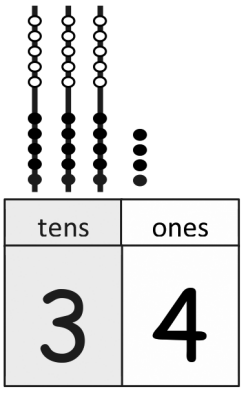
Tens and Ones

1.2B, 1.2C, 1.2D, 1.5A, 1.5B, 1.5C, 1.2A, 1.4A

Focus Standards:	1.2B	Use concrete and pictorial models to compose and decompose numbers up to 120 in more than one way as so many hundreds, so many tens, and so many ones.
	1.2C	Use objects, pictures, and expanded and standard forms to represent numbers up to 120.
	1.2D	Generate a number that is greater than or less than a given whole number up to 120.
	1.5A	Recite numbers forward and backward from any given number between 1 and 120.
	1.5B	Skip count by twos, fives, and tens to determine the total number of objects up to 120 in a set.
	1.5C	Use relationships to determine the number that is 10 more and 10 less than a given number up to 120.
Instructional Days:	7	
Coherence -Links from:	G1–M2	Introduction to Place Value Through Addition and Subtraction Within 20
-Links to:	G2–M3	Place Value, Counting, and Comparison of Numbers to 1,200

Module 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 modeled representationally 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 readily to numbers to 100 in Module 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 module.

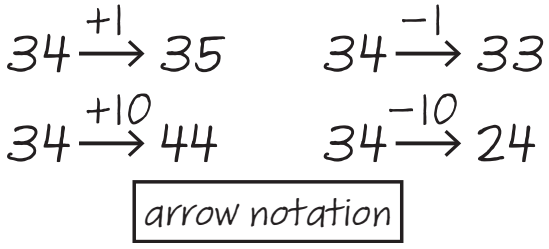


Place Value Chart

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.

In Lessons 5 and 6, 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 (e.g., "I see that 10 less than 34 is just 1 less ten, so it must be 24"). Students represent how the number changed by using arrow notation, or the arrow way, as shown. Lesson 6 then introduces the dime and penny as representations of ten and one, respectively. Students make the connection between the familiar representations of tens and ones to the dime and the penny, and they work to find 10 more, 10 less, 1 more, and 1 less.



Topic A concludes with lesson 7, which focuses on taking interpretations of two-digit numbers a step further. Students interpret numbers such as 25 in various ways—as 1 ten 15 ones, 2 tens 5 ones, and 25 ones.

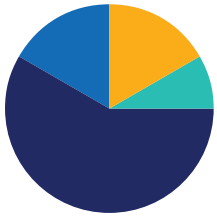
A Teaching Sequence Toward Proficiency in Tens and Ones	
Objective 1:	**Compare the efficiency of counting by ones and counting by tens. (Lesson 1)**
Objective 2:	**Use the place value chart to record and name tens and ones within a two-digit number. (Lesson 2)**
Objective 3:	**Interpret two-digit numbers as either tens and some ones or as all ones. (Lesson 3)**
Objective 4:	**Write and interpret two-digit numbers as addition sentences that combine tens and ones. (Lesson 4)**
Objective 5:	**Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number. (Lesson 5)**
Objective 6:	**Use dimes and pennies as representations of tens and ones. (Lesson 6)**
Objective 7:	**Interpret two-digit numbers as tens and ones, including cases with more than 9 ones. (Lesson 7)**

Lesson 1

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

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



NOTES ON FLUENCY:

Throughout the module, teachers are encouraged to make appropriate adjustments to fluency activities to account for varying student needs.

Fluency Practice (10 minutes)

- Break Apart Numbers **1.3D, 1.5G** (4 minutes)
- Change 10 Pennies for 1 Dime **1.2A, 1.4A** (4 minutes)
- Counting by Tens on the Rekenrek **1.5B** (2 minutes)

Break Apart Numbers (4 minutes)

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

Note: This fluency activity reviews decomposing numbers 5–9 and supports adding and subtracting within 10. It is an essential skill to apply the 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 (4 minutes)

Materials: (T) 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 Module 1 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.

Counting by Tens on the Rekenrek (2 minutes)

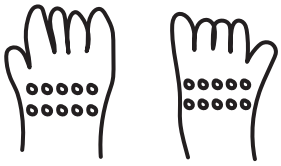
Materials: (T) Rekenrek

Use the Rekenrek to count by tens. Sliding 10 beads at a time, count up and down to 100. To reinforce place value understanding, alternate between counting the regular way and the Say Ten way.

Note: Counting by Tens on the Rekenrek prepares students to recognize the efficiency of counting groups of 10 in today's lesson.

Application Problem (5 minutes)

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



10 + 10 = 20

Joy has 20 marbles.

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. During the Debrief, students relate the Application Problem to the efficiency of counting by tens instead of counting by ones.

Concept Development (35 minutes)

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. In this lesson, students may choose to count by twos and fives.

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!

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

As students count, circulate and observe their counting levels. Not all students may be able to switch between counting ones and tens. Take some extra time with the students who need to practice counting these patterns. Play some counting games with the linking cubes.

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.

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.)

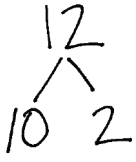
T: Show me this same number of cubes using your own set. Organize them efficiently, like the ones on the board.

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 simpler for you to see 12 quickly?

S: The ones on my desk. → The ten-stick and 2 cubes are simpler 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.

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 Module 4.

NOTES ON 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 can be helpful to all students, including some emergent bilingual students, students with hearing impairments, and those who may need more time while assembling their ten-sticks.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes.

For some classes, it may be appropriate to adjust the assignment by specifying which problems students should work on first. With this option, let the purposeful sequencing of the Problem Set guide the selections so that problems continue to be scaffolded. Balance word problems with other problem types to ensure a range of practice. Consider assigning incomplete problems for homework or at another time during the day.

Student Debrief (8 minutes)

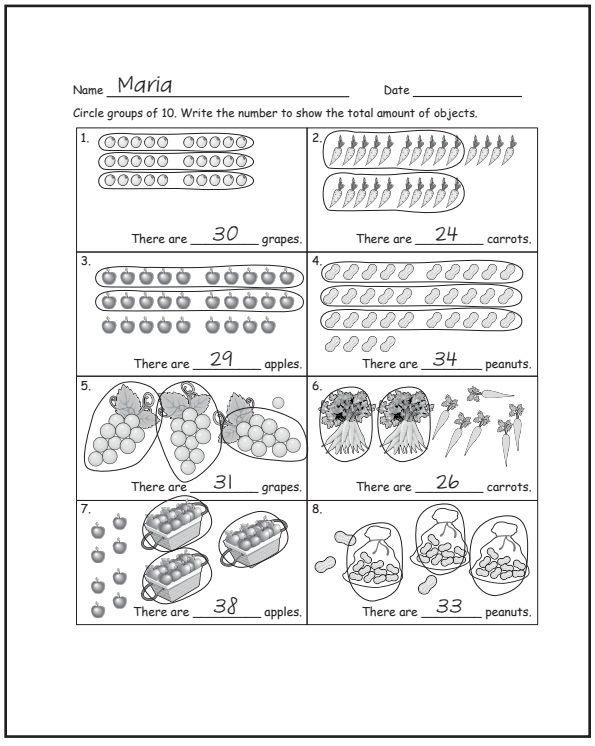
Lesson Objective: Compare the efficiency of counting by ones and counting by tens.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Compare your answer to Problem 15 with your partner's answer. Did you get the same answer? What are the parts of your number bond? Explain your thinking. (Accept any variation that aligns with the picture. For example, students may correctly bond as 20 and 10, or 30 and 0.)


Name Maria Date

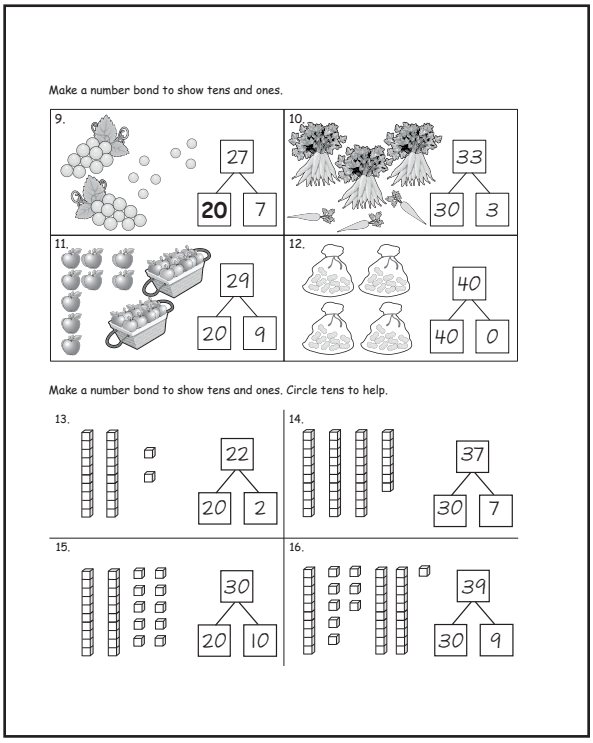
Circle groups of 10. Write the number to show the total amount of objects.

1. There are 30 grapes.
2. There are 24 carrots.
3. There are 29 apples.
4. There are 34 peanuts.
5. There are 31 grapes.
6. There are 26 carrots.
7. There are 38 apples.
8. There are 33 peanuts.

- What did you do to solve Problem 16? (Similar to Problem 15, there may be multiple correct answers.)
- What are the different ways we can group objects to make counting more efficient?
- How does organizing objects in groups of 10 help us?
- How did the Application Problem connect to today's lesson?

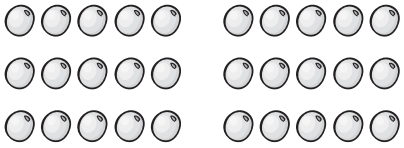
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

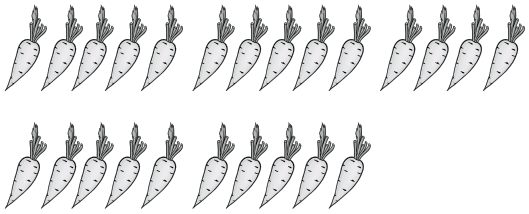


Name _____ Date _____

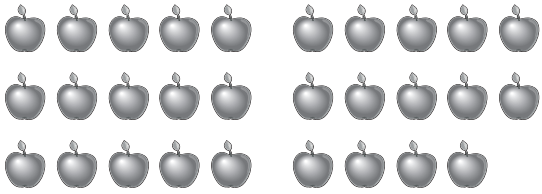
Circle groups of 10. Write the number to show the total amount of objects.

1. 

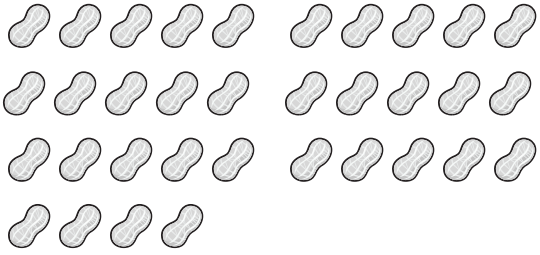
There are _____ grapes.

2. 

There are _____ carrots.

3. 

There are _____ apples.

4. 

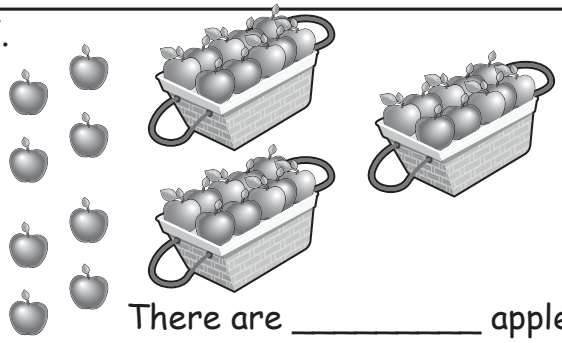
There are _____ peanuts.

5. 

There are _____ grapes.

6. 

There are _____ carrots.

7. 

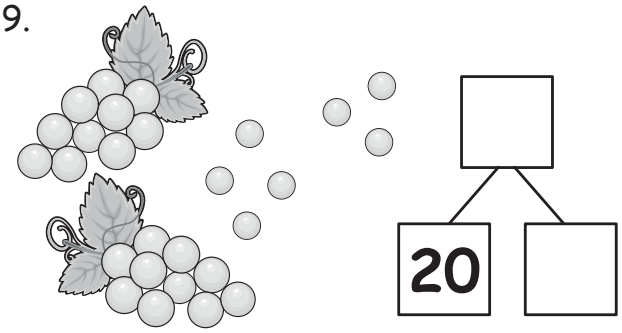
There are _____ apples.

8. 

There are _____ peanuts.

Make a number bond to show tens and ones.

9.



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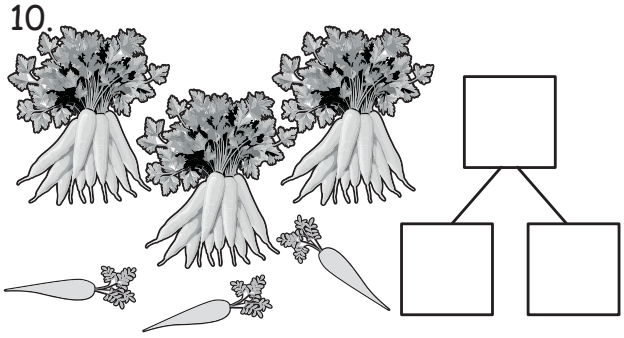

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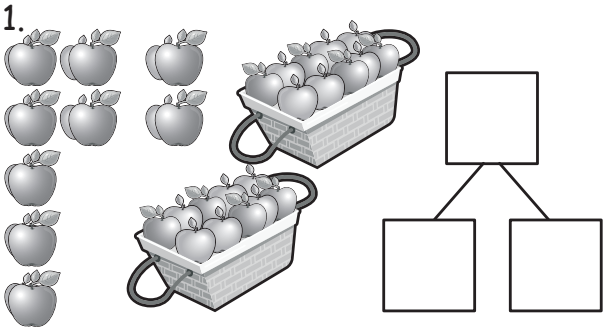
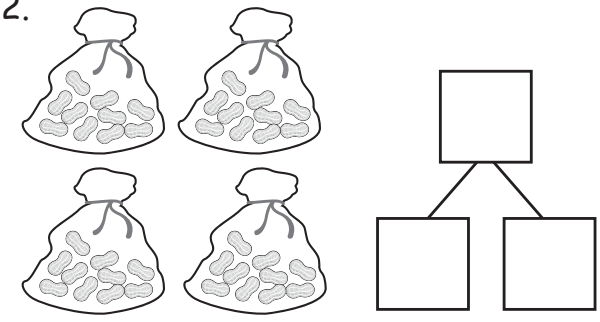
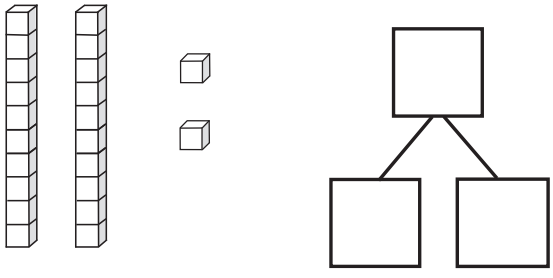


12.



Make a number bond to show tens and ones. Circle tens to help.

13.



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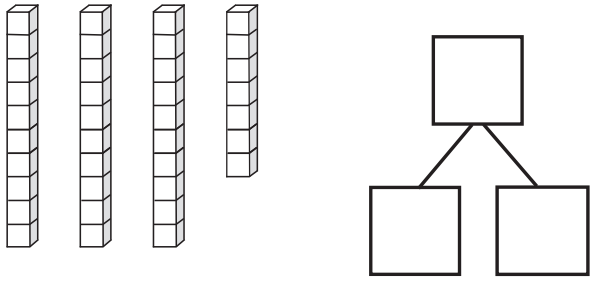

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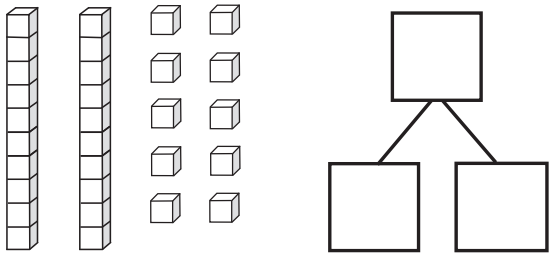

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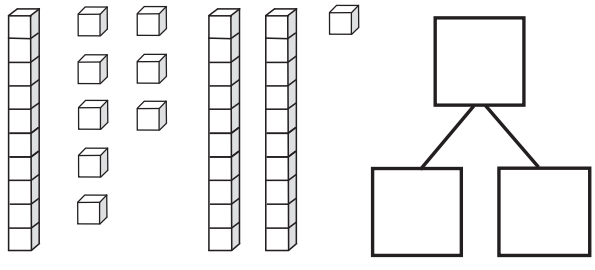
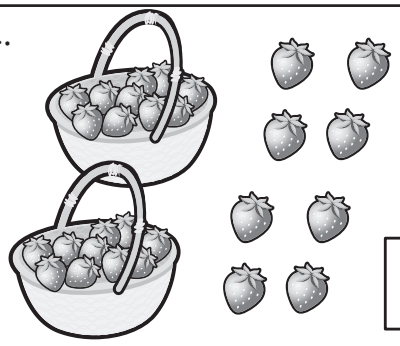
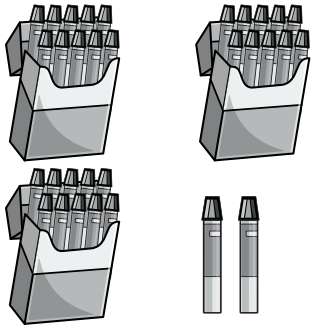
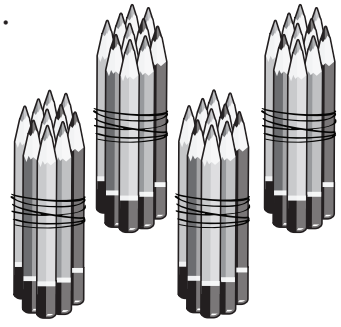


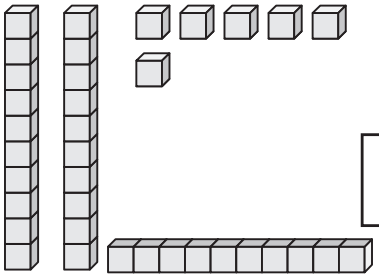
Name _____ Date _____

Complete the number bonds.

1. 

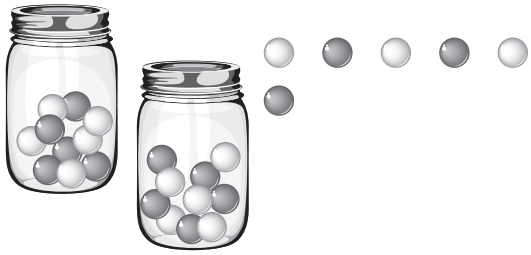
2. 

3. 

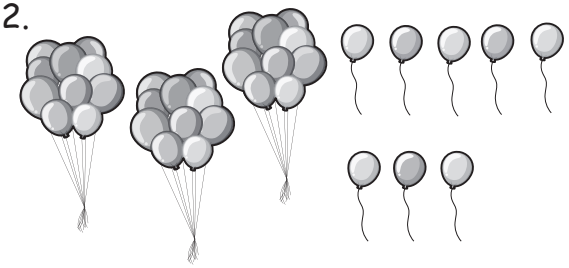
4. 

Name _____ Date _____

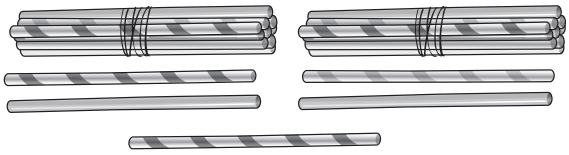
Circle groups of 10. Write the number to show the total amount of objects.

1. 

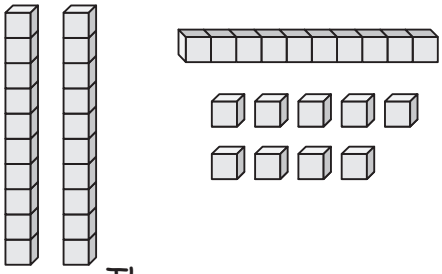
There are _____ marbles.

2. 

There are _____ balloons.

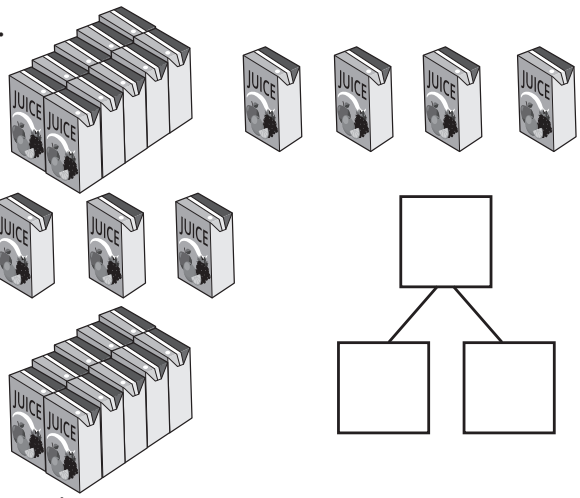
3. 

There are _____ straws.

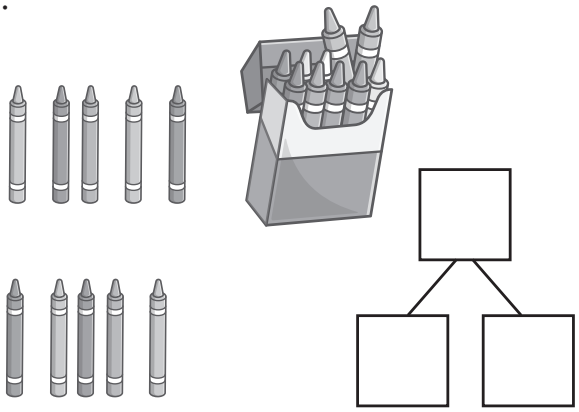
4. 

There are _____ cubes.

Make a number bond to show tens and ones. Circle tens to help. Write the number to show the total amount of objects.

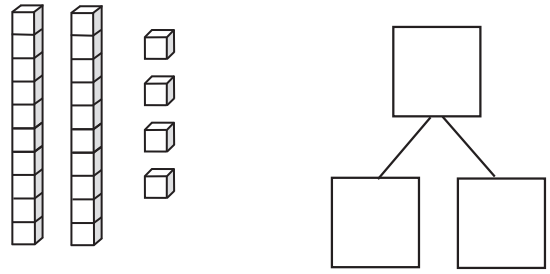
5. 

There are _____ juice boxes.

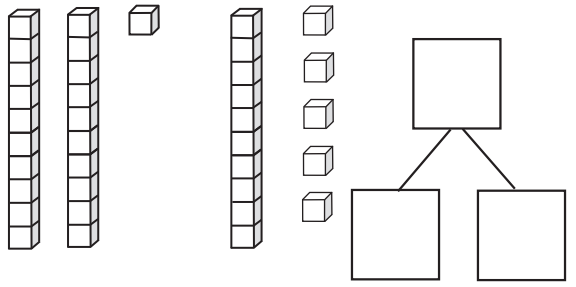
6. 

There are _____ crayons.

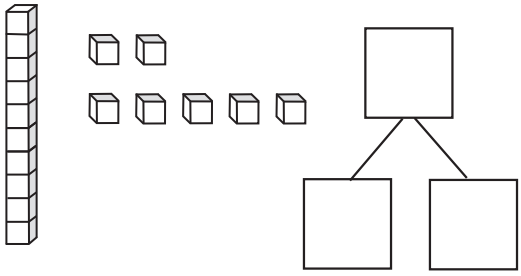
Make a number bond to show tens and ones. Circle tens to help. Write the number to show the total amount of objects.

7. 

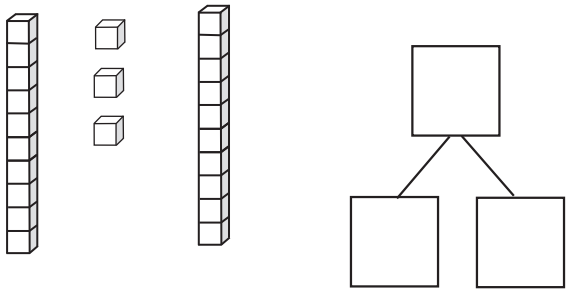
There are _____ cubes.

8. 

There are _____ cubes.

9. 

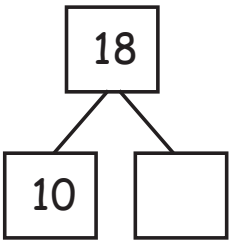
There are _____ cubes.

10. 

There are _____ cubes.

Make or complete a math drawing to show tens and ones. Complete the number bonds.

11.



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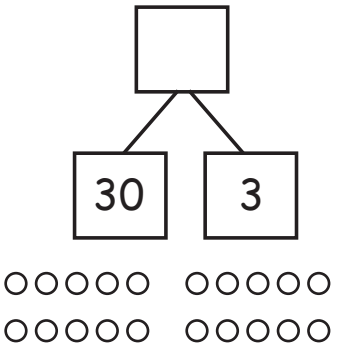
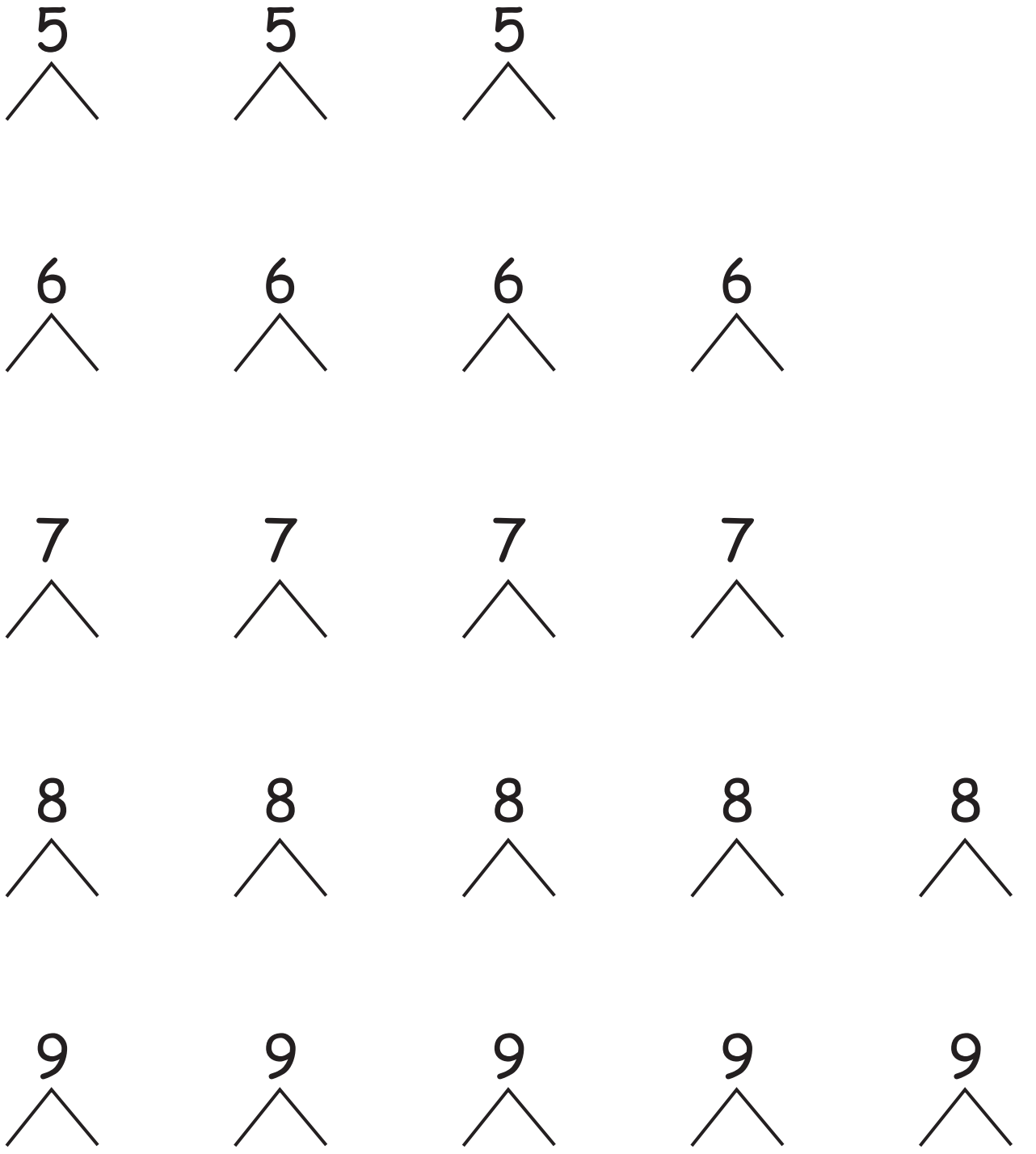




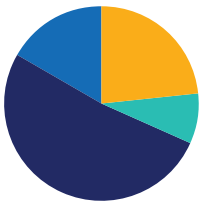
break apart numbers

Lesson 2

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

Suggested Lesson Structure

Fluency Practice	(14 minutes)
Application Problem	(5 minutes)
Concept Development	(31 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (14 minutes)

- Addition Fluency Review **1.3D, 1.5G** (5 minutes)
- 3, 4, and 5 More **1.3D, 1.5G** (4 minutes)
- Change 10 Pennies for 1 Dime **1.2A, 1.4A** (5 minutes)

Addition Fluency Review (5 minutes)

Materials: (S) Addition Fluency Review

Note: This addition review sheet contains the majority of addition facts within 10 (excluding some +0 and +1 facts). Students are likely to do well with this activity at this point in the year. If not, repeat some addition fluency activities from Module 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 Addition Fluency Reviews.

NOTES ON 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 challenged with motor skills, allowing them to experience success with the math skills being addressed.

3, 4, and 5 More (4 minutes)

Note: This fluency activity provides practice with the grade-level standard of 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 (5 minutes)

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

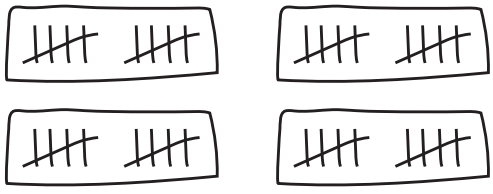
Note: This fluency activity is necessary to prepare students for utilizing coins as abstract representations of tens and ones in Lesson 6.

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.

Application Problem (5 minutes)

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

Note: This problem applies the Concept Development 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. During the Debrief, students represent the number 40 using a place value chart.



Ted has 4 tens.

10 + 10 + 10 + 10 = 40

He has 40 pencils altogether.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Support students, including some emergent bilingual students, in constructing their written responses by providing sentence frames. For example:

Ted has ___ tens.

He has ___ pencils altogether.

Concept Development (31 minutes)

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?

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?

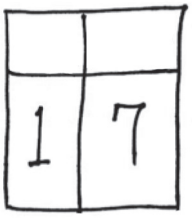
S: 7 extra ones.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Because the Hide Zero cards are familiar from Module 4, students can readily 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 module as needed. Some students, including some emergent bilingual students, can benefit from the presentation of information in multiple formats. The labels on the place value chart reinforce the language of tens and 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.

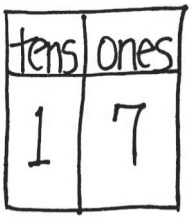
T: Point to where you think I should write 7.

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.

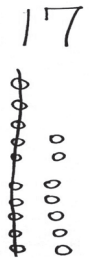
T: The Say Ten way?

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.



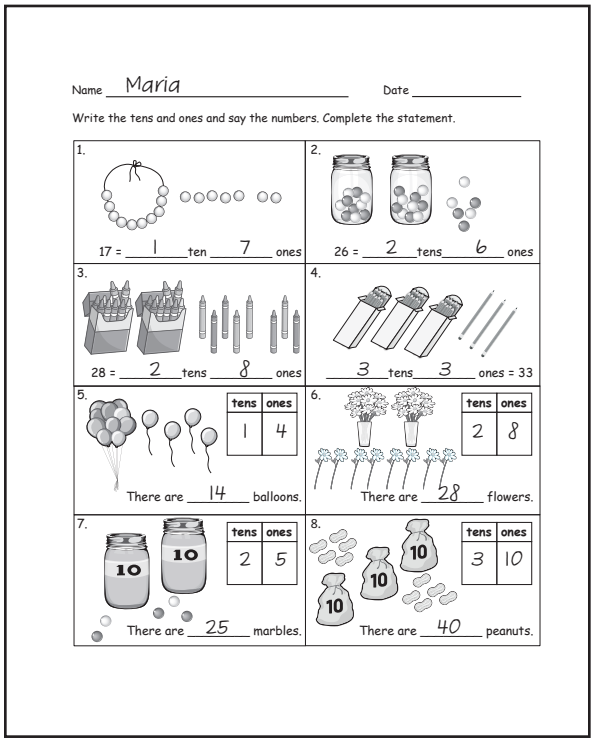
Repeat the process using the following sequence: 27, 37, 14, 24, 34, 13, 31, 30, 12, 21, and 20.

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.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)


Name Maria Date

Write the tens and ones and say the numbers. Complete the statement.

1. 17 = 1 ten 7 ones

2. 26 = 2 tens 6 ones

3. 28 = 2 tens 8 ones

4. 3 tens 3 ones = 33

5. tens 1, ones 4. There are 14 balloons.

6. tens 2, ones 8. There are 28 flowers.

7. 10 10 tens 2, ones 5. There are 25 marbles.

8. 10 10 10 tens 3, ones 10. There are 40 peanuts.

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

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

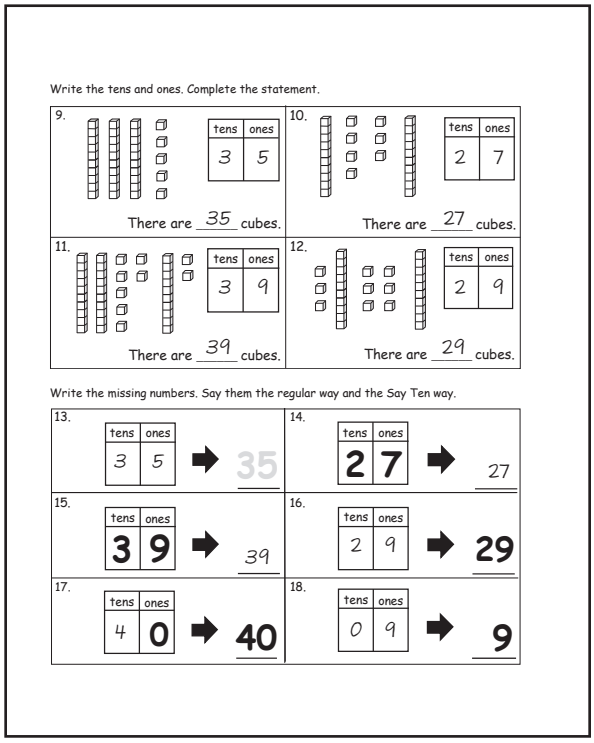
Any combination of the questions below may be used to lead the discussion.

- 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**.
- Look at Problem 18. How did you complete your place value chart? Explain your thinking.
- 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 separated into tens and ones.)

- How did the Application Problem connect to today's lesson? How would you write the answer in a place value chart?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



Write the tens and ones. Complete the statement.

9. tens 3, ones 5. There are 35 cubes.

10. tens 2, ones 7. There are 27 cubes.

11. tens 3, ones 9. There are 39 cubes.

12. tens 2, ones 9. There are 29 cubes.

Write the missing numbers. Say them the regular way and the Say Ten way.

13. tens 3, ones 5 → 35

14. tens 2, ones 7 → 27

15. tens 3, ones 9 → 39

16. tens 2, ones 9 → 29

17. tens 4, ones 0 → 40

18. tens 0, ones 9 → 9

Name _____ Date _____

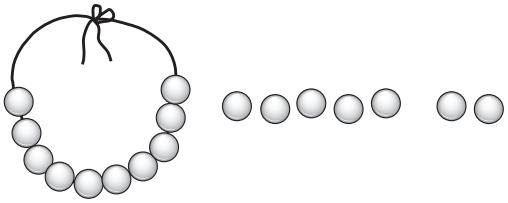
Addition Fluency Review

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

Name _____ Date _____

Write the tens and ones and say the numbers. Complete the statement.

1.

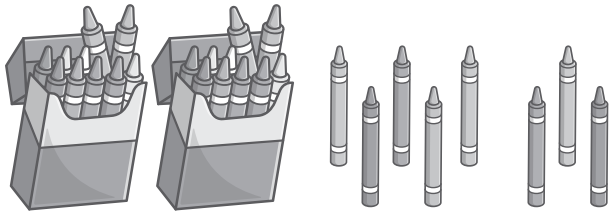


17 = _____ten _____ ones

2.

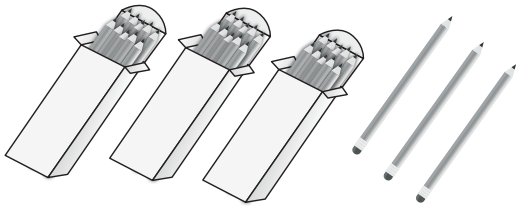
26 = _____tens_____ ones

3.



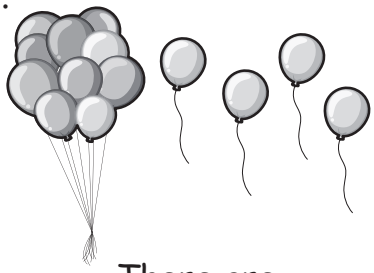
28 = _____tens _____ ones

4.



_____tens_____ ones = 33

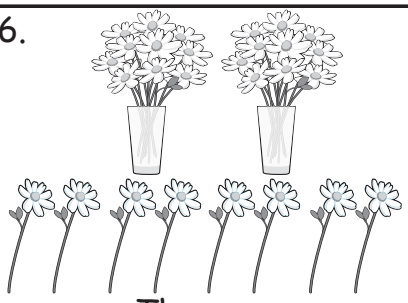
5.



tens	ones

There are _____ balloons.

6.



tens	ones

There are _____ flowers.

7.

tens	ones

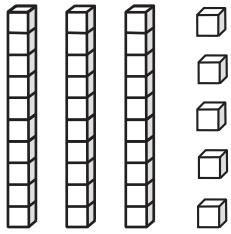
There are _____ marbles.

8.

tens	ones

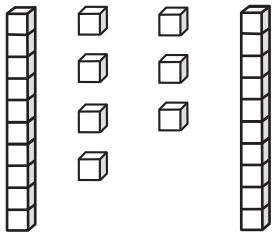
There are _____ peanuts.

Write the tens and ones. Complete the statement.

9. 

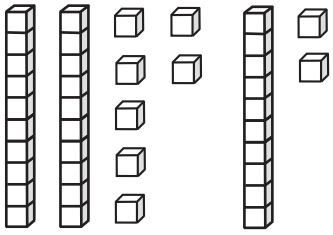
tens	ones

There are _____ cubes.

10. 

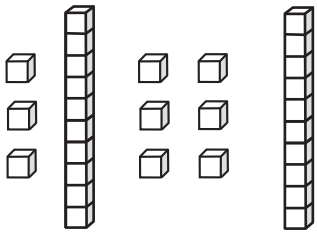
tens	ones

There are _____ cubes.

11. 

tens	ones

There are _____ cubes.

12. 

tens	ones

There are _____ cubes.

Write the missing numbers. Say them the regular way and the Say Ten way.

13.

tens	ones

➡ 35

14.

tens	ones
2	7

➡ _____

15.

tens	ones
3	9

➡ _____

16.

tens	ones

➡ 29

17.

tens	ones
	0

➡ 40

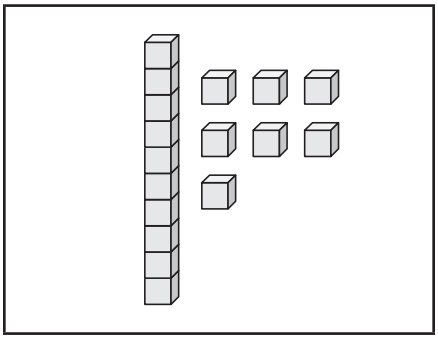
18.

tens	ones

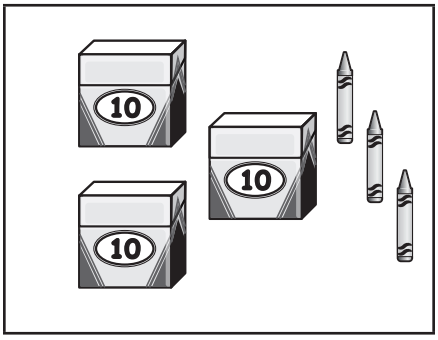
➡ 9

Name _____ Date _____

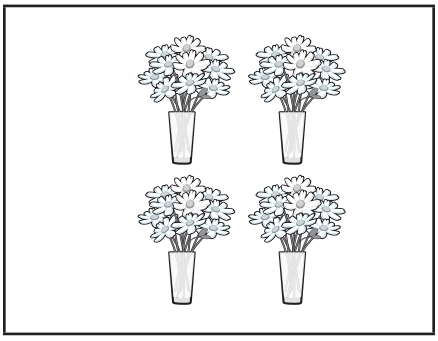
Match the picture to the place value chart that shows the correct tens and ones.



tens	ones
4	0



tens	ones
1	7

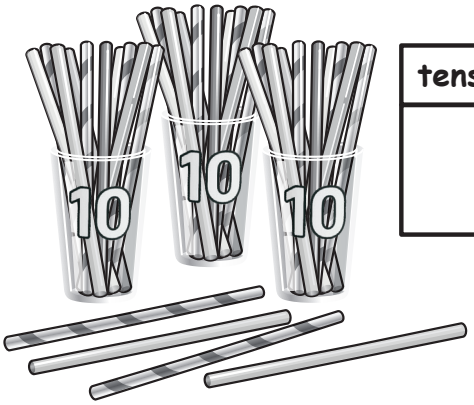


tens	ones
3	3

Name _____ Date _____

Write the tens and ones. Complete the statement.

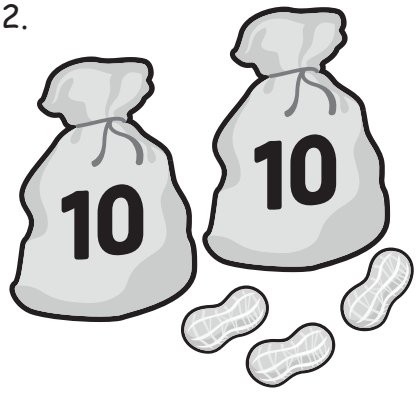
1.



tens	ones

There are _____ straws

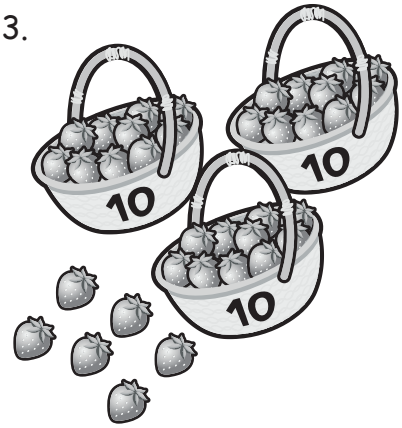
2.



tens	ones

There are _____ peanuts

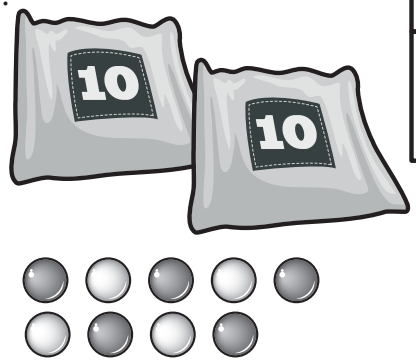
3.



tens	ones

There are _____ strawberries

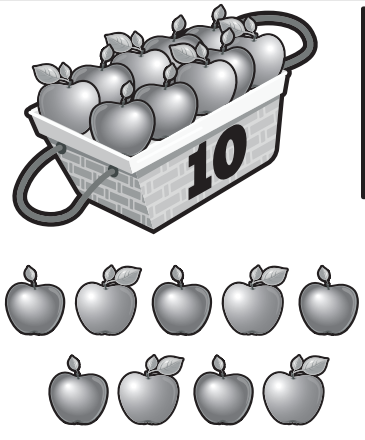
4.



tens	ones

There are _____ beads

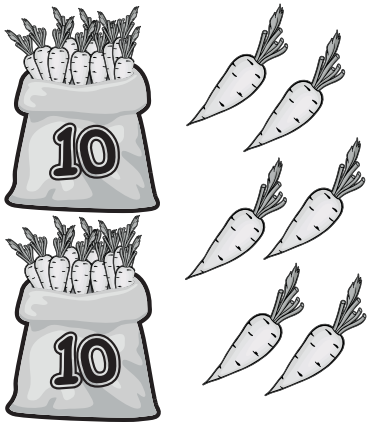
5.



tens	ones

There are _____ apples

6.

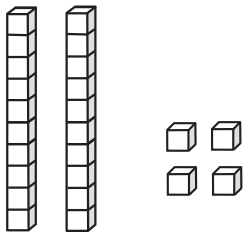


tens	ones

There are _____ carrots

Write the tens and ones. Complete the statement.

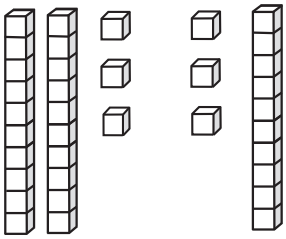
7.



tens	ones

There are _____ cubes.

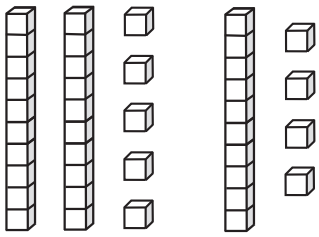
8.



tens	ones

There are _____ cubes.

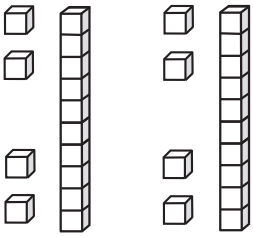
9.



tens	ones

There are _____ cubes.

10.



tens	ones

There are _____ cubes.

Write the missing numbers. Say them the regular way and the Say Ten way.

11.

tens	ones

➡ 23

12.

tens	ones
3	2

➡ _____

13.

tens	ones
0	9

➡ _____

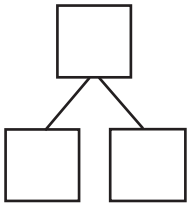
14.

tens	ones
4	0

➡ _____

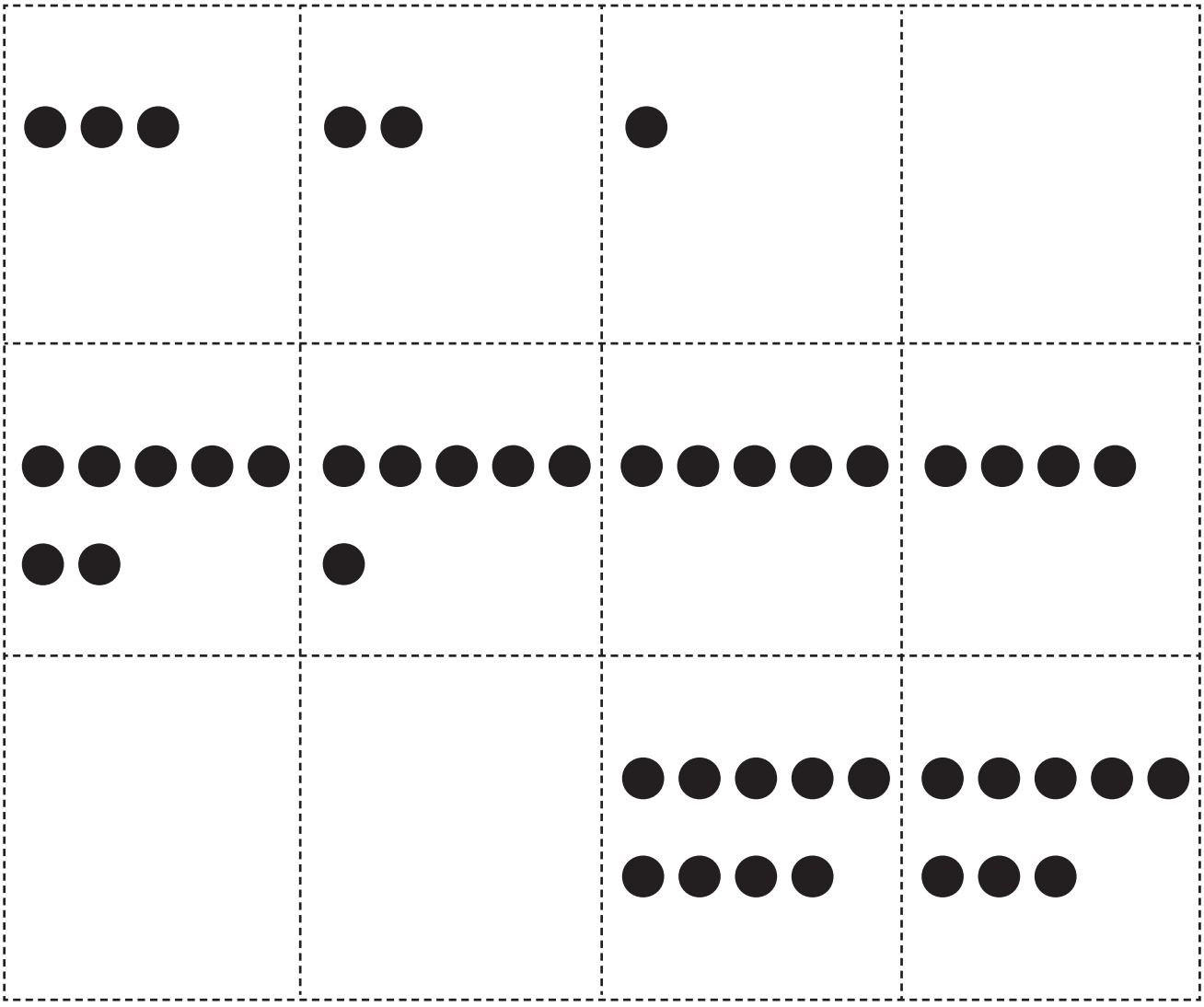
15. Choose a number less than 40. Make a math drawing to represent it, and fill in the number bond and place value chart.

tens	ones



0	1	2	3
4	5	6	7
8	9		

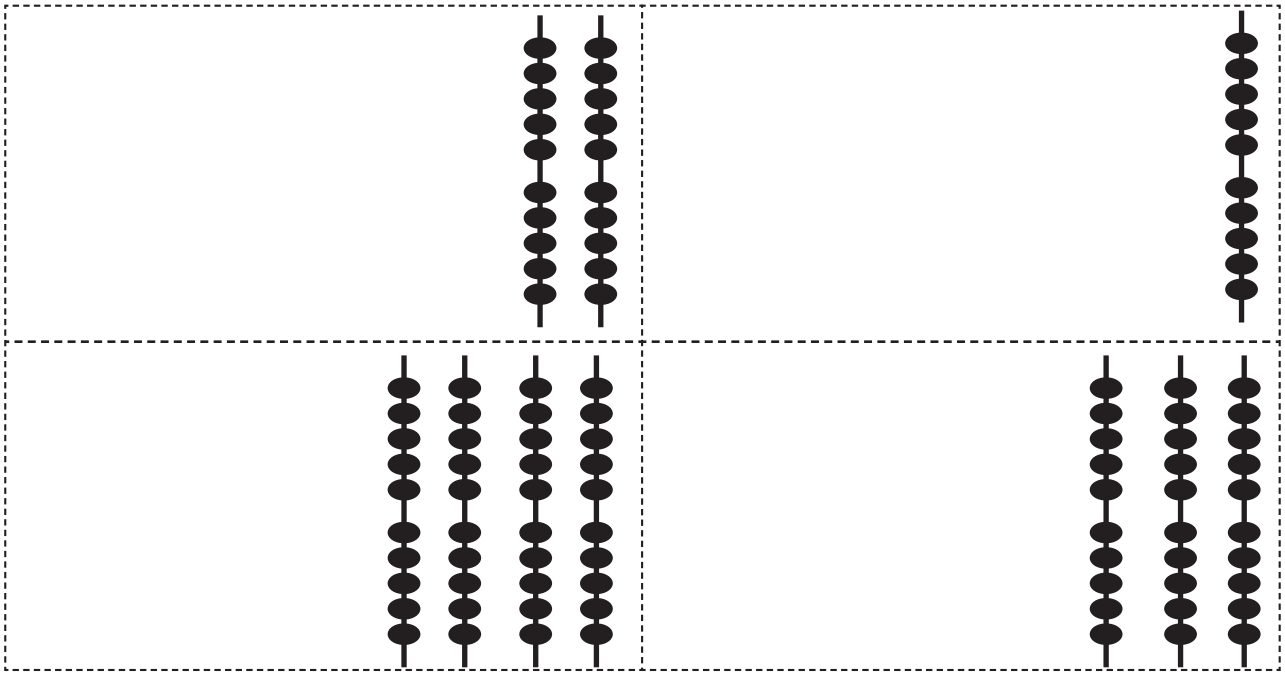
Hide Zero cards, numeral side of ones digits (copy double-sided with next page).



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

1	0	2	0
3	0	4	0

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).

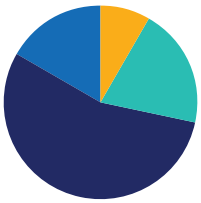
tens	ones

place value chart

Lesson 3

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

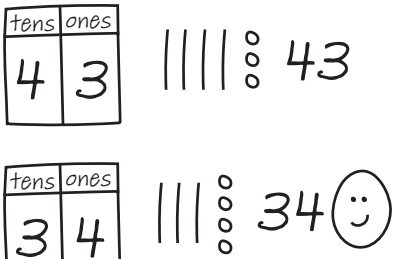
Suggested Lesson Structure



Application Problem	(5 minutes)
Fluency Practice	(12 minutes)
Concept Development	(33 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Application Problem (5 minutes)

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. During the Debrief, students also share other interpretations of 34.

Fluency Practice (12 minutes)

- Addition Fluency Review **1.3D, 1.5G** (5 minutes)
- Dime Exchange **1.2A, 1.4A, 1.4C, 1.5A** (4 minutes)
- Magic Counting Sticks **1.2A, 1.2B** (3 minutes)

Addition Fluency Review (5 minutes)

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

Note: This activity assesses students' progress toward proficiency in fluency with basic addition facts. 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 (4 minutes)

Materials: (T) 20 pennies and 2 dimes

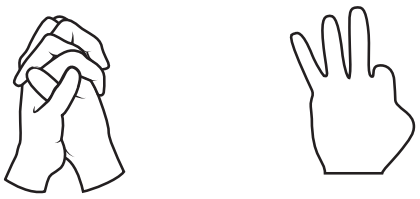
Note: This activity provides students practice with recognizing pennies and dimes and identifying their values. This fluency activity is necessary to prepare students to utilize coins as abstract representations of tens and ones in Lesson 6.

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.

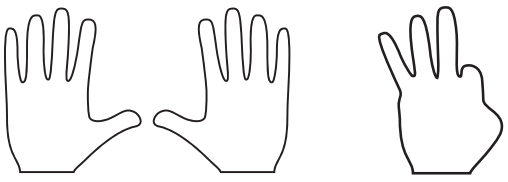
Magic Counting Sticks (3 minutes)

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: (Separate 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.

Concept Development (33 minutes)

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.

T: Show me your magic counting sticks. Wiggle 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.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

These daily class discussions, as well as "Think-pair-share," support students', including some emergent bilingual students', English language acquisition. They offer students an opportunity to talk about their math ideas in English and actively use the language of mathematics.

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.

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.

NOTES ON 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. For example, some emergent bilingual students may find the Hide Zero cards preferable to the finger work since the finger work does not have a visual component to support the verbal directions.

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.

Problem Set (10 minutes)

Note: For completing today's Problem Set, have students say the number and the sentence for each problem. This allows students to hear themselves reading numbers in different ways.

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

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

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

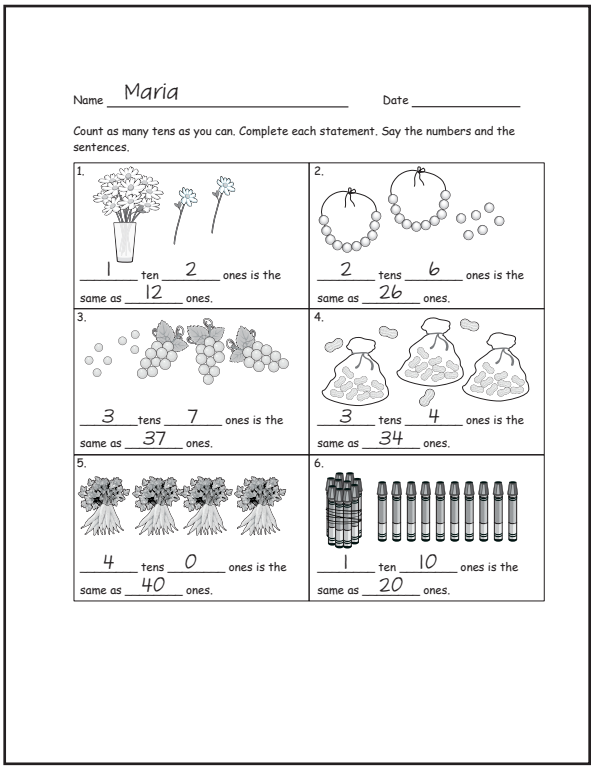
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 6. What is your solution? How are both of these answers correct?
- Look at Problem 10. Explain how 4 tens is the same as 40 ones. You may use linking cubes or the place value chart to support your thinking.
- Look at Problem 12. What are the different ways we can make 29?
- Student A says 2 tens and 9 ones only has 9 ones. Do you agree? Why or why not? What can you tell about the student's work?
- Look at your Application Problem. Share your work and explain your thinking with a partner. If we counted in all ones, how many ones are in 34?

Exit Ticket (3 minutes)

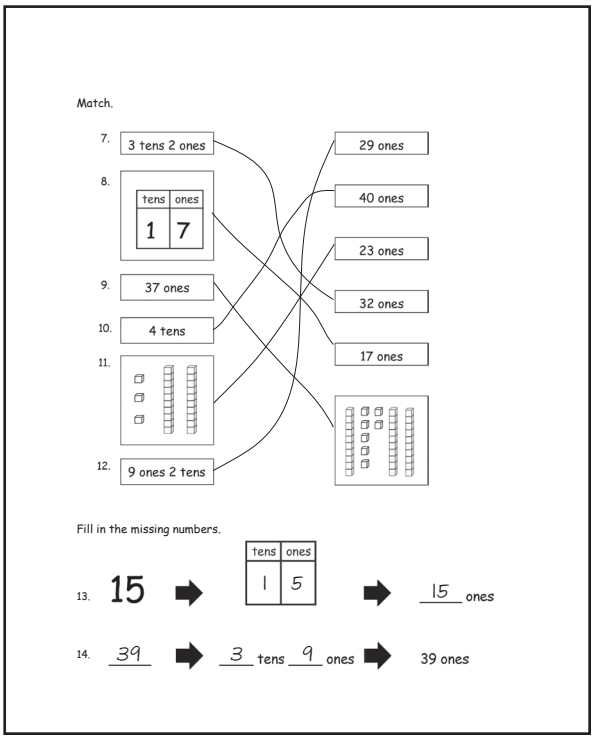
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



Name Maria Date

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

1. 1 ten 2 ones is the same as 12 ones.
2. 2 tens 6 ones is the same as 26 ones.
3. 3 tens 7 ones is the same as 37 ones.
4. 3 tens 4 ones is the same as 34 ones.
5. 4 tens 0 ones is the same as 40 ones.
6. 1 ten 10 ones is the same as 20 ones.



Match.

7. 3 tens 2 ones
8. tens | ones: 1 | 7
9. 37 ones
10. 4 tens
11.
12. 9 ones 2 tens

29 ones
40 ones
23 ones
32 ones
17 ones

Fill in the missing numbers.

13. 15 → tens | ones: 1 | 5 → 15 ones
14. 39 → 3 tens 9 ones → 39 ones

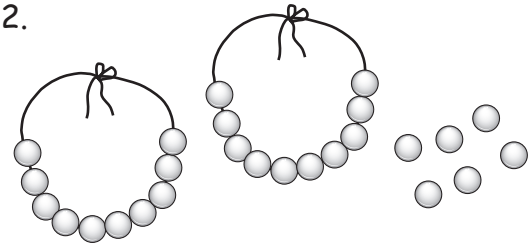
Name _____ Date _____

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

1.

_____ ten _____ ones is the same as _____ ones.

2.

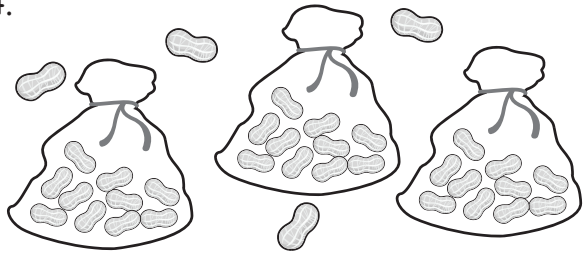


_____ tens _____ ones is the same as _____ ones.

3.

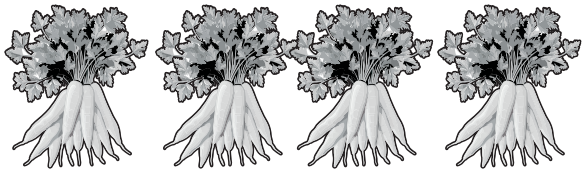
_____tens _____ ones is the same as _____ ones.

4.



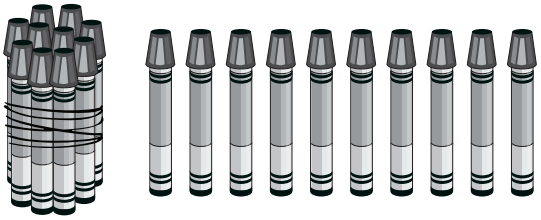
_____ tens _____ ones is the same as _____ ones.

5.



_____ tens _____ ones is the same as _____ ones.

6.



_____ ten _____ ones is the same as _____ ones.

Match.

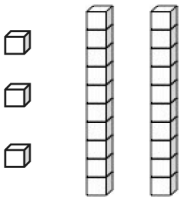
7. 3 tens 2 ones

8.

tens	ones
1	7

9. 37 ones

10. 4 tens

11. 

12. 9 ones 2 tens

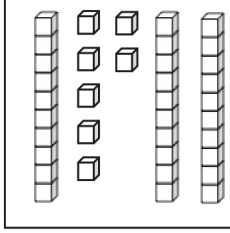
29 ones

40 ones

23 ones

32 ones

17 ones



Fill in the missing numbers.

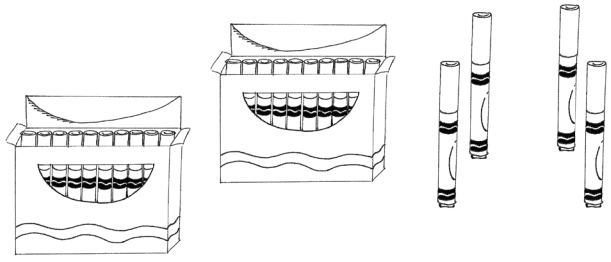
13. 15 ➡ | tens | ones | | | ➡ _____ ones

14. _____ ➡ _____ tens _____ ones ➡ 39 ones

Name _____ Date _____

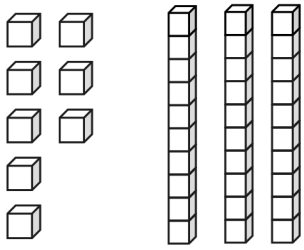
Count as many tens as you can. Complete each statement. Say the numbers and the sentences.

1.



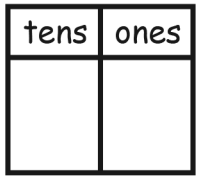
_____ **tens** _____ **ones** is the same as _____ **ones**.

2.



_____ **tens** _____ **ones** is the same as _____ **ones**.

Fill in the missing numbers.

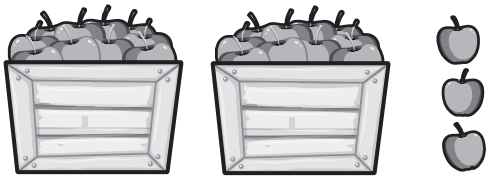
3. 27 ➡ 

➡ _____ ones

Name _____ Date _____

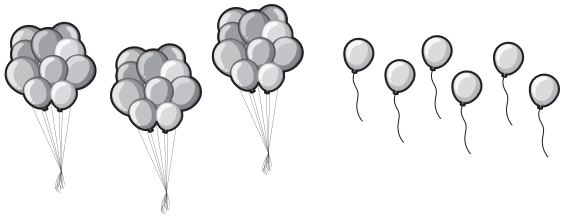
Count as many tens as you can. Complete each statement. Say the numbers and the sentences.

1.



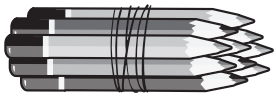
_____ tens _____ ones is the same as _____ ones.

2.



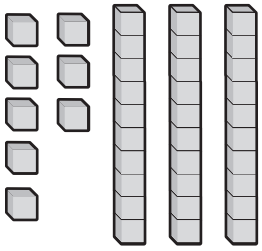
_____ tens _____ ones is the same as _____ ones.

3.



_____ ten _____ ones is the same as _____ ones.

4.



_____ tens _____ ones is the same as _____ ones.

Fill in the missing numbers.

5. _____ → | tens | ones |
|---|---|
| 2 | 9 |

→ _____ ones

6. 34 → _____ **tens** _____ **ones** → _____ ones

7. _____ → | tens | ones |
| --- | --- |
| 3 | 8 |

→ _____ ones

8. _____ → 9 **ones** 3 **tens** → _____ ones

9. _____ → _____ **ones** _____ **tens** → 40 ones

10. Choose at least one number less than 40. Draw the number in 3 ways:

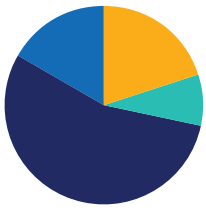
As grapes:	In a number bond:	In the place value chart:
		

Lesson 4

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

Suggested Lesson Structure

Fluency Practice	(12 minutes)
Application Problem	(5 minutes)
Concept Development	(33 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (12 minutes)

- Subtraction with Cards **1.3D, 1.5G** (5 minutes)
- Dime Exchange **1.2A, 1.4A, 1.4C, 1.5A** (5 minutes)
- 10 More **1.5C** (2 minutes)

Subtraction with Cards (5 minutes)

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.

Students sit in partnerships. Students shuffle or mix their numeral cards. Each partner places their 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 (5 minutes)

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 they lay 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.

10 More (2 minutes)

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

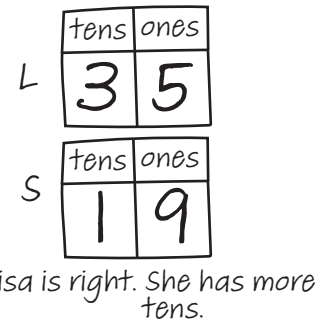
T: What's 10 more than 5?
S: 15.
T: Say 15 the Say Ten way.
S: Ten 5.
T: Say it as an addition sentence, starting with 5.
S: 5 + 10 = 15.
T: Say the addition sentence, starting with 10.
S: 10 + 5 = 15.

Repeat, beginning with other numbers between 0 and 10.

Application Problem (5 minutes)

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 Development (33 minutes)

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 (Fluency Template)

Students gather in the meeting area in a semicircle formation with their personal white boards with place value chart templates inserted, and their toolkits of 4 ten-sticks.

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…?

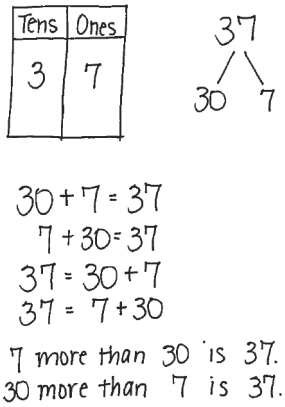
S: 37.

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.)

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

S: (Separate 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.



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: When we write a number sentence by adding each place value, it is called writing the number in **expanded form**. By writing 37 as 30 + 7, we are putting it in expanded form.

T: Now, start your number sentence with the ones. (Record on the chart.)

S: 7 + 30 = 37.

T: This number sentence is also written in expanded form. The number sentence still shows the value of each digit in the total, it just starts with the ones.

T: Let's try another number sentence for 37. 37 is the same as…? (Write 37 = …, and complete the number sentence as students answer.)

S: 30 + 7.

T: Is this considered expanded form?

S: Yes. This time it starts with the total and the parts are the value of each digit.

T: This time, let's start with the ones. 37 is the same as…? (Write 37 = …, and complete the number sentence.) Is this number sentence written in expanded form?

S: 7 plus 30. That's expanded form too!

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

NOTES ON MULTIPLE MEANS OF EXPRESSION:

Some students, including some emergent bilingual students, may need additional support with the language of "___is the same as___," "___is___ more than___," etc. Insert a sentence frame into their personal white boards, and allow students to fill in the blanks. Pointing to each word and number as it is read can provide a bridge between the concrete and the abstract, which is helpful to all students, including emergent bilingual students.

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.)

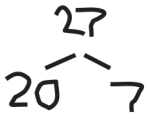
T: (Point to 30.) 30 more than 7 is…? Say the whole sentence.

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.

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.

- 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 circles the number sentence that shows the number written in expanded form.
- Switch roles for the next set of cards drawn.

NOTES ON 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.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

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

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

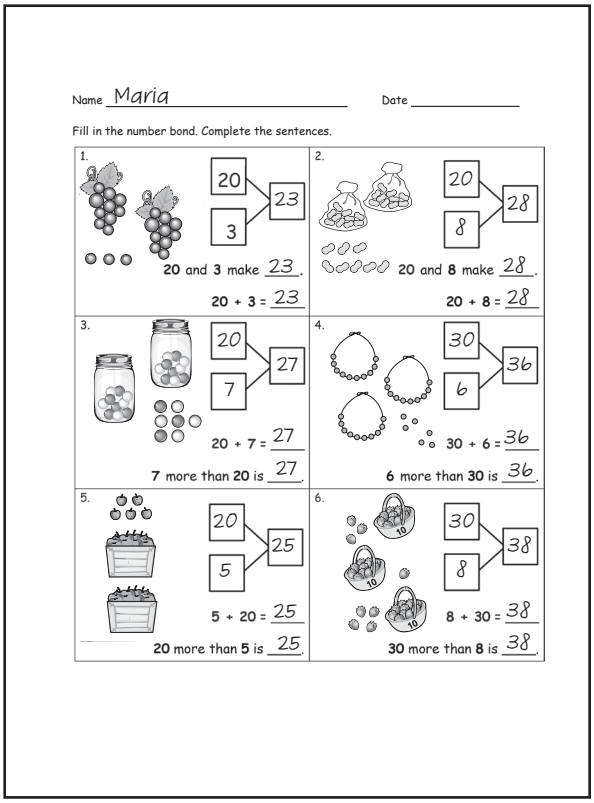
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How can solving Problem 1 help you solve Problem 2?
- How did you solve Problem 5? Is it more efficient to start with the ones first or the tens first?
- Look at Problem 15. Explain why the answer is not 23. Write the number in a place value chart. Which digit is in the tens place? Which digit is in the ones place?
- 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?
- Look at your Application Problem. Share your thinking with a partner. How many crayons does Lisa have? Write the number of crayons Lisa has using two number sentences, as we did during today's lesson.
- What is expanded form? How do we write a number in expanded form?

Exit Ticket (3 minutes)

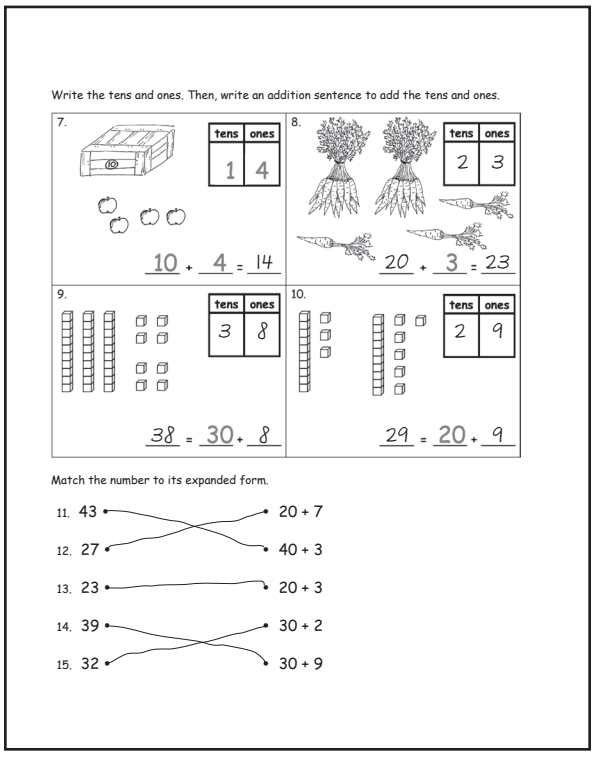
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



Name Maria Date

Fill in the number bond. Complete the sentences.

1. 20 and 3 make 23. 20 + 3 = 23
2. 20 and 8 make 28. 20 + 8 = 28
3. 20 + 7 = 27. 7 more than 20 is 27.
4. 30 + 6 = 36. 6 more than 30 is 36.
5. 5 + 20 = 25. 20 more than 5 is 25.
6. 8 + 30 = 38. 30 more than 8 is 38.



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

7. tens 1, ones 4. 10 + 4 = 14
8. tens 2, ones 3. 20 + 3 = 23
9. tens 3, ones 8. 38 = 30 + 8
10. tens 2, ones 9. 29 = 20 + 9

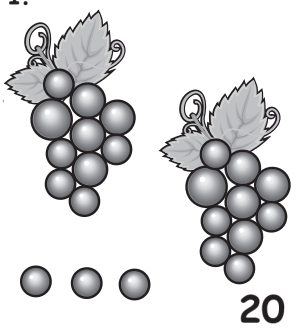
Match the number to its expanded form.

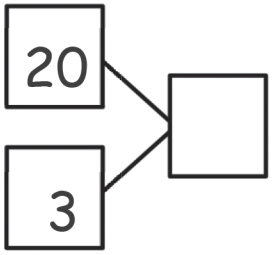
11. 43 — 40 + 3
12. 27 — 20 + 7
13. 23 — 20 + 3
14. 39 — 30 + 9
15. 32 — 30 + 2

Name _____ Date _____

Fill in the number bond. Complete the sentences.

1.

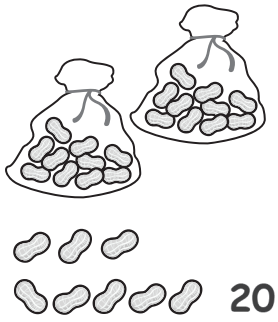


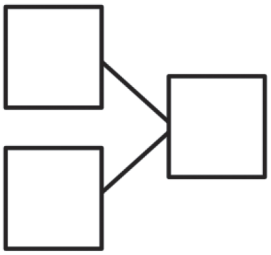


20 and **3** make _____.

20 + 3 = _____

2.

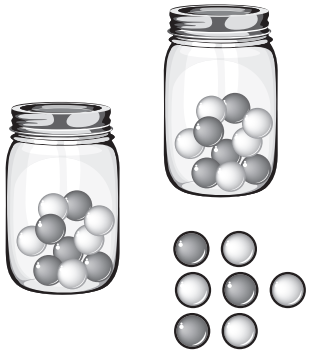


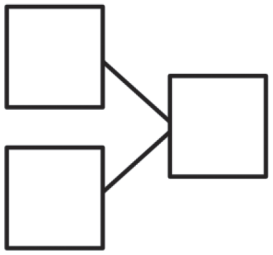


20 and **8** make _____.

20 + 8 = _____

3.

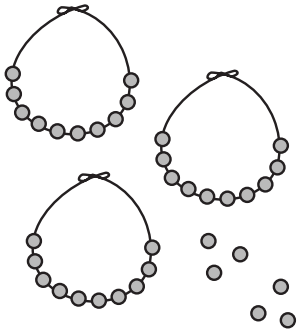


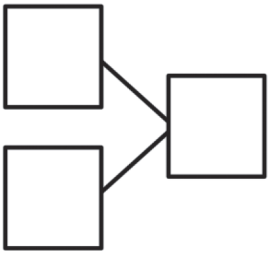


20 + 7 = _____

7 more than **20** is _____.

4.

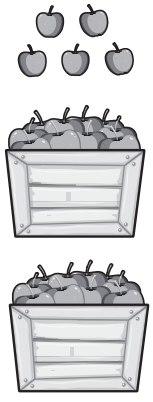


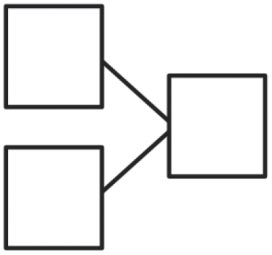


30 + 6 = _____

6 more than **30** is _____.

5.

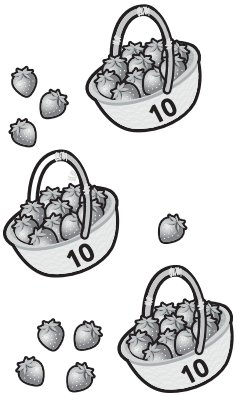


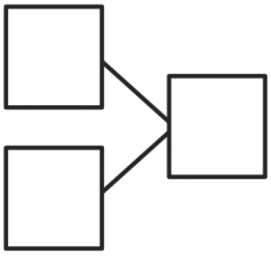


5 + 20 = _____

20 more than **5** is _____.

6.



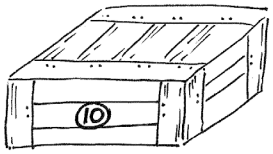


8 + 30 = _____

30 more than **8** is _____.

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

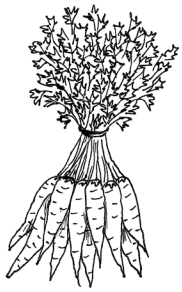
7.



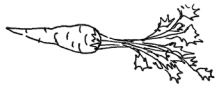
tens	ones
1	4

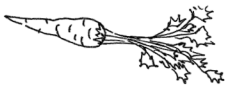
10 + 4 = ____

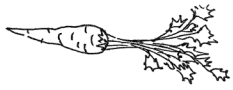
8.



tens	ones

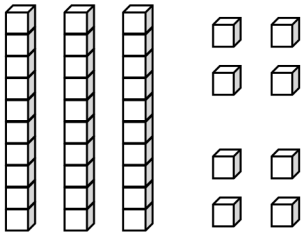






____ + 3 = ____

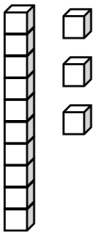
9.

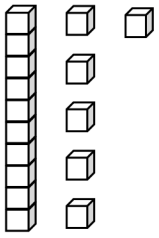


tens	ones

____ = 30 + ____

10.





tens	ones

____ = 20 + ____

Match the number to its expanded form.

11. 43 •
• 20 + 7

12. 27 •
• 40 + 3

13. 23 •
• 20 + 3

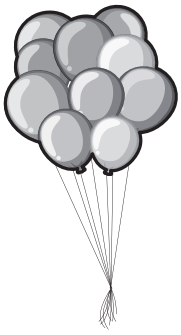
14. 39 •
• 30 + 2

15. 32 •
• 30 + 9

Name _____ Date _____

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

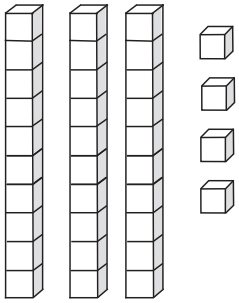
1.



tens	ones

10 + ____ = ____

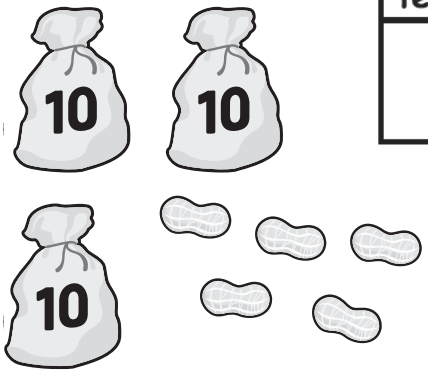
2.



tens	ones

____ + 4 = ____

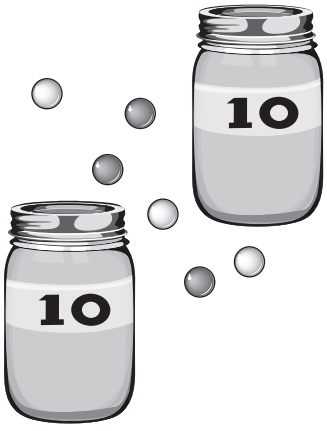
3.



tens	ones

____ = 30 + ____

4.



tens	ones

____ = 6 + ____

Write the number in expanded form.

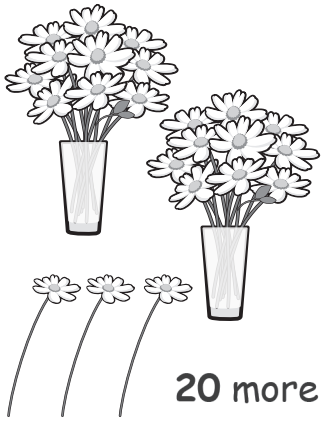
5. 38 _____ + _____

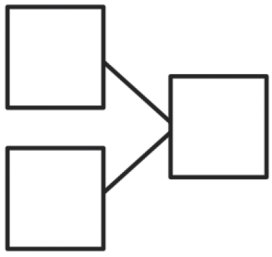
6. 16 _____ + _____

Name _____ Date _____

Fill in the number bond, or write the tens and ones. Complete the addition sentences.

1.

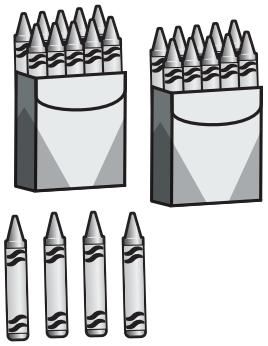


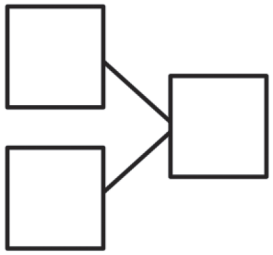


3 + 20 = _____

20 more than 3 is _____.

2.

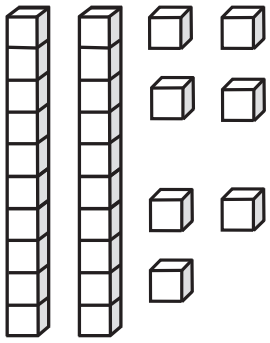




20 + 4 = _____

4 more than 20 is _____.

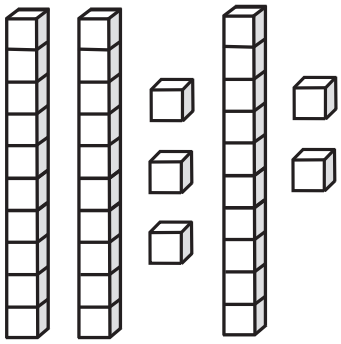
3.



tens	ones

7 + 20 = _____

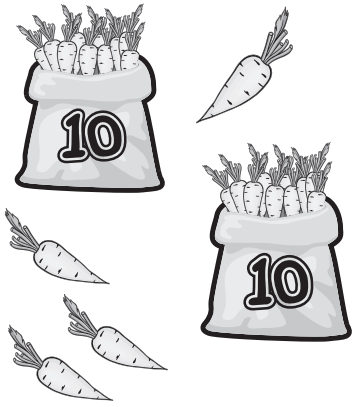
4.



tens	ones

_____ + 30 = _____

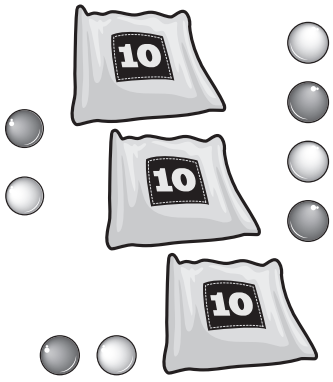
5.



tens	ones

20 + _____ = _____

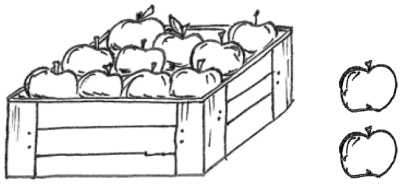
6.



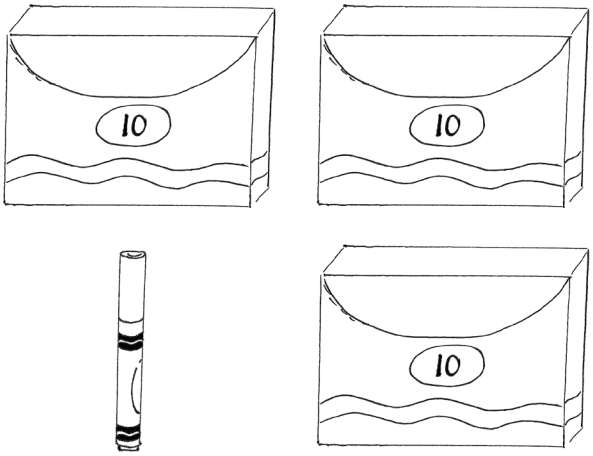
tens	ones

_____ + _____ = _____

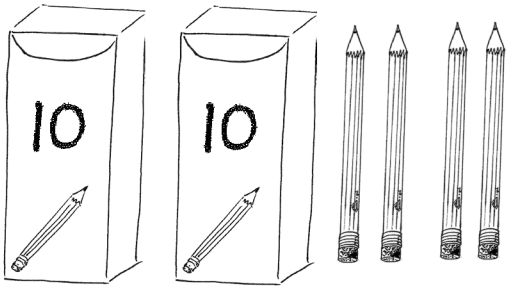
Match the pictures with the words.

7. 

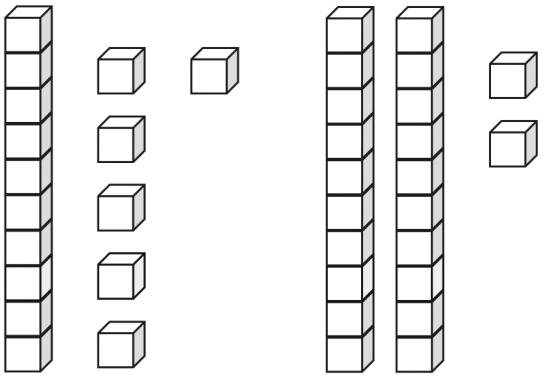
1 and 30 make _____.

8. 

8 + 30 = _____.

9. 

2 more than 10 is _____.

10. 

20 + 4 = _____.

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

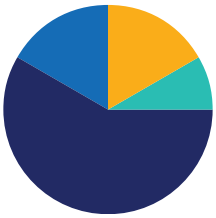
numeral cards

Lesson 5

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

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Application Problem	(5 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (10 minutes)

- Sprint: 10 More, 10 Less Review **1.3C, 1.3D, 1.5C, 1.5G** (10 minutes)

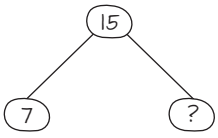
Sprint: 10 More, 10 Less Review (10 minutes)

Materials: (S) 10 More, 10 Less Review Sprint

Note: This review Sprint provides practice with addition and subtraction within 20 and prepares students to extend this skill for numbers to 40 in today's lesson.

Application Problem (5 minutes)

Help me use this number sentence to write a story about how Ximena adds to her set of toy cars: 7 + _____ = 15. Solve and show your work with a number bond.



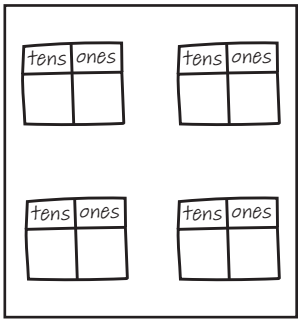
Ximena had 7 toy cars. After buying some more at a garage sale, she had 15 toy cars. How many cars did she buy at the garage sale? Ximena bought 8 toy cars.

Note: Students verbally create their own story problems from a given number sentence. Students are given a context to keep the focus on creation of the story structure rather than the search for a topic. Working verbally also allows this work to be done in the 5 minutes allotted for the Application Problem. Encourage a story that has the action of *adding to* or *joining* in order to match the equation. The number bond can be given to students who need more proficiency practice.

Concept Development (35 minutes)

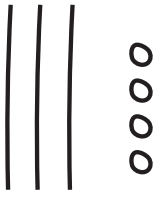
Rekenrek bracelet

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)



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.)
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.
T/S: (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!



NOTES ON REPRESENTATION:

Consider further supporting students, including some emergent bilingual students, with the term *quick ten*. Write *quick ten* on the board and ask students to define *quick* in their own words. Discuss that the time it takes to draw is shorter when a quick ten is used. Brainstorm examples of other shortcuts students may be familiar with in everyday life and compare drawing quick tens to these shortcuts.

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.

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.

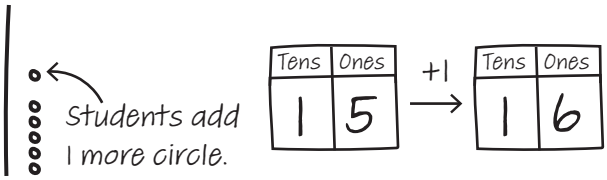
S: Just draw one more quick ten!

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.

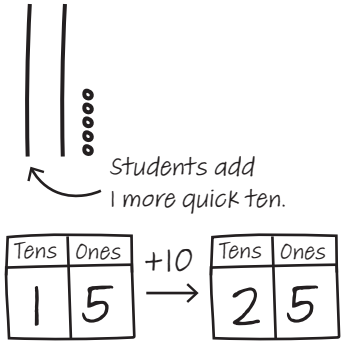
T: I'm about to write the new number on the place value chart to show 10 more than 15. Talk to your partner about what you think will change and what will remain the same.

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!



NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Some students may need more support imagining 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.

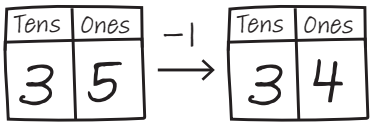


NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Some 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.

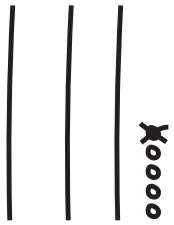
T: We added 10 more to 15 to get 25. (Complete the second place value chart with 2 and 5.)

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



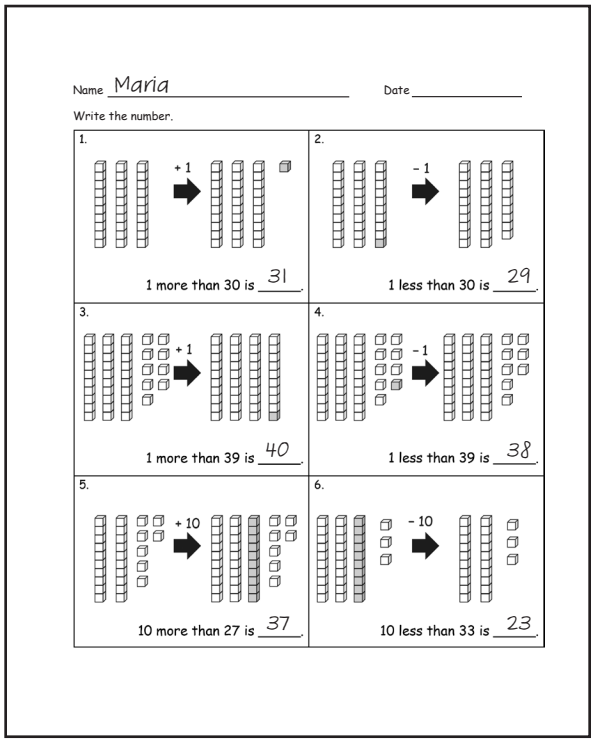
Then, follow the suggested sequence:

- 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



Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.


Name Maria Date

Write the number.

1. +1 — 1 more than 30 is 31.

2. −1 — 1 less than 30 is 29.

3. +1 — 1 more than 39 is 40.

4. −1 — 1 less than 39 is 38.

5. +10 — 10 more than 27 is 37.

6. −10 — 10 less than 33 is 23.

Student Debrief (10 minutes)

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

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

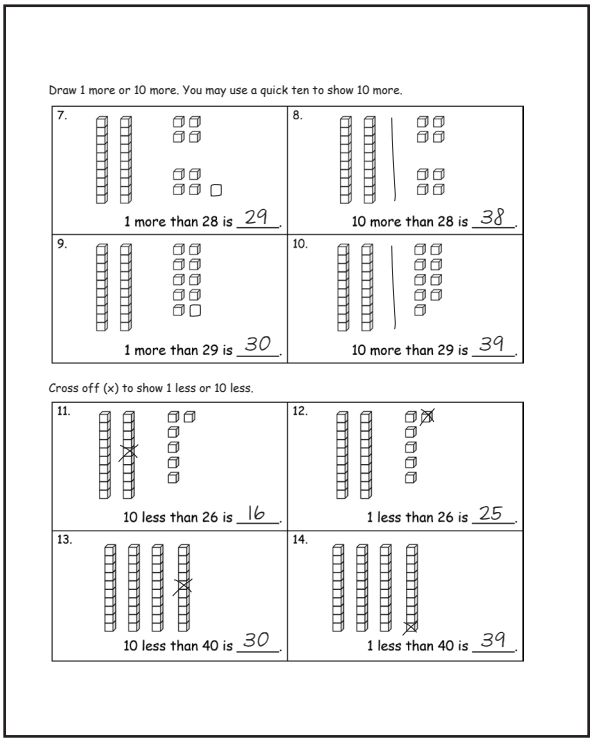
Any combination of the questions below may be used to lead the discussion.

- Look at Problem 11. What is 10 less than 26? Which digit changed when you went from 26 to 16?
- Look at Problem 12. What is 1 less than 26? Which digit changed when you went from 26 to 25?
- Look at Problem 9. In what ways did the pictures change from the starting number to the end number? Explain why this is so. Which digit changed? What happened to the digits when you went from 29 to 30? Why is this so? Is this similar to and different from our other problems?

- What does the word *digit* mean?
- Look at your solution to Problem 14. What changed in the number? Even though we added 1 more in Problem 9 and made 1 less in Problem 14, why did the numbers in both the tens and the ones change?
- What new math drawing did we use to work more efficiently? (**Quick ten** drawings.)

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.


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

7. 1 more than 28 is 29.

8. 10 more than 28 is 38.

9. 1 more than 29 is 30.

10. 10 more than 29 is 39.

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

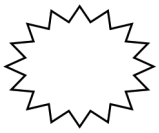
11. 10 less than 26 is 16.

12. 1 less than 26 is 25.

13. 10 less than 40 is 30.

14. 1 less than 40 is 39.

A

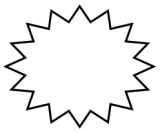
Number Correct: 

Name _____ Date _____

*Write the missing number.

1.	10 + 3 = ☐		16.	10 + ☐ = 11	
2.	10 + 2 = ☐		17.	10 + ☐ = 12	
3.	10 + 1 = ☐		18.	5 + ☐ = 15	
4.	1 + 10 = ☐		19.	4 + ☐ = 14	
5.	4 + 10 = ☐		20.	☐ + 10 = 17	
6.	6 + 10 = ☐		21.	17 – ☐ = 7	
7.	10 + 7 = ☐		22.	16 – ☐ = 6	
8.	8 + 10 = ☐		23.	18 – ☐ = 8	
9.	12 – 10 = ☐		24.	☐ – 10 = 8	
10.	11 – 10 = ☐		25.	☐ – 10 = 9	
11.	10 – 10 = ☐		26.	1 + 1 + 10 = ☐	
12.	13 – 10 = ☐		27.	2 + 2 + 10 = ☐	
13.	14 – 10 = ☐		28.	2 + 3 + 10 = ☐	
14.	15 – 10 = ☐		29.	4 + ☐ + 3 = 17	
15.	18 – 10 = ☐		30.	☐ + 5 + 10 = 18	

B

Number Correct: 

Name _____ Date _____

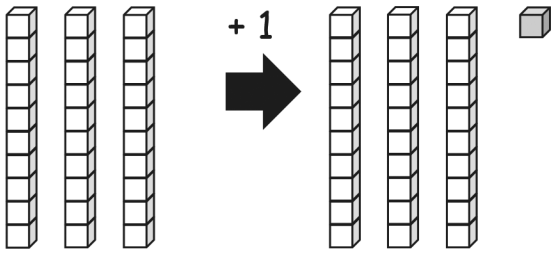
*Write the missing number.

1.	10 + 1 = ☐		16.	10 + ☐ = 10	
2.	10 + 2 = ☐		17.	10 + ☐ = 11	
3.	10 + 3 = ☐		18.	2 + ☐ = 12	
4.	4 + 10 = ☐		19.	3 + ☐ = 13	
5.	5 + 10 = ☐		20.	☐ + 10 = 13	
6.	6 + 10 = ☐		21.	13 – ☐ = 3	
7.	10 + 8 = ☐		22.	14 – ☐ = 4	
8.	8 + 10 = ☐		23.	16 – ☐ = 6	
9.	10 – 10 = ☐		24.	☐ – 10 = 6	
10.	11 – 10 = ☐		25.	☐ – 10 = 8	
11.	12 – 10 = ☐		26.	2 + 1 + 10 = ☐	
12.	13 – 10 = ☐		27.	3 + 2 + 10 = ☐	
13.	15 – 10 = ☐		28.	2 + 3 + 10 = ☐	
14.	17 – 10 = ☐		29.	4 + ☐ + 4 = 18	
15.	19 – 10 = ☐		30.	☐ + 6 + 10 = 19	

Name _____ Date _____

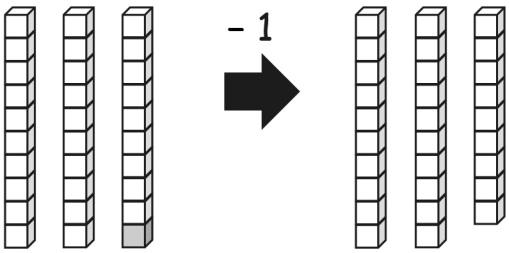
Write the number.

1.



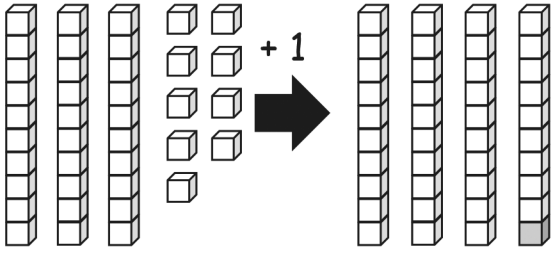
1 more than 30 is _____.

2.



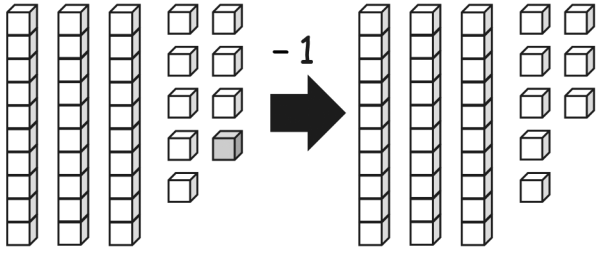
1 less than 30 is _____.

3.



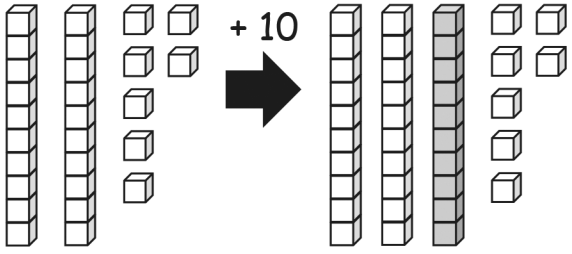
1 more than 39 is _____.

4.



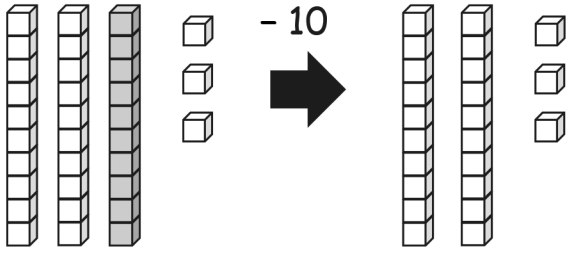
1 less than 39 is _____.

5.



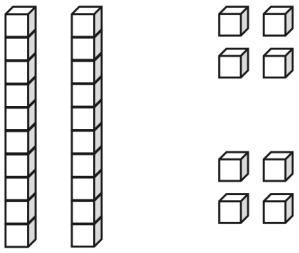
10 more than 27 is _____.

6.

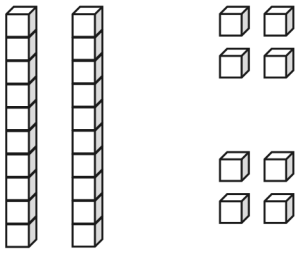


10 less than 33 is _____.

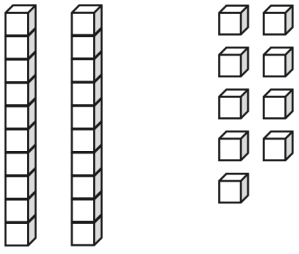
Draw 1 more or 10 more. You may use a quick ten to show 10 more.

7. 

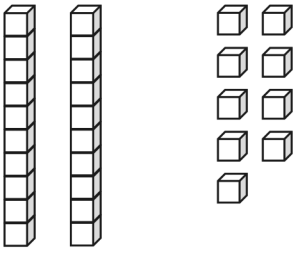
1 more than 28 is _____.

8. 

10 more than 28 is _____.

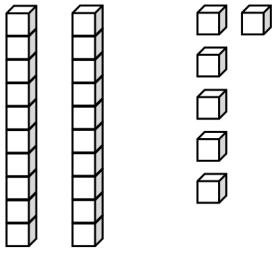
9. 

1 more than 29 is _____.

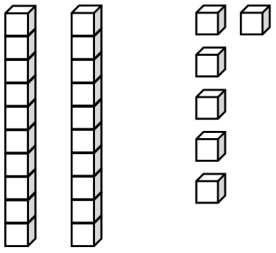
10. 

10 more than 29 is _____.

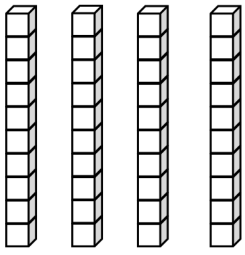
Cross off (x) to show 1 less or 10 less.

11. 

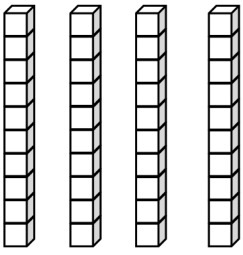
10 less than 26 is _____.

12. 

1 less than 26 is _____.

13. 

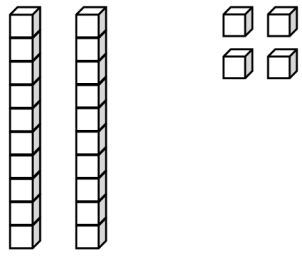
10 less than 40 is _____.

14. 

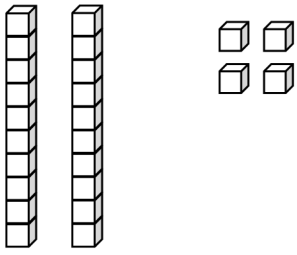
1 less than 40 is _____.

Name _____ Date _____

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

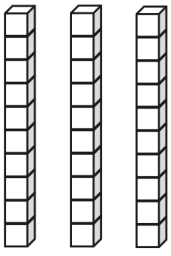
1. 

1 more than 24 is _____.

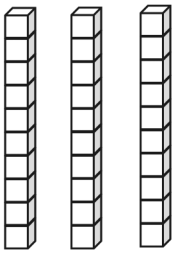
2. 

10 more than 24 is _____.

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

3. 

10 less than 30 is _____.

4. 

1 less than 30 is _____.

Name _____ Date _____

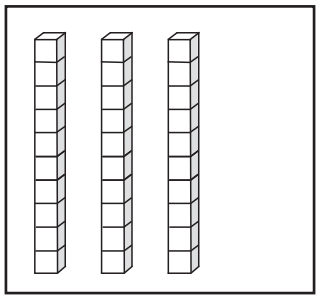
Draw quick tens and ones to show the number. Then, draw 1 more or 10 more.

1. 1 more than 38 is _____.	2. 10 more than 38 is _____.
3. 1 more than 35 is _____.	4. 10 more than 35 is _____.

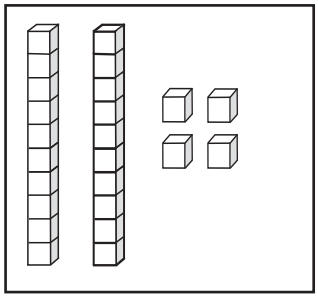
Draw quick tens and ones to show the number. Cross off (x) to show 1 less or 10 less.

5. 10 less than 23 is _____.	6. 1 less than 23 is _____.
7. 10 less than 31 is _____.	8. 1 less than 31 is _____.

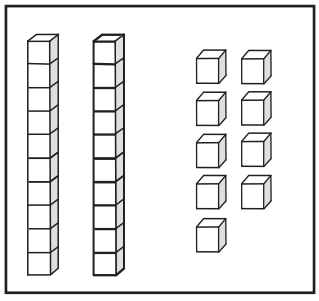
Match the words to the picture that shows the right amount.

9. 

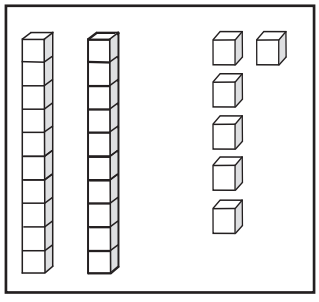
- 1 less than 30.

10. 

- 1 more than 23.

11. 

- 10 less than 36.

12. 

- 10 more than 20.

tens	ones

tens	ones

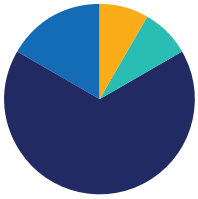
double place value charts

Lesson 6

Objective: Use dimes and pennies as representations of tens and ones.

Suggested Lesson Structure

Fluency Practice	(5 minutes)
Application Problem	(5 minutes)
Concept Development	(40 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (5 minutes)

- Quick Tens **1.2A, 1.2B** (3 minutes)
- Count Coins **1.4C** (2 minutes)

Quick Tens (3 minutes)

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

For the next minute, represent numbers using quick tens and ones. Students say the numbers aloud.

Count Coins (2 minutes)

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.

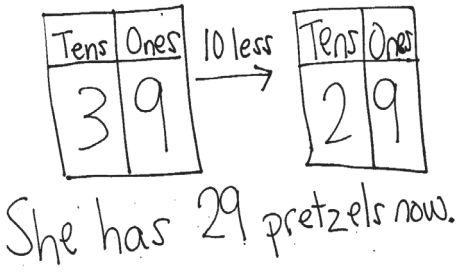
Lay out 2 dimes. Students count up from 20 by ones as the teacher lays out 10 pennies into 5-groups. Repeat, but this time, change the 10 pennies for another dime once 40 has been reached.

Application Problem (5 minutes)

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?

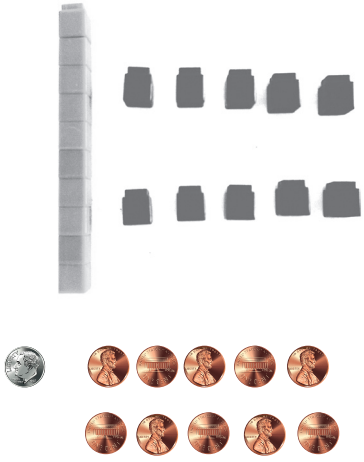
Extension: John has 19 pretzels. How many more pretzels does he need to have as many as Sheila has now?

Note: Depending on their strategies for solving, students may subtract in quantities larger than the grade-level standard of 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. In the Debrief, students model the quantity and use place value charts to demonstrate their method for solving.



Concept Development (40 minutes)

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?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Support students, including some emergent bilingual students, with the term *value* by posting a visual for students to refer to. For example, create a web graphic organizer and write "value of 10" in the center. Add to the web with visuals of a dime, a ten stick, 10 pennies in 5-groups, and 10 individual cubes in 5-groups. Create similar graphic organizers depicting other values to support students in generalizing the term.

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.

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?

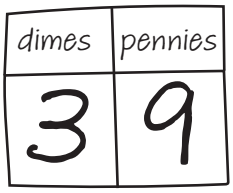
S: 9 pennies.

T: (Fill in the dimes and pennies place value chart.) How many tens?

S: 3 tens.

NOTES ON 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.

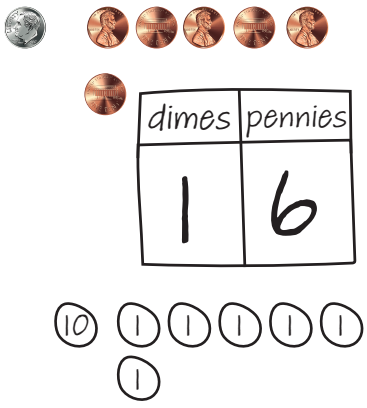


NOTES ON MULTIPLE MEANS OF REPRESENTATION:

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 need more support understanding quantities of tens and ones, continue to use linking cubes or bundled straws to visually present the comparative quantities.

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.

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.

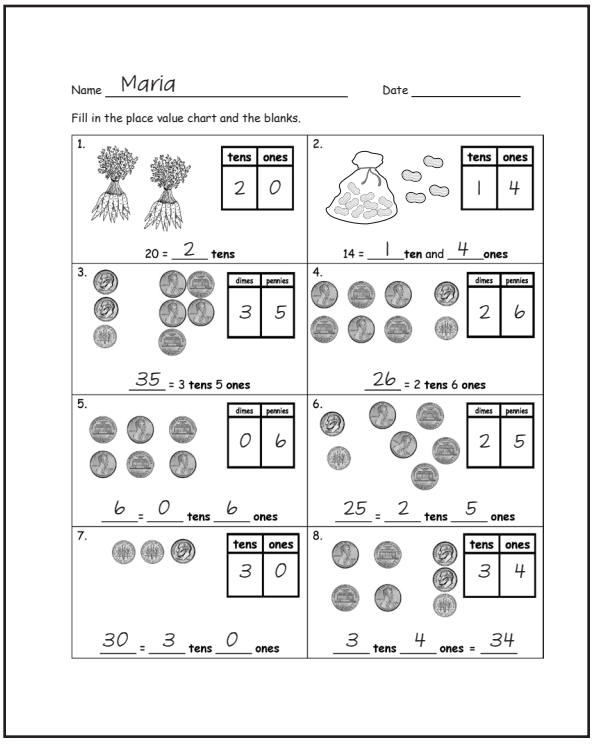


Give students one minute to study their 4 dimes and 10 pennies, noticing the similarities and differences of these coins.

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.

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.


Name Maria Date

Fill in the place value chart and the blanks.

1. tens 2, ones 0
20 = 2 tens

2. tens 1, ones 4
14 = 1 ten and 4 ones

3. dimes 3, pennies 5
35 = 3 tens 5 ones

4. dimes 2, pennies 6
26 = 2 tens 6 ones

5. dimes 0, pennies 6
6 = 0 tens 6 ones

6. dimes 2, pennies 5
25 = 2 tens 5 ones

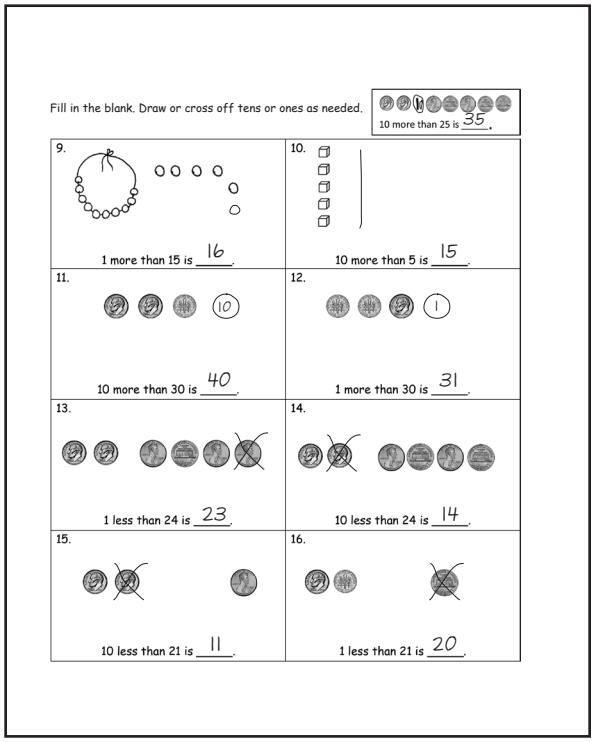
7. tens 3, ones 0
30 = 3 tens 0 ones

8. tens 3, ones 4
3 tens 4 ones = 34

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)



Lesson Objective: Use dimes and pennies as representations of tens and ones.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 2. If you were to show that amount with dimes and pennies, how many of each coin would you use?
- Look at Problems 3 and 6. How is Problem 6 different from Problem 3? What is different about the amount shown in the pictures?
- Look at Problems 13 and 14. What did you cross off in 13? What did you cross off in 14? Why did you cross off a different coin in each problem?
- 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?
- Look at your Application Problem. Discuss how you solved it with a partner. How could you represent this amount in a place value chart? How is this problem connected to today's lesson?

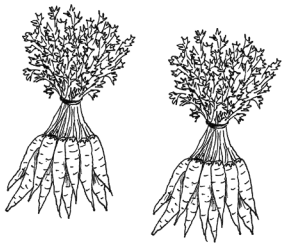
Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

Fill in the place value chart and the blanks.

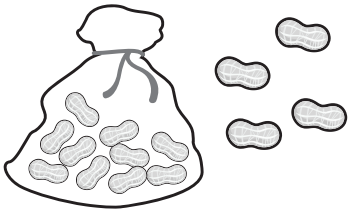
1.



tens	ones

20 = _____ tens

2.



tens	ones

14 = _____ten and _____ones

3.

dimes	pennies

_____ = 3 tens 5 ones

4.

dimes	pennies

_____ = 2 tens 6 ones

5.

dimes	pennies

_____= _____ tens _____ ones

6.

dimes	pennies

_____ = _____ tens _____ ones

7.

tens	ones

_____ = _____ tens _____ ones

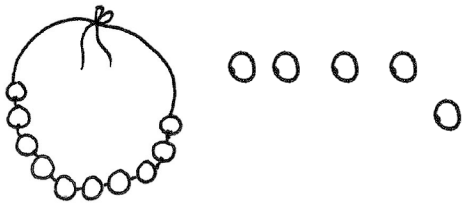
8.

tens	ones

_____ tens _____ ones = _____

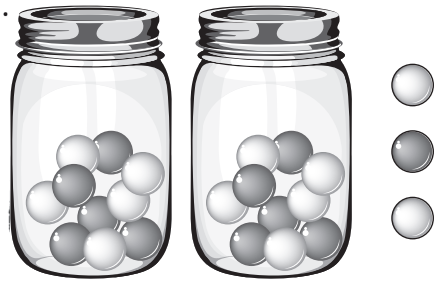
Fill in the blank. Draw or cross off tens or ones as needed.

10 more than 25 is 35.

9.  1 more than 15 is _____.	10.  10 more than 5 is _____.
11.  10 more than 30 is _____.	12.  1 more than 30 is _____.
13.  1 less than 24 is _____.	14.  10 less than 24 is _____.
15.  10 less than 21 is _____.	16.  1 less than 21 is _____.

Name _____ Date _____

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

1. 

10 more than 23 is _____.

2. 

1 more than 13 is _____.

3. 

10 less than 31 is _____.

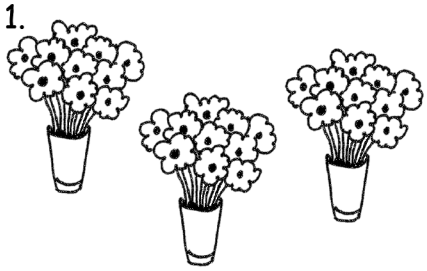
4. 

1 less than 14 is _____.

Name _____ Date _____

Fill in the place value chart and the blanks.

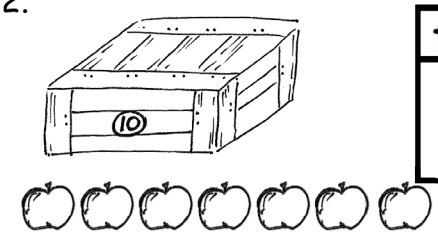
1.



tens	ones

30 = _____ tens

2.



tens	ones

17 = _____ ten and _____ ones

3.

dimes	pennies

_____ = 2 tens 2 ones

4.

dimes	pennies

_____ = 3 tens 3 ones

5.

dimes	pennies

_____ = _____ tens _____ ones

6.

dimes	pennies

_____ = _____ tens _____ ones

7.

tens	ones

_____ = _____ ten _____ ones

8.

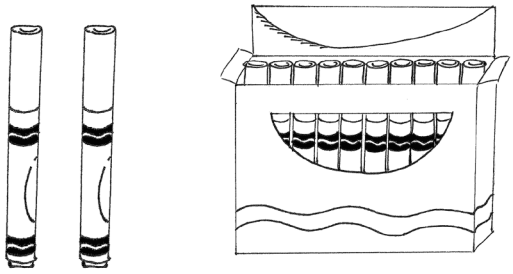
tens	ones

_____ tens _____ ones = _____

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

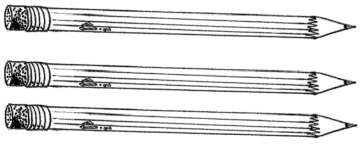
10 more than 25 is 35.

9.



1 more than 12 is _____.

10.



10 more than 3 is _____.

11.

10 more than 22 is _____.

12.

1 more than 22 is _____.

13.

1 less than 39 is _____.

14.

10 less than 39 is _____.

15.

10 less than 33 is _____.

16.

1 less than 33 is _____.

dimes	pennies

tens	ones

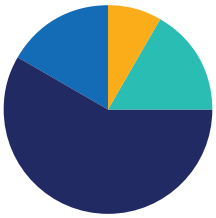
coin and place value charts

Lesson 7

Objective: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.

Suggested Lesson Structure

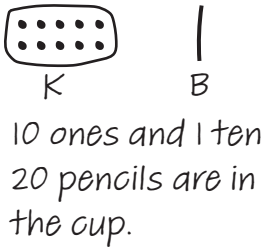
Application Problem	(5 minutes)
Fluency Practice	(10 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Application Problem (5 minutes)

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 reinforces what students have learned in this topic about the efficiency of unitizing ten. During the Debrief, students complete a place value chart to match the story and reinterpret the number 20 in several ways.



Fluency Practice (10 minutes)

- Grade 1 Fluency Differentiated Practice Sets **1.3D, 1.5G** (5 minutes)
- Count by 10 with Dimes **1.4A, 1.5C** (2 minutes)
- Tens and Ones **1.5C** (3 minutes)

Grade 1 Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Fluency Practice Sets

Note: This fluency provides an opportunity for students to practice sums and differences with totals through 10. Five options are provided in this lesson for the 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 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 (2 minutes)

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.

Tens and Ones (3 minutes)

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.

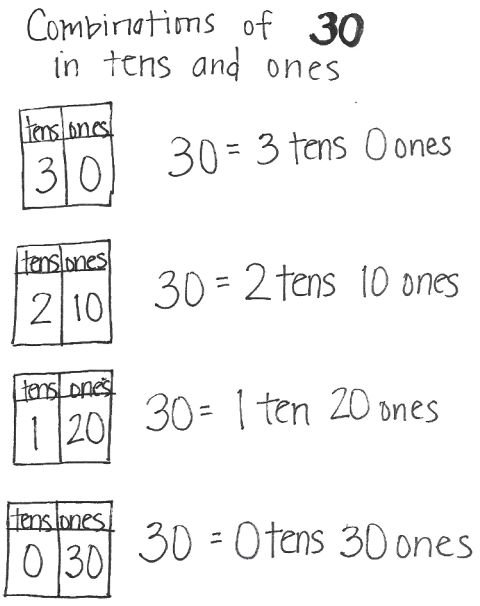
Slide over the next row, and repeat for 26, and then 36. Continue with the following suggested sequence: 15, 25, 35, 45, 55, 65, 75; 17, 27, 37, 57, 97. Then, follow the same script, but ask students to subtract 10 instead of add 10, using the following suggested sequence: 39, 29, 19, 9; 51, 41, 31, etc.

Concept Development (35 minutes)

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.

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 0 ones, and fill in the place value cha 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, 0 tens 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 0 ones, 2 tens 10 ones, 1 ten 20 ones, or 0 tens 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.)

NOTES ON 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. Some emergent bilingual students may benefit from being paired with students who express reasoning especially well.

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.)
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.
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.

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

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.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

As students complete the Problem Set, allow those who need more concrete practice to use their ten-sticks and ones cubes. Some students may not be able to visualize ones as tens yet, especially when completing Problem 4. Support students by having them lay out the numbers as they are matching.

Student Debrief (10 minutes)

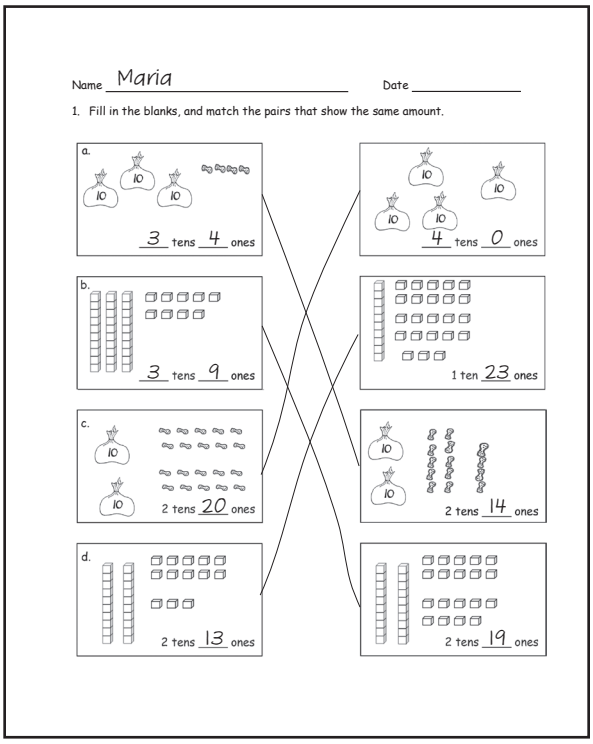
Lesson Objective: Interpret two-digit numbers as tens and ones, including cases with more than 9 ones.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did you solve Problem 4? Explain your thinking.
- Look at Problem 1(d). A student says 2 tens 13 ones can be written as 213. How can you help this student understand why this is not correct?
- Look at Problem 2. Circle the place value charts that have two digits in the ones place. What do you notice?


Name Maria Date

1. Fill in the blanks, and match the pairs that show the same amount.

a. 3 tens 4 ones

b. 3 tens 9 ones

c. 2 tens 20 ones

d. 2 tens 13 ones

4 tens 0 ones

1 ten 23 ones

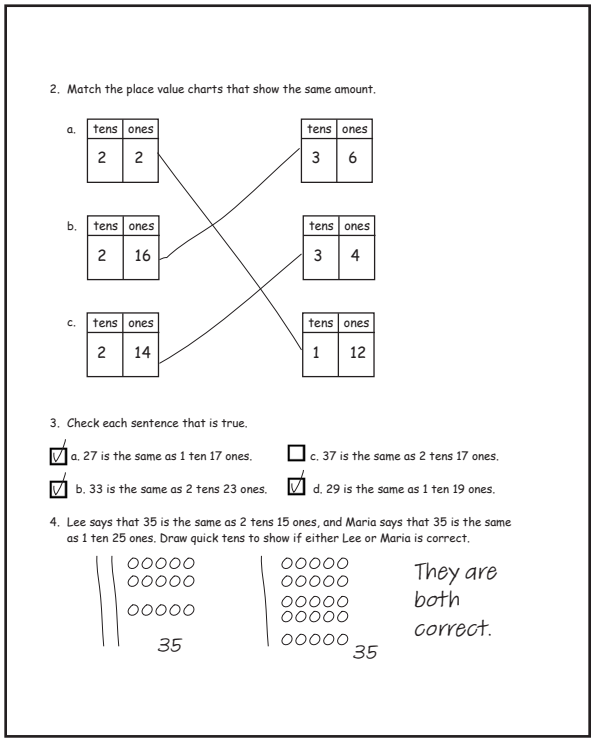
2 tens 14 ones

2 tens 19 ones

- Look at Problem 3. Circle the statement that is not true. Write down as many combinations of tens and ones as you can to make the statement true.
- How can using Say Ten counting help you find your combinations of tens and ones?
- How did the Application Problem connect to today's lesson? How could we write the total number of pencils in the place value chart? What other combinations of tens and ones can we use to make this number?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



2. Match the place value charts that show the same amount.

a. tens 2, ones 2 — tens 3, ones 6

b. tens 2, ones 16 — tens 3, ones 4

c. tens 2, ones 14 — tens 1, ones 12

3. Check each sentence that is true.

☑ a. 27 is the same as 1 ten 17 ones.
☐ c. 37 is the same as 2 tens 17 ones.
☑ b. 33 is the same as 2 tens 23 ones.
☑ d. 29 is the same as 1 ten 19 ones.

4. Lee says that 35 is the same as 2 tens 15 ones, and Maria says that 35 is the same as 1 ten 25 ones. Draw quick tens to show if either Lee or Maria is correct.

35 35 They are both correct.

Name _____ Date _____

My Addition Practice

1. 6 + 0 = ____	11. 7 + 1 = ____	21. 5 + 3 = ____
2. 0 + 6 = ____	12. ____ = 1 + 7	22. ____ = 5 + 4
3. 5 + 1 = ____	13. 3 + 3 = ____	23. 6 + 4 = ____
4. 1 + 5 = ____	14. 3 + 4 = ____	24. 4 + 6 = ____
5. 6 + 1 = ____	15. ____ = 3 + 5	25. ____ = 4 + 4
6. 1 + 6 = ____	16. 6 + 3 = ____	26. 3 + 4 = ____
7. 6 + 2 = ____	17. 7 + 3 = ____	27. 5 + 5 = ____
8. 5 + 2 = ____	18. ____ = 7 + 2	28. ____ = 4 + 5
9. 2 + 5 = ____	19. 2 + 7 = ____	29. 3 + 7 = ____
10. 2 + 4 = ____	20. 2 + 8 = ____	30. ____ = 3 + 6

Today, I finished _____ problems.

I solved _____ problems correctly.

Name _____ Date _____

My Missing Addend Practice

1. 6 + ____ = 6	11. 3 + ____ = 6	21. 4 + ____ = 7
2. 0 + ____ = 6	12. 4 + ____ = 8	22. 7 = 3 + ____
3. 5 + ____ = 6	13. 10 = 5 + ____	23. 2 + ____ = 7
4. 4 + ____ = 6	14. 5 + ____ = 9	24. 2 + ____ = 8
5. 0 + ____ = 7	15. 5 + ____ = 7	25. 9 = 2 + ____
6. 6 + ____ = 7	16. 8 = 5 + ____	26. 2 + ____ = 10
7. 1 + ____ = 7	17. 5 + ____ = 9	27. 10 = 3 + ____
8. 7 + ____ = 8	18. 8 + ____ = 10	28. 3 + ____ = 9
9. 1 + ____ = 8	19. 7 + ____ = 10	29. 4 + ____ = 9
10. 6 + ____ = 8	20. 10 = 6 + ____	30. 10 = 4 + ____

Today, I finished _____ problems.

I solved _____ problems correctly.

Name _____ Date _____

My Related Addition and Subtraction Practice

1. 5 + ____ = 6	11. 7 + ____ = 10	21. 4 + ____ = 8
2. 1 + ____ = 6	12. 10 – 7 = ____	22. 8 – 4 = ____
3. 6 – 1 = ____	13. 5 + ____ = 7	23. 4 + ____ = 7
4. 9 + ____ = 10	14. 7 – 5 = ____	24. 7 – 4 = ____
5. 1 + ____ = 10	15. 5 + ____ = 8	25. 5 + ____ = 9
6. 10 – 9 = ____	16. 8 – 5 = ____	26. 9 – 5 = ____
7. 5 + ____ = 10	17. 4 + ____ = 6	27. 6 + ____ = 9
8. 10 – 5 = ____	18. 6 – 4 = ____	28. 9 – 6 = ____
9. 8 + ____ = 10	19. 3 + ____ = 6	29. 4 + ____ = 7
10. 10 – 8 = ____	20. 6 – 3 = ____	30. 7 – 4 = ____

Today, I finished _____ problems.

I solved _____ problems correctly.

Name _____ Date _____

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.

Name _____ Date _____

My Mixed Practice

1. 4 + 2 = ____	11. 2 + ____ = 6	21. 8 – 5 = ____
2. 2 + ____ = 6	12. 6 – 2 = ____	22. 3 + ____ = 8
3. 6 = 3 + ____	13. 6 – 4 = ____	23. 8 = ____ + 5
4. 2 + 5 = ____	14. 5 + ____ = 7	24. ____ + 2 = 9
5. 7 = 5 + ____	15. 7 – 5 = ____	25. 9 = ____ + 7
6. 4 + 3 = ____	16. 7 – 4 = ____	26. 9 – 2 = ____
7. 7 = ____ + 4	17. 7 – 3 = ____	27. 9 – 7 = ____
8. 8 = ____ + 4	18. 8 = 6 + ____	28. 9 – 6 = ____
9. 4 + 5 = ____	19. 8 – 2 = ____	29. 9 = ____ + 4
10. 9 = ____ + 4	20. 8 – 6 = ____	30. 9 – 6 = ____

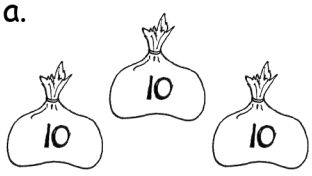
Today, I finished _____ problems.

I solved _____ problems correctly.

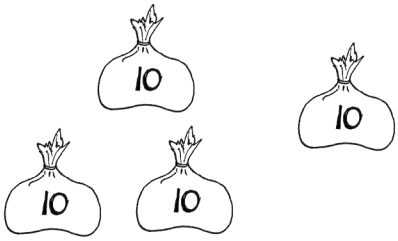
Name _____ Date _____

1. Fill in the blanks, and match the pairs that show the same amount.

a.

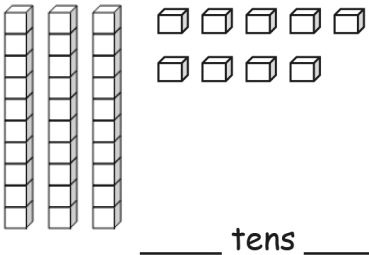


_____ tens _____ ones

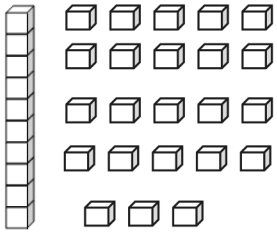


_____ tens _____ ones

b.

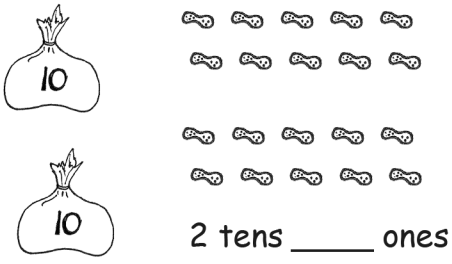


_____ tens _____ ones

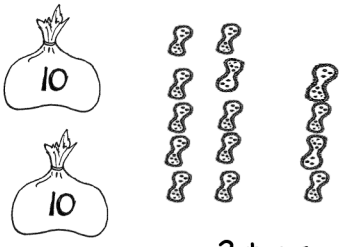


1 ten _____ ones

c.

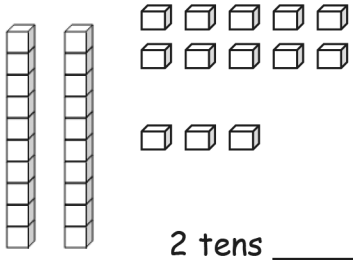


2 tens _____ ones

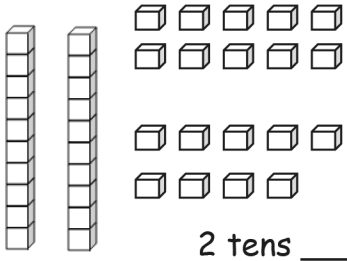


2 tens _____ ones

d.



2 tens _____ ones



2 tens _____ ones

2. Match the place value charts that show the same amount.

a.

tens	ones
2	2

tens	ones
3	6

b.

tens	ones
2	16

tens	ones
3	4

c.

tens	ones
2	14

tens	ones
1	12

3. Check each sentence that is true.

☐ a. 27 is the same as 1 ten 17 ones.

☐ b. 33 is the same as 2 tens 23 ones.

☐ c. 37 is the same as 2 tens 17 ones.

☐ d. 29 is the same as 1 ten 19 ones.

4. Lee says that 35 is the same as 2 tens 15 ones, and Maria says that 35 is the same as 1 ten 25 ones. Draw quick tens to show if either Lee or Maria is correct.

Name _____ Date _____

1. Match the place value charts that show the same amount.

a.

tens	ones
2	12

tens	ones
2	16

b.

tens	ones
2	8

tens	ones
1	18

c.

tens	ones
3	6

tens	ones
3	2

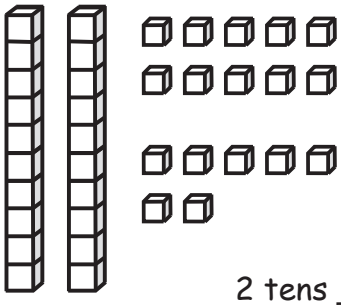
2. Tamra says that 24 is the same as 1 ten 14 ones, and Willie says that 24 is the same as 2 tens 14 ones. Draw quick tens to show if Tamra or Willie is correct.

Name _____ Date _____

1. Fill in the blanks, and match the pairs that show the same amount.

a.

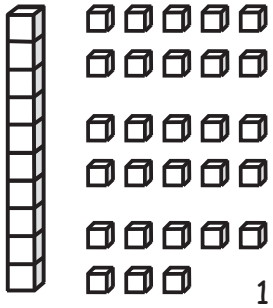
_____ tens _____ ones



2 tens _____ ones

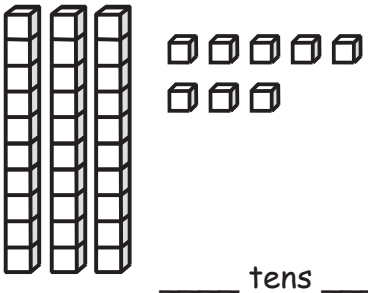
b.

_____ tens _____ ones

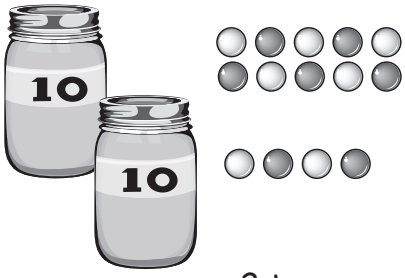


1 ten _____ ones

c.

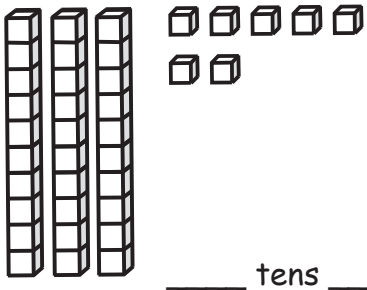


_____ tens _____ ones

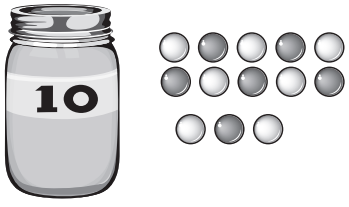


2 tens _____ ones

d.



_____ tens _____ ones



1 ten _____ ones

2. Match the place value charts that show the same amount.

a.

tens	ones
2	18

tens	ones
3	8

b.

tens	ones
1	16

tens	ones
2	1

c.

tens	ones
0	21

tens	ones
2	6

3. Check each sentence that is true.

☐ a. 35 is the same as 1 ten 25 ones.

☐ b. 28 is the same as 1 ten 18 ones.

☐ c. 36 is the same as 2 tens 16 ones.

☐ d. 39 is the same as 2 tens 29 ones.

4. Emi says that 37 is the same as 1 ten 27 ones, and Ben says that 37 is the same as 2 tens 7 ones. Draw quick tens to show if Emi or Ben is correct.

Topic B

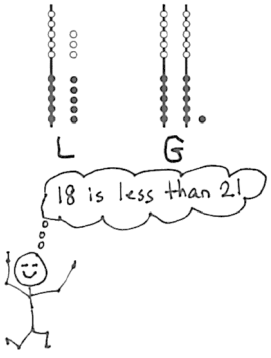
Comparison of Pairs of Two-Digit Numbers

1.2E, 1.2F, 1.2G, 1.2A, 1.2B

Focus Standards:	1.2E	Use place value to compare whole numbers up to 120 using comparative language.
	1.2F	Order whole numbers up to 120 using place value and open number lines.
	1.2G	Represent the comparison of two numbers to 100 using the symbols >, <, or =.
Instructional Days:	6	
Coherence -Links from:	G1–M2	Introduction to Place Value Through Addition and Subtraction Within 20
-Links to:	G2–M3	Place Value, Counting, and Comparison of Numbers to 1,200

Topic B begins with Lesson 8, where students identify the greater or lesser of two given numbers. They first work with concrete materials, whereby they build each quantity (**1.2A, 1.2B**) 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 9, 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. In Lessons 10 and 11, students build upon what they learned in Lesson 9 to order numbers up to 40, first by using their place value knowledge to order numbers in Lesson 10 and then using an open number line to order numbers in Lesson 11 (**1.2F**).



18 < 21

The topic closes with Lessons 12 and 13, where students use the comparison symbols >, =, and < to compare pairs of two-digit numbers (**1.2E, 1.2G**). In Lesson 12, students identify the amount or number that is greater or less by using their knowledge of place value. Then, they use the comparison symbols, > and <, to make true number sentences. Lastly, in Lesson 13, 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."

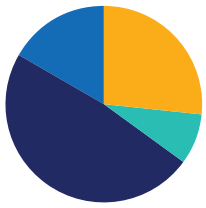
A Teaching Sequence Toward Mastery of Proficiency in Pairs of Two-Digit Numbers	
Objective 1:	**Compare two quantities, and identify the greater or lesser of the two given numerals. (Lesson 8)**
Objective 2:	**Compare quantities and numerals from left to right. (Lesson 9)**
Objective 3:	**Order whole numbers up to 40 using place value. (Lesson 10)**
Objective 4:	**Order whole numbers up to 40 using open number lines. (Lesson 11)**
Objective 5:	**Use the symbols >, =, and < to compare quantities and numerals. (Lesson 12–13)**

Lesson 8

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

Suggested Lesson Structure

Fluency Practice	(16 minutes)
Application Problem	(5 minutes)
Concept Development	(29 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (16 minutes)

- 1 More/Less, 10 More/Less **1.2D, 1.5C** (6 minutes)
- Sprint: +1, –1, +10, –10 **1.2D, 1.5C** (10 minutes)

1 More/Less, 10 More/Less (6 minutes)

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.

Sprint: +1, –1, +10, –10 (10 minutes)

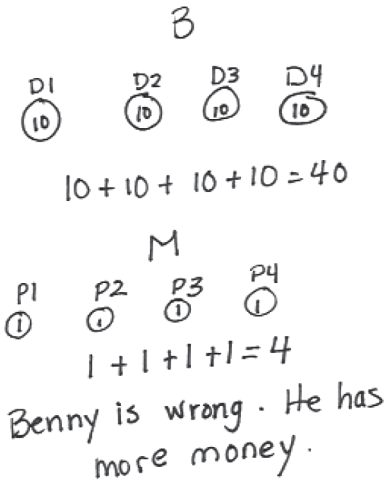
Materials: (S) +1, –1, +10, –10 Sprint

Note: This Sprint reviews the concepts taught in Lesson 5 and supports students' understanding of place value.

Application Problem (5 minutes)

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 Development (29 minutes)

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 Application 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

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Challenge students who have demonstrated proficiency 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?

- 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 Debrief.

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!

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Some students may need support with 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.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

To support students, including some emergent bilingual students, consider creating a chart to reinforce the terms greater and less. For example, post 38 and 28 on the chart with the values represented with quick ten drawings. Under the numbers and their quick ten representations, write, using the language of tens and ones, *3 tens is greater than 2 tens. 38 is greater than 28.* In upcoming lessons, after the symbols are introduced, add 38 > 28 to the chart. Create similar examples for *less than*.

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.

After the first minute of play, change the rules so that the person with the total that is *less* wins the cards. Partners should use the words *less than* when comparing the cards during this round. Alternate between the two rules for four minutes. At the five-minute mark, change the rules so that if the totals are *equal,* the game is over. Have students save one pair of cards to compare with a partner during the Debrief using a place value chart.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

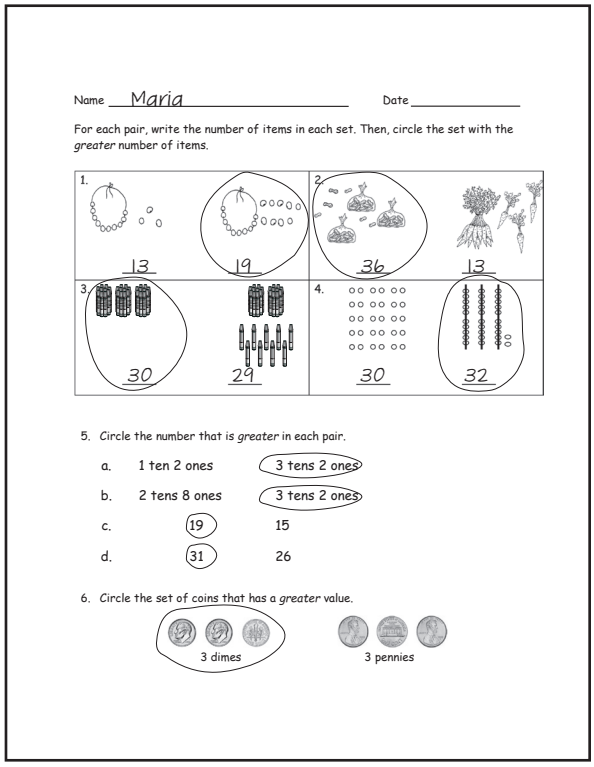
Lesson Objective: Compare two quantities, and identify the greater or lesser of the two given numerals.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- In Problem 3, did you look at the tens or ones to compare? Why?
- Look at your Problem Set with a partner, and find an example where you needed to look at the ones place to compare. Talk about why you must sometimes look the ones place to compare numbers.
- How are dimes and pennies similar to tens and ones?
- Look at Problem 4. Was this pair more challenging for you to compare? Why?



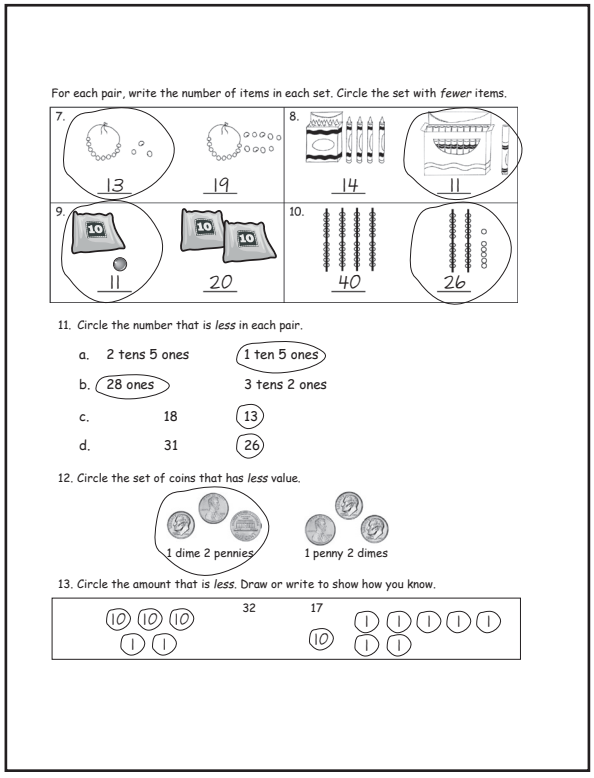
Name Maria Date

For each pair, write the number of items in each set. Then, circle the set with the *greater* number of items.

1. 13 19
2. 36 13
3. 30 29
4. 30 32

5. Circle the number that is *greater* in each pair.
   a. 1 ten 2 ones (3 tens 2 ones)
   b. 2 tens 8 ones (3 tens 2 ones)
   c. (19) 15
   d. (31) 26

6. Circle the set of coins that has a *greater* value.
   3 dimes 3 pennies



For each pair, write the number of items in each set. Circle the set with *fewer* items.

7. 13 19
8. 14 11
9. 11 20
10. 40 26

11. Circle the number that is *less* in each pair.
   a. 2 tens 5 ones (1 ten 5 ones)
   b. (28 ones) 3 tens 2 ones
   c. 18 (13)
   d. 31 (26)

12. Circle the set of coins that has *less* value.
   1 dime 2 pennies 1 penny 2 dimes

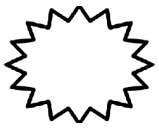
13. Circle the amount that is *less*. Draw or write to show how you know.
   32 17

- We call the numeral in the tens place a digit. The numeral in the ones place can also be called a digit. Look at the pair of numbers in Problem 5(d) and identify the digit in the tens place and the digit in the ones place for both numbers.
- 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.
- Share your answer to today's Application Problem with a partner. Restate your answer using the words **greater** or **less**.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

A

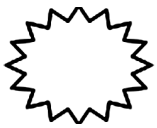
Number Correct: 

Name _____ Date _____

*Write the missing number. Pay attention to the addition or subtraction sign.

1.	5 + 1 = ☐		16.	29 + 10 = ☐	
2.	15 + 1 = ☐		17.	9 + 1 = ☐	
3.	25 + 1 = ☐		18.	19 + 1 = ☐	
4.	5 + 10 = ☐		19.	29 + 1 = ☐	
5.	15 + 10 = ☐		20.	39 + 1 = ☐	
6.	25 + 10 = ☐		21.	40 – 1 = ☐	
7.	8 – 1 = ☐		22.	30 – 1 = ☐	
8.	18 – 1 = ☐		23.	20 – 1 = ☐	
9.	28 – 1 = ☐		24.	20 + ☐ = 21	
10.	38 – 1 = ☐		25.	20 + ☐ = 30	
11.	38 – 10 = ☐		26.	27 + ☐ = 37	
12.	28 – 10 = ☐		27.	27 + ☐ = 28	
13.	18 – 10 = ☐		28.	☐ + 10 = 34	
14.	9 + 10 = ☐		29.	☐ – 10 = 14	
15.	19 + 10 = ☐		30.	☐ – 10 = 24	

B

Number Correct: 

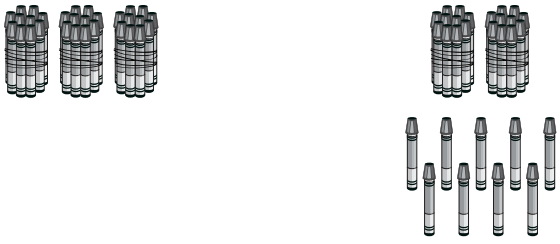
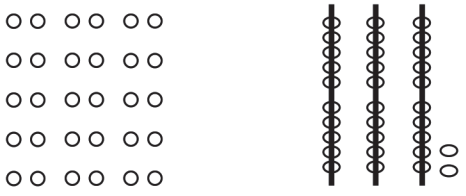
Name _____ Date _____

*Write the missing number. Pay attention to the addition or subtraction sign.

1.	4 + 1 = ☐		16.	28 + 10 = ☐	
2.	14 + 1 = ☐		17.	9 + 1 = ☐	
3.	24 + 1 = ☐		18.	19 + 1 = ☐	
4.	6 + 10 = ☐		19.	29 + 1 = ☐	
5.	16 + 10 = ☐		20.	39 + 1 = ☐	
6.	26 + 10 = ☐		21.	40 – 1 = ☐	
7.	7 – 1 = ☐		22.	30 – 1 = ☐	
8.	17 – 1 = ☐		23.	20 – 1 = ☐	
9.	27 – 1 = ☐		24.	10 + ☐ = 11	
10.	37 – 1 = ☐		25.	10 + ☐ = 20	
11.	37 – 10 = ☐		26.	22 + ☐ = 32	
12.	27 – 10 = ☐		27.	22 + ☐ = 23	
13.	17 – 10 = ☐		28.	☐ + 10 = 39	
14.	8 + 10 = ☐		29.	☐ – 10 = 19	
15.	18 + 10 = ☐		30.	☐ – 10 = 29	

Name _____ Date _____

For each pair, write the number of items in each set. Then, circle the set with the *greater* number of items.

1.  _____ _____	2.  _____ _____
3.  _____ _____	4.  _____ _____

5. Circle the number that is *greater* in each pair.

a. 1 ten 2 ones 3 tens 2 ones

b. 2 tens 8 ones 3 tens 2 ones

c. 19 15

d. 31 26

6. Circle the set of coins that has a *greater* value.

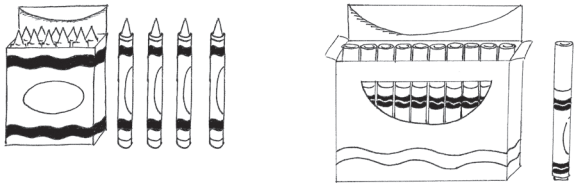
3 dimes

3 pennies

For each pair, write the number of items in each set. Circle the set with *fewer* items.

7. 

_____ _____

8. 

_____ _____

9. 

_____ _____

10. 

_____ _____

11. Circle the number that is *less* in each pair.

a. 2 tens 5 ones 1 ten 5 ones

b. 28 ones 3 tens 2 ones

c. 18 13

d. 31 26

12. Circle the set of coins that has *less* value.

1 dime 2 pennies

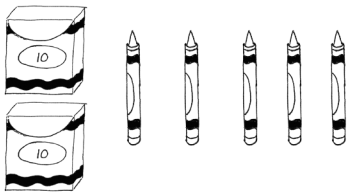
1 penny 2 dimes

13. Circle the amount that is *less*. Draw or write to show how you know.

32 17

Name _____ Date _____

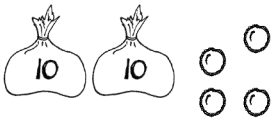
1. Write the number of items in each set. Then, circle the set that is *greater* in number. Write a statement to compare the two sets.

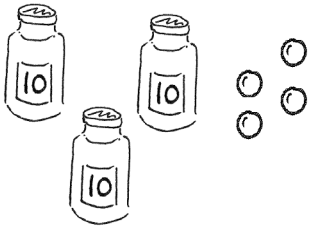


_____ _____

_____ is greater than _____.

2. Write the number of items in each set. Then, circle the set that is *less* in number. Say a statement to compare the two sets.





_____ _____

_____ is less than _____.

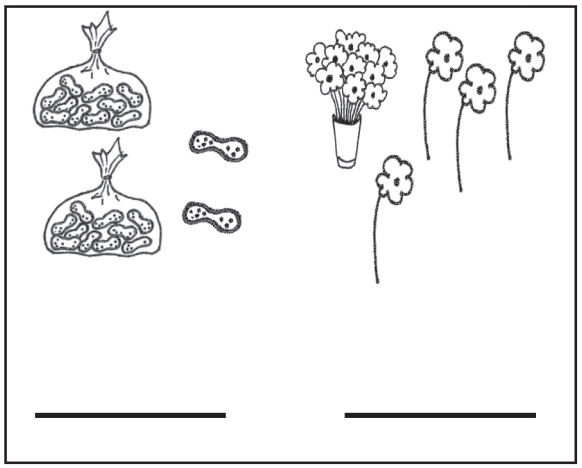
3. Circle the set of coins that has a *greater* value.

4. Circle the set of coins that has *less* value.

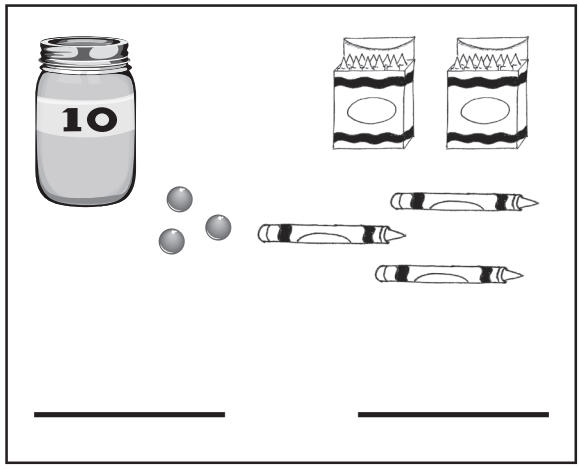
Name _____ Date _____

Write the number, and circle the set that is *greater* in each pair. Say a statement to compare the two sets.

1.



2.



Circle the number that is *greater* for each pair.

3.

3 tens 8 ones	3 tens 9 ones

4.

25	35

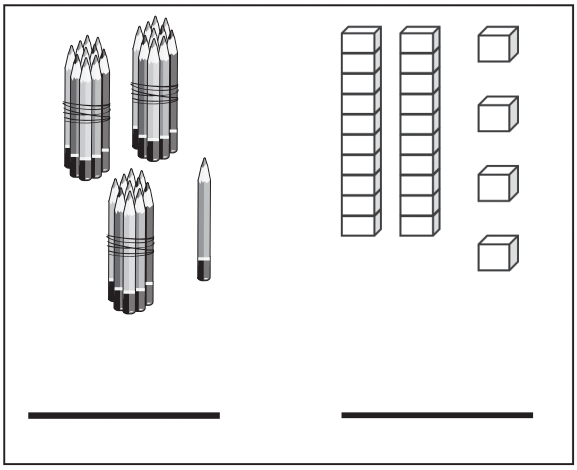
5. Write the value and circle the set of coins that has *greater* value.

_____

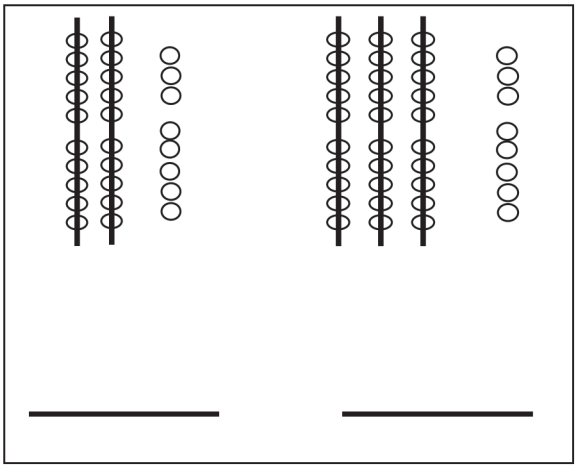
_____

Write the number, and circle the set that is *less* in each pair. Say a statement to compare the two sets.

6.



7.



Circle the number that is *less* for each pair.

8.

2 tens 7 ones	3 tens 7 ones

9.

22	29

10. Write the value and circle the set of coins that has *less* value.

11. Katelyn and Jose are playing comparison with cards. They have recorded the totals for each round. For each round, circle the total that won the cards, and write the statement. The first one is done for you.

ROUND 1: The total that is **greater** wins.

Katelyn's Total	Jose's Total
16	19

19 is greater than 16.

a. ROUND 2: The total that is **less** wins.

Katelyn's Total	Jose's Total
27	24

b. ROUND 3: The total that is **greater** wins.

Katelyn's Total	Jose's Total
32	22

c. ROUND 4: The total that is **less** wins.

Katelyn's Total	Jose's Total
29	26

d. If Katelyn's total is 39, and Jose's total has 3 tens 9 ones, who would have a greater total? Draw a math drawing to explain how you know.

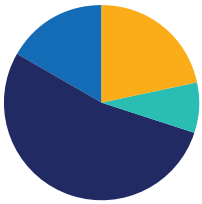
tens	ones

large place value chart

Lesson 9

Objective: Compare quantities and numerals from left to right.

Suggested Lesson Structure



Fluency Practice	(13 minutes)
Application Problem	(5 minutes)
Concept Development	(32 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (13 minutes)

- Subtraction with Cards **1.3D, 1.5G** (5 minutes)
- Subtraction Fluency Review **1.3D, 1.5G** (5 minutes)
- Beep Counting by Ones and Tens **1.2D, 1.5C** (3 minutes)

Subtraction with Cards (5 minutes)

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

Note: This fluency activity reviews yesterday's lesson 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 their 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.

Subtraction Fluency Review (5 minutes)

Materials: (S) Subtraction Fluency Review

Note: This subtraction review sheet contains the majority of subtraction facts within 10 (excluding some –0 and –1 facts). Consider using this sheet to monitor progress toward proficiency.

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 Subtraction Fluency Reviews.

Beep Counting by Ones and Tens (3 minutes)

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 simple 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.

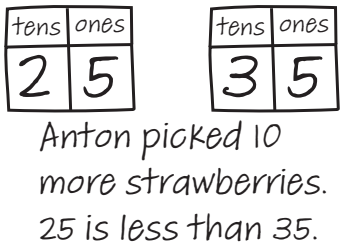
Application Problem (5 minutes)

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

a. Use a place value chart to show how many strawberries Anton picked.

b. Use a place value chart to show how many strawberries Anton has now. How many strawberries did Anton pick?

c. 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 Development (32 minutes)

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

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, both of which were used in today's beep counting: 10, 11, 12, 13 and 40, 30, 20, 10.

T: You said these numbers during beep counting. What is different about them?

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Be sure students, including some emergent bilingual students, understand the word *compare.* Remind students about comparing the length of objects as they did in Module 4, and show some concrete examples. Help students make the connection between comparing length and comparing numbers.

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)?

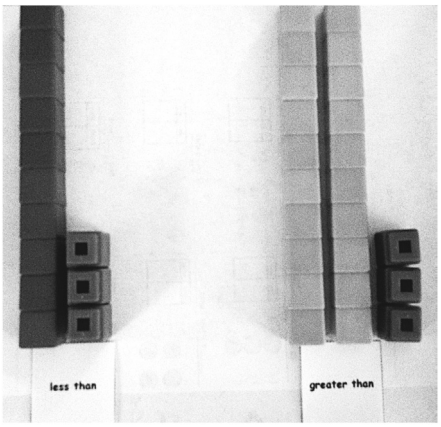
S: Less than.

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.

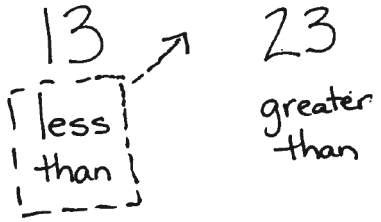
T/S: (Continue pointing to each number.) 10 is less than 11. 11 is less than 12. 12 is less than 13.



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!

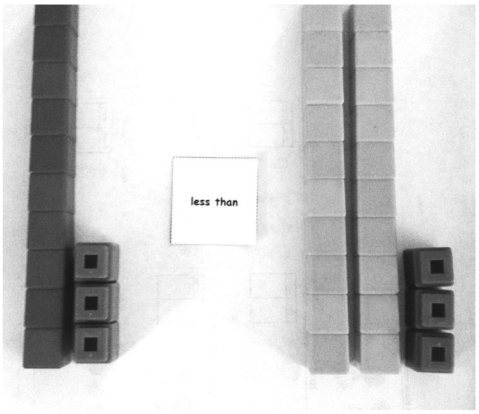


T: Let's read the whole sequence, using greater than to compare the number pairs as we go.

T/S: 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 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.)

T/S: 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 manageable.

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.)

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Some students may need more proficiency practice using concrete models. 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.

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.

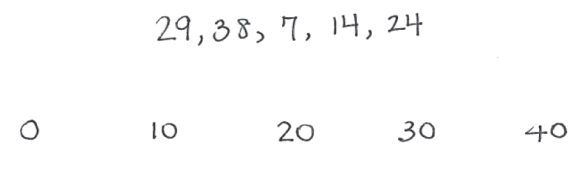
T: (Leave 34 and 28 on display.) Which digit in each number did you look at first to compare them?

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.)

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Highlight the critical vocabulary for students 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, students, including some emergent bilingual students, find it challenging to place numbers into the tens sequence.

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!

T/S: (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!

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

Problem Set (10 minutes)

In this Problem Set, students order numbers from least to greatest and greatest to least. It would be helpful to review the meaning of the words *least* and *greatest* to prepare students to answer these questions. Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

Lesson Objective: Compare quantities and numerals from left to right.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

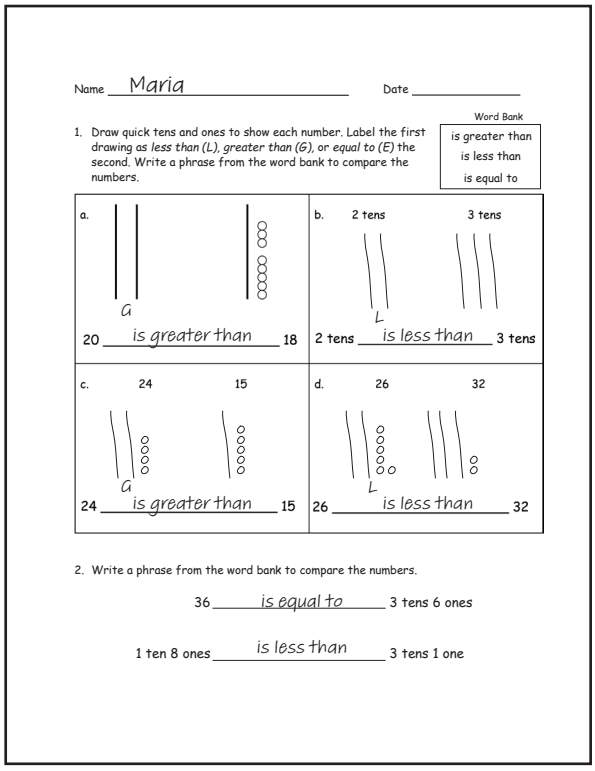
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 2. Use math drawings, materials, or place value charts to prove your solution for 36 _____ 3 tens 6 ones.
- How did Problem 3 help you solve Problem 4? What is the same about these two problems? What is different?
- Rewrite your statement for the Application Problem using only numbers and the phrase *greater than* or *less than* to compare the two sets of strawberries. Start with Anton's strawberries.
- Share your solution to Problem 5 with your partner. Did you have the same solution? If your solutions were different, explain how they could both be correct.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



Name Maria Date _____

1. Draw quick tens and ones to show each number. Label the first drawing as *less than (L), greater than (G), or equal to (E)* the second. Write a phrase from the word bank to compare the numbers.

Word Bank: is greater than / is less than / is equal to

a. G — 20 is greater than 18

b. 2 tens L 3 tens — 2 tens is less than 3 tens

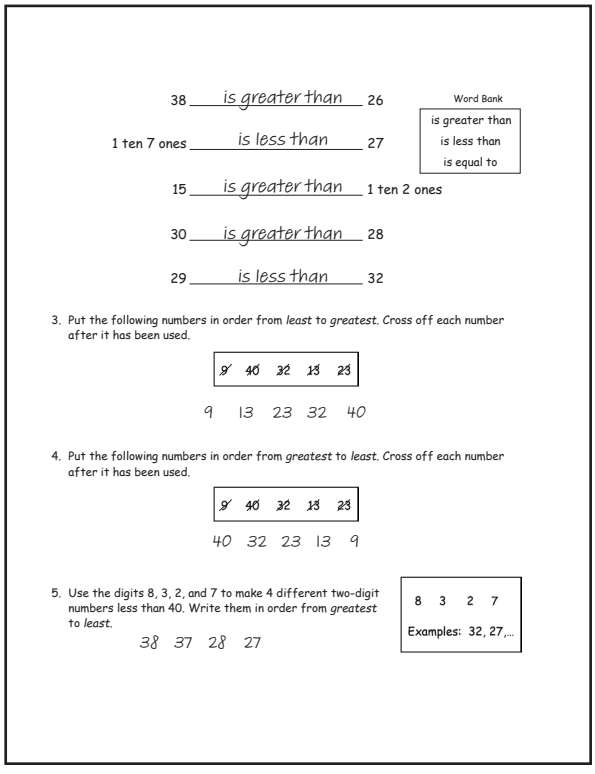
c. 24 G 15 — 24 is greater than 15

d. 26 L 32 — 26 is less than 32

2. Write a phrase from the word bank to compare the numbers.

36 is equal to 3 tens 6 ones

1 ten 8 ones is less than 3 tens 1 one



38 is greater than 26

1 ten 7 ones is less than 27

15 is greater than 1 ten 2 ones

30 is greater than 28

29 is less than 32

Word Bank: is greater than / is less than / is equal to

3. Put the following numbers in order from *least* to *greatest*. Cross off each number after it has been used.

9 40 32 13 23

9 13 23 32 40

4. Put the following numbers in order from *greatest* to *least*. Cross off each number after it has been used.

9 40 32 13 23

40 32 23 13 9

5. Use the digits 8, 3, 2, and 7 to make 4 different two-digit numbers less than 40. Write them in order from *greatest* to *least*.

38 37 28 27

8 3 2 7

Examples: 32, 27,...

Name _____ Date _____

Subtraction Fluency Review

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

Name _____ Date _____

Word Bank

is greater than
is less than
is equal to

1. Draw quick tens and ones to show each number. Label the first drawing as *less than (L), greater than (G),* or *equal to (E)* the second. Write a phrase from the word bank to compare the numbers.

a. 

20 _____ 18

b. 2 tens 3 tens

2 tens _____ 3 tens

c. 24 15

24 _____ 15

d. 26 32

26 _____ 32

2. Write a phrase from the word bank to compare the numbers.

36 _____ 3 tens 6 ones

1 ten 8 ones _____ 3 tens 1 one

38 _____ 26

1 ten 7 ones _____ 27

15 _____ 1 ten 2 ones

30 _____ 28

29 _____ 32

Word Bank

is greater than
is less than
is equal to

3. Put the following numbers in order from *least* to *greatest*. Cross off each number after it has been used.

9	40	32	13	23

4. Put the following numbers in order from *greatest* to *least*. Cross off each number after it has been used.

9	40	32	13	23

5. Use the digits 8, 3, 2, and 7 to make 4 different two-digit numbers less than 40. Write them in order from *greatest* to *least*.

8	3	2	7

Examples: 32, 27,...

Name _____ Date _____

1. Write the numbers in order from *greatest* to *least*.

	40	
39		29
	30	

_____ _____ _____ _____

2. Complete the sentence frames using the phrases from the word bank to compare the two numbers.

Word Bank

is greater than

is less than

is equal to

a. 17 _____ 24

b. 23 _____ 2 tens 3 ones

c. 29 _____ 20

Name _____ Date _____

1. Draw the numbers using quick tens and circles. Use the phrases from the word bank to complete the sentence frames to compare the numbers. The first one has been done for you.

Word Bank

is greater than
is less than
is equal to

a. 20  30  20 is less than 30	b. 14 22 14 _____ 22
c. 15 1 ten 5 ones 15 _____ 1 ten 5 ones	d. 39 29 39 _____ 29
e. 31 13 31 _____ 13	f. 23 33 23 _____ 33

2. Circle the numbers that are *greater* than 28.

32 29 2 tens 8 ones 4 tens 18

3. Circle the numbers that are *less* than 31.

29 3 tens 6 ones 3 tens 13 3 tens 9 ones

4. Write the numbers in order from *least* to *greatest*.
   Where would the number 27 go in this order? Use words or rewrite the numbers to explain.

	23	
32		30
	29	

_____ _____ _____ _____

5. Write the numbers in order from *greatest* to *least*.
   Where would the number 23 go in this order? Use words or rewrite the numbers to explain.

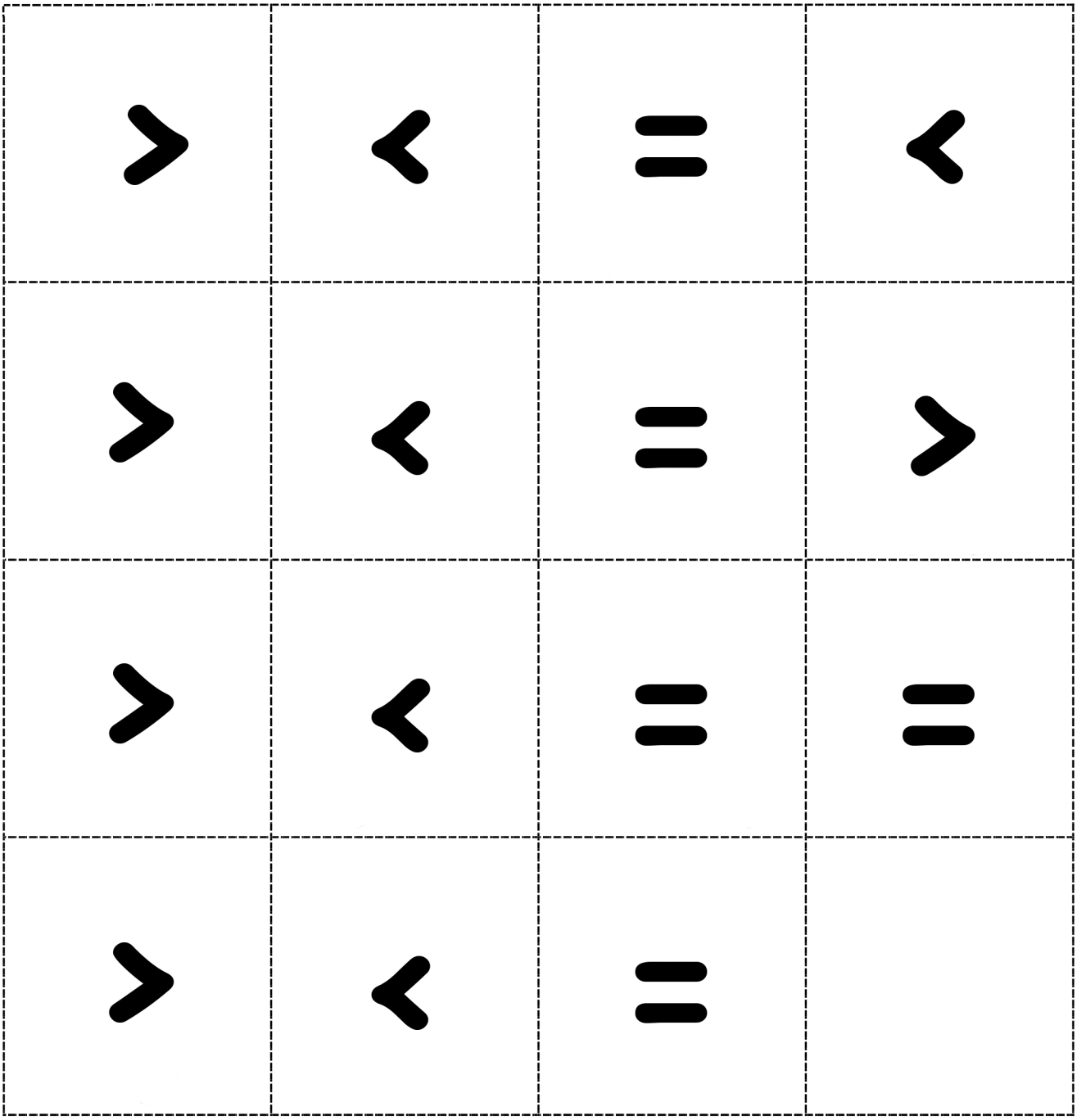
	40	
13		30
	31	

_____ _____ _____ _____

6. Use the digits 9, 4, 3, and 2 to make 4 different two-digit numbers less than 40. Write them in order from *least* to *greatest*.

9 3 4 2

Examples: 34, 29,...



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

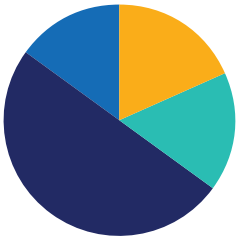
comparison cards, p. 2. (Print double-sided on cardstock. Distribute each of the three cards to students.)

Lesson 10

Objective: Order whole numbers up to 40 using place value.

Suggested Lesson Structure

Fluency Practice	(11 minutes)
Application Problem	(10 minutes)
Concept Development	(30 minutes)
Student Debrief	(9 minutes)
Total Time	**(60 minutes)**



Fluency Practice (11 minutes)

- Quick Tens **1.2A, 1.2B** (3 minutes)
- Count Coins **1.4C** (2 minutes)
- 1 More/Less, 10 More/Less **1.2D, 1.5C** (6 minutes)

Quick Tens (3 minutes)

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.

Repeat Quick Tens from Lesson 6 to reinforce place value in preparation for using place value to compare numbers during today's Concept Development.

Count Coins (2 minutes)

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.

Repeat Count Coins from Lesson 6.

1 More/Less, 10 More/Less (6 minutes)

Materials: (S) Personal math toolkit (4 ten-sticks, 4 dimes, and 10 pennies), personal white board, large place value chart (Lesson 8 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 10 cubes. Add 1. Say the addition sentence, starting with 10.

S: 10 + 1 = 11.

T: Add 10. Say the addition sentence, starting with 11.

S: 11 + 10 = 21.

T: Subtract 1. Say the subtraction sentence, starting with 21.

S: 21 – 1 = 20.

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.

Application Problem (10 minutes)

On Monday, Ms. Nelson sharpened 16 pencils. On Tuesday, she sharpened some more pencils. Ms. Nelson sharpened a total of 26 pencils. How many pencils did Ms. Nelson sharpen on Tuesday?

a. Use a quick ten drawing to solve this problem.

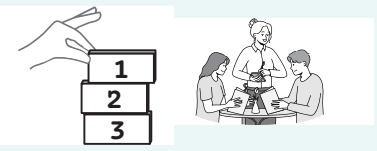
b. Write a statement comparing the number of pencils Ms. Nelson sharpened on Monday to the number of pencils Ms. Nelson sharpened on Tuesday using one of these phrases: *greater than*, *less than*, or *equal to*.

Note: In this *add to with change unknown* problem, students are asked to first use their understanding of place value to identify the number of pencils sharpened on Tuesday and then compare the two different amounts of pencils from Monday and Tuesday.

Note: This problem reviews quick ten drawings and comparison language in preparation for today's Concept Development.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

The word *order* has multiple meanings. Consider supporting students, including some emergent bilingual students by providing visual support for each meaning of the word. Clarify which meaning is used in this lesson.



Concept Development (30 minutes)

Materials: (S) Personal white board

Distribute personal white boards to students.

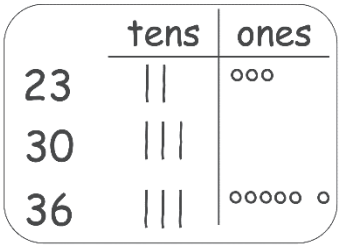
T: Last night, I was at the grocery store buying meat for a family get-together. I found one package of meat for $23, one package for $30, and another package for $36. I was wondering which package cost the least, so I decided to put these packages in order by their price. What tools or strategies can help me put these prices in order?

S: Build each number using ten sticks. → Show the amounts using money. → Draw pictures.

T: Yes! There are many ways to compare and order numbers. Since I didn't bring my ten sticks to the store, I decided to use place value drawings to help me order these numbers. Let's try this together. On the left side of your white board, write the numbers 23, 30, and 36.

S: (Students record numbers on their place value charts.)

T: Next, draw a place value chart. Use quick tens and ones to represent your numbers on the place value chart (see image to the right).



S: (Students draw quick tens and ones to represent 23, 30, and 36.)

T: How do this place value chart and our quick tens and ones help us find the number that is smallest? This number comes first when ordering these numbers.

S: I can see 30 and 36 each have 3 tens, but 23 only has 2 tens. 23 is less than the other numbers.

T: Great! Now we know that 23 is the least, or smallest. I'll write this number on the board first. Which number comes next when I put them in order?

S: 30 comes next. 30 and 36 both have 3 tens, but 36 has some extra ones. That means 36 is more than 30.

T: Great! I'll finish writing these numbers in order: 23, 30, 36.

T: When we draw place value charts and quick tens and ones, we are using our understanding of place value to order numbers. Today and every day, you can use place value to order numbers.

Repeat the above steps with several other sets of numbers. As students order numbers, encourage them to use comparison words such as *less than/least, more than/most,* and *equal to.*

T: Wow, you are great at using your place value understanding to order sets of numbers from least to greatest. Now let's try something a little different. Erase your white boards. Let's draw a place value chart.

S: (Students draw place value charts on their white boards.)

T: Think back to the numbers we worked with earlier: 23, 30, and 36. This time, let's try recording our numbers on the place value chart instead of drawing quick tens and ones. How would I record 23?

S: Instead of drawing quick tens for 23, you could put the 2 in the tens place since that means 2 tens. Then, put the 3 in the ones place. You can do the same thing for 30 and 36.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Support students, including some emergent bilingual students, by providing them with sentence starters such as, " is less than ." and " is greater than ." The sentence starters not only help them communicate but also holds students accountable for staying on topic as they work together.

T: On your personal white board, do what Student A is suggesting (see image to the right).

tens	ones
2	3
3	0
3	6

S: (Students record on their personal white boards.)

T: How does this help us put our numbers in order?

S: I can see that 23 only has 2 tens, and the others have 3 tens. 23 is the smallest. We write that first. Then, I need to look at the ones place. 36 has some ones and 30 doesn't. We write 30 next. 36 is the biggest, so we write that last.

T: Today and every day, we can use our place value understanding to order numbers from least to greatest. We can draw quick tens and ones on a place value chart, or we can record numbers on our place value chart.

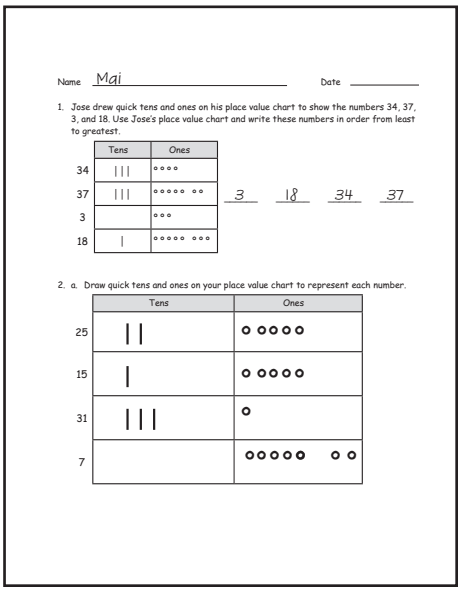
Repeat the above steps with several other sets of numbers. After students find the correct order of numbers from least to greatest, have them record the numbers in order.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Distribute the Problem Set to students. In this Problem Set, students order sets of numbers using their place value understanding. Students do this by recording quick ten drawings on their place value charts, as well as recording numbers on their place value charts. Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (9 minutes)


Name Mai Date

1. Jose drew quick tens and ones on his place value chart to show the numbers 34, 37, 3, and 18. Use Jose's place value chart and write these numbers in order from least to greatest.

	Tens	Ones
34	III	○○○○
37	III	○○○○○ ○○
3		○○○
18	I	○○○○○ ○○○

3 18 34 37

2. a. Draw quick tens and ones on your place value chart to represent each number.

	Tens	Ones
25	II	○○○○○
15	I	○○○○○
31	III	○
7		○○○○○ ○○

Lesson Objective: Order whole numbers up to 40 using place value.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

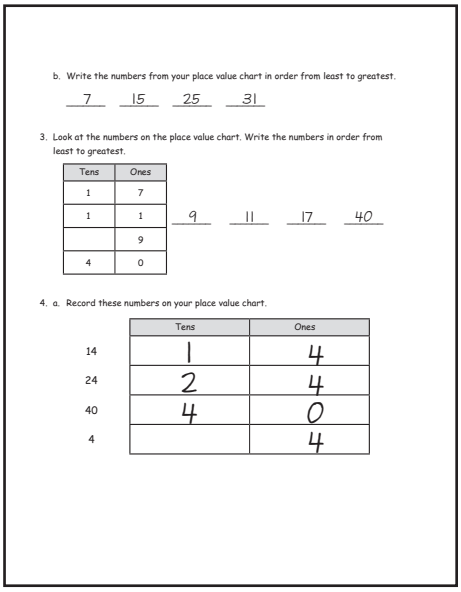
Any combination of the questions below may be used to lead the discussion.

- Was it simpler to order numbers by writing quick tens on your place value chart or by recording numbers on your place value chart?

- If you were teaching a new student how to order numbers, what tips would you give them?
- Which part of a number do you look at first when ordering numbers?
- Talk to a partner and share how you solved 4b. Did you both solve it the same way?

Exit Ticket (4 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



b. Write the numbers from your place value chart in order from least to greatest.

7 15 25 31

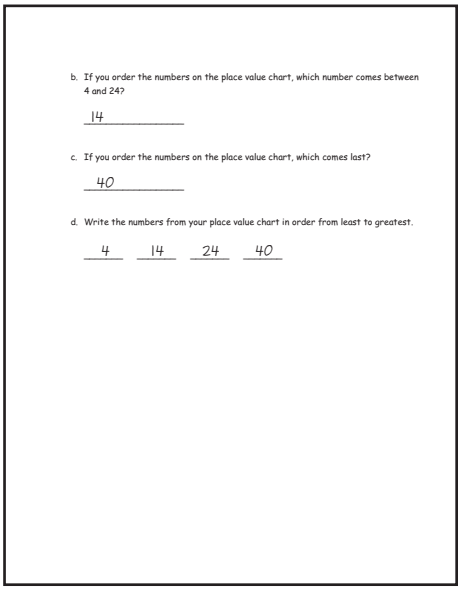
3. Look at the numbers on the place value chart. Write the numbers in order from least to greatest.

Tens	Ones
1	7
1	1
	9
4	0

9 11 17 40

4. a. Record these numbers on your place value chart.

	Tens	Ones
14	1	4
24	2	4
40	4	0
4		4



b. If you order the numbers on the place value chart, which number comes between 4 and 24?

14

c. If you order the numbers on the place value chart, which comes last?

40

d. Write the numbers from your place value chart in order from least to greatest.

4 14 24 40

Name _____ Date _____

1. Jose drew quick tens and ones on his place value chart to show the numbers 34, 37, 3, and 18. Use Jose's place value chart and write these numbers in order from least to greatest.

	Tens	Ones
34	| | |	○ ○ ○ ○
37	| | |	○ ○ ○ ○ ○ ○ ○
3		○ ○ ○
18	|	○ ○ ○ ○ ○ ○ ○ ○

_____ _____ _____ _____

2. a. Draw quick tens and ones on your place value chart to represent each number.

	Tens	Ones
25		
15		
31		
7		

b. Write the numbers from your place value chart in order from least to greatest.

_____ _____ _____ _____

3. Look at the numbers on the place value chart. Write the numbers in order from least to greatest.

Tens	Ones
1	7
1	1
	9
4	0

_____ _____ _____ _____

4 a. Record these numbers on your place value chart.

	Tens	Ones
14		
24		
40		
4		

b. If you order the numbers on the place value chart, which number comes between 4 and 24?

_____

c. If you order the numbers on the place value chart, which comes last?

_____

d. Write the numbers from your place value chart in order from least to greatest.

_____ _____ _____ _____

Name _____ Date _____

1. Look at the quick tens on the place value chart to answer each question.

	Tens	Ones
32	| | |	o o
20	| |	
16	|	o o o o o o
39	| | |	o o o o o o o o o

a. If you put these numbers in order, what comes between 16 and 32?

_____

b. Write the numbers from the place value chart in order from least to greatest.

_____ _____ _____ _____

2. Look at the numbers on the place value chart to answer each question.

Tens	Ones
2	8
2	1
	6
3	0

a. If you put these numbers in order, which number comes first?

_____

b. If you put these numbers in order, which number comes last?

_____

c. Write the numbers from the place value chart in order from least to greatest.

_____ _____ _____ _____

Name _____ Date _____

1. Look at the quick tens on the place value chart to answer each question.

	Tens	Ones
12	|	∘ ∘
40	| | | |	
16	|	∘ ∘ ∘ ∘ ∘ ∘
30	| | |	

a. If you put these numbers in order, what comes between 12 and 30?

_____

b. If you put these numbers in order, what comes after 30?

_____

c. Write the numbers from the place value chart in order from least to greatest.

_____ _____ _____ _____

2. Look at the numbers on the place value chart to answer each question.

Tens	Ones
1	4
2	7
1	0
3	4

a. If you put these numbers in order, which number comes first?_____

b. If you put these numbers in order, which number goes between 10 and 27?_____

c. If you put these numbers in order, which number comes last? _____

d. Write the numbers from the place value chart in order from least to greatest.

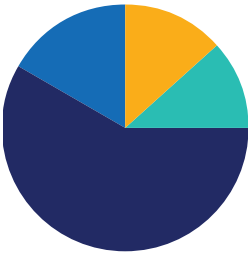
_____ _____ _____ _____

Lesson 11

Objective: Order whole numbers up to 40 using open number lines.

Suggested Lesson Structure

Fluency Practice	(8 minutes)
Application Problem	(7 minutes)
Concept Development	(35 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (8 minutes)

- Subtraction Fluency Review **1.3D, 1.5G** (5 minutes)
- Beep Counting by Ones and Tens **1.2D, 1.5C** (3 minutes)

Subtraction Fluency Review (5 minutes)

Materials: (S) Subtraction Fluency Review (from Lesson 9)

Complete this fluency review activity as indicated in Lesson 9.

Beep Counting by Ones and Tens (3 minutes)

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 simple sequences and moving to more complex ones. Choose sequences that count forward and backward by ones and tens within 40.

Suggested sequence type: 12, 13, 14, beep; 30, 31, 32, beep; 30, 29, 28, beep; 20, 19, 18, beep; 10, 20, 30, beep; 2, 12, 22, beep; 40, 30, 20, beep; 36, 26, 16, beep. Continue with similar sequences, changing the sequential placement of the beep.

Application Problem (7 minutes)

Distribute personal white boards to students.

T: Use your place value understanding to put these numbers in order: **31, 24, 18,** and **9.**

T: Share your strategy and answer with a partner. Discuss what is the same and different about your strategies.

Note: During the previous lesson, students learned how to use place value charts and quick ten drawings to order numbers. This problem provides review of yesterday's lesson in preparation for today's Concept Development.

Concept Development (35 minutes)

Materials: (S) Personal white board

Call students to sit in a half-circle on the carpet. Distribute personal white boards to students.

T: In the last lesson, we learned about ordering numbers. What are some strategies we can use for ordering numbers?

S: Draw quick tens. → Write numbers on a place value chart.

T: Yes, both strategies help us order numbers. Now, I need 4 volunteers to help me order some numbers. (Ask the 4 students to stand in a line on the carpet. Write a different number on each student's personal white board: 15 28 14 35. Have the students display their white boards so the class can see their numbers.)

T: Class, each of these students has been assigned a number. Your job is to put the students in order by their numbers. On your personal white boards, draw a place value chart. On your place value chart, record quick tens or numbers to decide how to order these students.

S: (Students use place value understanding to order numbers on their personal white boards.)

T: Which number should come first? How do you know?

S: I drew quick tens and ones. 14 and 15 both have one ten, but 14 had fewer ones. 14 is smallest.

T: Let's move the student holding 14 so they are first in line. (Move this student to the far left of the line.)

Continue to ask the class how to order the remaining students based on their numbers.

T: Look at our line of students. Where is the smallest number?

S: They're all the way left.

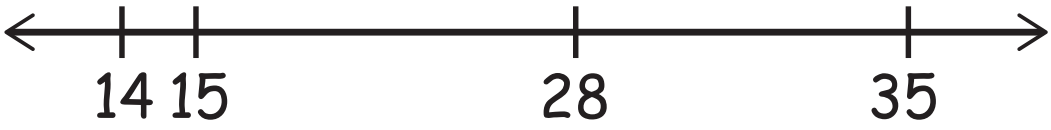
T: Yes! Where is the biggest, or greatest number?

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Consider supporting students, including some emergent bilingual students with directional terms by gesturing to the left or to the right on the number line. Also consider labeling a pre-marked number line with L and R. Invite students to notice that when you move to the left the numbers get smaller and as you move to the right the numbers get larger.

S: They're on the right side of the carpet.

T: This line of students reminds me of an **open number line**. An open number line is a number line with only certain numbers written on it. (Model drawing a number line with 14, 15, 28, and 35 written on it.) Look at the open number line I drew on the board. What do you notice? (Encourage students to make connections between the open number line and students holding numbers in line.)



S: It doesn't have every number. → The smallest numbers are on the left, and the biggest are on the right. → The 14 and 15 are close together, and some of the other numbers are farther apart.

T: Why do you think the 14 and 15 are close together?

S: They are next to each other when we count… 14, 15, 16.

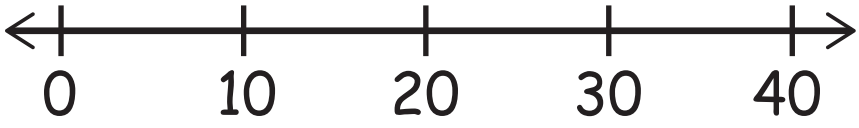
T: Why do you think 15 and 28 are far apart?

S: They are far apart when we count. → 15 is small and 28 is big.

T: Today we are going to learn how to draw open number lines to help us order numbers. Erase your personal white board and draw a line on it with arrows on both ends.

S: (Students draw open number lines.)

T: To help us know where to place numbers on our number line, we are going to start by writing some helper numbers on our number line. These numbers help us know where to place other numbers. Today, we'll use helper numbers 0, 10, 20, 30, and 40. Watch as I draw my number line and copy me.



S: (Students draw open number line and write helper numbers.)

T: We can use our open number line to order numbers. Let's put the numbers 27, 9, 38, and 21 in order. Where would our first number, 27, go?

S: It goes after 20.

T: Yes, it goes after 20. Do you think it is closer to 20 or 30 on our number line?

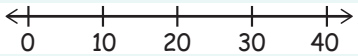
S: 30 because it's really close to 30 on our calendar.

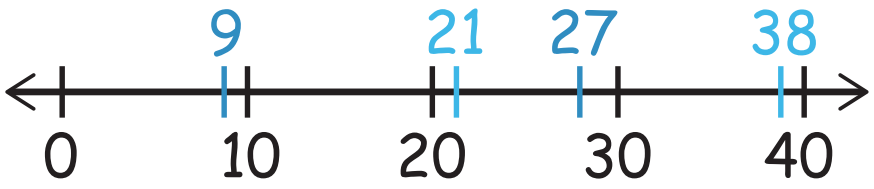
T: Great, write 27 on your number line between 20 and 30. Keep it close to 30.

Continue to support students in recording 9, 38, and 21 on their open number lines.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Consider the needs of your students and provide pre-marked number lines to decrease fine motor demands. Pre-marked number lines can also support the understanding of the phrase *helper numbers*.





T: Look! By placing all our numbers on the number line, we put them in order. Who can read the correct order of our numbers?

S: 9, 21, 27, 38.

T: How did you know to start with 9?

S: The numbers on the left are small, and the numbers on the right are big. 9 is our smallest number.

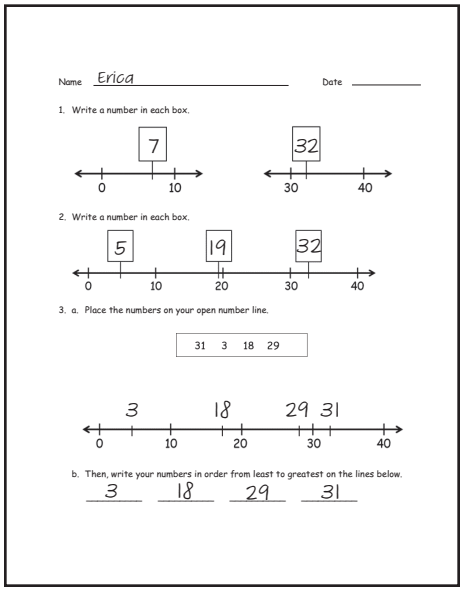
T: Great job! Today and every day, we can use open number lines to order numbers. We start by drawing the open number line. Then, we record some helper number like 0, 10, 20, 30, and 40. Last, we place our numbers on the number line.

Repeat the above steps with another set of numbers: 35, 2, 22, 39. Discuss where to place 35 as it is in the middle between 30 and 40. As students order numbers, encourage them to use comparison words such as *less than/least, more than/most*, and *equal to*.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Distribute the Problem Set to students. In this Problem Set, students identify numbers on an open number line and order sets of numbers using open number lines. Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.


Name Erica Date

1. Write a number in each box.

2. Write a number in each box.

3. a. Place the numbers on your open number line.

31 3 18 29

b. Then, write your numbers in order from least to greatest on the lines below.

3 18 29 31

Student Debrief (10 minutes)

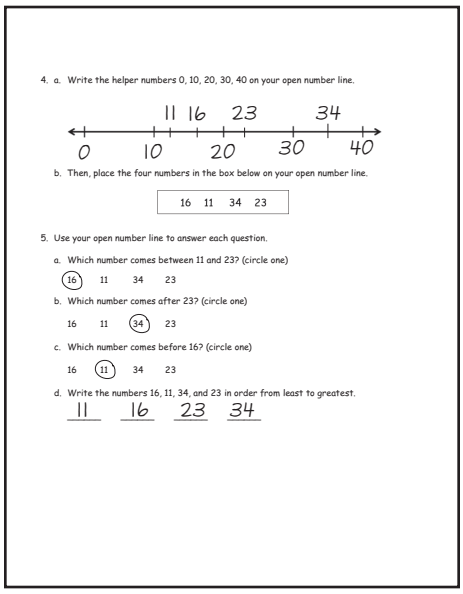
Lesson Objective: Order whole numbers up to 40 using place value.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem 1. Tell your partner how you found the missing numbers. Did you both have the same answers?
- Look at Problem 2. Which numbers were quickest to identify? Trickiest?
- What is an open number line?
- What are helper numbers, and why are they important?
- How is an open number line a helpful tool?



4. a. Write the helper numbers 0, 10, 20, 30, 40 on your open number line.

b. Then, place the four numbers in the box below on your open number line.

16 11 34 23

5. Use your open number line to answer each question.

a. Which number comes between 11 and 23? (circle one)

(16) 11 34 23

b. Which number comes after 23? (circle one)

16 11 (34) 23

c. Which number comes before 16? (circle one)

16 (11) 34 23

d. Write the numbers 16, 11, 34, and 23 in order from least to greatest.

11 16 23 34

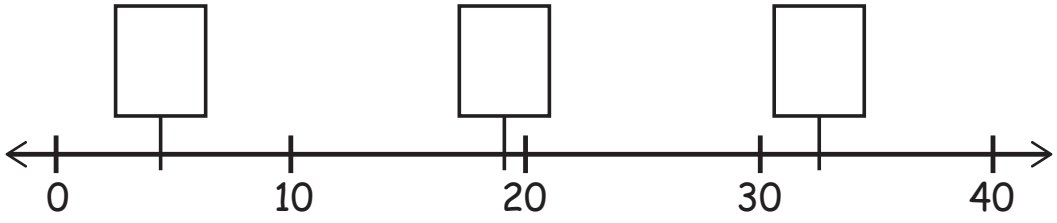
Exit Ticket (5 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

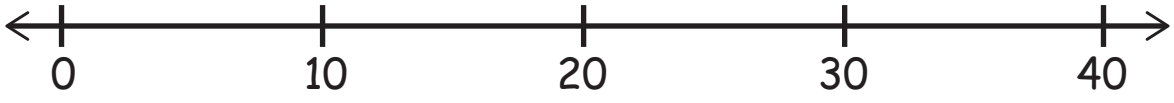
1. Write a number in each box.

2. Write a number in each box.



3. a. Place the numbers on your open number line.

31	3	18	29



b. Then, write your numbers in order from least to greatest on the lines below.

_____ _____ _____ _____

4. a. Write the helper numbers 0, 10, 20, 30, 40 on your open number line.

b. Then, place the four numbers in the box below on your open number line.

16	11	34	23

5. Use your open number line to answer each question.

a. Which number comes between 11 and 23? (circle one)

16 11 34 23

b. Which number comes after 23? (circle one)

16 11 34 23

c. Which number comes before 16? (circle one)

16 11 34 23

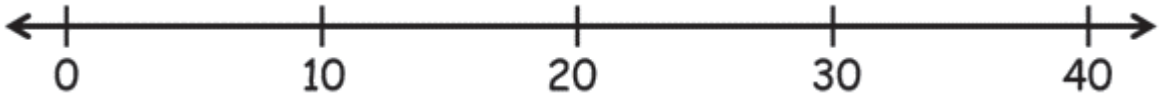
d. Write the numbers 16, 11, 34, and 23 in order from least to greatest.

_____ _____ _____ _____

Name _____ Date _____

1. Place the four numbers in the box below on your open number line.

40	15	2	28



2. Use your open number line to answer each question.

   a. Which number comes between 2 and 28? (circle one)

      40 15 2 28

   b. Which number comes before 15? (circle one)

      40 15 2 28

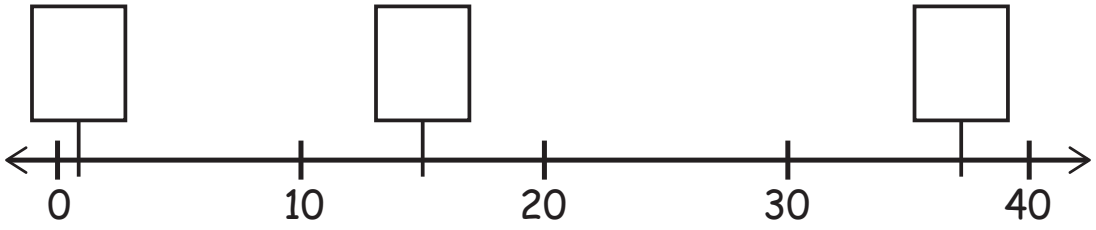
   c. Write the numbers 40, 15, 2, and 28 in order from least to greatest.

      _____ _____ _____ _____

Name _____ Date _____

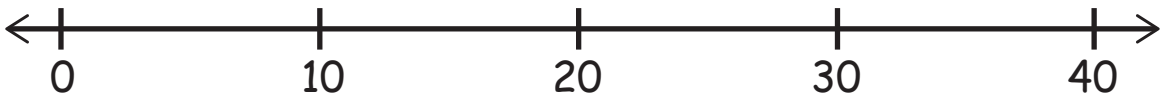
1. Write a number in each box.

2. Write a number in each box.



3. a. Place the four numbers in the box below on your open number line.

20	11	34	27



b. Write your numbers in order from least to greatest on the lines below.

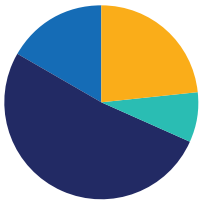
_____ _____ _____ _____

Lesson 12

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

Suggested Lesson Structure

Fluency Practice	(14 minutes)
Application Problem	(5 minutes)
Concept Development	(31 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (14 minutes)

- Subtraction Fluency Review **1.3D, 1.5G** (5 minutes)
- Digit Detective **1.2A, 1.2B** (4 minutes)
- Sequence Sets of Numbers **1.2E, 1.2F** (5 minutes)

Subtraction Fluency Review (5 minutes)

Materials: (S) Subtraction Fluency Review (Lesson 9 Subtraction Fluency Review)

Note: This fluency activity assesses students' progress toward proficiency in subtraction fluency for first graders. Since this is the second day students are doing this activity, 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 (4 minutes)

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.

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 simple 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 (5 minutes)

Materials: (S) Personal white board

Note: This activity reviews using place value to compare quantities.

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.

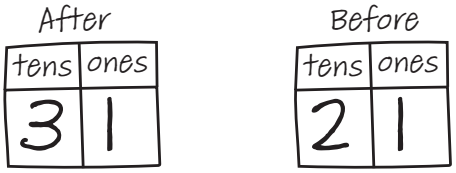
Suggested sets: 13, 11, 31, 1; 17, 27, 21, 12; 38, 18, 25, 35; etc.

Application Problem (5 minutes)

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?

a. Use place value charts to show how many rocks Carl now has, and how many rocks Carl had at the beginning.

b. Write a statement comparing how many rocks Carl started and ended with, using one of these phrases: *greater than, less than,* or *equal to.*



Carl had 21 rocks at the beginning. 21 is less than 31.

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.

Concept Development (31 minutes)

Materials: (T) Double-sided comparison card (Template), comparison cards (Lesson 9 Template) (S) Comparison cards (Lesson 9 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.

NOTES ON MULTIPLE MEANS OF EXPRESSION:

Students needing more support, including some emergent bilingual students, 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.

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 double-sided comparison card.) I heard there is a very hungry bear looking to eat some fish. Would the hungry bear 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 the comparison card between the fish, showing 2 fish is less than 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 bear 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. Place the comparison card between the fish, showing 15 fish is greater than 10 fish.)

T: Now, I will post only numbers. We'll continue to compare them and make a true number sentence with the comparison sign.

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

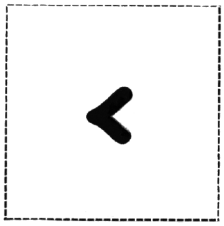
- 1 ten and 1 ten 6 ones
- 30 and 20
- 4 tens and 3 tens 8 ones
- 39 and 32
- 14 and 40
- 23 and 32

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.



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 their comparison cards to compare the numbers and make a true number sentence. Then, Partner B will read the number sentence 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.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

Lesson Objective: Use the symbols >, =, and < to compare quantities and numerals.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

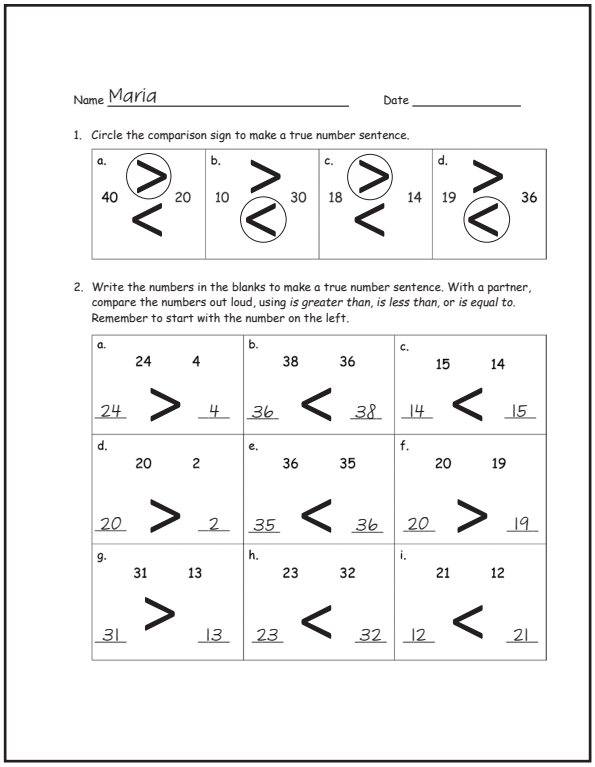
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Compare your answer to Problem 4(a) with your partner's answer. Did you and your partner come up with the same answer? Can there be *more* than one answer? Are there other problems that can have more than one answer? Why?
- Compare your answer to Problem 4(j) with your partner's answer. Did you and your partner come up with the same answer? Can there be only *one* answer? Are there other problems that can only have one answer? Why?
- What new math symbols did we use today to compare different numbers? (> for greater than, < for less than.)
- Look at your statement to today's Application Problem. Rewrite your statement using only numbers and a symbol.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



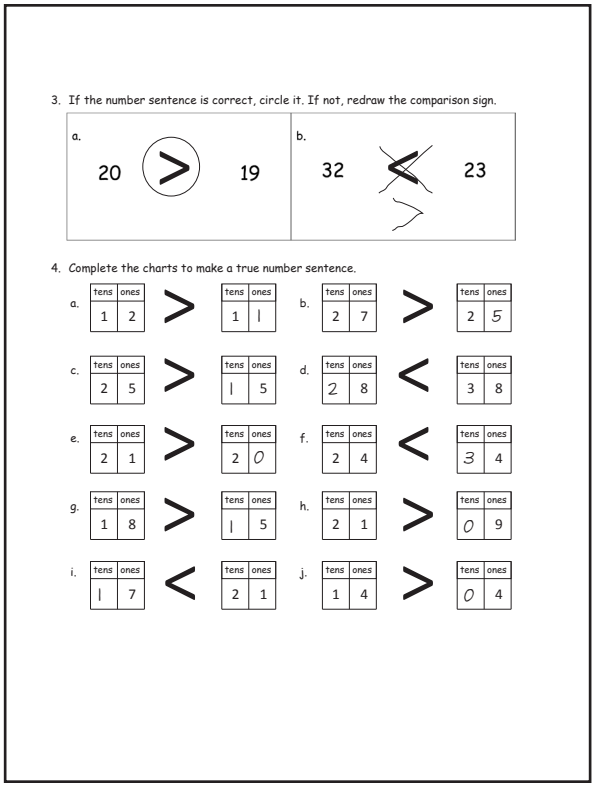
Name Maria Date

1. Circle the comparison sign to make a true number sentence.

a.	b.	c.	d.
40 > < 20	10 > < 30	18 > < 14	19 > < 36

2. Write the numbers in the blanks to make a true number sentence. With a partner, compare the numbers out loud, using *is greater than*, *is less than*, or *is equal to*. Remember to start with the number on the left.

a. 24 4 — 24 > 4	b. 38 36 — 36 < 38	c. 15 14 — 14 < 15
d. 20 2 — 20 > 2	e. 36 35 — 35 < 36	f. 20 19 — 20 > 19
g. 31 13 — 31 > 13	h. 23 32 — 23 < 32	i. 21 12 — 12 < 21



3. If the number sentence is correct, circle it. If not, redraw the comparison sign.

a.	b.
20 > 19	32 < > 23

4. Complete the charts to make a true number sentence.

a.	1 2	>	1 |	b.	2 7	>	2 5
c.	2 5	>	| 5	d.	2 8	<	3 8
e.	2 1	>	2 0	f.	2 4	<	3 4
g.	1 8	>	| 5	h.	2 1	>	0 9
i.	| 7	<	2 1	j.	1 4	>	0 4

Name _____ Date _____

1. Circle the comparison sign to make a true number sentence.

a.	b.	c.	d.
40 > < 20	10 > < 30	18 > < 14	19 > < 36

2. Write the numbers in the blanks to make a true number sentence. With a partner, compare the numbers out loud, using *is greater than*, *is less than*, or *is equal to*. Remember to start with the number on the left.

a. 24 4 ___ > ___	b. 38 36 ___ < ___	c. 15 14 ___ < ___
d. 20 2 ___ > ___	e. 36 35 ___ < ___	f. 20 19 ___ > ___
g. 31 13 ___ > ___	h. 23 32 ___ < ___	i. 21 12 ___ < ___

3. If the number sentence is correct, circle it. If not, redraw the comparison sign.

a. 20 > 19	b. 32 < 23

4. Complete the charts to make a true number sentence.

a. 	b. 
c. 	d. 
e. 	f. 
g. 	h. 
i. 	j. 

Name _____ Date _____

Write the numbers in the blanks to make a true number sentence. Read the number sentence, using *is greater than*, *is less than*, or *is equal to*. Remember to start with the number on the left.

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

Name _____ Date _____

1. Write the numbers in the blanks to make a true number sentence. Read the number sentence, using *is greater than*, *is less than*, or *is equal to*. Remember to start with the number on the left.

a. 10 ___ > ___ 20	b. 15 ___ < ___ 17	c. 24 ___ > ___ 22
d. 29 ___ > ___ 30	e. 39 ___ < ___ 38	f. 39 ___ < ___ 40

2. Complete the charts to make true number sentences.

a. tens: 1, ones: 8 > tens: 1, ones:	b. tens: 2, ones: 4 < tens: , ones: 3	
c. tens: , ones: > tens: , ones:	d. tens: 2, ones: 3 > tens: 2, ones:	
e. tens: , ones: < tens: , ones:	f. tens: 1, ones: 7 > tens: , ones: 7	

Compare each set of numbers by matching to the correct comparison sign or phrase to make a true number sentence. Check your work by reading the sentence from left to right.

3.

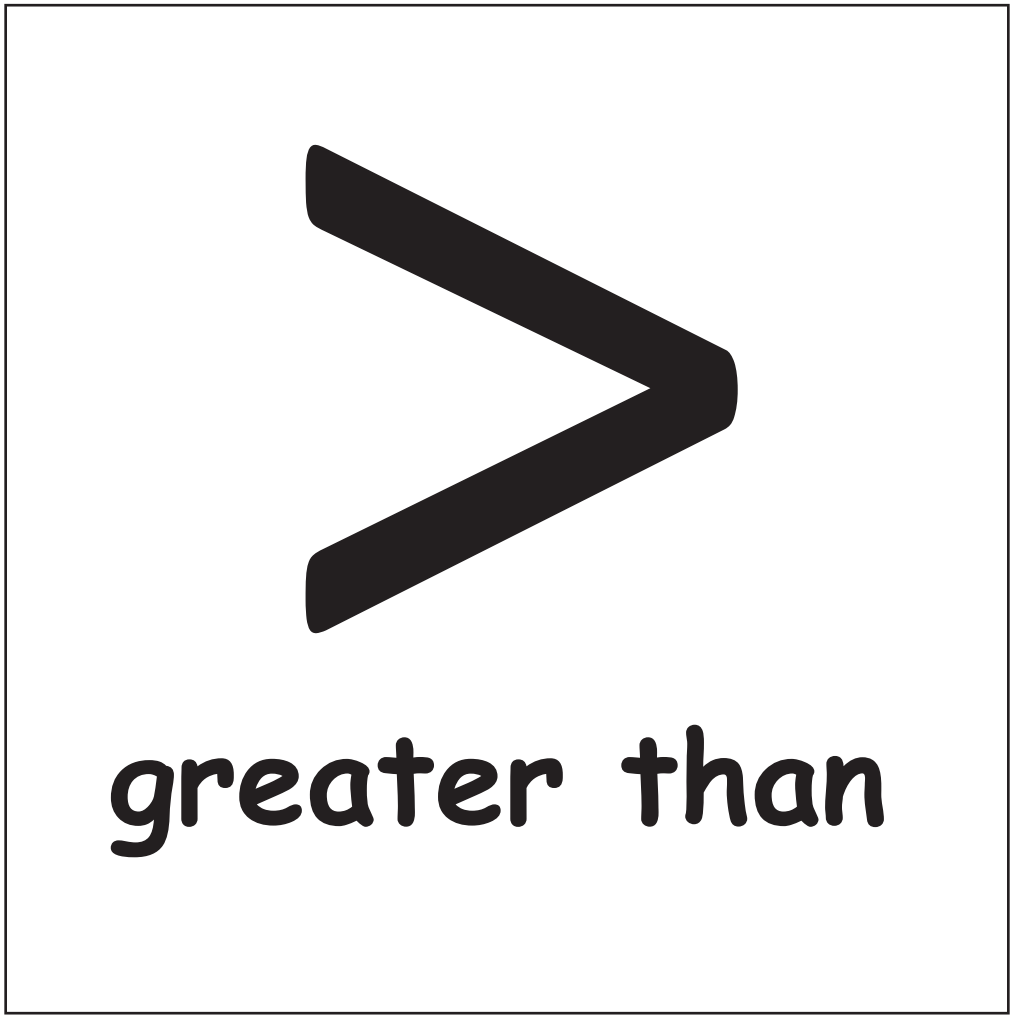
16	17
31	23
35	25
12	21
22	32
29	30
39	40

<

is *less* than

>

is *greater* than



double-sided comparison card. (Print on cardstock with next page. One copy for teacher only.)

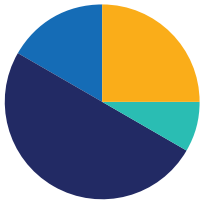
double-sided comparison card. (Print on cardstock with previous page. One copy for teacher only.)

Lesson 13

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

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(30 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Sprint: Number Sequences Within 40 **1.2D, 1.2F, 1.5A** (10 minutes)
- Digit Detective **1.2G** (5 minutes)

Sprint: Number Sequences Within 40 (10 minutes)

Materials: (S) Number Sequences Within 40 Sprint

Note: In this Sprint, students recognize forward and backward counting patterns. As with all Sprints, the sequence progresses from simple to complex, with the final quadrant being the most challenging. The last four problems of this particular Sprint involve counting by twos, a Grade 2 standard. Grade 1 students who complete enough problems to encounter this challenge may use their understanding of the relationship between counting and addition to solve these problems (**1.3D**).

Digit Detective (5 minutes)

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

Note: This fluency activity was conducted as a teacher-directed fluency in the previous lesson. 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 their place value chart but does not show their 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).

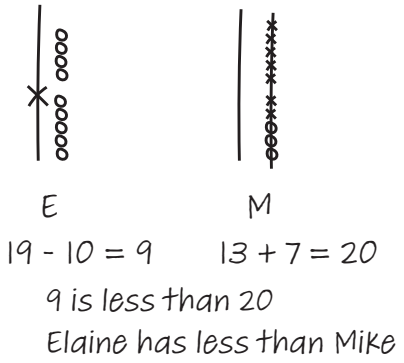
Application Problem (5 minutes)

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.

a. Use words and pictures to show how many blueberries each person has.

b. Use the term *greater than* or *less than* in your statement.

Note: During the Debrief, students write the number sentence using the proper comparative symbol. If the challenge of wielding both Elaine and Mike poses too much of a challenge for students, invite them to work in pairs and let one student be Mike and the other Elaine.



Concept Development (30 minutes)

Materials: (T) Double-sided comparison card (Lesson 12 Template), comparison cards (Lesson 9 Template), projector
(S) Comparison cards (Lesson 9 Template), erasers, personal white board

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Connect learning to areas of interest. Students who enjoy writing can be given the challenge to write their own Application Problem using tens and ones. Students can also present their problems to the class to solve.

Gather students in the meeting area with their materials.

T: (Project 28 and 37 in place value charts.) Which number is greater?

S: 37.

T: (Project or hold up the *greater than* 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. (Rewrite the numbers on either side of the symbol.)

T: We learned that this symbol is called 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: The smaller end points to the smaller number. → The open part faces the greater number.

T: Today, let's 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.)

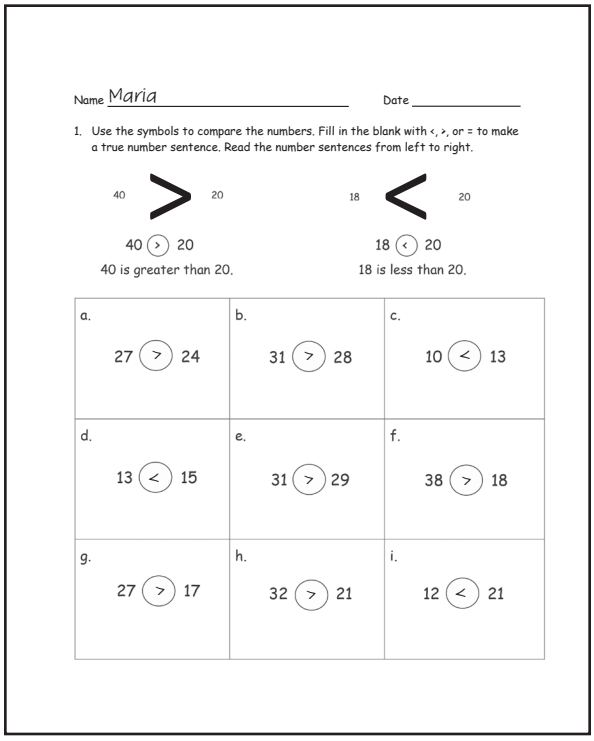
NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Add the greater than and less than symbols to the chart suggested in Lesson 8. Posting a reference chart can support students, including some emergent bilingual students, in connecting the symbolic representations with the phrases *greater than, less than*, and *equal to*.

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.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.



Name Maria Date

1. Use the symbols to compare the numbers. Fill in the blank with <, >, or = to make a true number sentence. Read the number sentences from left to right.

40 > 20 — 40 (>) 20 — 40 is greater than 20.

18 < 20 — 18 (<) 20 — 18 is less than 20.

a. 27 (>) 24	b. 31 (>) 28	c. 10 (<) 13
d. 13 (<) 15	e. 31 (>) 29	f. 38 (>) 18
g. 27 (>) 17	h. 32 (>) 21	i. 12 (<) 21

Student Debrief (10 minutes)

Lesson Objective: Use the symbols >, =, and < to compare quantities and numerals.

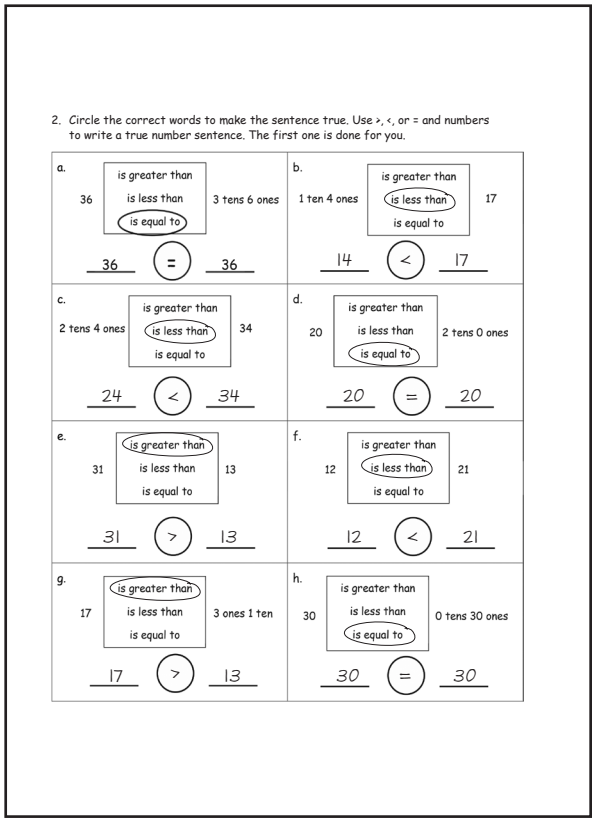
The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a

conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problems 1(a) and 1(b). How was the way you solved 1(a) different from how you solved 1(b)? Explain your thinking.
- Look at Problem 2(f). How are the numbers the same? How are they different? Compare the digit 2 in each number. How does changing the position of the digit change the value of the number?
- What are some different ways you can remember each of the symbols?
- Look at the Application Problem. How did you find the answer? Use the symbols from today's lesson to write a number sentence that matches your statement.



2. Circle the correct words to make the sentence true. Use >, <, or = and numbers to write a true number sentence. The first one is done for you.

a. 36 — (is greater than / is less than / is equal to) — 3 tens 6 ones
36 = 36

b. 1 ten 4 ones — (is greater than / is less than / is equal to) — 17
14 < 17

c. 2 tens 4 ones — (is greater than / is less than / is equal to) — 34
24 < 34

d. 20 — (is greater than / is less than / is equal to) — 2 tens 0 ones
20 = 20

e. 31 — (is greater than / is less than / is equal to) — 13
31 > 13

f. 12 — (is greater than / is less than / is equal to) — 21
12 < 21

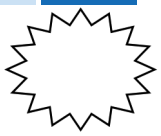
g. 17 — (is greater than / is less than / is equal to) — 3 ones 1 ten
17 > 13

h. 30 — (is greater than / is less than / is equal to) — 0 tens 30 ones
30 = 30

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

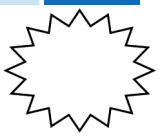
A

Number Correct: 

Name _____ Date _____

*Write the missing number in the sequence.

1.	0, 1, 2, ___		16.	15, ___, 13, 12	
2.	10, 11, 12, ___		17.	___, 24, 23, 22	
3.	20, 21, 22, ___		18.	6, 16, ___, 36	
4.	10, 9, 8, ___		19.	7, ___, 27, 37	
5.	20, 19, 18, ___		20.	___, 19, 29, 39	
6.	40, 39, 38, ___		21.	___, 26, 16, 6	
7.	0, 10, 20, ___		22.	34, ___, 14, 4	
8.	2, 12, 22, ___		23.	___, 20, 21, 22	
9.	5, 15, 25, ___		24.	29, ___, 31, 32	
10.	40, 30, 20, ___		25.	5, ___, 25, 35	
11.	39, 29, 19, ___		26.	___, 25, 15, 5	
12.	7, 8, 9, ___		27.	2, 4, ___, 8	
13.	7, 8, ___, 10		28.	___, 14, 16, 18	
14.	17, ___, 19, 20		29.	8, ___, 4, 2	
15.	15, 14, ___, 12		30.	___, 18, 16, 14	

Number Correct: 

B

Name _____ Date _____

*Write the missing number in the sequence.

1.	1, 2, 3, ___		16.	13, ___, 11, 10	
2.	11, 12, 13, ___		17.	___, 22, 21, 20	
3.	21, 22, 23, ___		18.	5, 15, ___, 35	
4.	10, 9, 8, ___		19.	4, ___, 24, 34	
5.	20, 19, 18, ___		20.	___, 17, 27, 37	
6.	30, 29, 28, ___		21.	___, 29, 19, 9	
7.	0, 10, 20, ___		22.	31, ___, 11, 1	
8.	3, 13, 23, ___		23.	___, 30, 31, 32	
9.	6, 16, 26, ___		24.	19, ___, 21, 22	
10.	40, 30, 20, ___		25.	5, ___, 25, 35	
11.	38, 28, 18, ___		26.	___, 25, 15, 5	
12.	6, 7, 8, ___		27.	2, 4, ___, 8	
13.	6, 7, ___, 9		28.	___, 12, 14, 16	
14.	16, ___, 18, 19		29.	12, ___, 8, 6	
15.	16, ___, 14, 13		30.	___, 20, 18, 16	

Name _____ Date _____

1. Use the symbols to compare the numbers. Fill in the blank with <, >, or = to make a true number sentence. Read the number sentences from left to right.

40 (>) 20

40 is greater than 20.

18 (<) 20

18 is less than 20.

a. 27 ◯ 24	b. 31 ◯ 28	c. 10 ◯ 13
d. 13 ◯ 15	e. 31 ◯ 29	f. 38 ◯ 18
g. 27 ◯ 17	h. 32 ◯ 21	i. 12 ◯ 21

2. Circle the correct words to make the sentence true. Use >, <, or = and numbers to write a true number sentence. The first one is done for you.

a. 36 | is greater than / is less than / is equal to | 3 tens 6 ones

36 = 36

b. 1 ten 4 ones | is greater than / is less than / is equal to | 17

_____ ◯ _____

c. 2 tens 4 ones | is greater than / is less than / is equal to | 34

_____ ◯ _____

d. 20 | is greater than / is less than / is equal to | 2 tens 0 ones

_____ ◯ _____

e. 31 | is greater than / is less than / is equal to | 13

_____ ◯ _____

f. 12 | is greater than / is less than / is equal to | 21

_____ ◯ _____

g. 17 | is greater than / is less than / is equal to | 3 ones 1 ten

_____ ◯ _____

h. 30 | is greater than / is less than / is equal to | 0 tens 30 ones

_____ ◯ _____

Name _____ Date _____

Circle the correct words to make the sentence 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

_____ ◯ _____

Name _____ Date _____

Use the symbols to compare the numbers. Fill in the blank with <, >, or = to make a true number sentence. Complete the number sentence with a phrase from the word bank.

40  20

40 (>) 20

40 is greater than 20.

18  20

18 (<) 20

18 is less than 20.

Word Bank

is greater than
is less than
is equal to

a. 17 ◯ 13

17 _____ 13

b. 23 ◯ 33

23 _____ 33

c. 36 ◯ 36

36 _____ 36

d. 25 ◯ 32

25 _____ 32

e. 38 ◯ 28

38 _____ 28

f. 32 ◯ 23

32 _____ 23

g. 1 ten 5 ones ◯ 14

1 ten 5 ones _____ 14

h. 3 tens ◯ 30

3 tens _____ 30

i. 29 ◯ 2 tens 7 ones

29 _____ 2 tens 7 ones

j. 19 ◯ 2 tens 3 ones

19 _____ 2 tens 3 ones

k. 3 tens 1 one ◯ 13

3 tens 1 one _____ 13

l. 35 ◯ 3 tens 5 ones

35 _____ 3 tens 5 ones

m. 2 tens 3 ones ◯ 32

2 tens 3 ones _____ 32

n. 3 tens ◯ 36

3 tens _____ 36

o. 29 ◯ 3 tens 9 ones

29 _____ 3 tens 9 ones

p. 4 tens ◯ 39

4 tens _____ 39

Topic C

Addition of Tens or Ones to a Two-Digit Number

1.3A, 1.3D, 1.3E

Focus Standards:		1.3A	Use concrete and pictorial models to determine the sum of a multiple of 10 and a one-digit number in problems up to 99.
		1.3D	Apply basic fact strategies to add and subtract within 20, including making 10 and decomposing a number leading to a 10.
		1.3E	Explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.
Instructional Days:		2	
Coherence	**-Links from:**	G1–M2	Introduction to Place Value Through Addition and Subtraction Within 20
	-Links to:	G1–M6	Place Value to 120, Comparison, Understanding Income with Addition and Subtraction to 100
		G2–M4	Addition and Subtraction Within 200 with Word Problems to 100

Topic C builds on the work students completed in Module 2 as they use basic facts, place value understanding, and addition strategies to solve problems with larger sums. Students notice the ways that smaller addition problems can help with larger ones. In Lesson 14, students add 8 + 4, 18 + 4, and 28 + 4 and notice that 8 + 4 is embedded in all three problems. This lesson connects to the work in Topic A in which students find 10 more and 10 less.

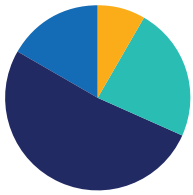
In Lesson 15, students focus on adding like place value units and making a new ten. Students recognize single-digit addition facts as they solve 16 + 2 by adding the ones to the ones. Students see that they are adding 2 ones to 6 ones, while the tens remain unchanged to make 1 ten 8 ones or 18. Students also work with problems that involve making the next ten, such as 19 + 3, as shown. They use concrete models, quick tens, and number bonds as methods for representing their thinking.

A Teaching Sequence Toward Proficiency in Addition of Tens or Ones to a Two-Digit Number	
Objective 1:	**Use single-digit sums to support solutions for analogous sums to 40. (Lesson 14)**
Objective 2:	**Add ones and ones or tens and tens. (Lesson 15)**

Lesson 14

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

Suggested Lesson Structure



Application Problems	(5 minutes)
Fluency Practice	(14 minutes)
Concept Development	(31 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Application Problems (5 minutes)

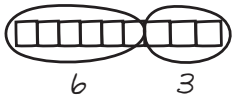
Today, students should focus on pictorial representations. They should solve without using linking cubes. They read-draw-write (RDW) to solve one or more of the problems.

a. 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?

b. 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?

c. 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.



6 + 3 = 9

Emi has 9 cubes.

7 + 5 = 12

Emi added 5 cubes.

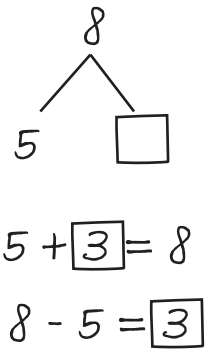
12 - 8 = 4

Emi took off 8 cubes.

Fluency Practice (14 minutes)

- Number Bond Addition and Subtraction **1.2C, 1.3D** (4 minutes)
- Make Ten Addition with Partners **1.3D** (6 minutes)
- Add Tens **1.3A** (4 minutes)

Number Bond Addition and Subtraction (4 minutes)



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.

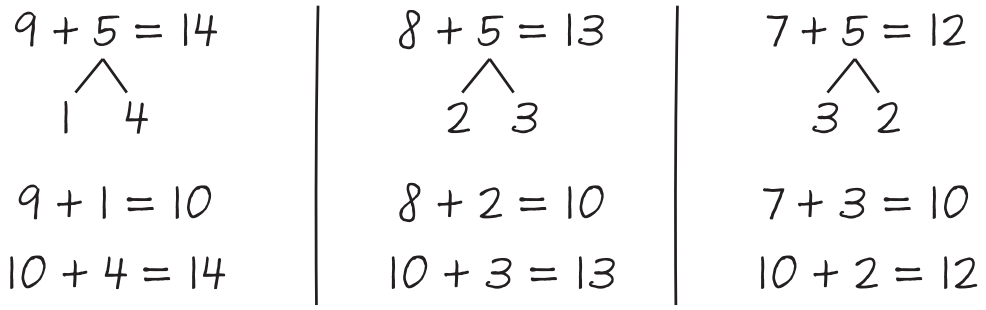
Write a number bond for a number between 0 and 10, with a missing part or whole. Students write an addition and a subtraction sentence with a box for the missing number in each equation. They then solve for the missing number.

Make Ten Addition with Partners (6 minutes)

Materials: (S) Personal white board

Note: This fluency activity reviews how to use the 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).

- Assign student pairs.
- 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 two addition sentences to show the strategy of making ten.



- Partners then exchange boards and check each other's work.

Add Tens (4 minutes)

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

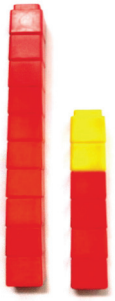
T: (Flash 3 on fingers. Pause.) Add ten. The total is…?
S: 13.
T: (Flash 3 again.) Add 2 tens. The total is…?
S: 23.

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.

Concept Development (31 minutes)

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

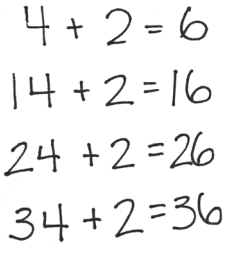
Students gather in the meeting area with their materials.



- 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.)
- S: 24 + 2 = 26.
- T: (Record on the chart.) What do you think I'll do next? Turn and talk to your partner.
- 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.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Provide opportunities for students to practice their math facts within 10 throughout the day. Students needing more support with proficiency in the grade-level fluency goal benefit from focused extra practice. Elicit from them which facts they find challenging to understand in order to determine that focus. Keep families informed of these details, and offer effective ways they can support the students.

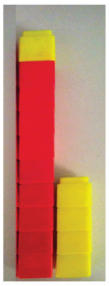


T: Great observations! Let's try another problem.

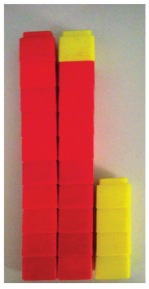
T: (Write and show 9 + 5 with 9 red and 5 yellow linking cubes.) Talk to your partner about how you can solve 9 + 5.

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…?

S: 24.

T: When you show 19 as tens and ones, you can see the simpler problem, 9 + 5. (Write the number bond for 19 as 10 and 9.) 9 + 5 is…?

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…?

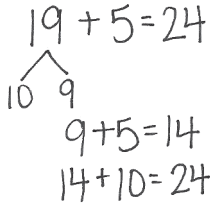
S: 14.

T: 20 more than 14 is…?

S: 34.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

The reference to making a simpler problem is used throughout the lesson. Support students, including some emergent bilingual students, with the meaning of *simpler* by asking students to define it in their own words. Elaborate on why using what we already know helps them to solve the problem.



T: 29 + 5 is…?

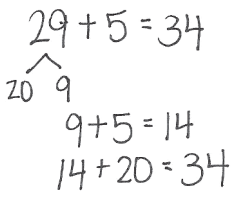
S: 34.

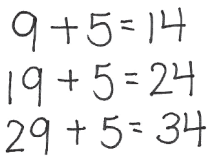
T: Using your number bond, let's write the two number sentences that helped us solve this problem.

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.

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

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Choose just right numbers to provide ample opportunities for students to experience success and build confidence in their math skills.

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.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.

Student Debrief (10 minutes)

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

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

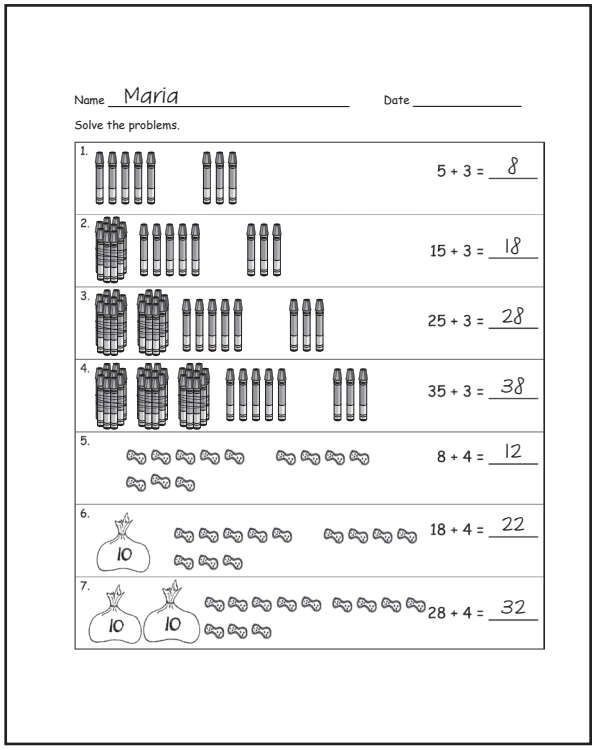
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- How did looking for patterns help you solve the problems on the second page of your Problem Set?
- Look at Problem 8(a–d) and 8(i–k). In (a–d), the tens in the answers are the same as the tens in the first addend of each problem, but in (i–k), the tens in the answers do not match the tens in the first addends. Explain why this is so.
- You solved 36 + 2 in Problem 8(d). How can this problem help you solve 36 + 3? How can knowing 36 + 3 then help us solve 26 + 3?
- What new strategy did you learn to solve addition problems when one addend is a two-digit number?
- Look at the Application Problems and the answers from the Problem Set. Find the related addition sentence that could have helped you solve the subtraction problem.

Exit Ticket (3 minutes)

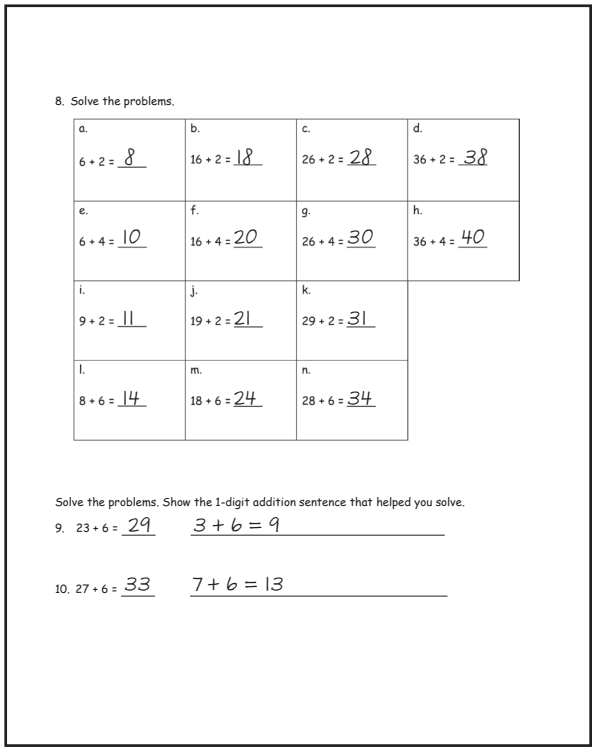
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



Name Maria Date

Solve the problems.

1. 5 + 3 = 8
2. 15 + 3 = 18
3. 25 + 3 = 28
4. 35 + 3 = 38
5. 8 + 4 = 12
6. 18 + 4 = 22
7. 28 + 4 = 32



8. Solve the problems.

a. 6 + 2 = 8	b. 16 + 2 = 18	c. 26 + 2 = 28	d. 36 + 2 = 38
e. 6 + 4 = 10	f. 16 + 4 = 20	g. 26 + 4 = 30	h. 36 + 4 = 40
i. 9 + 2 = 11	j. 19 + 2 = 21	k. 29 + 2 = 31	
l. 8 + 6 = 14	m. 18 + 6 = 24	n. 28 + 6 = 34	

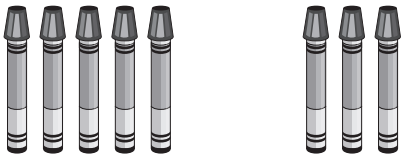
Solve the problems. Show the 1-digit addition sentence that helped you solve.

9. 23 + 6 = 29 3 + 6 = 9

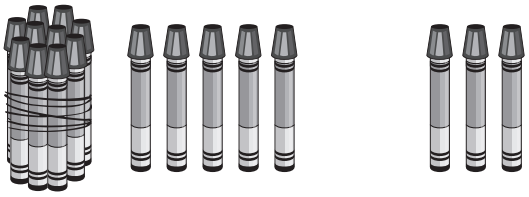
10. 27 + 6 = 33 7 + 6 = 13

Name _____ Date _____

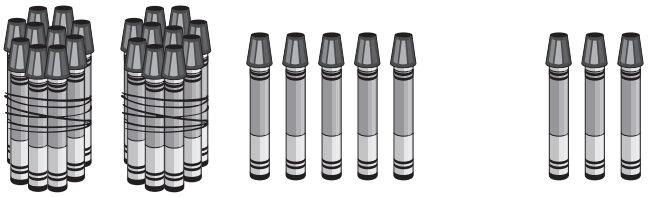
Solve the problems.

1. 

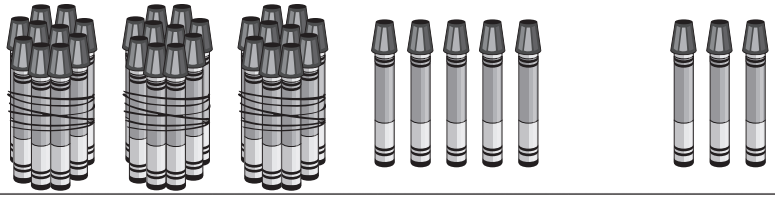
5 + 3 = _____

2. 

15 + 3 = _____

3. 

25 + 3 = _____

4. 

35 + 3 = _____

5. 

8 + 4 = _____

6. 

18 + 4 = _____

7. 

28 + 4 = _____

8. Solve the problems.

a. 6 + 2 = _____	b. 16 + 2 = _____	c. 26 + 2 = _____	d. 36 + 2 = _____
e. 6 + 4 = _____	f. 16 + 4 = _____	g. 26 + 4 = _____	h. 36 + 4 = _____
i. 9 + 2 = _____	j. 19 + 2 = _____	k. 29 + 2 = _____	
l. 8 + 6 = _____	m. 18 + 6 = _____	n. 28 + 6 = _____	

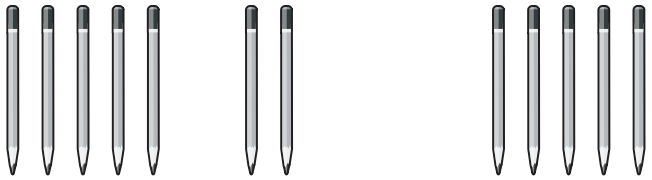
Solve the problems. Show the 1-digit addition sentence that helped you solve.

9. 23 + 6 = _____ _____

10. 27 + 6 = _____ _____

Name _____ Date _____

1. Solve the problems.

a. 

7 + 5 = _____

b. 

17 + 5 = _____

c. 

27 + 5 = _____

Solve the problems.

2. a. 5 + 3 = _____

   b. 15 + 3 = _____

   c. 25 + 3 = _____

   d. 35 + 3 = _____

3. a. 5 + 8 = _____

   b. 15 + 8 = _____

   c. 25 + 8 = _____

Name _____ Date _____

Solve the problems.

1. 

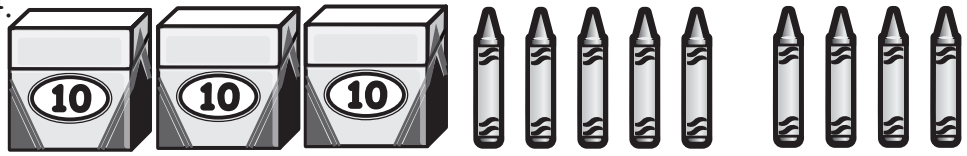
5 + 4 = _____

2. 

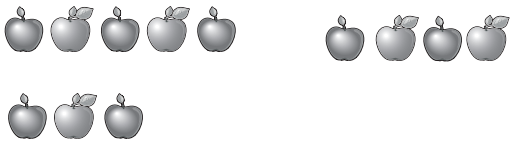
15 + 4 = _____

3. 

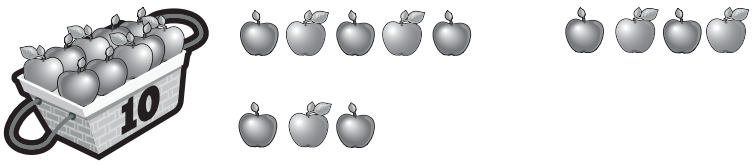
25 + 4 = _____

4. 

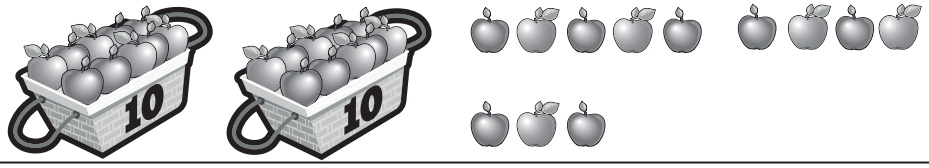
35 + 4 = _____

5. 

8 + 4 = _____

6. 

18 + 4 = _____

7. 

28 + 4 = _____

Use the first number sentence in each set to help you solve the other problems.

8. a. 5 + 2 = _____ b. 15 + 2 = _____ c. 25 + 2 = _____ d. 35 + 2 = _____	9. a. 5 + 5 = _____ b. 15 + 5 = _____ c. 25 + 5 = _____ d. 35 + 5 = _____
10. a. 2 + 7 = _____ b. 12 + 7 = _____ c. 22 + 7 = _____	11. a. 7 + 4 = _____ b. 17 + 4 = _____ c. 27 + 4 = _____
12. a. 8 + 7 = _____ b. 18 + 7 = _____ c. 28 + 7 = _____	13. a. 3 + 9 = _____ b. 13 + 9 = _____ c. 23 + 9 = _____

Solve the problems. Show the 1-digit addition sentence that helped you solve.

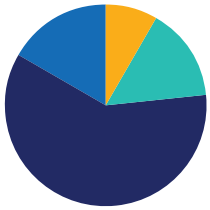
14. 24 + 5 = _____ _____

15. 24 + 7 = _____ _____

Lesson 15

Objective: Add ones and ones or make a new ten.

Suggested Lesson Structure



Application Problems	(5 minutes)
Fluency Practice	(9 minutes)
Concept Development	(36 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Application Problems (5 minutes)

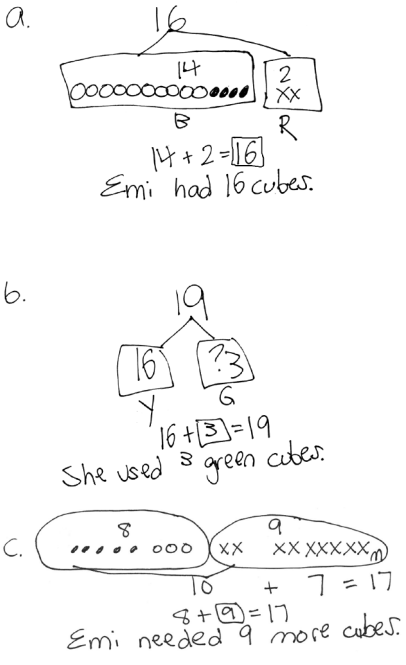
Use the RDW process to solve one or more of the problems without using linking cubes.

a. Emi had a linking cube train with 14 blue cubes and 2 red cubes. How many cubes were in her train?

b. 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?

c. 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 Application Problems solved throughout the past few days. Make note of students who were successful with the earlier sets but needed support with the problem today. These students may find it challenging to envision 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.



Fluency Practice (9 minutes)

- Analogous Addition Sentences **1.5C, 1.5G** (5 minutes)
- Digit Detective **1.2A, 1.2B** (4 minutes)

Analogous Addition Sentences (5 minutes)

Materials: (S) Personal white board, one die

Note: This fluency activity reviews yesterday's lesson. 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

Digit Detective (4 minutes)

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.

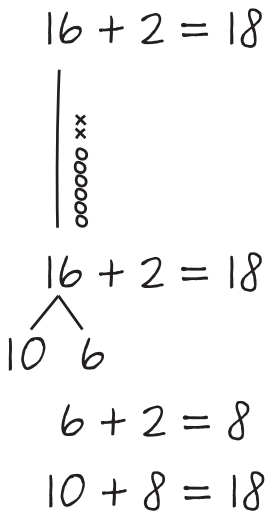
T: The digit in the tens place is 1 more than 2. The digit in the ones place is equal to 7 – 4. What's my number? (Snap.)
S: 33.
T: The digit in the ones place is equal to 2 + 6. The digit in the tens place is equal to 8 – 6. What's my number? (Snap.)
S: 28.

As with the above example, begin with simple clues, and gradually increase the complexity.

Concept Development (36 minutes)

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

T: (Write 16 + 2.) Use your linking cubes to show how you would solve 16 + 2.
S: (Solve.)
T: Share your work with your partner.
T: Let's make quick ten drawings to show how we solved with our cubes. Start by drawing 16.
S: (Draw 16 on their personal white board.)
T: Let's add 2 ones. Should we add to the ones or to the tens? How do you know?
S: Add to the ones, because I know that 16 has 6 ones in the ones place. You can add 6 ones and 2 ones. → 6 + 2 = 8 is a fact I know.
T: You're right! Let's 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. → I can see how many tens and how many ones.
T: 6 and 2 is…?
S: 8.
T: (Write 6 + 2 = 8.) 10 and 8 is…?
S: 18.
T: (Write 10 + 8 = 18.)
T: Let's try another one! (Write 19 + 3.) How many cubes do I start with?
S: 19 cubes. → 1 ten-stick and 9 ones.
T: (Show 19 + 3 with cubes.) Turn and talk to your partner about how you can solve 19 + 3.



While students discuss 19 + 3, circulate and listen for them saying that they would add to the ones, count on, or make a ten.

T: (Ask for student volunteers to share their strategies.)
S: We can add the ones together first. Then, we can add on the ten. → We know that 19 is close to 20. So, we can make a ten.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Giving students an opportunity to share their thinking allows them to evaluate their process and practice. Students who need more support, including some emergent bilingual students, benefit from hearing other students verbally explain their ideas.

Support students with responding to the question, "How do you know?" by providing the sentence frame, I know _____ because _____.

T: Good thinking! Just like we did yesterday, let's add the ones together. We can represent our work using a number bond. Which number do we break apart to add the ones?

S: We break apart 19 into 10 and 9. We can add 9 and 3 first, and then add 10.

T: Yes. (Make a number bond as shown to the right.) 9 and 3 is…?

S: 12.

T: (Write 9 + 3 = 12.) 12 and 10 is…?

S: 22.

T: (Write 12 + 10 = 22.) So, 19 + 3 is…?

S: 22.

T: Let's solve 19 + 3 a different way. (Write 19 + 3 = ___.) We know that 19 is close to the next ten, which is 20. How many more does 19 need to get to 20?

S: 1 more.

T: Where can we get 1 more?

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: So, 19 + 3 is…?

S: 22.

T: Let's record what we did by using a number bond. Can we make a ten?

S: Yes!

T: Which number is closest to a ten, 19 or 3?

S: 19.

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: So we can break 3 into…?

S: 1 and 2.

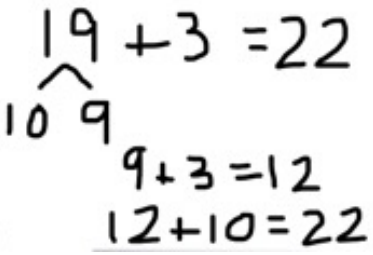
T: (Make a number bond as shown to the right.) 19 and 1 is …?

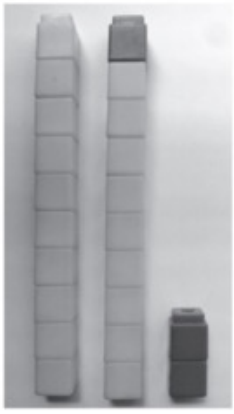
S: 20.

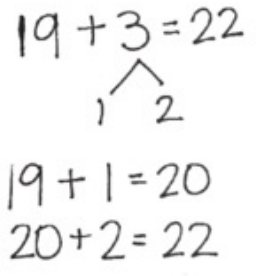
T: (Write 19 + 1 = 20.) 20 and 2 is…?

S: 22.

T: (Write 20 + 2 = 22.) This time I made the next ten or got to a ten. I can add ones to a ten in my head. 2 tens 2 ones is 22.







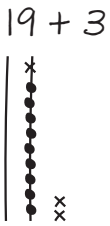
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Give students an opportunity to choose which tools support them best in representing their thinking (e.g., linking cubes, quick ten drawings, number bonds). Some students may need to practice one method of representation at a time. If students are ready for a challenge, encourage them to consider using various tools and strategies for solving the same problem.

T: Let's stop and think. When we have an addition problem, what is a good question to ask ourselves before adding? (Point to 16 + 2 and 19 + 3.)

S: What strategy do we want to use? → Can I add the ones to the ones? → Can I make a ten? → If I add the ones, will I make a new ten?

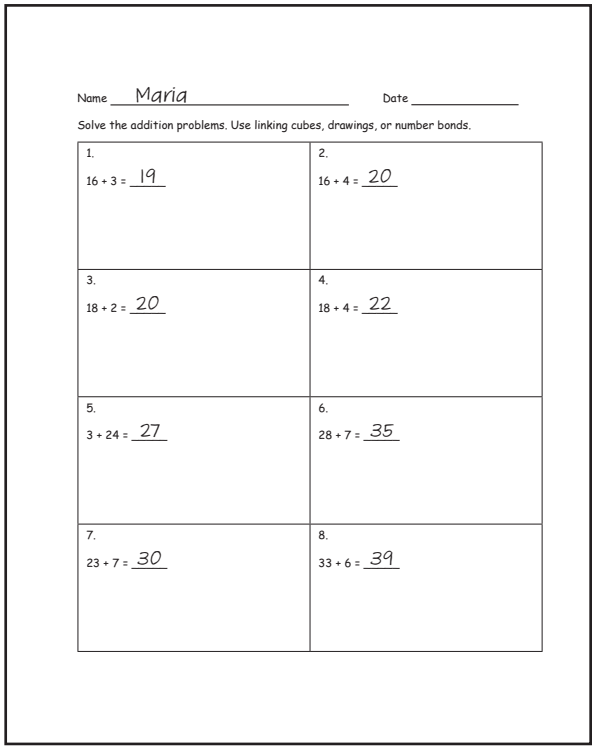
Have students work through the following suggested sequence with a partner. When appropriate, encourage students to draw quick tens to show how they solved the problem. (See the image to the right.)



- 18 + 2 and 18 + 4
- 25 + 4 and 25 + 7
- 36 + 3 and 29 + 6

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first.



Name Maria Date

Solve the addition problems. Use linking cubes, drawings, or number bonds.

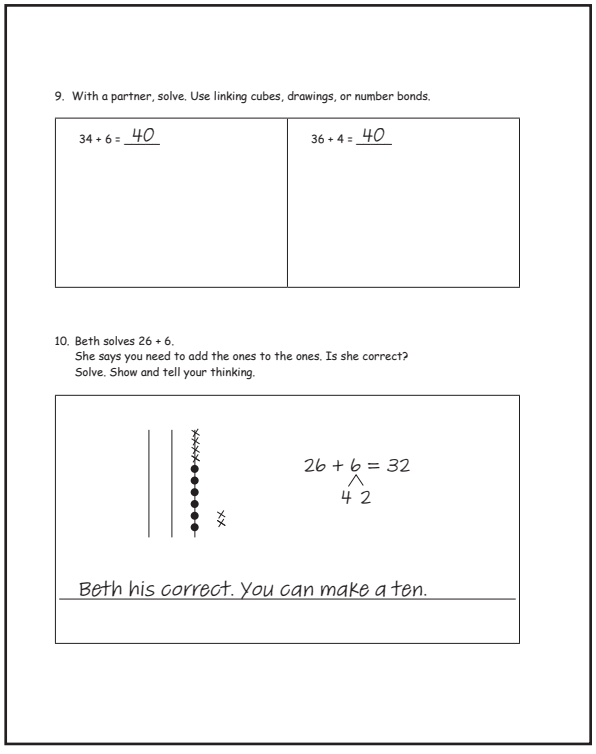
1. 16 + 3 = 19	2. 16 + 4 = 20
3. 18 + 2 = 20	4. 18 + 4 = 22
5. 3 + 24 = 27	6. 28 + 7 = 35
7. 23 + 7 = 30	8. 33 + 6 = 39

Student Debrief (10 minutes)

- What was different about solving Problem 1 from solving Problem 2?
- How could Problem 3 help you solve Problem 4?
- For Problem 5, a student says 3 + 24 = 54. Can you help them understand their mistake?
- For Problem 9, what was the same? What was different?
- Today, how did you decide whether to add the ones to the ones or to make a new ten?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



9. With a partner, solve. Use linking cubes, drawings, or number bonds.

34 + 6 = 40	36 + 4 = 40

10. Beth solves 26 + 6.
She says you need to add the ones to the ones. Is she correct?
Solve. Show and tell your thinking.

26 + 6 = 32
4 2

Beth his correct. You can make a ten.

Name _____ Date _____

Solve the addition problems. Use linking cubes, drawings, or number bonds.

1. 16 + 3 = _____	2. 16 + 4 = _____
3. 18 + 2 = _____	4. 18 + 4 = _____
5. 3 + 24 = _____	6. 28 + 7 = _____
7. 23 + 7 = _____	8. 33 + 6 = _____

9. With a partner, solve. Use linking cubes, drawings, or number bonds.

34 + 6 = _____	36 + 4 = _____

10. Beth solves 26 + 6.
She says you need to add the ones to the ones. Is she correct?
Solve. Show and tell your thinking.

Name _____ Date _____

Solve the addition problems. Use linking cubes, drawings, or number bonds.

24 + 5 = _____	18 + 7 = _____

Name _____ Date _____

Solve the addition problems. Use drawings or number bonds.

1. 17 + 2 = _____	2. 17 + 3 = _____
3. 14 + 3 = _____	4. 29 + 4 = _____
5. 6 + 24 = _____	6. 32 + 7 = _____

7. In which problems would you make a new ten? Circle them.

   a. 22 + 1

   b. 13 + 6

   c. 37 + 3

   d. 3 + 36

   e. 22 + 8

8. Ben solves 6 + 15.
   He says the answer is 75. What should Ben do differently next time?
   Solve the problem correctly.

Topic D

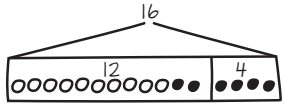
Varied Problem Types Within 20

1.3B, 1.3E, 1.3F, 1.5D

Focus Standards:		1.3B	Use objects and pictorial models to solve word problems involving joining, separating, and comparing sets within 20 and unknowns as any one of the terms in the problem such as 2 + 4 = [ ]; 3 + [ ] = 7; and 5 = [ ] − 3.
		1.3E	Explain strategies used to solve addition and subtraction problems up to 20 using spoken words, objects, pictorial models, and number sentences.
		1.3F	Generate and solve problem situations when given a number sentence involving addition or subtraction of numbers within 20.
		1.5D	Represent word problems involving addition and subtraction of whole numbers up to 20 using concrete and pictorial models and number sentences.
Instructional Days:		4	
Coherence	**-Links from:**	G1–M2	Introduction to Place Value Through Addition and Subtraction Within 20
	-Links to:	G1–M6	Place Value to 120, Comparison, Understanding Income with Addition and Subtraction to 100
		G2–M4	Addition and Subtraction Within 200 with Word Problems to 100

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 D, 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 strip diagram to the right.



Strip Diagram

In Lesson 16, students are presented with *join/separate with total unknown* and *add to with result unknown* word problems within 20 (**1.3B, 1.5D**). As they solve, they draw and box the two parts and then include the numeral label within the box, producing strip 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 17 and 18 allow students to explore number relationships as they solve *join/separate 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 strip 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 **(1.3E)**. 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 19, students use their experiences and understanding to write their own word problems of varied types based on given strip diagrams (**1.3F**).

While the addition and subtraction within the problems for Topic D are within 20, fluency work continues to support students' skill and understanding from Topics A through C using numbers to 40.

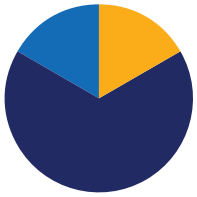
A Teaching Sequence Toward Proficiency in Varied Problem Types Within 20	
Objective 1:	**Use strip diagrams as representations to solve *join/separate with total unknown* and *add to with result unknown* word problems. (Lesson 16)**
Objective 2:	**Recognize and make use of part–whole relationships within strip diagrams when solving a variety of problem types. (Lessons 17–18)**
Objective 3:	**Write word problems of varied types. (Lesson 19)**

Lesson 16

Objective: Use strip diagrams as representations to solve *join/separate with total unknown* and *add to with result unknown* word problems.

Suggested Lesson Structure

Fluency Practice	(10 minutes)
Concept Development	(40 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**



Fluency Practice (10 minutes)

- Sprint: Analogous Addition Within 40 **1.5C, 1.5G** (10 minutes)

Sprint: Analogous Addition Within 40 (10 minutes)

Materials: (S) Analogous Addition Within 40 Sprint

Note: The progression of this Sprint mirrors the progression of concepts taught in Topic C thus far. It begins with addition sentences conducive to counting on, transitions into sentences in which the sums of the ones are less than ten, and ends with problems that cross ten.

Concept Development (40 minutes)

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 *join* 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 strip diagram within the Read-Draw-Write (RDW) process:

- Read the problem.
- Draw and label.
- Write a number sentence (equation).
- Write a word sentence (statement).

Teachers may support the process by encouraging their students to ask themselves questions such as

- What do I see?
- Can I draw something?
- What conclusions can I make from my drawing?

In Lesson 19, students grapple with solving both addition and subtraction problem types. Have students keep the Problem Sets from Lessons 16-18 in a folder for use in Lesson 19.

Have students locate the Problem Sets, and work from their seats.

T: (Project Problem 1 on the board.) Let's read the problem together.

T/S: Lee saw 6 yellow squashes and 7 pumpkins growing in his garden. How many plants did he see growing in his garden?

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.

T/S: (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 strip 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.)

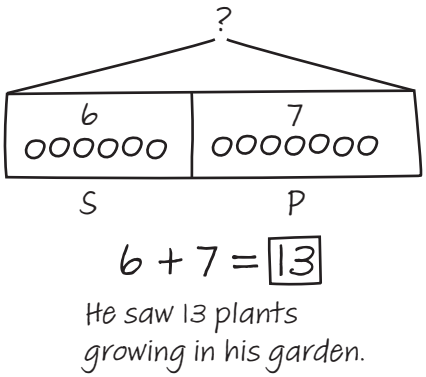
T: (If the 6 squashes are not inside a rectangle or circle to show the part, include this next sentence.) The label helps find this part of the drawing. Let's put a rectangle around it, so I can keep track of this part.

T: How many are there?

S: 6.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Appropriate scaffolds help all students feel successful. Some students, including some emergent bilingual students, may use translators, interpreters, or sentence frames to present their solutions or respond to feedback. Models shared may include concrete manipulatives.



Problem 1: Lee saw 6 squashes and 7 pumpkins growing in his garden. How many plants did he see growing in his garden?

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

If anticipating that students will be unsuccessful 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.

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: They wrote 6 next to their picture.

Repeat the process asking about the pumpkins, using the same student work sample.

T: (Ask a student to read the question from the story again for the class.) How many plants are there?

S: 13 plants.

T: So, from here (pointing to one end of the squashes) to here (pointing to the other end of the pumpkins), we have 13 plants?

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 **strip diagram**. If you didn't show this in your drawing, add it now.

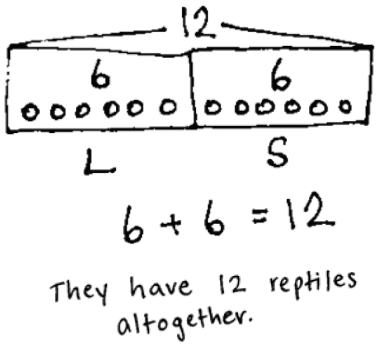
Repeat the process for each of the next problems. Use the questions to move students toward placing rectangles around each part and labeling with the number inside the part, as well as using a letter label outside of the shape. Encourage students to make their rectangles touch, so that they have one 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.

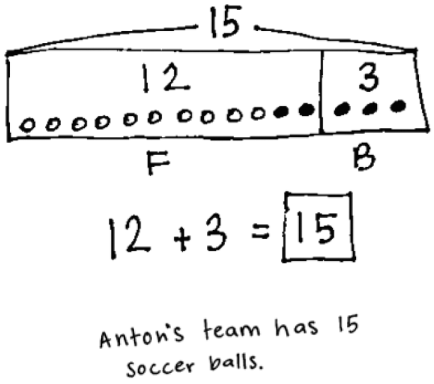
- How could using a color change at 10 help you keep track of the number of soccer balls on the field?

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.

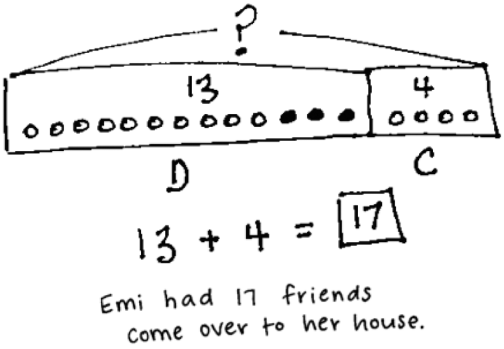
Choose probing questions appropriate to the successes and challenges of the class. Encourage early finishers to write their own word problems on another sheet of paper. They can write the problem on one side and then write the solution using a drawing, number sentence, and statement on the other side.



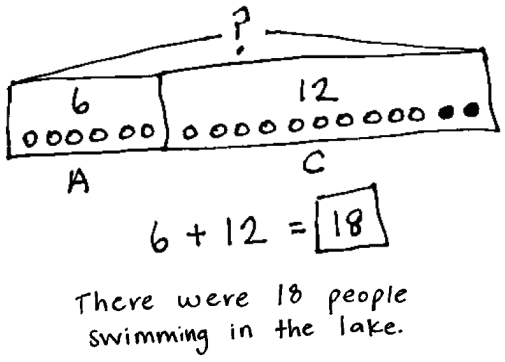
Problem 2: Kiana caught 6 lizards. Her brother caught 6 snakes. How many reptiles do they have altogether?



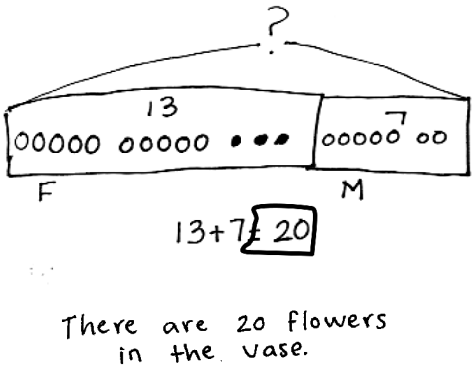
Problem 3: Anton's team has 12 soccer balls on the field and 3 soccer balls in the coach's bag. How many soccer balls does Anton's team have?



Problem 4: Emi had 13 friends over for dinner. 4 more friends came over for cake. How many friends came over to Emi's?



Problem 5: 6 adults and 12 children were swimming in the lake. How many people were swimming in the lake?



Problem 6: Rose has a vase with 13 flowers. She puts 7 more flowers in the vase. How many flowers are in the vase?

Student Debrief (10 minutes)

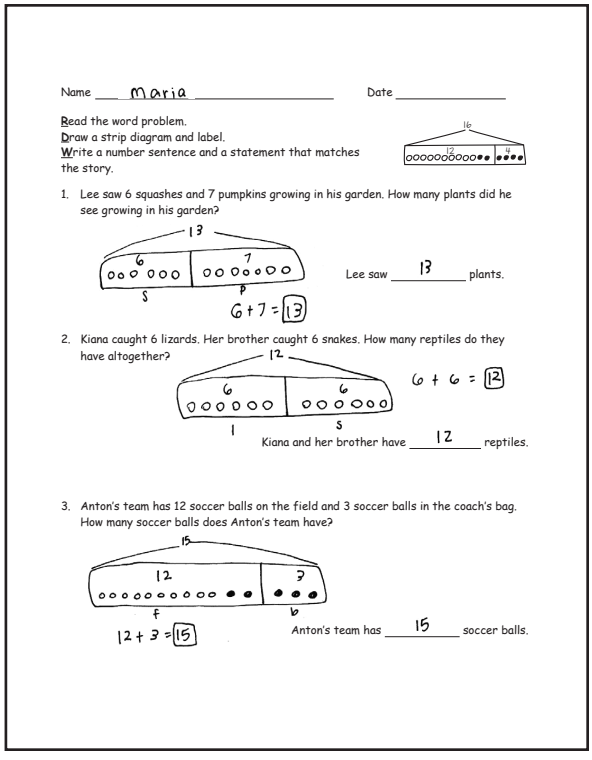
Lesson Objective: Use strip diagrams as representations to solve *join/separate with total unknown* and *add to with result unknown* word problems.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Guide students in a conversation to debrief the Problem Set and process the lesson. Look for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to lead the discussion.

- Today, we called our drawings **strip 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 strip 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 strip 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?


Name Maria Date

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.

1. Lee saw 6 squashes and 7 pumpkins growing in his garden. How many plants did he see growing in his garden?

6 + 7 = 13

Lee saw 13 plants.

2. Kiana caught 6 lizards. Her brother caught 6 snakes. How many reptiles do they have altogether?

6 + 6 = 12

Kiana and her brother have 12 reptiles.

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?

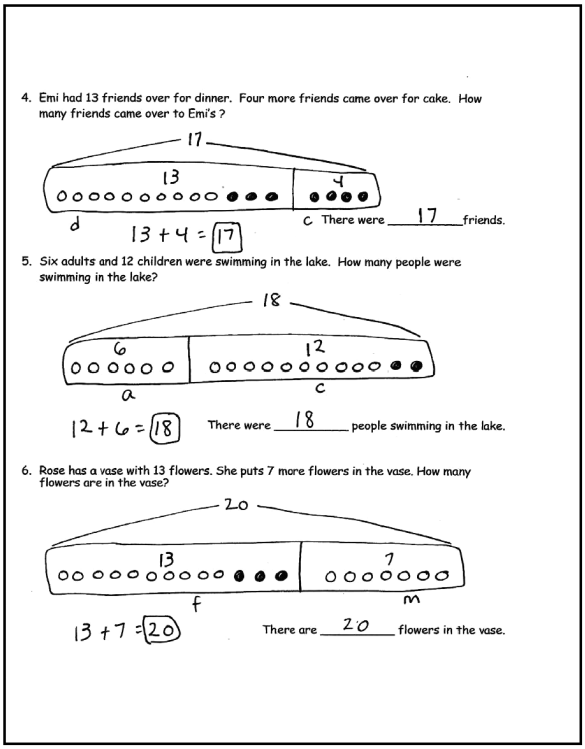
12 + 3 = 15

Anton's team has 15 soccer balls.

- What do you notice about the story problems we completed today?
- Who created a problem that joins two known parts to find an unknown total? Share your story problem with the class.
- You know your strip diagram has good labels when you can tell the story by looking at it. Who can use the strip diagram to tell the soccer ball story?
- How can a strip diagram help us share our thinking?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.


4. Emi had 13 friends over for dinner. Four more friends came over for cake. How many friends came over to Emi's ?

17
13 4
d c There were 17 friends.
13 + 4 = 17

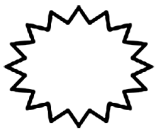
5. Six adults and 12 children were swimming in the lake. How many people were swimming in the lake?

18
6 12
a c
12 + 6 = 18 There were 18 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?

20
13 7
f m
13 + 7 = 20 There are 20 flowers in the vase.

A

Number Correct: 

Name _____ Date _____

*Write the missing number.

1.	6 + 1 = ☐		16.	6 + 3 = ☐	
2.	16 + 1 = ☐		17.	16 + 3 = ☐	
3.	26 + 1 = ☐		18.	26 + 3 = ☐	
4.	5 + 2 = ☐		19.	4 + 5 = ☐	
5.	15 + 2 = ☐		20.	15 + 4 = ☐	
6.	25 + 2 = ☐		21.	8 + 2 = ☐	
7.	5 + 3 = ☐		22.	18 + 2 = ☐	
8.	15 + 3 = ☐		23.	28 + 2 = ☐	
9.	25 + 3 = ☐		24.	8 + 3 = ☐	
10.	4 + 4 = ☐		25.	8 + 13 = ☐	
11.	14 + 4 = ☐		26.	8 + 23 = ☐	
12.	24 + 4 = ☐		27.	8 + 5 = ☐	
13.	5 + 4 = ☐		28.	8 + 15 = ☐	
14.	15 + 4 = ☐		29.	28 + ☐ = 33	
15.	25 + 4 = ☐		30.	25 + ☐ = 33	

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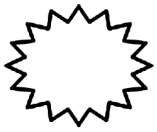
Number Correct: 

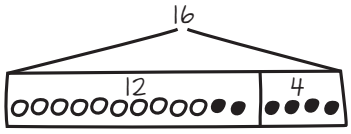
Name _____ Date _____

*Write the missing number.

1.	5 + 1 = ☐		16.	6 + 3 = ☐	
2.	15 + 1 = ☐		17.	16 + 3 = ☐	
3.	25 + 1 = ☐		18.	26 + 3 = ☐	
4.	4 + 2 = ☐		19.	3 + 5 = ☐	
5.	14 + 2 = ☐		20.	15 + 3 = ☐	
6.	24 + 2 = ☐		21.	9 + 1 = ☐	
7.	5 + 3 = ☐		22.	19 + 1 = ☐	
8.	15 + 3 = ☐		23.	29 + 1 = ☐	
9.	25 + 3 = ☐		24.	9 + 2 = ☐	
10.	6 + 2 = ☐		25.	9 + 12 = ☐	
11.	16 + 2 = ☐		26.	9 + 22 = ☐	
12.	26 + 2 = ☐		27.	9 + 5 = ☐	
13.	4 + 3 = ☐		28.	9 + 15 = ☐	
14.	14 + 3 = ☐		29.	29 + ☐ = 34	
15.	24 + 3 = ☐		30.	25 + ☐ = 34	

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.



1. Lee saw 6 squashes and 7 pumpkins growing in his garden. How many plants did he see growing in his garden?

Lee saw _____ plants.

2. Kiana caught 6 lizards. Her brother caught 6 snakes. How many reptiles do they have altogether?

Kiana and her brother have _____ reptiles.

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?

Anton's team has _____ soccer balls.

4. Emi had 13 friends over for dinner. 4 more friends came over for cake. How many friends came over to Emi's?

There were _____ friends.

5. 6 adults and 12 children were swimming in the lake. How many people were swimming in the lake?

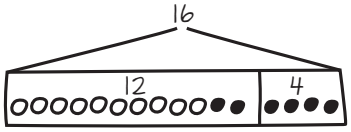
There were _____ people swimming in the lake.

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.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.

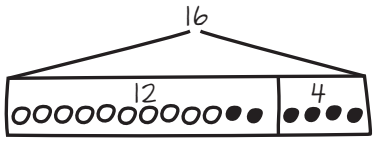


Peter counted 14 ladybugs in a garden, and Lee counted 6 ladybugs outside of the garden. How many ladybugs did they count in all?

They counted _____ ladybugs.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.



1. Darnel is playing with his 4 red robots. Ben joins him with 13 blue robots. How many robots do they have altogether?

They have _____ robots.

2. Rose and Emi had a jump rope contest. Rose jumped 14 times, and Emi jumped 6 times. How many times did Rose and Emi jump?

They jumped _____ times.

3. Pedro counted the airplanes taking off and landing at the airport. He saw 7 airplanes take off and 6 airplanes land. How many airplanes did he count altogether?

Pedro counted _____ airplanes.

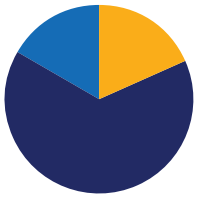
4. Tamra and Juan scored all the points for their team in their basketball game. Tamra scored 13 points, and Juan scored 5 points. What was their team's score for the game?

The team's score was _____ points.

Lesson 17

Objective: Recognize and make use of part–whole relationships within strip diagrams when solving a variety of problem types.

Suggested Lesson Structure



Fluency Practice	(11 minutes)
Concept Development	(39 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (11 minutes)

- Beep Counting by Ones and Tens **1.5A, 1.5C** (2 minutes)
- Number Bond Addition and Subtraction **1.2C, 1.3D, 1.5G** (4 minutes)
- Addition and Subtraction with Cards **1.2E, 1.5G** (5 minutes)

Beep Counting by Ones and Tens (2 minutes)

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.

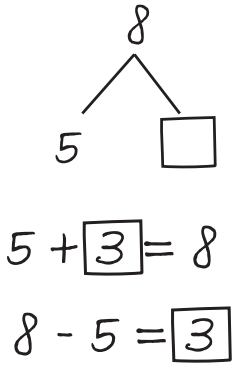
Say a series of four numbers, but replace one of the numbers with the word "beep" (e.g., "1, 2, 3, beep"). When signaled, students say the number that was replaced by the word "beep" in the sequence. Scaffold number sequences, beginning with simple sequences and moving to more complex ones. Choose sequences 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 (4 minutes)

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 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.

Addition and Subtraction with Cards (5 minutes)

Materials: (S) Addition and subtraction cards, Sets A and B (Lesson 17 Fluency Template)

Note: This fluency game reviews the problem types introduced in this module, as well as subtraction from Module 2. Cards in Set A focus on adding or subtracting 1 or 10, while cards in Set B focus on adding or subtracting a one-digit number to or from a two-digit number. Consider the needs of students when distributing sets of cards. Save cards for use during centers or other times of the day.

Distribute a set of cards to each student pair. Have students play Addition and Subtraction with Cards according to the following directions:

- Student pairs place the deck of cards facedown between them.
- Each partner flips over one card, solves the problem, and then says the number sentence.
- 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 1–2 minutes 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 playing time.

Concept Development (39 minutes)

Materials: (S) Problem Set, highlighter

Note: 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.

NOTES ON 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.

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 Application Problems from Topic C 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.

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Appropriate scaffolds help all students feel successful. Some students, including some emergent bilingual students, may use translators, interpreters, or sentence frames to present their solutions or respond to feedback. Models shared may include concrete manipulatives.

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.

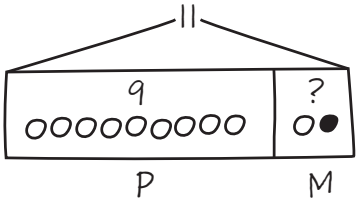
Ask questions to help students recognize how each part of their drawing matches the story and solution. This helps students begin to see how the same process can help them solve varying word problems. Keep at least one chart paper sample of each solution for reference later in the lesson.

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 they separate them from the part consisting of the dogs that came later?
- What label did they use for the total number of dogs?
- Where did they put the label for the total number of dogs? How did that help?



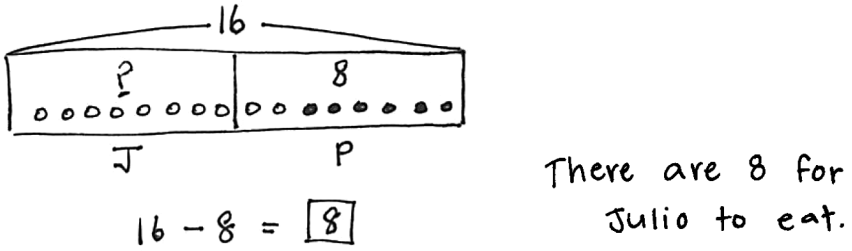
Two more dogs came to the park.

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?

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.

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?



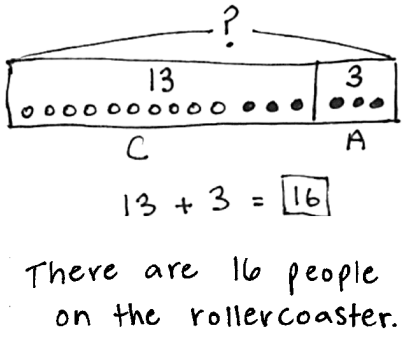
Problem 2: 16 strawberries are in a basket for Peter and Julio. Peter eats 8 of them. How many are there for Julio to eat?

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.



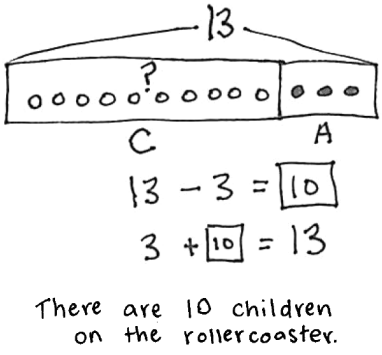
Problem 3: 13 children are on the roller coaster. 3 adults are on the roller coaster. How many people are on the roller coaster?

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 Debrief, Problems 3 and 4 are compared.

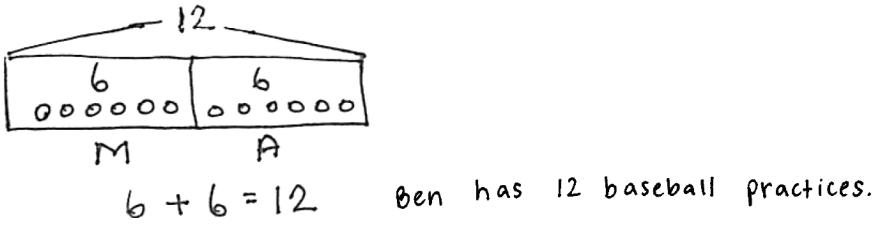


Problem 4: 13 people are on the roller coaster now. 3 adults are on the roller coaster, and the rest are children. How many children are on the roller coaster?

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?

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 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?

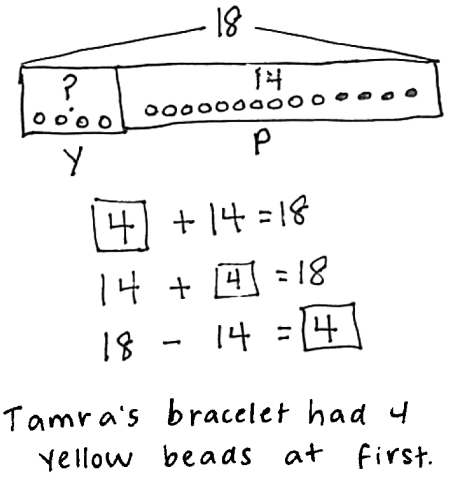
Problem 6

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?

As an *add to with start unknown* problem type, this is most likely the most challenging problem of the set.

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.

The number sentences are written. The most probable solution equation would be the center one, 14 + ___ = 18. Not many first graders will opt to start with a part unknown or subtract 14 from 18.



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?

Student Debrief (10 minutes)

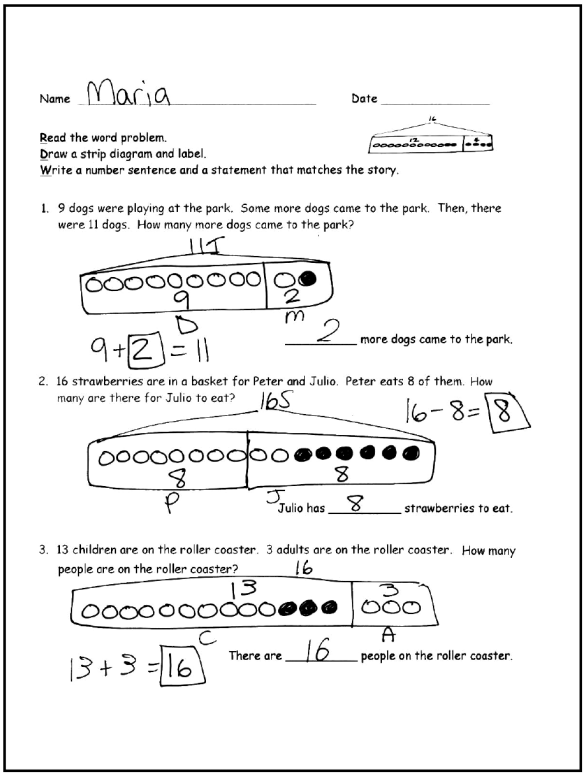
Lesson Objective: Recognize and make use of part–whole relationships within strip diagrams when solving a variety of problem types.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Guide students in a conversation to debrief the Problem Set and process the lesson. Look for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of 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 strip 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 strip diagram. Why do we draw the circles sometimes? Why do we just use numbers at times?


Name Maria Date

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.

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?

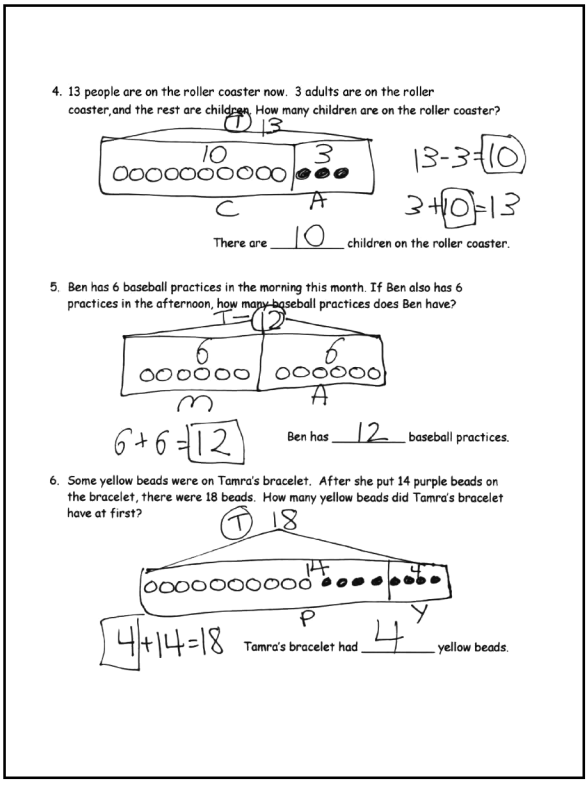
9 + 2 = 11 — 2 more dogs came to the park.

2. 16 strawberries are in a basket for Peter and Julio. Peter eats 8 of them. How many are there for Julio to eat?

16 − 8 = 8 — Julio has 8 strawberries to eat.

3. 13 children are on the roller coaster. 3 adults are on the roller coaster. How many people are on the roller coaster?

13 + 3 = 16 — There are 16 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?

13 − 3 = 10
3 + 10 = 13
There are 10 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?

6 + 6 = 12 — Ben has 12 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?

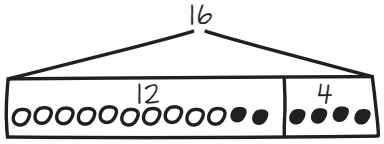
4 + 14 = 18 — Tamra's bracelet had 4 yellow beads.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.



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?

_____ more dogs came to the park.

2. 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.

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 _____ 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?

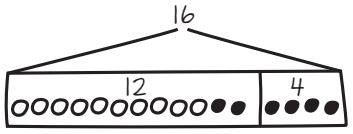
Ben has _____ baseball practices.

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.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.

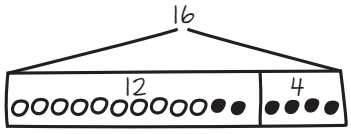


There were 6 turtles in the tank. Dad bought some more turtles. Now, there are 12 turtles. How many turtles did Dad buy?

Dad bought _____ turtles.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.



1. Rose has 12 soccer practices this month. 6 practices are in the afternoon, but the rest are in the morning. How many practices will be in the morning?

Rose has _____ practices in the morning.

2. Ben caught 16 fish. He put some back in the lake. He kept 7 fish. How many fish did he put back in the lake?

Ben put _____ fish back in the lake.

3. Nikil solved 9 problems on the first Sprint. He solved 11 problems on the second Sprint. How many problems did he solve on the two Sprints?

Nikil solved _____ problems on the Sprints.

4. Shanika returned some books to the library. She had 16 books at first, and she still has 13 books left. How many books did she return to the library?

Shanika returned _____ books to the library.

39 + 1	30 – 1
20 + 10	10 + 30
40 – 1	40 – 10
30 + 1	30 – 10
14 + 1	20 – 10

Addition and Subtraction Cards, Set A

10 + 14	15 + 10
12 + 10	27 + 10
29 + 10	10 + 19
10 + 16	39 + 10

Addition and Subtraction Cards, Set A

35 + 4	24 + 3
24 + 6	28 + 4
35 + 5	22 + 8
17 + 7	31 + 6
24 + 9	8 + 28

Addition and Subtraction Cards, Set B

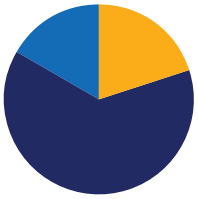
26 + 8	3 + 33
7 + 32	29 + 7
3 + 18	18 – 3
17 – 4	19 – 5

Addition and Subtraction Cards, Set B

Lesson 18

Objective: Recognize and make use of part–whole relationships within strip diagrams when solving a variety of problem types.

Suggested Lesson Structure



Fluency Practice	(12 minutes)
Concept Development	(38 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (12 minutes)

- Race and Roll Addition **1.3D, 1.5G** (4 minutes)
- Number Bond Addition and Subtraction **1.2C, 1.3D, 1.5G** (4 minutes)
- Take Out 1 or 10 **1.2D, 1.5C** (2 minutes)
- Longer/Shorter **K.2H** (2 minutes)

Race and Roll Addition (4 minutes)

Materials: (S) 1 die per set of partners

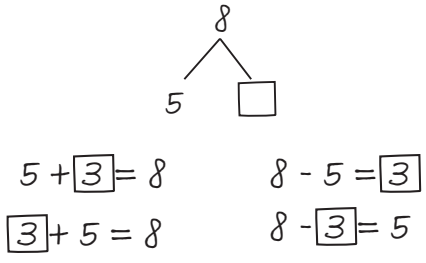
Note: In this fluency activity, students practice adding and subtracting within 20. The competitive nature of Race and Roll Addition and Subtraction promotes students' engagement while increasing their brains' ability to retain information (since the partners are trying to stand quickly).

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 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 (4 minutes)

Materials: (S) Personal white board

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 (2 minutes)

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.

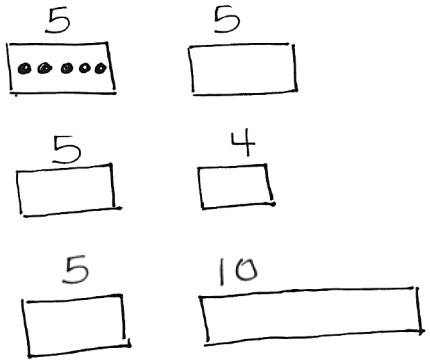
Repeat for 25 and 35. Then, take out 10 from 15, 25, and 35, respectively.

Longer/Shorter (2 minutes)

Materials: (T) Board or document camera

Note: Working with visualizing proportional relationships between numbers can support students' number sense development. By using strip 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).

Concept Development (38 minutes)

Materials: (S) Problem Set

Note: The suggested delivery of instruction is similar to previous lessons in this topic. An integration of student work on Problem Sets is interspersed with guided instruction 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 strip 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?* Strip 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 Application Problems from Topic C 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 and support. After two minutes, have the two pairs of students share only 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.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Encourage students who need additional support with moving to the strip diagram representation as the position of the unknown changes to draw a number bond as part of their work. Some students more readily relate to the strip diagram through its similarities with number bonds.

NOTES ON 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. Acting out the problem can also support students, including some emergent bilingual students, by removing barriers associated with written language.

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 Juan drew 11 pictures. How many pictures did they draw altogether?

This problem, a *join with total unknown,* is one of the more simple problem types. After the students have explained their drawings and solutions accurately, point to sections of the strip 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

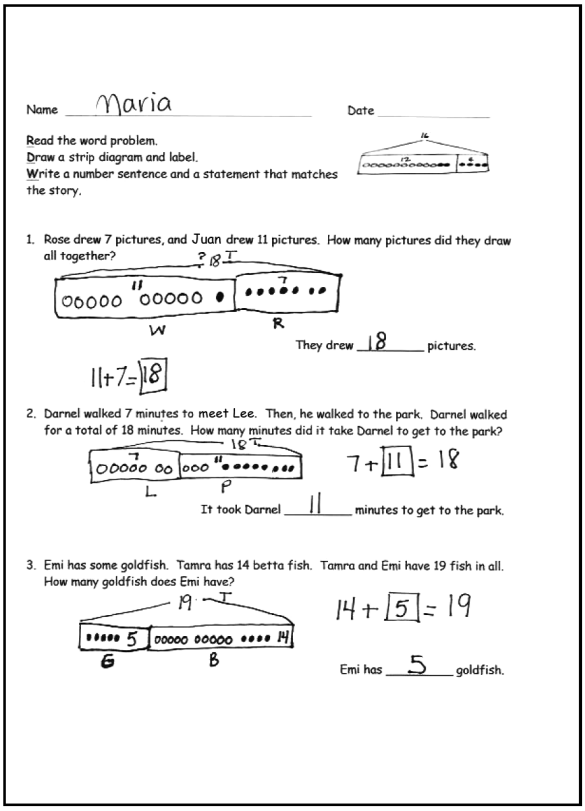
Darnel walked 7 minutes to meet Lee. Then, he walked to the park. Darnel walked for a total of 18 minutes. How many minutes did it take Darnel to get to the park?

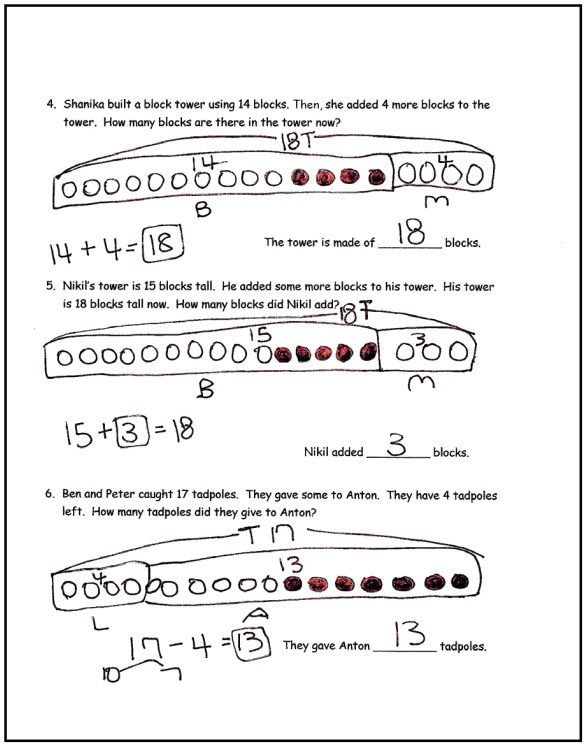
Problem 3

Emi has some goldfish. Tamra has 14 betta fish. Tamra and Emi have 19 fish in all. How many goldfish does Emi have?

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?





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?

Student Debrief (10 minutes)

Lesson Objective: Recognize and make use of part–whole relationships within strip diagrams when solving a variety of problem types.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Guide students in a conversation to debrief the Problem Set and process the lesson. Look for misconceptions or misunderstandings that can be addressed in the Debrief.

Any combination of the questions below may be used to lead the discussion.

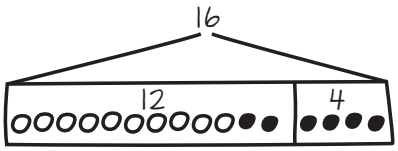
- Look at Problem 1. What did you draw? How did your drawing help you solve the problem?
- Look at Problem 2. What did you draw first? How is your drawing similar or different from the drawing you made for Problem 1?
- Look at Problem 3. How did you draw this problem? How is your drawing similar to or 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.
- 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 strip diagrams in ways that help you see simple problems inside the larger ones?
- Using a highlighter, underline the question in each problem. Highlight the part of the strip 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 strip 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?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.



1. Rose drew 7 pictures, and Juan drew 11 pictures. How many pictures did they draw all together?

They drew _____ pictures.

2. Darnel walked 7 minutes to meet Lee. 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?

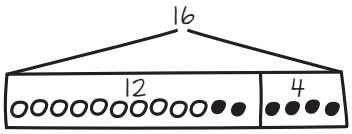
Nikil added _____ blocks.

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.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.

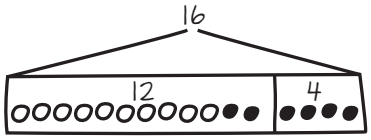


Shanika read some pages on Monday. On Tuesday, she read 6 pages. She read 13 pages during the 2 days. How many pages did she read on Monday?

Shanika read _____ pages on Monday.

Name _____ Date _____

Read the word problem.
Draw a strip diagram and label.
Write a number sentence and a statement that matches the story.



1. Fatima has 12 colored pencils in her bag. She has 6 regular pencils, too. How many pencils does Fatima have?

Fatima has _____ pencils.

2. Julio swam 7 laps in the morning. In the afternoon, he swam some more laps. He swam a total of 14 laps. How many laps did he swim in the afternoon?

Julio swam _____ laps in the afternoon.

3. Peter built 18 models. He built 13 airplanes and some cars. How many car models did he build?

Peter built _____ car models.

4. Kiana found some shells at the beach. She gave 8 shells to her brother. Now, she has 9 shells left. How many shells did Kiana find at the beach?

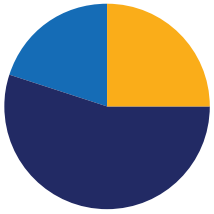
Kiana found _____ shells.

Lesson 19

Objective: Write word problems of varied types.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Concept Development	(33 minutes)
Student Debrief	(12 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Sprint: Related Addition and Subtraction Within 10 and 20 **1.3D, 1.5G** (10 minutes)
- Count by Twos, Fives, and Tens **1.5B** (5 minutes)

Sprint: Related Addition and Subtraction Within 10 and 20 (10 minutes)

Materials: (S) Related Addition and Subtraction Within 10 and 20 Sprint

Note: During the last few days of fluency, students have been reviewing the relationship between addition and subtraction using the context of a number bond. In this Sprint, students apply this knowledge to solve equations, first within 10 and then within 20. Students who reach the final two questions of the fourth quadrants are challenged to apply their understanding of analogous addition equations to analogous subtraction equations (**2.4A, 2.4B**).

Count by Twos, Fives, and Tens (5 minutes)

Materials: (S) 120 linking cubes per pair

Distribute sets of 120 linking cubes. Ask for some students to count by twos to find the total, some to count by fives and some to count by tens. When students are done counting, ask them to compare their totals, which should all be 120.

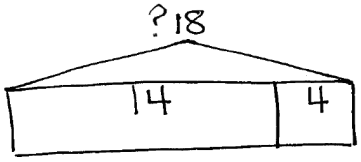
Note: This fluency reviews group counting by using objects.

Concept Development (33 minutes)

Materials: (T) Chart paper (S) Folder with Problem Sets from Lessons 16–18, personal white board

Have students bring all materials to the meeting area.

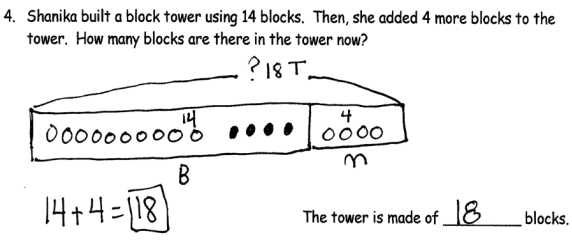
T: (Display the strip diagram shown in the image to the right.) I found this drawing on a piece of paper on the floor. It went with someone's word problem from this week. Does anyone know which one it went to? Look through your Problem Sets with a partner, and see if you can figure it out. Talk about how you know.



S: (Look back at Problem Sets with a partner, and discuss what is the same about the problem and the strip diagram.)

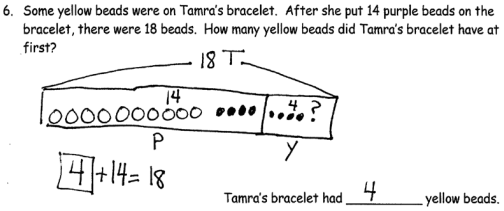
T: Which problem does this strip diagram go with?

S: This strip diagram goes with the problem about Shanika's tower (Problem 4 in Lesson 18). (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 17). (Explains how the referents align with the problem story.)


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?

?18 T
14
4
B
m
14+4=18
The tower is made of 18 blocks.

Lesson 18 Problem 4

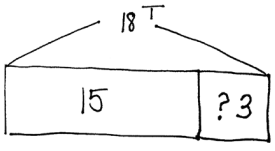

6. Some yellow beads were on Tamra's bracelet. After she put 14 purple beads on the bracelet, there were 18 beads. How many yellow beads did Tamra's bracelet have at first?

18 T
14
4 ?
P
Y
4+14=18
Tamra's bracelet had 4 yellow beads.

Lesson 17 Problem 6

T: Hmm. They both sound like they could match this strip diagram.

T: (Draw the strip diagram shown in the image on the right.) This is a strip diagram for a problem from yesterday's lesson. Which problem does this match?



S: (Look back at the Problem Set for Lesson 18 with a partner, and discuss what is the same about the problem and the strip diagram.)

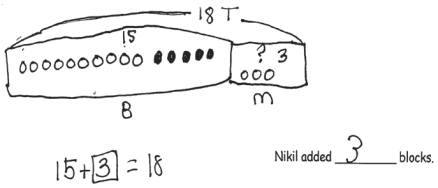
T: Which problem does the strip diagram go with?

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.)

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?

T: With your partner, try to come up with a *different* story that could go with this strip diagram. You can use your strip diagram template as you discuss your idea.

T: (While students are discussing, circulate and listen.)



Lesson 18 Problem 5

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.

As the students share the problem with the class, redraw the strip 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 strip 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.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Giving students an opportunity to share their thinking allows them to evaluate their process and practice. Many students, including emergent bilingual students, benefit from hearing others explain their thinking.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Highlight the vocabulary used in the Problem Set to ensure understanding of all words. This supports vocabulary development for all students, including emergent bilingual students.

Problem Set (15 minutes)

Students should do their personal best to complete the Problem Set within the allotted 15 minutes. For some classes, it may be appropriate to adjust the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students should solve these problems using the RDW approach used for Application Problems.

Student Debrief (12 minutes)

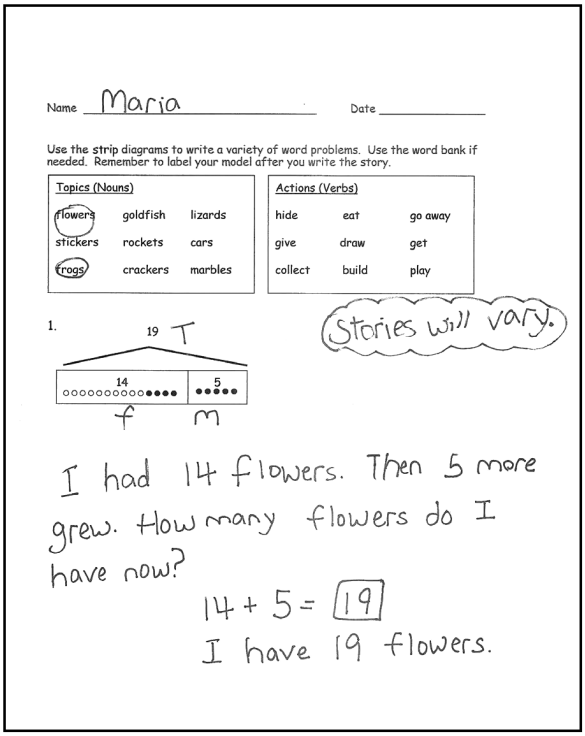
Lesson Objective: Write word problems of varied types.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at Problem A. What story problem did you write? Share with the class. Pose to the rest of the class: What is the unknown number in the question? What number sentence would help you solve the question? Invite one or two more students to share. How did you decide on your labels for your strip diagrams?
- Look at your Application Problems from Lessons 14–15 and your Problem Sets from Lessons 16–18. What do you notice about your work? What part of your word problem work has been improving?


Name Maria Date

Use the strip diagrams to write a variety of word problems. Use the word bank if needed. Remember to label your model after you write the story.

Topics (Nouns)		
flowers	goldfish	lizards
stickers	rockets	cars
frogs	crackers	marbles

Actions (Verbs)		
hide	eat	go away
give	draw	get
collect	build	play

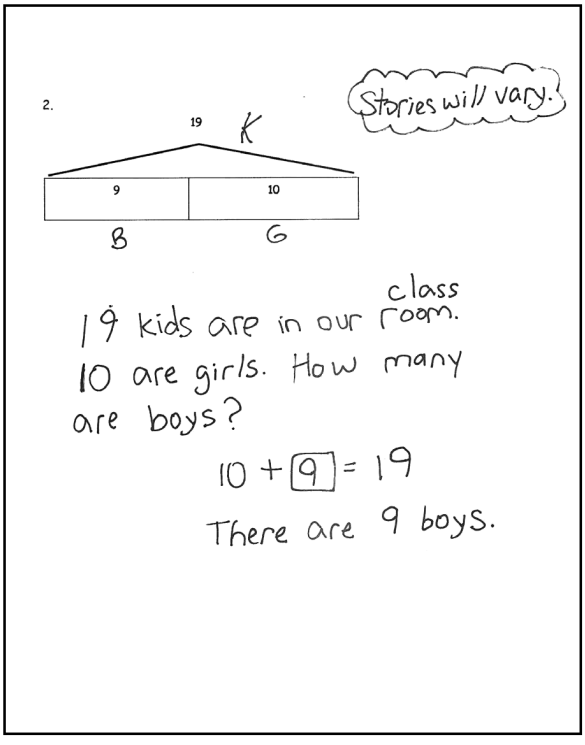
1. 19 T; 14 f; 5 m

Stories will vary.

I had 14 flowers. Then 5 more grew. How many flowers do I have now?

14 + 5 = 19

I have 19 flowers.


2. 19 K; 9 B; 10 G

Stories will vary.

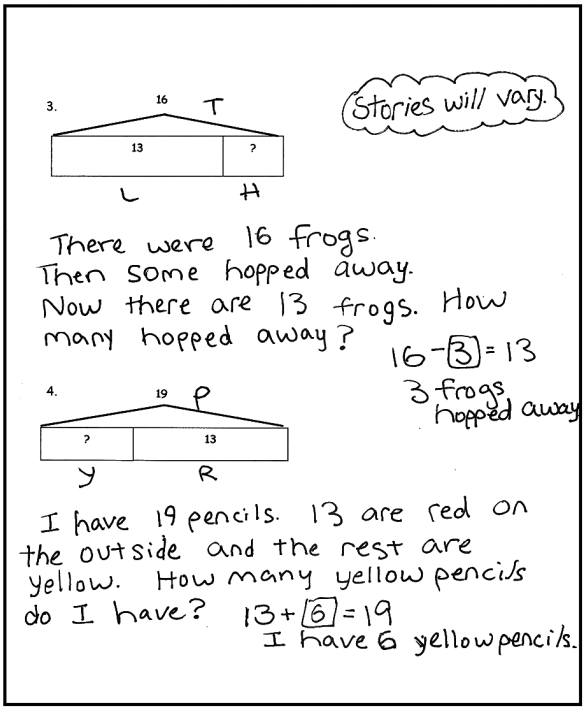
19 kids are in our class room. 10 are girls. How many are boys?

10 + 9 = 19

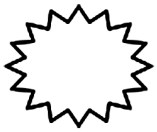
There are 9 boys.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work helps with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



A

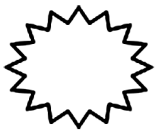
Number Correct: 

Name _____ Date _____

*Write the missing number. Pay attention to the + and - signs.

1.	2 + 2 = □		16.	2 + □ = 8	
2.	2 + □ = 4		17.	6 + □ = 8	
3.	4 – 2 = □		18.	8 – 6 = □	
4.	3 + 3 = □		19.	8 – 2 = □	
5.	3 + □ = 6		20.	9 + 2 = □	
6.	6 – 3 = □		21.	9 + □ = 11	
7.	4 + □ = 7		22.	11 – 9 = □	
8.	3 + □ = 7		23.	9 + □ = 15	
9.	7 – 3 = □		24.	15 – 9 = □	
10.	7 – 4 = □		25.	8 + □ = 15	
11.	5 + 4 = □		26.	15 – □ = 8	
12.	4 + □ = 9		27.	8 + □ = 17	
13.	9 – 4 = □		28.	17 – □ = 8	
14.	9 – 5 = □		29.	27 – □ = 8	
15.	9 – □ = 4		30.	37 – □ = 8	

B

Number Correct: 

Name _____ Date _____

*Write the missing number. Pay attention to the + and - signs.

1.	3 + 3 = □		16.	2 + □ = 9	
2.	3 + □ = 6		17.	7 + □ = 9	
3.	6 – 3 = □		18.	9 – 7 = □	
4.	4 + 4 = □		19.	9 – 2 = □	
5.	4 + □ = 8		20.	9 + 5 = □	
6.	8 – 4 = □		21.	9 + □ = 14	
7.	4 + □ = 9		22.	14 – 9 = □	
8.	5 + □ = 9		23.	9 + □ = 16	
9.	9 – 5 = □		24.	16 – 9 = □	
10.	9 – 4 = □		25.	8 + □ = 16	
11.	3 + 4 = □		26.	16 – □ = 8	
12.	4 + □ = 7		27.	8 + □ = 16	
13.	7 – 4 = □		28.	16 – □ = 8	
14.	7 – 3 = □		29.	26 – □ = 8	
15.	7 – □ = 3		30.	36 – □ = 8	

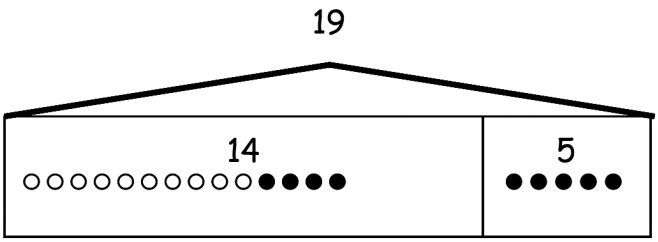
Name _____ Date _____

Use the strip diagrams to write a variety of word problems. Use the word bank if needed. Remember to label your model after you write the story.

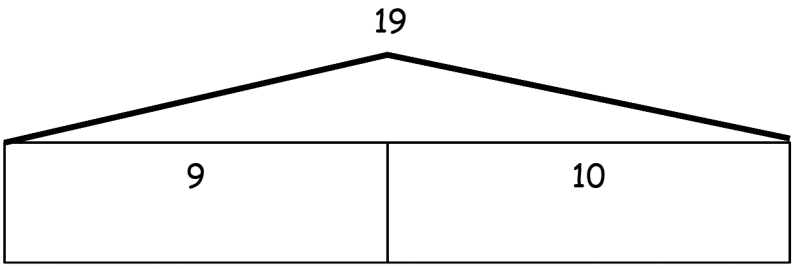
Topics (Nouns)		
flowers	goldfish	lizards
stickers	rockets	cars
frogs	crackers	marbles

Actions (Verbs)		
hide	eat	go away
give	draw	get
collect	build	play

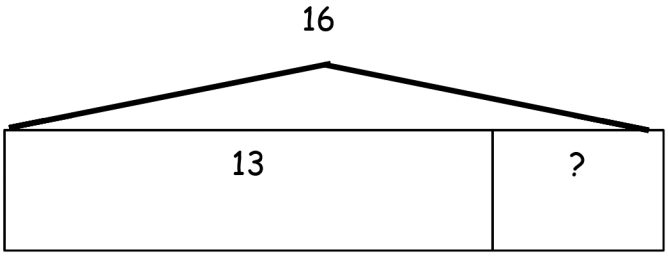
1.



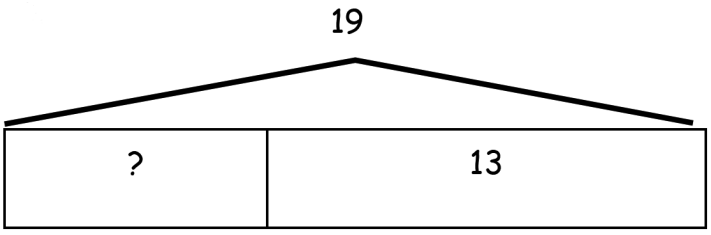
2.



3.

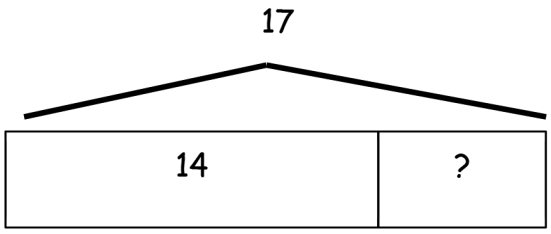


4.



Name _____ Date _____

Circle the 2 story problems that match the strip diagram.



a. There are 14 ants on the picnic blanket. Then, some more ants came over. Now, there are 17 ants on the picnic blanket. How many ants came over?

b. 14 children are on the playground from one class. Then, 17 children from another class came to the playground. How many children are on the playground now?

c. 17 grapes were on the plate. Juan ate 14 grapes. How many grapes are on the plate now?

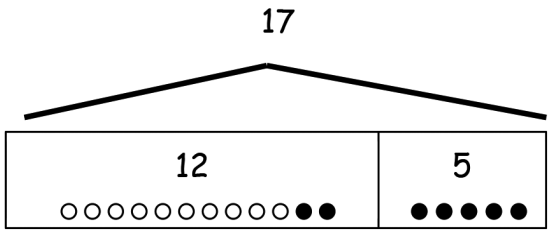
Name _____ Date _____

Use the strip diagrams to write a variety of word problems. Use the word bank if needed. Remember to label your model after you write the story.

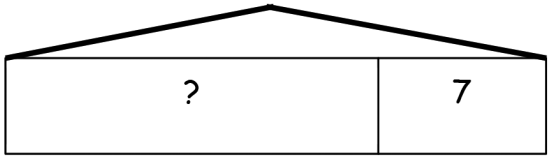
Topics (Nouns)		
flowers	goldfish	lizards
stickers	rockets	cars
frogs	crackers	marbles

Actions (Verbs)		
hide	eat	go away
give	draw	get
collect	build	play

1.



2. 16



Answer Key

GRADE 1 • MODULE 4

Place Value, Comparison, Addition and Subtraction to 40

Lesson 1

Problem Set

1. Groups of 10 circled; 30
2. Groups of 10 circled; 24
3. Groups of 10 circled; 29
4. Groups of 10 circled; 34
5. Groups of 10 circled; 31
6. Groups of 10 circled; 26
7. Groups of 10 circled; 38
8. Groups of 10 circled; 33
9. Number bond shows that 20 and 7 is 27.
10. Number bond shows that 30 and 3 is 33.
11. Number bond shows that 20 and 9 is 29.
12. Number bond shows that 40 and 0 is 40.
13. Groups of 10 circled; 20 and 2 is 22.
14. Groups of 10 circled; 30 and 7 is 37.
15. Groups of 10 circled; 20 and 10 is 30.
16. Groups of 10 circled; 30 and 9 is 39.

Exit Ticket

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.

Homework

1. Groups of 10 circled; 26
2. Groups of 10 circled; 38
3. Groups of 10 circled; 25
4. Groups of 10 circled; 39
5. Groups of 10 circled; 20 and 7 is 27; 27
6. Groups of 10 circled; 10 and 10 is 20; 20
7. Groups of 10 circled; 20 and 4 is 24; 24
8. Groups of 10 circled; 30 and 6 is 36; 36
9. Groups of 10 circled; 10 and 7 is 17; 17
10. Groups of 10 circled; 20 and 3 is 23; 23
11. Picture of 10 and 8 drawn; 8
12. Picture of 10 more and 3 more drawn; 33

Lesson 2

Practice Sheet

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

Problem Set

1. 1, 7
2. 2, 6
3. 2, 8
4. 3, 3
5. 1, 4; 14
6. 2, 8; 28
7. 2, 5; 25
8. 3, 10; 40
9. 3, 5; 35
10. 2, 7; 27
11. 3, 9; 39
12. 2, 9; 29
13. 3, 5
14. 27
15. 39
16. 2, 9
17. 4
18. 0, 9

Exit Ticket

Pictures on the left are appropriately matched with charts (cubes: 17; crayons: 33; flowers: 40).

Homework

1. 3, 4; 34
2. 2, 3; 23
3. 3, 6; 36
4. 2, 9; 29
5. 1, 9; 19
6. 2, 6; 26
7. 2, 4; 24
8. 3, 6; 36
9. 3, 9; 39
10. 2, 8; 28
11. 2, 3
12. 32
13. 9
14. 40
15. Answers will vary.

Lesson 3

Problem Set

1. 1, 2, 12
2. 2, 6, 26
3. 3, 7, 37
4. 3, 4, 34
5. 4, 0, 40
6. 1, 10, 20
7. 32 ones
8. 17 ones
9. Picture of 3 tens and 7 ones
10. 40 ones
11. 23 ones
12. 29 ones
13. 1, 5; 15
14. 39; 3, 9

Exit Ticket

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

Homework

1. 2, 3, 23
2. 3, 6, 36
3. 1, 0, 10
4. 3, 8, 38
5. 29; 29
6. 3, 4; 34
7. 38; 38
8. 39; 39
9. 40; 0, 4
10. Answers will vary.

Lesson 4

Problem Set

1. 23; 23; 23
2. 20, 8, 28; 28; 28
3. 20, 7, 27; 27; 27
4. 30, 6, 36; 36; 36
5. 20, 5, 25; 25; 25
6. 30, 8; 38; 38; 38
7. 14
8. 2, 3; 20, 23
9. 3, 8; 38, 8
10. 2, 9; 29, 9
11. 43 = 40 + 3
12. 27 = 20 + 7
13. 23 = 20 + 3
14. 39 = 30 + 9
15. 32 = 30 + 2

Exit Ticket

1. 1, 3; 3, 13
2. 3, 4; 30, 34
3. 3, 5; 35, 5
4. 2, 6; 26, 20
5. 30 + 8
6. 10 + 6

Homework

1. 20, 3, 23; 23; 23
2. 20, 4, 24; 24; 24
3. 2, 7; 27
4. 3, 5; 5, 35
5. 2, 4; 4, 24
6. 3, 8; 30, 8, 38
7. 2 more than 10 is 12.
8. 1 and 30 make 31.
9. 20 + 4 = 24
10. 8 + 30 = 38

Lesson 5

Sprint

Side A

1.	13	11.	0	21.	10
2.	12	12.	3	22.	10
3.	11	13.	4	23.	10
4.	11	14.	5	24.	18
5.	14	15.	8	25.	19
6.	16	16.	1	26.	12
7.	17	17.	2	27.	14
8.	18	18.	10	28.	15
9.	2	19.	10	29.	10
10.	1	20.	7	30.	3

Side B

1.	11	11.	2	21.	10
2.	12	12.	3	22.	10
3.	13	13.	5	23.	10
4.	14	14.	7	24.	16
5.	15	15.	9	25.	18
6.	16	16.	0	26.	13
7.	18	17.	1	27.	15
8.	18	18.	10	28.	15
9.	0	19.	10	29.	10
10.	1	20.	3	30.	3

Problem Set

1. 31
2. 29
3. 40
4. 38
5. 37
6. 23
7. 1 more drawn; 29
8. 10 more or quick 10 drawn; 38
9. 1 more drawn; 30
10. 10 more or quick 10 drawn; 39
11. 10 crossed off; 16
12. 1 crossed off; 25
13. 10 crossed off; 30
14. 1 crossed off; 39

Exit Ticket

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

Homework

1. 3 quick tens and 9 ones drawn; 39
2. 4 quick tens and 8 ones drawn; 48
3. 3 quick tens and 6 ones drawn; 36
4. 4 quick tens and 5 ones drawn; 45
5. 23 drawn, 10 crossed off; 13
6. 23 drawn, 1 crossed off; 22
7. 31 drawn, 10 crossed off; 21
8. 31 drawn, 1 crossed off; 30
9. 10 more than 20
10. 1 more than 23 is 24
11. 1 less than 30
12. 10 less than 36

Lesson 6

Problem Set

1. 2, 0; 2
2. 1, 4; 1, 4
3. 3, 5; 35
4. 2, 6; 26
5. 0, 6; 6, 0, 6
6. 2, 5; 25, 2, 5
7. 3, 0; 30, 3, 0
8. 3, 4; 3, 4, 34
9. 16; 1 more drawn
10. 15; 10 more drawn
11. 40; 1 dime drawn
12. 31; 1 penny drawn
13. 23; 1 penny crossed off
14. 14; 1 dime crossed off
15. 11; 1 dime crossed off
16. 20; 1 penny crossed off

Exit Ticket

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

Homework

1. 3, 0; 3
2. 1, 7; 1, 7
3. 2, 2; 22
4. 3, 3; 33
5. 0, 8; 8, 0, 8
6. 3, 6; 36, 3, 6
7. 1, 6; 16, 1, 6
8. 2, 4; 2, 4, 24
9. 13; 1 more drawn
10. 13; 10 more drawn
11. 32; 1 more dime drawn
12. 23; 1 more penny drawn
13. 38; 1 penny crossed off
14. 29; 1 dime crossed off
15. 23; 1 dime crossed off
16. 32; 1 penny crossed off

Lesson 7

Fluency Practice

Set A

1.	6	11.	8	21.	8
2.	6	12.	8	22.	9
3.	6	13.	6	23.	10
4.	6	14.	7	24.	10
5.	7	15.	8	25.	8
6.	7	16.	9	26.	7
7.	8	17.	10	27.	10
8.	7	18.	9	28.	9
9.	7	19.	9	29.	10
10.	6	20.	10	30.	9

Set B

1.	0	11.	3	21.	3
2.	6	12.	4	22.	4
3.	1	13.	5	23.	5
4.	2	14.	4	24.	6
5.	7	15.	2	25.	7
6.	1	16.	3	26.	8
7.	6	17.	4	27.	7
8.	1	18.	2	28.	6
9.	7	19.	3	29.	5
10.	2	20.	4	30.	6

Set C

1.	1	11.	3	21.	4
2.	5	12.	3	22.	4
3.	5	13.	2	23.	3
4.	1	14.	2	24.	3
5.	9	15.	3	25.	4
6.	1	16.	3	26.	4
7.	5	17.	2	27.	3
8.	5	18.	2	28.	3
9.	2	19.	3	29.	3
10.	2	20.	3	30.	3

Set D

1.	6	11.	3	21.	4
2.	5	12.	4	22.	5
3.	6	13.	6	23.	3
4.	7	14.	2	24.	4
5.	4	15.	4	25.	5
6.	5	16.	6	26.	4
7.	7	17.	5	27.	3
8.	0	18.	1	28.	2
9.	1	19.	2	29.	3
10.	3	20.	2	30.	2

Set E

1.	6	11.	4	21.	3
2.	4	12.	4	22.	5
3.	3	13.	2	23.	3
4.	7	14.	2	24.	7
5.	2	15.	2	25.	2
6.	7	16.	3	26.	7
7.	3	17.	4	27.	2
8.	4	18.	2	28.	3
9.	9	19.	6	29.	5
10.	5	20.	2	30.	3

Problem Set

1. a. 3, 4; matched to third pair; 14
   b. 3, 9; matched to fourth pair; 19
   c. 20; matched to first pair; 4, 0
   d. 2, 13; matched to second pair; 23
2. a. 1 ten, 12 ones
   b. 3 tens, 6 ones
   c. 3 tens, 4 ones
3. a, c, and d should be checked.
4. Quick ten drawing showing both are correct

Exit Ticket

1. a. 3 tens, 2 ones
   b. 1 ten, 18 ones
   c. 2 tens, 16 ones
2. Draw quick tens to show Tamra is corrrect.

Homework

1. a. 2, 3; matched to fourth pair; 13
   b. 3, 4; matched to third pair; 14
   c. 3, 8; matched to second pair; 28
   d. 3, 7; matched to first pair; 17
2. a. 3 tens, 8 ones
   b. 2 tens, 6 ones
   c. 2 tens, 1 one
3. a, b, and c should be checked.
4. Quick tens drawing showing Emi is correct

Lesson 8

Sprint

Side A

1.	6	11.	28	21.	39
2.	16	12.	18	22.	29
3.	26	13.	8	23.	19
4.	15	14.	19	24.	1
5.	25	15.	29	25.	10
6.	35	16.	39	26.	10
7.	7	17.	10	27.	1
8.	17	18.	20	28.	24
9.	27	19.	30	29.	24
10.	37	20.	40	30.	34

Side B

1.	5	11.	27	21.	39
2.	15	12.	17	22.	29
3.	25	13.	7	23.	19
4.	16	14.	18	24.	1
5.	26	15.	28	25.	10
6.	36	16.	38	26.	10
7.	6	17.	10	27.	1
8.	16	18.	20	28.	29
9.	26	19.	30	29.	29
10.	36	20.	40	30.	39

Problem Set

1. 13, 19; set of 19 circled
2. 36, 13; set of 36 circled
3. 30, 29; set of 30 circled
4. 30, 32; set of 32 circled
5. a. 3 tens 2 ones circled
   b. 3 tens 2 ones circled
   c. 19 circled
   d. 31 circled
6. Set of 3 dimes circled
7. 13, 19; set of 13 circled
8. 14, 11; set of 11 circled
9. 11, 20; set of 11 circled
10. 40, 26; set of 26 circled
11. a. 1 ten 5 ones circled
    b. 28 ones circled
    c. 13 circled
    d. 26 circled
12. Set of 1 dime and 2 pennies circled
13. 17 circled; explanations will vary.

Exit Ticket

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

Homework

1. 22, 14; set of 22 circled
2. 13, 23; set of 23 circled
3. 3 tens 9 ones circled
4. 35 circled
5. 20, 11; set of 2 dimes circled
6. 31, 24; set of 24 circled
7. 28, 38; set of 28 circled
8. 2 tens 7 ones circled
9. 22 circled
10. 22, 13; Set of 1 dime and 3 pennies circled
11. a. 24 circled; 24 is less than 27.
    b. 32 circled; 32 is greater than 22.
    c. 26 circled; 26 is less than 29.
    d. It would be a tie; drawings showing 39

Lesson 9

Practice Sheet

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

Problem Set

1. The appropriate number of quick tens and ones should be drawn for each.
   a. G; is greater than
   b. L; is less than
   c. G; is greater than
   d. L; is less than
2. is equal to; is less than; is greater than; is less than; is greater than; is greater than; is less than
3. 9, 13, 23, 32, 40
4. 40, 32, 23, 13, 9
5. Combination of 4 answers will vary (22, 23, 27, 28, 32, 33, 37, 38), but the two-digit numbers must be written from greatest to least.

Exit Ticket

1. 40, 39, 30, 29
2. is less than; is equal to; is greater than

Homework

1. The appropriate number of quick tens and ones should be drawn for each.
   a. Answer provided
   b. is less than
   c. is equal to
   d. is greater than
   e. is greater than
   f. is less than
7. 32, 29, 4 tens circled
8. 29, 3 tens, 13 circled
9. 23, 29, 30, 32; 27 goes between 23 and 29
10. 40, 31, 30, 13; 23 goes between 30 and 13
11. Combination of 4 answers will vary (22, 23, 24, 29, 32, 33, 34, 39), but two-digit numbers must be written from least to greatest.

Lesson 10

Problem Set

1. 3, 18, 34, 37
2. a. 25 = | | ooooo
   15 = | ooooo
   31 = | | | o
   7 = ooooo oo
   b. 7, 15, 25, 31
3. 9, 11, 17, 40
4. a. 14 = 1 ten, 4 ones
   24 = 2 tens, 4 ones
   40 = 4 tens, 0 ones
   4 = 4 ones
   b. 14
   c. 40
   d. 4, 14, 24, 40

Exit Ticket

1. a. 20
   b. 16, 20, 32, 39
2. a. 6
   b. 30
   c. 6, 21, 28, 30

Homework

1. a. 16
   b. 40
   c. 12, 16, 30, 40
2. a. 10
   b. 14
   c. 34
   d. 10, 14, 27, 34

Lesson 11

Problem Set

1. a. 7 (answers may vary)
   b. 32 (answers may vary)
2. 15, 19, 32 (answers may vary)
3. a. Answers may vary
   b. 3, 18, 29, 31
4. a. Correctly labeled open number line.
   b. Correctly labeled open number line.
5. a. 16
   b. 34
   c. 11
   d. 11, 16, 23, 34

Exit Ticket

1. 2, 15, 28, 40 (Correctly labeled on the open number line.)
2. a. 15
   b. 2
   c. 2, 15, 28, 40

Homework

1. Answers may vary.
2. Answers may vary.
3. a. Answers may vary.
   b. 11, 20, 27, 34

Lesson 12

Problem Set

1. a. Circled >
   b. Circled <
   c. Circled >
   d. Circled <
2. a. 24, 4
   b. 36, 38
   c. 14, 15
   d. 20, 2
   e. 35, 36
   f. 20, 19
   g. 31, 13
   h. 23, 32
   i. 12, 21
3. a. Number sentence is circled.
   b. Comparison sign is redrawn.
4. Answers will vary.

Exit Ticket

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

Homework

1. a. 20, 10 b. 15, 17 c. 24, 22 d. 30, 29 e. 38, 39 f. 39, 40
2. Answers will vary.
3. 16, 17 is matched to the is less than sign.
   31, 23 is matched to the is greater than sign.
   35, 25 is matched to the is greater than sign.
   12, 21 is matched to the is less than sign.
   22, 32 is matched to the is less than sign.
   9, 30 is matched to the is less than sign.
   39, 40 is matched to the is less than sign.

Lesson 13

Sprint

Side A

1.	3	11.	9	21.	36
2.	13	12.	10	22.	24
3.	23	13.	9	23.	19
4.	7	14.	18	24.	30
5.	17	15.	13	25.	15
6.	37	16.	14	26.	35
7.	30	17.	25	27.	6
8.	32	18.	26	28.	12
9.	35	19.	17	29.	6
10.	10	20.	9	30.	20

Side B

1.	4	11.	8	21.	39
2.	14	12.	9	22.	21
3.	24	13.	8	23.	29
4.	7	14.	17	24.	20
5.	17	15.	15	25.	15
6.	27	16.	12	26.	35
7.	30	17.	23	27.	6
8.	33	18.	25	28.	10
9.	36	19.	14	29.	10
10.	10	20.	7	30.	22

Problem Set

1. a. >
   b. >
   c. <
   d. <
   e. >
   f. >
   g. >
   h. >
   i. <

2. a. answer provided
   b. less than is circled; 14 < 17
   c. less than is circled; 24 < 34
   d. equal to is circled; 20 = 20
   e. greater than is circled; 31 > 13
   f. less than is circled; 12 < 21
   g. greater than is circled; 17 > 13
   h. equal to is circled; 30 = 30

Exit Ticket

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

Homework

a. >; is greater than
b. <; is less than
c. =; is equal to
d. <; is less than
e. >; is greater than
f. >; is greater than
g. >; is greater than
h. =; is equal to
i. >; is greater than
j. <; is less than
k. >; is greater than
l. =; is equal to
m. <; is less than
n. <; is less than
o. <; is less than
p. >; is greater than

Lesson 14

Problem Set

1. 8
2. 18
3. 28
4. 38
5. 12
6. 22
7. 32
8. a. 8
   b. 18
   c. 28
   d. 38
   e. 10
   f. 20
   g. 30
   h. 40
   i. 11
   j. 21
   k. 31
   l. 14
   m. 24
   n. 34
9. 29; 3 + 6 = 9
10. 33; 7 + 6 = 13

Exit Ticket

1. a. 12
   b. 22
   c. 32
2. a. 8
   b. 18
   c. 28
   d. 38
3. a. 13
   b. 23
   c. 33

Homework

1. 9
2. 19
3. 29
4. 39
5. 12
6. 22
7. 32
8. a. 7
   b. 17
   c. 27
   d. 37
9. a. 10
   b. 20
   c. 30
   d. 40
10. a. 9
    b. 19
    c. 29
11. a. 11
    b. 21
    c. 31
12. a. 15
    b. 25
    c. 35
13. a. 12
    b. 22
    c. 32
14. 29; 4 + 5 = 9
15. 31; 4 + 7 = 11

Lesson 15

Problem Set

1. 19
2. 20
3. 20
4. 22
5. 27
6. 35
7. 30
8. 39
9. 40; 40 (Valid representations given.)
10. 32 (Valid representation and explanation given.)

Exit Ticket

1. 29
2. 26

Homework

1. 19
2. 20
3. 17
4. 33
5. 30
6. 39
7. c; e
8. 21

Lesson 16

Sprint

Side A

1.	7	11.	18	21.	10
2.	17	12.	28	22.	20
3.	27	13.	9	23.	30
4.	7	14.	19	24.	11
5.	17	15.	29	25.	21
6.	27	16.	9	26.	31
7.	8	17.	19	27.	13
8.	18	18.	29	28.	23
9.	28	19.	9	29.	5
10.	8	20.	19	30.	8

Side B

1.	6	11.	18	21.	10
2.	16	12.	28	22.	20
3.	26	13.	7	23.	30
4.	6	14.	17	24.	11
5.	16	15.	27	25.	21
6.	26	16.	9	26.	31
7.	8	17.	19	27.	14
8.	18	18.	29	28.	24
9.	28	19.	8	29.	5
10.	8	20.	18	30.	9

Problem Set

1. 13; 6 + 7 = 13; labeled strip diagram
2. 12; 6 + 6 = 12; labeled strip diagram
3. 15; 12 + 3 = 15; labeled strip diagram
4. 17; 13 + 4 = 17; labeled strip diagram
5. 18; 6 + 12 = 18; labeled strip diagram
6. 20; 13 + 7 = 20; labeled strip diagram

Exit Ticket

20; 14 + 6 = 20; labeled strip diagram

Homework

1. 17; 4 + 13 = 17; labeled strip diagram
2. 20; 14 + 6 = 20; labeled strip diagram
3. 13; 7 + 6 =13; labeled strip diagram
4. 18; 13 + 5 = 18; labeled strip diagram

Lesson 17

Problem Set

1. 2; 9 + 2 = 11 or 11 − 9 = 2; labeled strip diagram
2. 8; 8 + 8 = 16 or 16 − 8 = 8; labeled strip diagram
3. 16; 13 + 3 = 16; labeled strip diagram
4. 10; 3 + 10 = 13 or 13 − 3 = 10; labeled strip diagram
5. 12; 6 + 6 = 12; labeled strip diagram
6. 4; 14 + 4 = 18 or 18 − 14 = 4; labeled strip diagram

Exit Ticket

6; 6 + 6 = 12 or 12 − 6 = 6; labeled strip diagram

Homework

1. 6; 6 + 6 = 12 or 12 − 6 = 6; labeled strip diagram
2. 9; 7 + 9 = 16 or 16 − 7 = 9; labeled strip diagram
3. 20; 9 + 11 = 20; labeled strip diagram
4. 3; 13 + 3 = 16 or 16 − 13 = 3; labeled strip diagram

Lesson 18

Problem Set

1. 18; 7 + 11 = 18; labeled strip diagram
2. 11; 7 + 11 = 18 or 18 − 7 = 11; labeled strip diagram
3. 5; 14 + 5 = 19 or 19 − 14 = 5; labeled strip diagram
4. 18; 14 + 4 = 18; labeled strip diagram
5. 3; 15 + 3 = 18 or 18 − 15 = 3; labeled strip diagram
6. 13; 4 + 13 = 17 or 17 − 4 = 13; labeled strip diagram

Exit Ticket

7; 6 + 7 = 13 or 13 − 6 = 7; labeled strip diagram

Homework

1. 18; 12 + 6 = 18; labeled strip diagram
2. 7; 7 + 7 = 14 or 14 − 7 = 7; labeled strip diagram
3. 5; 13 + 5 = 18 or 18 − 13 = 5; labeled strip diagram
4. 17; 8 + 9 = 17; labeled strip diagram

Lesson 19

Sprint

Side A

1.	4	11.	9	21.	2
2.	2	12.	5	22.	2
3.	2	13.	5	23.	6
4.	6	14.	4	24.	6
5.	3	15.	5	25.	7
6.	3	16.	6	26.	7
7.	3	17.	2	27.	9
8.	4	18.	2	28.	9
9.	4	19.	6	29.	19
10.	3	20.	11	30.	29

Side B

1.	6	11.	7	21.	5
2.	3	12.	3	22.	5
3.	3	13.	3	23.	7
4.	8	14.	4	24.	7
5.	4	15.	4	25.	8
6.	4	16.	7	26.	8
7.	5	17.	2	27.	8
8.	4	18.	2	28.	8
9.	4	19.	7	29.	18
10.	5	20.	14	30.	28

Problem Set

1. Answers will vary.
2. Answers will vary.
3. Answers will vary.
4. Answers will vary.

Exit Ticket

Stories A and C match the strip diagram.

Homework

1. Answers will vary.
2. Answers will vary.

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