

# Kenmore-Town of Tonawanda UFSD

*We educate, prepare, and inspire all students to achieve their highest potential*



## **Grade 1 Module 2 Parent Handbook**

The materials contained within this packet have been taken from the Great Minds curriculum Eureka Math.

### Introduction to Place Value using Addition and Subtraction up to the Number 20

In this module we will extend our work with addition and subtraction to the numbers 1-20, and learn some new strategies along the way.

We are working hard and extending our skills!



### Key Words to Know

*Units we will use:*

*A ten:* (students will focus mainly on one ten during this module)

*Ones:* (these are individual units, ten of which become a ten)

*Mathematical words:*

*Add*

*Subtract*

*Equals*

*“Teen Numbers”:* e.g., 13, 15, 19, etc.

*Partners to 10:* two numbers that together make 10

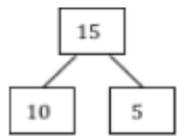
*5 groups:* representations of numbers that are lined up in groups of 5

*Number bonds:* a pictorial representation of how two or more smaller numbers can be combined to make a larger number

*Rekenrek:* see reverse

Think about this problem:

$$15 - 9 = ?$$



We can make a number bond showing that

$$15 = 10 + 5$$

Now, using the 10, we subtract 9:

$$10 - 9 = 1$$

We now have 1, but we need to add back our 5 from the number bond:

$$1 + 5 = 6$$

$$\text{SO... } 15 - 9 = 6!$$

**What Came Before this Module:** We worked with ways to make numbers up to 10, including simple addition and subtraction.

**What Comes After this Module:** We will continue to compare and order numbers, now expanding to topics in length measurement.

### + How you can help at home:

- Continue to practice finding partners for any given number, e.g., how can we make 8? 10?
- Talk about how we can find “tens” in other, larger numbers
- Make up and discuss short story problems that involve simple addition and subtraction

## Key Common Core Standards:

- *Represent and solve problems using addition and subtraction*
- *Understand and apply properties of operations and the relationship between addition and subtraction (e.g.  $3 + 2 = 2 + 3$ , and  $2 + 6 + 4 = 2 + 10$ )*
- *Add and subtract within 20*
- *Understand place value*



Spotlight on Math Models:

### Rekenrek

Students will use this tool to represent numbers in more and complex ways as they grow.

*A Story of Units* has several key mathematical “models” that will be used throughout a student’s elementary years.

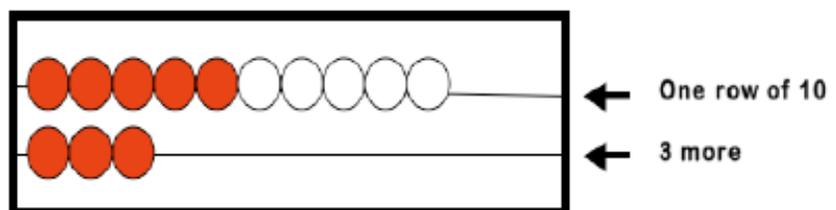
The rekenrek is a kind of abacus that was developed in The Netherlands but has many variations in other world cultures. In *A Story of Units*, rekenreks are used starting in kindergarten first as models of numbers 1-5. Later, the white and red beads are used to illustrate numbers up to 10 and then 20.

There are a variety of skills that students can practice on the rekenrek, including simple counting, skip counting, and eventually beginning addition and subtraction concepts. In the beginning of first grade, we use the rekenreks to model decomposing and composing numbers as we both add and subtract.

#### Sample Problem from Module 2:

##### Using the Rekenrek:

Students can easily see groups of both 5 and 10, and can move the beads to show their counting and thinking as they put numbers together and take them apart (compose and decompose numbers).



Thirteen is seen as “10 and 3 more”

# Introduction to Place Value Through Addition and Subtraction Within 20

## OVERVIEW

Module 2 serves as a bridge from problem solving within 10 to work within 100 as students begin to solve addition and subtraction problems involving teen numbers (**1.NBT.2ab**). In Module 1, students were encouraged to move beyond the Level 1 strategy of counting all to the more efficient counting on. Now, they go beyond Level 2 to learn Level 3 decomposition and composition strategies, informally called make ten or take from ten.

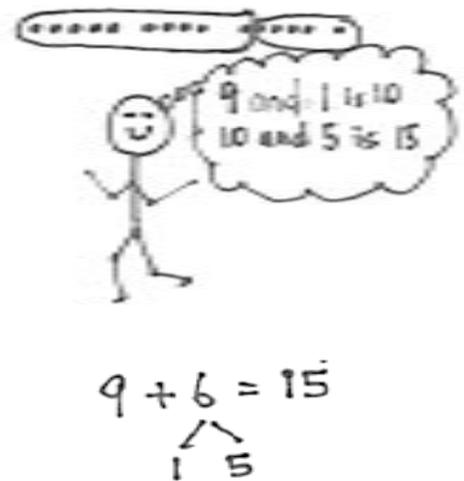
Level 1: Count all



Level 2: Count on



Level 3: Decompose an addend to compose

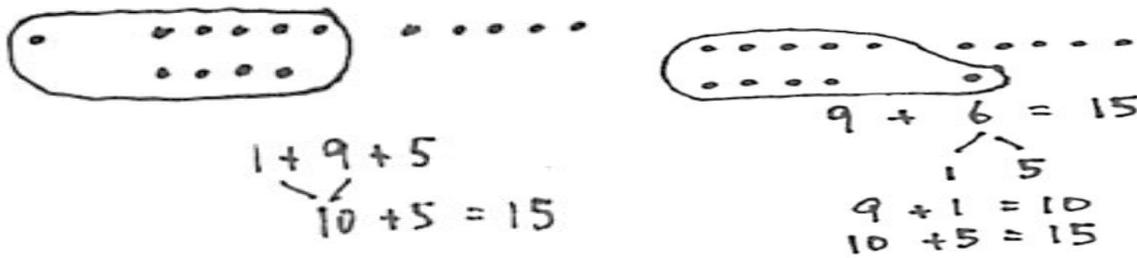


Though many students may continue to count on as their primary means of adding and subtracting, the larger purpose of composing and decomposing ten is to lay the foundation for the role of place value units in addition and subtraction. Meanwhile, from the beginning of the year, fluency activities have focused on the three prerequisite skills for the Level 3 decomposition and composition methods:

1. Partners to ten (**K.OA.4**).
2. Decompositions for all numbers within 10 (**K.OA.3**).
3. Representations of teen numbers as  $10 + n$  (**K.NBT.1** and **1.NBT.2b**). For example, students practice counting the Say Ten way (i.e., ten 1, ten 2, ...) from Kindergarten on.

To introduce students to the make ten strategy, in Topic A students solve problems with three addends (**1.OA.2**) and realize it is sometimes possible to use the associative and commutative properties to compose ten, e.g., “Maria made 1 snowball. Tony made 5, and their father made 9. How many snowballs did they make in all?”  $1 + 5 + 9 = (9 + 1) + 5 = 10 + 5 = 15$ . Since we can add in any order, we can pair the 1 with the 9 to make a ten first. Having seen how to use partners to ten to simplify addition, students next decompose a

second addend in order to compose a ten from 9 or 8 (e.g., “Maria has 9 snowballs and Tony has 6. How many do they have in all?”).  $9 + 6 = 9 + (1 + 5) = (9 + 1) + 5 = 10 + 5 = 15$  (**1.OA.3**). Between the intensive work with addends of 8 and 9 is a lesson exploring commutativity so that students realize they can compose ten from the larger addend.

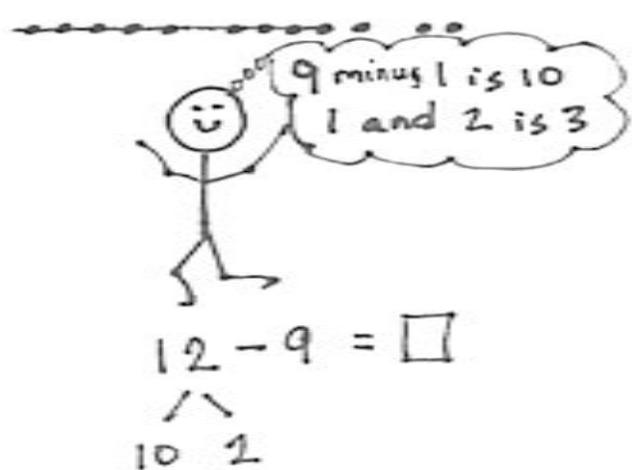
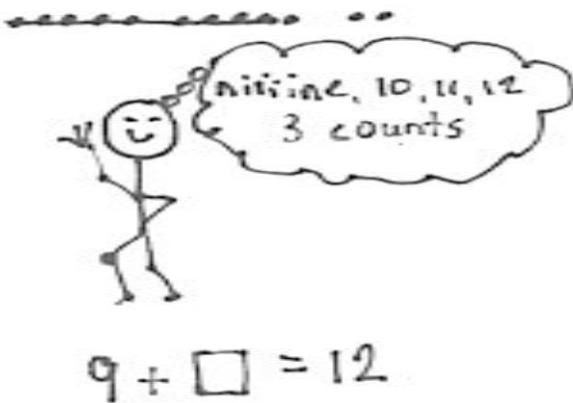


Throughout Topic A, students also count on to add. Students begin by modeling the situations with concrete materials, move to representations of 5-groups, and progress to modeling with number bonds. The representations and models make the connection between the two strategies clear. For example, using the 5-groups pictured above, students can simply count on from 9 to 15, tracking the number of counts on their fingers just as they did in Module 1. They repeatedly compare and contrast counting on with making ten, seeing that the latter is a convenient shortcut. Many start to make the important move from counting on, a Level 2 strategy, to make ten, a Level 3 strategy, persuaded by confidence in their increasing skill and the joy of the shortcut. This is a critical step in building flexible part-whole thinking whereby students see numbers as parts and wholes rather than as discrete counts or one part and some ones. Five-groups soon begin to be thought of as ten-frames, focusing on the usefulness of trying to group 10 when possible. This empowers students in later modules and future grade levels to compose and decompose place value units and work adeptly with the four operations. For example, in Grade 1, this is applied in later modules to solve problems such as  $18 + 6$ ,  $27 + 9$ ,  $36 + 6$ ,  $49 + 7$  (**1.OA.3**).

To introduce students to the take from ten strategy, Topic B opens with questions such as, “Mary has two plates of cookies, one with 10 and one with 2. At the party, 9 cookies were eaten from the plate with 10 cookies. How many cookies were left after the party?”  $10 - 9 = 1$  and  $1 + 2 = 3$ . Students then reinterpret the story to see its solution can also be written as  $12 - 9$ .

*Level 2: Count on*

*Level 3: Decompose ten and compose with the ones*



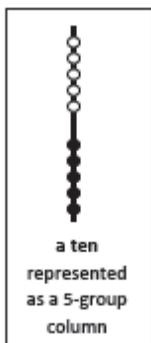
Students relate counting on and subtraction as pictured above. Notice the model is identical, but the thinking is very different.

S: To solve  $12 - 9$ , I count on from 9 to 12, niiiine, 10, 11, 12, three counts. • To solve  $12 - 9$ , I make 10 into 10 and 2 and subtract 9 from ten.  $1 + 2 = 3$ .

Students practice a pattern of action, take from ten and add the ones, as they face different contexts in word problems (MP.8) (e.g., “Maria has 12 snowballs. She threw 8 of them. How many does she have left?”). **(1.OA.3)**. This is important foundational work for decomposing in the context of subtraction problem solving in Grade 2 (e.g., “Hmmm.  $32 - 17$ , do I take 7 ones from 2 ones or from a ten?”). Grade 1 students begin using horizontal linear models of 5-groups or ten-frames to begin the transition toward a unit of ten, as shown in the above image.

Topic C presents students with opportunities to solve varied *add to with change unknown*, *take from with change unknown*, *put together with addend unknown*, and *take apart with addend unknown* word problems. These situations give ample time for exploring strategies for finding an unknown. The module so far has focused on counting on and subtracting by decomposing and composing **(1.OA.1)**. These lessons open up the possibilities to include other Level 3 strategies (e.g.,  $12 - 3 = 12 - 2 - 1$ ).<sup>2</sup> Teachers can include or adjust such strategy use dependent on whether they feel it enhances understanding or rather undermines or overwhelms. The topic closes with a lesson to further solidify student understanding of the equal sign as it has been applied throughout the module. Students match equivalent expressions to construct true number sentences and explain their reasoning using words, pictures, and numbers (e.g.,  $12 - 7 = 3 + 2$ ,  $10 + 5 = 9 + 6$ ) **(1.OA.7)**.

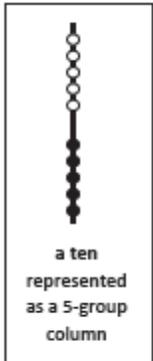
In Topic D, after all the work with 10, the module culminates with naming a ten **(1.NBT.2a)**. Familiar representations of teen numbers, such as two 5-groups, the Rekenrek, and 10 fingers, are all renamed as a ten and some ones **(1.NBT.2b)**, rather than 10 ones and some more ones **(K.NBT.1)**. The ten is shifting to being one unit, a structure from which students can compose and decompose teen numbers **(1.NBT.2b, MP.7)**. This significant step forward sets the stage for understanding all the numbers within 100 as composed of a number of units of ten and some ones **(1.NBT.2b)**. The horizontal linear 5-group modeling of 10 is moved to a vertical representation in preparation for this next stage, in Module 4, as shown in the image below. This topic’s work is done while solving both abstract equations and contextualized word problems.



# Terminology

## New or Recently Introduced Terms

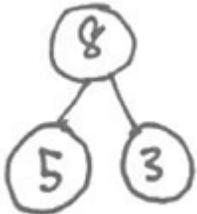
- A ten (a group, or unit, consisting of 10 items)



- Ones (individual units, 10 of which become a ten)

## Familiar Terms and Symbols

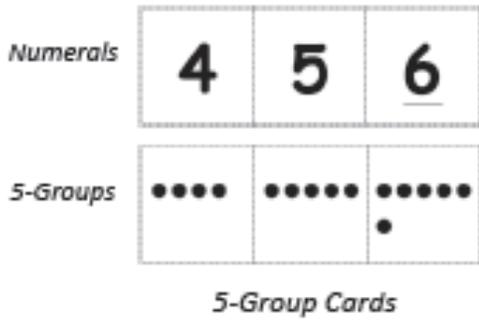
- 5-groups
- Add
- Equals
- Number bonds



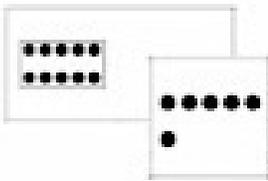
- Partners to ten
- Subtract
- Teen numbers

# Suggested Tools and Representations

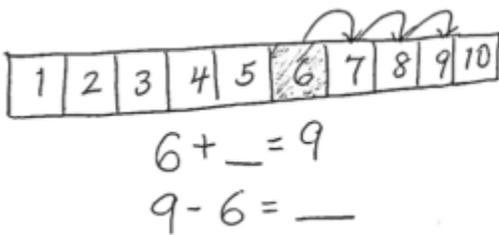
- 5-group formations: 5-groups (and 5-group cards), 5-group rows, 5-group column



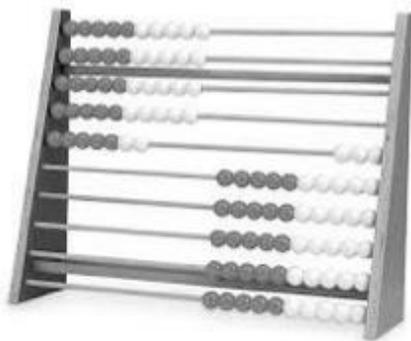
- Hide Zero cards



- Number bonds
- Number path



- Rekenrek



# Grade 1 Module 2 Topic A

---

## Counting On or Making Ten to Solve Result Unknown and Total Unknown Problems

### Focus Standards:

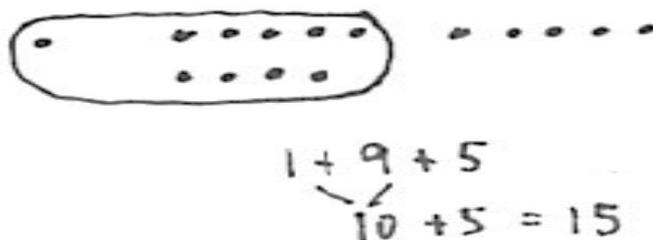
- 1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.2 Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) *Examples: If  $8 + 3 = 11$  is known, then  $3 + 8 = 11$  is also known. (Commutative property of addition.) To add  $2 + 6 + 4$ , the second two numbers can be added to make a ten, so  $2 + 6 + 4 = 2 + 10 = 12$ . (Associative property of addition.)*
- 1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g.,  $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g.,  $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that  $8 + 4 = 12$ , one knows  $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding  $6 + 7$  by creating the known equivalent  $6 + 6 + 1 = 12 + 1 = 13$ ).

### Instructional Days Recommended: 11

Topic A begins with students solving word problems with three addends (**1.OA.2**) as a way for them to begin to explore the make ten Level 3 strategy in a meaningful context. With problems that always include at least two numbers that yield 10 when added together, Lesson 1 encourages students to use the

associative and commutative properties as they set up and read equations in various ways. The story problem below, for instance, can be solved by adding  $1 + 9$  first and then adding the five (see image below story problem).

*We had 1 upper-grade buddy come visit with 9 more buddies following him. Soon after that, 5 more buddies came to our classroom. How many buddies came altogether*



This leads into Lesson 2's focus of explicitly using the associative and commutative properties<sup>1</sup> to add three addends without the context of story problems (**1.OA.3**). This lesson is where students practice associating the two addends that make ten (**1.OA.6**) and then adding the third addend; they prove to themselves that this simplification of addition is a viable strategy.

Following this introduction, Lessons 3, 4, and 5 afford students ample practice with adding 9 and another single-digit number as they decompose the second addend to make ten with the 9. Students solve problems such as "Maria has 9 snowballs, and Tony has 6. How many do they have in all?" as follows:  $9 + 6 = 9 + (1 + 5) = (9 + 1) + 5 = 10 + 5 = 15$ . This triad of lessons takes students through a concrete–pictorial–abstract progression as they work with physical 5-groups using objects, 5-group drawings, and finally number bonds.

Lesson 6 reminds students of the commutative property again, by focusing them on when and why they might apply commutativity: to compose ten from the larger addend. Lessons 7, 8, and 9 mirror the earlier set of three lessons, but students decompose one addend to make ten with 8 as the key addend. This extensive practice allows students to internalize both why and how they would compose ten from the larger addend as they come to realize that this is an efficient strategy.

Students use the make ten strategy with 5-group drawings and number bonds to solve a variety of problems involving a mixture of 7, 8, or 9 as addends in Lesson 10. This gives students an opportunity to not only practice their newly discovered strategies, but it also allows them to generalize this make ten strategy to a new number: 7. It is important to note that students can continue to use counting on as a strategy throughout the entirety of Topic A, although many students begin to use the make ten strategy more and more as they continually discuss addition strategies and efficiency with one another.

Topic A ends with Lesson 11 where students solve story problems with two addends (**1.OA.1**) using independently selected methods. By asking questions such as “Why did you solve the problem that way? How did we solve these differently?” students are able to engage in rich dialogue about the mathematical strategies and determine which are most useful.

*\*The sample homework responses contained in this manual are intended to provide insight into the skills expected of students and instructional strategies used in Eureka Math.*

## Lesson 1

Objective: Solve word problems with three addends, two of which make ten.

### Homework Key

1. Drawing with 10 circled; 5, 6, 4, 15; 5, 15; 15
2. Drawing with 10 circled; 5, 7, 5, 17; 7, 17; 17
3. Drawing with 10 circled; 7, 6, 3, 16; 6, 16; 16
4. Drawing with 10 circled; 4, 9, 1, 14; 10, 4, 14; 14

### Homework Sample

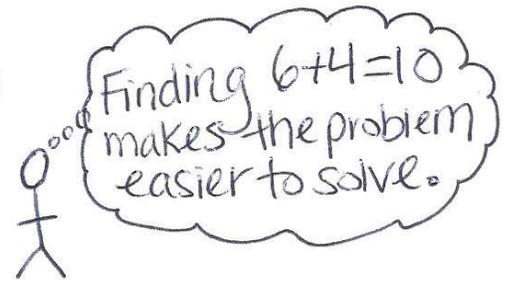
Read the math story. Make a simple math drawing with labels. (Circle)10 and solve.

1. Chris bought some treats. He bought 5 granola bars, 6 boxes of raisins, and 4 cookies. How many treats did Chris buy?

G  
00000

R C  
00000 0000  
0

$$\begin{array}{r} 5 + \overset{10}{\textcircled{6 + 4}} = \underline{15} \\ 10 + \underline{5} = \underline{15} \end{array}$$



Chris bought 15 treats.

## Lesson 2

Objective: Use the associative and commutative properties to make ten with three addends.

### Homework Key

1. Partial answer provided; 4; 2, 12
2. 5 and 5 circled; picture drawn; 10, 5, 5, 3; 3, 13
3. 2 and 8 circled; picture drawn; 10, 5, 2, 8; 5, 15
4. 7 and 3 circled; picture drawn; 10, 2, 3, 7; 2, 12
5. Partial answer provided; 15; 10, 5, 15
6. 8 and 2 circled into a number bond of 10; 14; 10, 4, 14

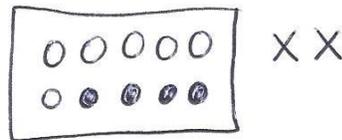
Challenge:

- a. Sentence circled
- b. 4, 6 circled; sentence circled
- c. 3, 7 circled
- d. 2, 8 circled; sentence circled

### Homework Samples

Circle the numbers that make ten. Draw a picture. Complete the number sentence.

1.  $\textcircled{6} + 2 + \textcircled{4} = \boxed{12}$

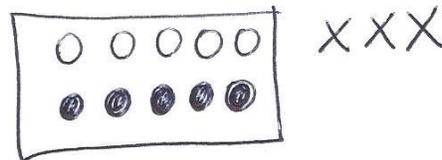


$\boxed{10}$   
 $\begin{array}{c} \diagdown \quad \diagup \\ \underline{6} + \underline{4} + \underline{2} \end{array}$

$\boxed{10} + \underline{2} = \underline{12}$

---

2.  $\textcircled{5} + 3 + \textcircled{5} = \boxed{13}$



$\boxed{10}$   
 $\begin{array}{c} \diagdown \quad \diagup \\ \underline{5} + \underline{5} + \underline{3} \end{array}$

$10 + \underline{3} = \underline{13}$

## Lesson 3 - 4

Objective: Make ten when one addend is 9.

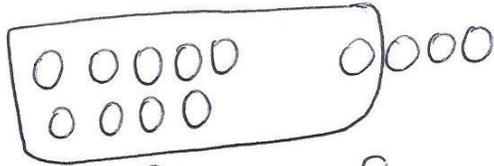
### Homework Key (Lesson 3)

- 10 circled in drawing; 4, 13; 3, 13; 13
- 10 circled in drawing; 5, 14; 4, 14; 14
- 10 circled in drawing; 6, 15; 5, 15; 15
- 10 circled in drawing; 7, 16; 6, 16; 16
- 10 circled in drawing; 8, 17; 7, 17; 17

### Homework Sample (Lesson 3)

Draw, label, and circle to show how you made ten to help you solve.  
Complete the number sentences.

1. Ron has 9 marbles, and Sue has 4 marbles.  
How many marbles do they have in all?



R

S

9 and 4 make 13.

10 and 3 make 13.

Ron and Sue have 13 marbles.

# Lesson 4

## Homework Key

- 1. 1, 2; 12; 10, 2, 12; picture drawn
- 2. 1, 5; 15; 10, 5, 15; picture drawn
- 3. 6, 1; 16; 10, 6, 16; picture drawn
- 4. a. 17; matched with 1, 7
- b. 15; matched with 1, 5
- c. 16; matched with 6, 1
- 5. a. 1, 1
- b. 1, 3; picture drawn
- c. 5, 1; picture drawn

## Homework Sample

Solve. Make math drawings using the ten-frame to show how you made 10 to solve.

$9 + 2 = 11$        $10 + 1 = 11$

1.  $9 + 3 = 12$

$10 + 2 = 12$

## Lesson 5

Objective: Compare efficiency of counting on and making ten when one addend is 9.

### Homework Key

- 15; 5, 15; number bond shows 5, 10, 15
- 17; 10, 7, 17; number bond shows 7, 10, 17
- 14; 10, 4, 14; number bond shows 4, 10, 14
- 16; 10, 6, 16; number bond shows 6, 10, 16
5.
  - 14; matched with 10, 4, 14
  - 15; matched with 5, 10, 15
  - 17; matched with 7, 10, 17
6. Most efficient strategy shown; 16
7. Most efficient strategy shown; 11
8. Most efficient strategy shown; 10
9. Most efficient strategy shown; 17
10. Most efficient strategy shown; 13
11. Most efficient strategy shown; 18

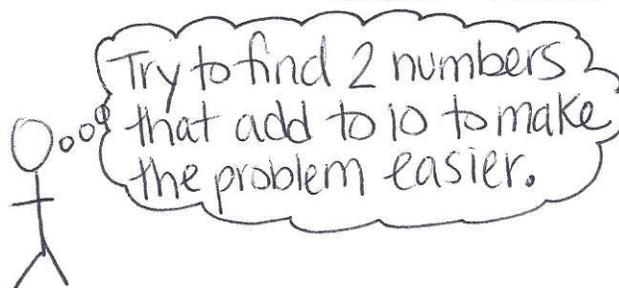
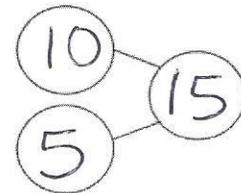
### Homework Sample

Solve the number sentences. Use number bonds to show your thinking. Write the 10+ fact and new number bond.

1.  $9 + 6 = 15$



$$10 + 5 = 15$$



## Lesson 6

Objective: Use the commutative property to make ten.

### Homework Key

- 15;  $6 + 9 = 15$ ; answer provided
  - 12;  $9 + 3 = 12$ ;  $10 + 2 = 12$
  - 14;  $5 + 9 = 14$ ;  $10 + 4 = 14$
  - 17;  $17 = 9 + 8$ ;  $10 + 7 = 17$
  - 16;  $16 = 7 + 9$ ;  $10 + 6 = 16$
- 13
  - 13
  - 15
  - 15
  - 17
  - 16
  - 8
  - 17
  - 10
  - 14
- 9 + 4 colored; answer provided; 9 + 4
  - 7 + 9 colored;  $10 + 6 = 7 + 9$
  - 8 + 9 colored;  $10 + 7 = 8 + 9$
  - 9 + 9 colored;  $10 + 8 = 9 + 9$

### Homework Samples

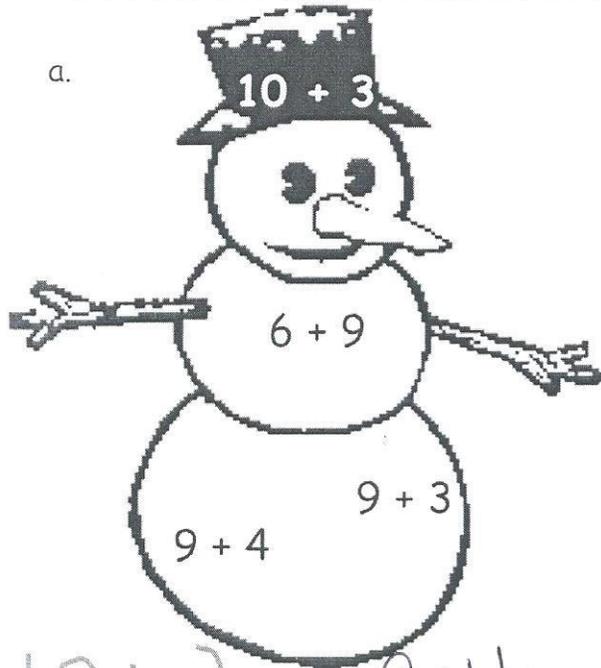
- Solve. Use your number bonds. Draw a line to match the related facts. Write the related 10+ fact.

a.	$9 + 6 = \underline{15}$	$\underline{17} = 9 + 8$	$\underline{10 + 7 = 17}$
b.	$\underline{12} = 3 + 9$	$\underline{16} = 7 + 9$	$\underline{10 + 6 = 16}$
c.	$\underline{14} = 9 + 5$	$6 + 9 = \underline{15}$	$\underline{10 + 5 = 15}$
d.	$8 + 9 = \underline{17}$	$9 + 3 = \underline{12}$	$\underline{10 + 2 = 12}$
e.	$9 + 7 = \underline{16}$	$5 + 9 = \underline{14}$	$\underline{10 + 4 = 14}$

## Lesson 6 (continued)

3. Find and color the expression that is equal to 13.  
Write the true number sentence below.

a.



10 + 3 = 9 + 4

## Lesson 7 - 8

Objective: Compare efficiency of counting on and making ten when one addend is 9.

### Homework Key (Lesson 7)

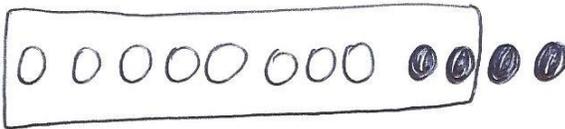
1. Picture drawn and labeled showing 4 and 8; 10 circled; 12; 2, 12; 12
2. Picture drawn and labeled showing 6 and 8; 10 circled; 6, 8, 14; 10, 4, 14; 14
3. Picture drawn and labeled showing 7 and 8; 10 circled; 7, 8, 15; 10, 5, 15; 15
4. Picture drawn and labeled showing 9 and 8; 10 circled; 9, 8, 17; 10, 7, 17; 17

### Homework Samples

Draw, label, and circle to show how you made ten to help you solve.

Write the number sentences you used to solve.

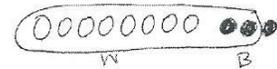
1. Meg gets 8 toy animals and 4 toy cars at a party.  
How many toys does Meg get in all?



$$8 + 4 = \underline{12}$$

$$10 + \underline{2} = \underline{12}$$

Meg gets 12 toys.



$$8 + 3 = 11$$

$$10 + 1 = 11$$

# Lesson 8

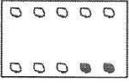
## Homework Key

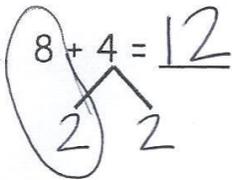
1. Picture drawn; 2, 2; 12; 10, 2, 12
2. Picture drawn; 2, 4; 14; 10, 4, 14
3. Picture drawn; 5, 2; 15; 10, 5, 15
4. a. Picture drawn; 2, 2; circled
  - b. Picture drawn; 2, 6; circled
  - c. Picture drawn; 5, 2; crossed out
  - d. Picture drawn; 3, 2; crossed out
  - e. Picture drawn; 2, 1; crossed out
  - f. Picture drawn; 7, 1; circled

## Homework Samples

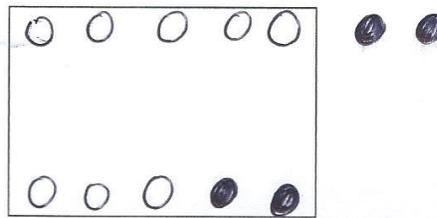
Solve. Make math drawings using the ten-frame to show how you made ten to solve.

$$\begin{array}{r} 8 + 3 = 11 \\ \swarrow \quad \searrow \\ 2 \quad 1 \end{array}$$

$$10 + 1 = 11$$


$$\textcircled{1} \quad 8 + 4 = 12$$


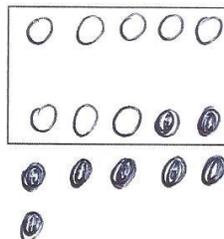
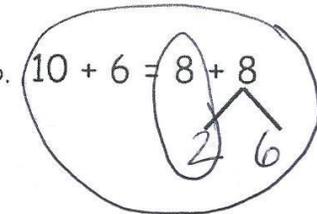
$$\underline{10} + \underline{2} = \underline{12}$$



4. Make math drawings using ten-frames to solve. Circle the true number sentences.

Write an X to show number sentences that are not true.

b.  $10 + 6 = 8 + 8$



## Lesson 9

Objective: Compare efficiency of counting on and making ten when one addend is 8.

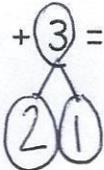
### Homework Key

- 2, 1; 11; 1, 11
- 4, 2; 14; 4, 14
- 16; 2, 6; 16, 6
- 13; 3, 2; 13, 3
- a. 15; 7, 8  
b. 15; 15, 10, 5
- a. 8; 16, 8, 8  
b. 16; 16, 10, 6
- a. 17; 17, 9, 8  
b. 17; 17, 10, 7
- $10 + 1 = 11$
- $13 = 10 + 3$
- $8 + 6 = 14$

### Homework Samples

Use number bonds to show your thinking. Write the 10+ fact.

1.  $8 + 3 = 11$



$10 + \underline{\quad} = \underline{11}$

9. Lisa had 5 red rocks and 8 white rocks.  
How many rocks did she have?

$5 + 8$



$10 + 1 = 11$

$13 = 10 + 3$

# Lesson 10

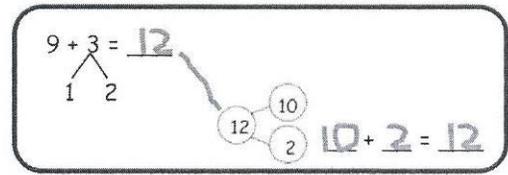
Objective: Solve problems with addends of 7, 8, and 9.

## Homework Key

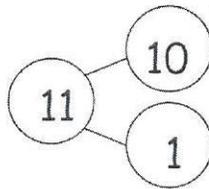
- |                                                 |                           |
|-------------------------------------------------|---------------------------|
| 1. 14; matched with 14-10-4 bond; $10 + 4 = 14$ | 7. 4; 5; 6                |
| 2. 12; matched with 12-10-2 bond; $10 + 2 = 12$ | 8. 5; 6; 7                |
| 3. 13; matched with 13-10-3 bond; $10 + 3 = 13$ | 9. 15; 6; 15, 7; 15, 8    |
| 4. 11; matched with 11-10-1 bond; $10 + 1 = 11$ | 10. 7; 16, 8; 9, 16       |
| 5. 15; matched with 15-10-5 bond; $10 + 5 = 15$ | 11. 17; 17; 17, 9; 17, 10 |
| 6. 12; 3; 4; 5                                  |                           |

## Homework Samples

Solve. Match the number sentence to the ten-plus number bond that helped you solve the problem. Write the ten-plus number sentence.

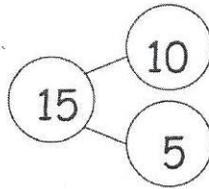


1.  $8 + 6 = 14$   
 (2) (4)



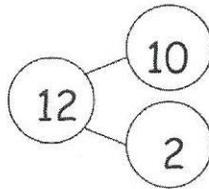
\_\_\_ + \_\_\_ = \_\_\_

2.  $7 + 5 =$  \_\_\_



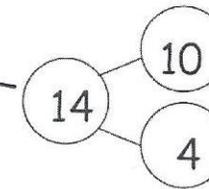
\_\_\_ + \_\_\_ = \_\_\_

3.  $5 + 8 =$  \_\_\_



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

4.  $4 + 7 =$  \_\_\_

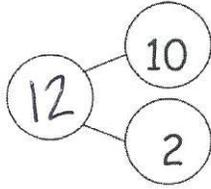


10 + 4 = 14

## Lesson 10 (continued)

Complete the number sentences so they equal the given number bond.

6.



$$9 + \underline{3} = 12$$

$$8 + \underline{4} = 12$$

$$7 + \underline{5} = 12$$

## Lesson 11

Objective: Share and critique peer solutions strategies for *put together with total unknown* word problems.

### Homework Key

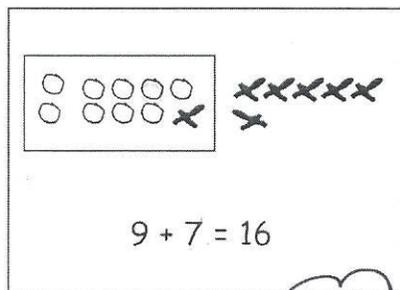
1. Joe's work corrected to show number bond of 1, 6;  $9 + 7 = 16$
2. Lori's work corrected to show number bond of 5, 3;  $8 + 5 = 13$
3. Mary's work corrected to show drawing and number sentence of  $13 = 7 + 6$
4. Frank's work corrected to show number bond of 1, 7;  $9 + 8 = 17$

### Homework Sample

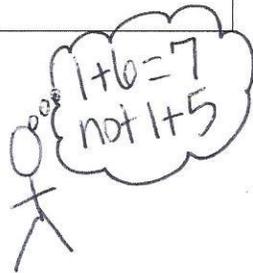
Look at the student work. Correct the work. If the answer is incorrect, show a correct solution in the space below the student work.

1. Todd has 9 red cars and 7 blue cars. How many cars does he have altogether?

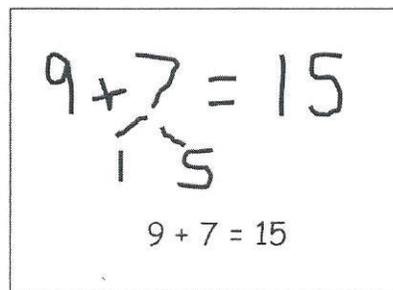
Mary's Work



$9 + 7 = 16$

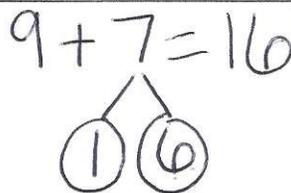


Joe's Work



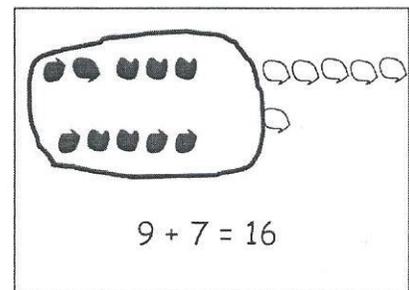
$9 + 7 = 15$

$9 + 7 = 15$



$9 + 7 = 16$

Len's Work



$9 + 7 = 16$

# Grade 1 Module 2 Topic B

---

## Counting On or Taking from Ten to Solve *Result Unknown* and *Total Unknown* Problems

### Focus Standards:

- 1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.3 Apply properties of operations as strategies to add and subtract. (Students need not use formal terms for these properties.) *Examples: If  $8 + 3 = 11$  is known, then  $3 + 8 = 11$  is also known. (Commutative property of addition.) To add  $2 + 6 + 4$ , the second two numbers can be added to make a ten, so  $2 + 6 + 4 = 2 + 10 = 12$ . (Associative property of addition.)*
- 1.OA.4 Understand subtraction as an unknown-addend problem. *For example, subtract  $10 - 8$  by finding the number that makes 10 when added to 8.*
- 1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g.,  $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g.,  $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that  $8 + 4 = 12$ , one knows  $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding  $6 + 7$  by creating the known equivalent  $6 + 6 + 1 = 12 + 1 = 13$ ).

### Instructional Days Recommended: 10

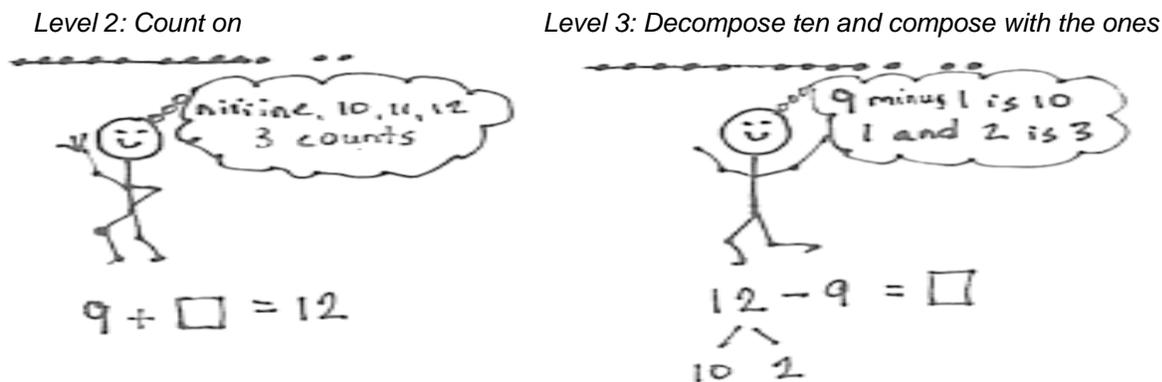
Topic B focuses on the take from ten Level 3 strategy (**1.OA.6**). Students begin with word problems calling on them to subtract 9 from 10 in Lessons 12 and 13,

first with concrete objects, then with drawings, and then with number bonds. The problems students solve are similar to this one: “Mary has two plates of cookies, one with 10 and one with 2. At the party, 9 cookies were eaten from the plate with 10 cookies. How many cookies were left after the party?” (1.OA.1)  $10 - 9 = 1$  and  $1 + 2 = 3$ . This allows students to use this take from ten strategy when the ten is already separated for them and in a variety of contexts (concrete, pictorial, and abstract), which sets them up for the work of the later lessons of the topic where they must decompose teen numbers on their own to take from ten.

Lessons 14, 15, and 16 focus students on modeling subtraction of 9 from teen numbers, first with manipulatives, then 5-groups drawings, and finally number bonds. Students relate counting on to subtraction in a couple of ways (pictured below) (1.OA.4). Students begin to realize that there is both simplicity and efficiency when they decompose the teen number into 10 and some ones, subtract the 9 from 10, and finally add the 1 left over with some ones; this is key in Lesson 16 as students share their thinking and compare efficiency.

*S: To solve  $12 - 9$ , I count on from 9 to 12. Niiine, 10, 11, 12, three counts.*

*To solve  $12 - 9$ , I make 12 into 10 and 2 and subtract 9 from ten.  $1 + 2 = 3$ .*



This same progression that occurred with subtracting 9 from teen numbers repeats itself in Lessons 17, 18, and 19 as students subtract 8 from teen numbers in concrete, pictorial, and abstract contexts. Students practice a pattern of action, take from ten and add the ones, as they face different contexts in word problems (MP.8). For example, “Maria has 12 snowballs. She threw 8 of them. How many does she have left?” (1.OA.3).

Lesson 20 both broadens and solidifies students’ strategy use as they are faced with a combination of 7, 8, and 9 as subtrahends being taken away from teen

numbers in both story problems and abstract equations. Lesson 21 closes Topic B with a student-centered discussion about solution strategies as they solve both action-oriented (*take from with result unknown*) and relationship (*take apart with addend unknown*) problems. Students ask each other, “How and why did you solve it this way?” and then discuss which strategies are the most efficient.

*\*The sample homework responses contained in this manual are intended to provide insight into the skills expected of students and instructional strategies used in Eureka Math.*

## Lesson 12 - 13

Objective: Solve word problems with subtraction of 9 from 10.

### Homework Key (Lesson 12)

- 15, 10, 5; groups of 10 and 5 drawn; 9 crossed off from eating nuts; 6
- 17, 10, 7; groups of 10 and 7 drawn; 9 crossed off from the leaf; 8
- Groups of 10 and 3 drawn; 9 crossed off from the sleeping ants; 4
- Groups of 10 and 4 drawn; answers will vary.

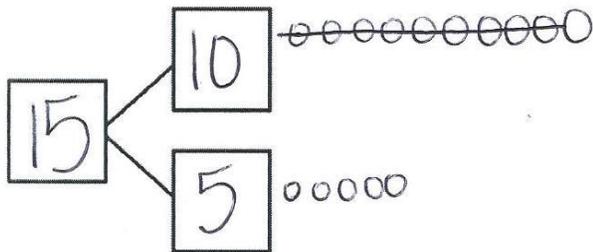
### Homework Sample (Lesson 12)

Make a simple math drawing. Cross out from the 10 ones to show what happens in the stories.

I had 16 grapes.  
10 of them were red,  
and 6 were green.  
I ate 9 red grapes.  
How many grapes do  
I have now?

Now I have 7 grapes.

1. There were 15 squirrels by a tree. 10 of them were eating nuts. 5 squirrels were playing. A loud noise scared away 9 of the squirrels eating nuts. How many squirrels were left by the tree?



There were 6 squirrels left by the tree.

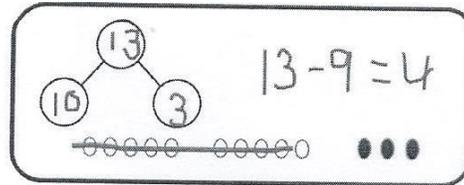
# Lesson 13

## Homework Key

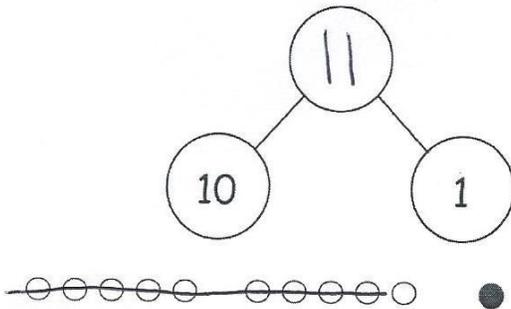
- 11; 9 crossed off;  $11 - 9 = 2$ ; 2
- 5-group rows showing 19; 9 crossed off; number bond showing 19, 10, 9;  $19 - 9 = 10$ ; 10
- 5-group rows showing 18; 9 crossed off; number bond showing 18, 10, 8;  $18 - 9 = 9$ ; 9
- 14; 5-group rows showing 14; 9 crossed off; 14, 10;  $14 - 10 = 4$ ; 4

## Homework Samples

Solve. Use 5-group rows, and cross out to show your work. Write number sentences.



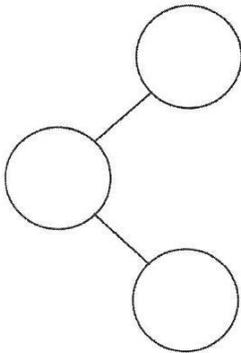
1. In a park, 10 dogs are running on the grass, and 1 dog is sleeping under the tree. 9 of the running dogs leave the park. How many dogs are left in the park?



$$11 - 9 = 2$$

There are 2 dogs left in the park.

2. Alejandro had 9 rocks in his yard and 10 rocks in his room. 9 of the rocks in his room are gray rocks, and the rest of the rocks are white. How many white rocks does Alejandro have?



Alejandro has \_\_\_ white rocks.

# Lesson 14 - 15

Objective: Model subtraction of 9 from teen numbers.

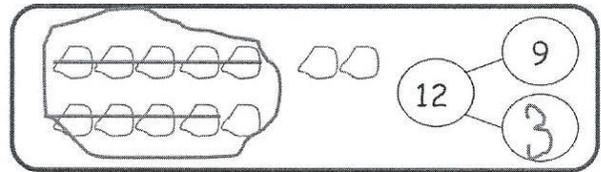
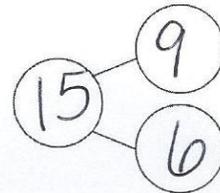
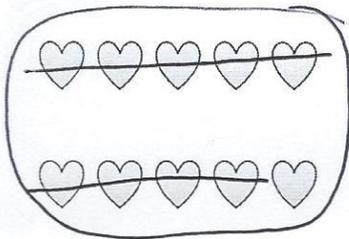
## Homework Key (Lesson 14)

- Group of 10 circled; number bond showing 15, 9, 6; 6
- Group of 10 drawn and circled; number bond showing 14, 9, 5; 5
- Group of 10 drawn and circled; number bond showing 12, 9, 3; 3
- Group of 10 drawn and circled; number bond showing 13, 9, 4; 4
- Group of 10 drawn and circled; number bond showing 16, 9, 7; 7
- $4; 1 + 3 = 4$
  - $5; 1 + 4 = 5$
  - $6; 1 + 5 = 6$
  - $7; 1 + 6 = 7$
- Number bond drawn showing 17, 9, 8;  $9 + 8 = 17$

## Homework Samples (Lesson 14)

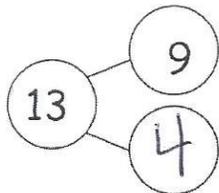
Circle 10 and subtract. Make a number bond.

1.  $15 - 9 = 6$

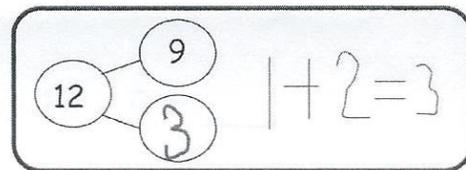


6. Complete the number bond, and write the number sentence that helped you.

a.



$9 + 4 = 13$



# Lesson 15

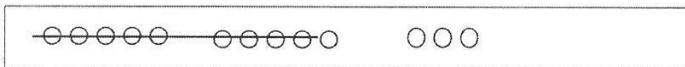
## Homework Key

- Answer provided  
 $16 - 9 = 7$   
 $19 - 9 = 10$   
 $17 - 9 = 8$   
 $18 - 9 = 9$   
 $14 - 9 = 5$
- 5-groups drawn; 6;  $15 - 9 = 6$
- 5-groups drawn; 8;  $17 - 9 = 8$
- 5-groups drawn; 7;  $16 - 9 = 7$
- 5-groups drawn; 17; 17, 9, 8;  $9 + 8 = 17$ ;  $17 - 9 = 8$
- 5-groups drawn; 8; 17, 9, 8;  $17 - 8 = 9$ ;  $8 + 9 = 17$

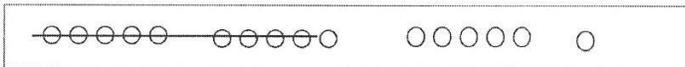
## Homework Samples

Write the number sentence for each 5-group row drawing.

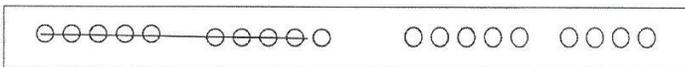
1.



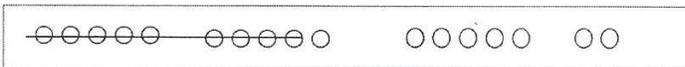
$$\underline{13 - 9 = 4}$$



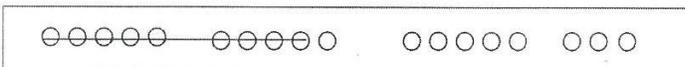
$$\underline{16 - 9 = 7}$$



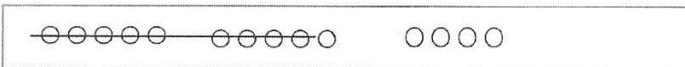
$$\underline{19 - 9 = 10}$$



$$\underline{17 - 9 = 8}$$



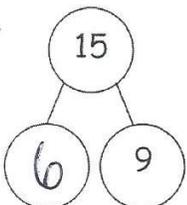
$$\underline{18 - 9 = 9}$$



$$\underline{14 - 9 = 5}$$

Draw 5-groups to complete the number bond, and write the 9- number sentence.

2.



# Lesson 16

Objective: Relate counting on to making ten and taking from ten.

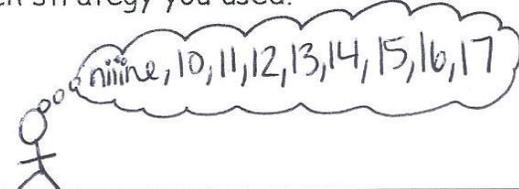
## Homework Key

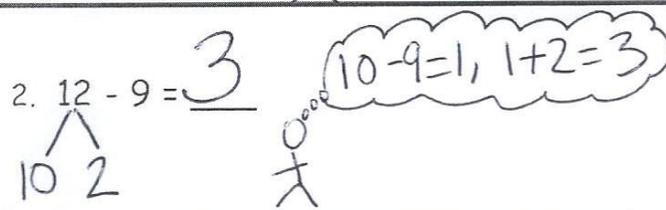
- 1. 8; work based on strategy used to solve
- 2. 3; work based on strategy used to solve
- 3. 7; work based on strategy used to solve
- 4. 2; work based on strategy used to solve
- 5. 5; work will vary.

- 6. 8; work will vary.
- 7. Paul: 3, Lisa: 9; work will vary.
- 8. Answers will vary.

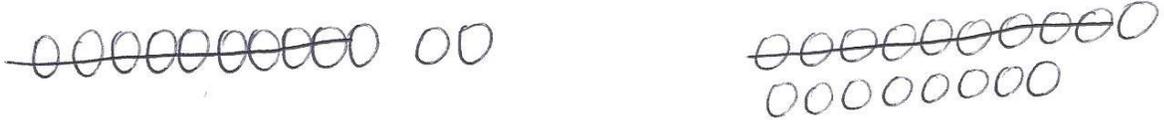
## Homework Samples

Complete the subtraction sentences by using either the count on or take from ten strategy. Tell which strategy you used.

1.  $17 - 9 = \underline{8}$    take from ten  
 count on

2.  $12 - 9 = \underline{3}$    take from ten  
 count on

7. Paul has 12 marbles. Lisa has 18 marbles. They each rolled 9 marbles down a hill. How many marbles did each student have left? Tell which strategy you chose for each student.



I used take from ten.

Paul has 3 marbles left.

Lisa has 9 marbles left.

## Lesson 17- 18

Objective: Model subtraction of 8 from teen numbers.

### Homework Key (Lesson 17)

- 6; matched to first picture
  - 8; matched to hearts
  - 3; matched to stars
  - 5; matched to third picture
- Number bond or drawing to match number sentence; 6
- 10 circled;  $17 - 8 = 9$ ; 9
- 10 circled; 8 crossed off;  $12 - 8 = 4$ ; 4
- Number bond or drawing;  $15 - 8 = 7$ ; 7
- 18, 8;  $18 - 8 = 10$ ; number bond showing 18, 10, 8

### Homework Samples (Lesson 17)

- Match the number sentence to the picture or to the number bond.

a.  $13 - 7 = \underline{6}$

$\begin{array}{c} 13 \\ \wedge \\ 10 \quad 3 \end{array}$	$\begin{array}{l} 10 - 7 = 3 \\ 3 + 3 = 6 \end{array}$
-----------------------------------------------------------	--------------------------------------------------------

b.  $16 - 8 = \underline{8}$

--

c.  $11 - 8 = \underline{3}$

$\begin{array}{c} 13 \\ \wedge \\ 10 \quad 3 \end{array}$	$\begin{array}{l} 10 - 8 = 2 \\ 2 + 3 = 5 \end{array}$
-----------------------------------------------------------	--------------------------------------------------------

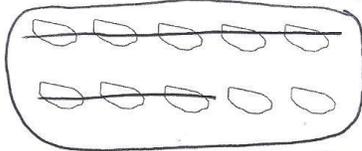
d.  $13 - 8 = \underline{5}$

--

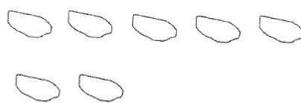
- Show how you would solve  $14 - 8$ , either with a number bond or a drawing.

Circle 10. Then subtract.

- Milo has 17 rocks. He throws 8 of them into a pond. How many does he have left?



$17 - 8 = 9$



Milo has 9 rocks left.

# Lesson 18

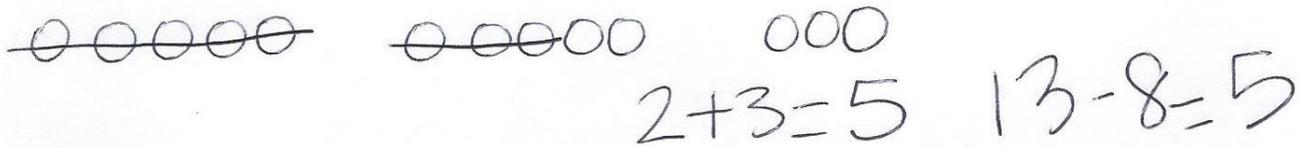
## Homework Key

1. 5-group row and ones drawn; 8 crossed off;  $2 + 3 = 5$ ;  $13 - 8 = 5$ ; 5
2. 5-group row and ones drawn; 8 crossed off;  $2 + 5 = 7$ ;  $15 - 8 = 7$ ; 7
3. 5-group row and ones drawn; 8 crossed off;  $2 + 9 = 11$ ;  $19 - 8 = 11$ ; 11
4. 15; number bond drawn showing 5, 2
5. 7; number bond drawn showing 10, 5
6. 5-group row and ones drawn; 9 crossed off; 2
7. 5-group row and ones drawn; 9 crossed off; 5
8. 5-group row and ones drawn; 8 crossed off or number bond drawn;  $14 - 8 = 6$ ; 6

## Homework Samples

Draw 5-group rows, and cross out to solve. Write the 2+ addition sentence that helped you add the two parts.

1. Annabelle had 13 goldfish. Eight goldfish ate fish food. How many goldfish did not eat fish food?



5 goldfish did not eat fish food.

Show making ten or taking from ten to solve the number sentences.

4.  $7 + 8 = \underline{15}$

5.  $15 - 8 = \underline{\quad}$

# Lesson 19

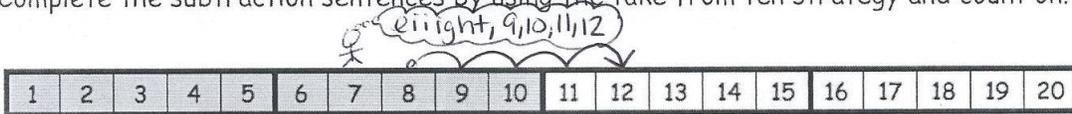
Objective: Compare efficiency of counting on and taking from ten.

## Homework Key (Lesson 17)

- a. Number bond showing 10, 2; 4  
b. 4
- a. Number bond showing 10, 5; 7  
b. 7
- Strategy will vary; 3
- Strategy will vary; 9
- 8; 8
- $13 - 8 = 5$ ; number bond showing 10, 3; 5
- a.  $4; 8 + 4 = 12$   
b.  $7; 8 + 7 = 15$   
c.  $10; 8 + 10 = 18$   
d.  $3; 8 + 3 = 11$

## Homework Samples

Complete the subtraction sentences by using the take from ten strategy and count on.



1. a.  $12 - 8 = \underline{4}$       b.  $8 + \underline{4} = 12$

$\begin{array}{c} \wedge \\ 10 \quad 2 \end{array}$

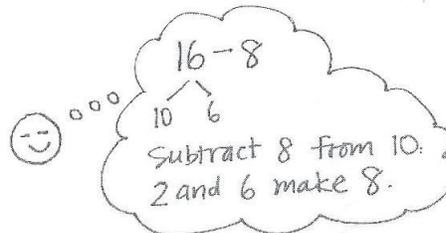
2. a.  $15 - 8 = \underline{7}$       b.  $8 + \underline{7} = 15$

$\begin{array}{c} \wedge \\ 10 \quad 5 \end{array}$

Use a number bond to show how you solved using the take from ten strategy.

5. Elise counted 16 worms on the pavement. Eight worms crawled into the dirt. How many worms did Elise still see on the pavement?

$16 - 8 = \underline{\quad}$



Elise still saw        worms on the pavement.

## Lesson 20

Objective: Subtract 7, 8, and 9 from teen numbers.

### Homework Key

- 6
- 7
- 8
- 8
- 9
- 10
- 7
- 8
- 9
- 10
- 11
- 12
- $18 - 8$
  - $12 - 7$
- Drawing or number bond drawn showing Elsie is right since both expressions are equal
  - Drawing or number bond drawn showing John is right since both expressions are not equal
  - Drawing or number bond drawn showing Elsie made a mistake and John is correct since  $17 - 9$  and  $16 - 10$  are not equal
  - 7; other answers will vary.

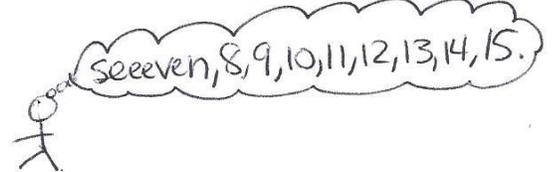
### Homework Samples

Complete the number sentences to make them true.

1.  $15 - 9 = \underline{6}$

2.  $15 - 8 = \underline{7}$

3.  $15 - 7 = \underline{8}$



---

4.  $17 - 9 = \underline{8}$

5.  $17 - 8 = \underline{9}$

6.  $17 - 7 = \underline{10}$

# Lesson 21

Objective: Share and critique peer solution strategies for *take from with result unknown* and *take apart with addend unknown* word problems from the teens.

## Homework Key

1. a. Take from ten;  $13 - 6 = 7$ ; strategy shown correctly solving problem
  - b. Make ten; different strategy shown correctly solving problem
  - c. Explanations may vary.
2. a. Take from ten; different strategy shown correctly solving problem
  - b. Make ten;  $9 + 8 = 17$ ; strategy shown correctly solving problem
  - c. Explanations may vary.

## Homework Samples

Olivia and Jake both solved the word problems.  
 Write the strategy used under their work.  
 Check their work. If incorrect, solve correctly.  
 If solved correctly, solve using a different strategy.

- Strategies:
- Take from 10
  - Make 10
  - Count on
  - I just knew

1. A fruit bowl had 13 apples. Mike ate 6 apples from the fruit bowl. How many apples were left?

Olivia's work

$13 - 6 = 4$

$\begin{array}{r} 13 \\ -6 \\ \hline 103 \end{array}$

~~○○○○○○○○○○○○~~ ○○○○○○ 4

4 + 3 more equals 7.

a. Strategy: Take from 10

$13 - 6 = 7$

$\begin{array}{r} 13 \\ -6 \\ \hline 103 \end{array}$

Jake's work

$6 + ? = 13$

$\begin{array}{r} 6 \\ + 4 \\ \hline 10 \end{array}$   $\begin{array}{r} 3 \\ + 3 \\ \hline 6 \end{array}$

$? = 7$

b. Strategy: Make 10

~~○○○○○○○○○○○○~~  
○○○

- c. Explain your strategy choice below.

I used take from ten strategy for both problems then added the left over circles.

# Grade 1 Module 2 Topic C

---

## Strategies for Solving *Change* or *Addend Unknown* Problems

### Focus Standards:

- 1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.4 Understand subtraction as an unknown-addend problem. *For example, subtract  $10 - 8$  by finding the number that makes 10 when added to 8.*
- 1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g.,  $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g.,  $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that  $8 + 4 = 12$ , one knows  $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding  $6 + 7$  by creating the known equivalent  $6 + 6 + 1 = 12 + 1 = 13$ ).

### Instructional Days Recommended: 4

Topic C provides students with practice solving *add to with change unknown*, *take from with change unknown*, *put together with addend unknown*, and *take apart with addend unknown* word problems (**1.OA.1**). Drawing on the momentum gained from Topic B, Lesson 22 allows students to attack *put together/take apart with addend unknown* word problems such as, “Maria has 15 baseballs. Eight of them are old, and some of them are brand new. How many brand new baseballs does Maria have?” Students solve these problems using both the Level 2 counting on strategy and Level 3 subtraction strategies (**1.OA.4**).

Lesson 23 allows students to use counting on as it relates to subtraction, take from ten strategies, or the get to ten Level 3 strategy, as they solve *add to with change unknown* problems (**1.OA.6**). The get to ten strategy has students solving  $12 - 3$  as  $12 - 2 - 1$ , understanding that decomposing the subtrahend to easily get to the ten yields a simpler, more manageable subtraction problem. It is the way a student can make ten when there is an unknown addend. It is a step away from counting on, where, rather than counting on by ones, students consider how much it takes to get to ten and then add on the rest to get to the teen number. For many students, the language of get to ten helps them bridge from counting on to a more efficient strategy. Up to this point, make ten for the students has shown both addends, and they are strategic about which number to break apart so that they can bond two numbers to make ten. This is a different, though related, process.

Lesson 24 presents students with *take from with change unknown* problems where they continue to select various strategies for solving. Students again relate various addition strategies to their recently acquired subtraction strategies, but in this new word problem type, the strategies they select and discuss help them better make sense of these problems. Students begin to recognize that although stories may be *take from with change unknown* problems, they can apply many strategies such as counting on, counting back, taking from ten, or getting to ten to accurately solve this challenging problem type.

Topic C closes with Lesson 25, where students move away from the context of story problems to find matching expressions to create true number sentences. They work solely with equations to show and talk about how they would re-represent a given addition or subtraction problem using a Level 2 or Level 3 strategy. For example, when given  $9 + 6$ , students decompose the 6 into 1 and 5 and then can add using their new number sentence,  $10 + 5$  (i.e.,  $9 + 6 = 10 + 5$ ) (**1.OA.7**), using pictures and words.

*\*The sample homework responses contained in this manual are intended to provide insight into the skills expected of students and instructional strategies used in Eureka Math.*

## Lesson 22

Objective: Solve *put together/take apart with addend unknown* word problems, and relate counting on to the take from ten strategy.

### Homework Key

1. Labeled drawing and statement;  $6 + 8 = 14$  or  $14 - 6 = 8$
2. Labeled drawing and statement;  $6 + 9 = 15$  or  $15 - 6 = 9$
3. Labeled drawing and statement;  $9 + 9 = 18$  or  $18 - 9 = 9$
4. Labeled drawing and statement;  $8 + 9 = 17$  or  $17 - 8 = 9$
5. Labeled drawing and statement;  $9 + 8 = 17$  or  $17 - 9 = 8$
6. Labeled drawing and statement;  $9 + 7 = 16$  or  $16 - 9 = 7$

### Homework Sample

Read the word problem.

Draw and label.

Write a number sentence and a statement that matches the story.

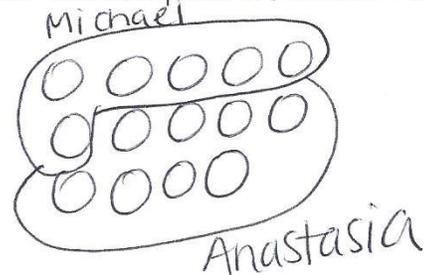
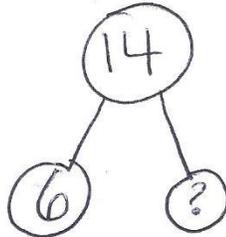
Remember to draw a box around your solution in the number sentence.

Strategies:

- Take from 10
- Make 10
- Count on
- I just knew

1. Michael and Anastasia pick 14 flowers for their mom. Michael picks 6 flowers. How many flowers does Anastasia pick?

$$14 - 6 = 8$$

## Lesson 23

Objective: Solve *add to with change unknown* problems, relating vertical addition and subtraction strategies.

### Homework Key

1. Labeled drawing;  $9 + 5 = 14$  or  $14 - 9 = 5$ ; 5
2. Labeled drawing;  $8 + 9 = 17$  or  $17 - 8 = 9$ ; 9
3. Labeled drawing;  $5 + 8 = 13$  or  $13 - 5 = 8$ ; 8
4. Labeled drawing;  $12 + 6 = 18$  or  $18 - 12 = 6$ ; 6

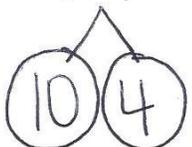
### Homework Sample

Read the word problem.

Draw and label.

Write a number sentence and a statement that matches the story.

1. Micah collected 9 pinecones on Friday and some more on Saturday. Micah collected a total of 14 pinecones. How many pinecones did Micah collect on Saturday?

$$14 - 9 = ?$$

$$14 - 9 = 5$$

9 pinecones - Friday  
? pinecones - Saturday  
14 total pinecones

## Lesson 24

Objective: Strategize to solve *take from with change unknown* problems.

### Homework Key

1. Labeled drawing and statement;  $12 - 9 = 3$  or  $9 + 3 = 12$ ; 3
2. Labeled drawing and statement;  $11 - 7 = 4$  or  $7 + 4 = 11$ ; 4
3. Labeled drawing and statement;  $17 - 8 = 9$  or  $8 + 9 = 17$ ; 9
4. Labeled drawing and statement;  $12 - 9 = 3$  or  $9 + 3 = 12$ ; 3

### Homework Sample

Read the word problem.

Draw and label.

Write a number sentence and a statement that matches the story.

1. Toby dropped 12 crayons on the classroom floor. Toby picked up 9 crayons. Marnie picked up the rest. How many crayons did Marnie pick up?

$$12 - 9 = 3$$


Toby - 9 crayons  
Marnie - ? crayons  
Total - 12 crayons.

## Lesson 25

Objective: Strategize and apply understanding of the equal sign to solve equivalent expressions.

### Homework Key

- False
  - True
  - True
  - False
  - True
  - True
- Lola; pictures drawn to explain thinking
  - Lola; pictures drawn to explain thinking
  - Charlie; pictures drawn to explain thinking
- Answers will vary.
  - Answers will vary.
  - Answers will vary.

### Homework Samples

1. Circle "true" or "false."

Equation	True or False?
a. $2 + 3 = 5 + 1$	True / <input checked="" type="radio"/> False
b. $7 + 9 = 6 + 10$	<input checked="" type="radio"/> True / False
c. $11 - 8 = 12 - 9$	<input checked="" type="radio"/> True / False
d. $15 - 4 = 14 - 5$	True / <input checked="" type="radio"/> False
e. $18 - 6 = 2 + 10$	<input checked="" type="radio"/> True / False
f. $15 - 8 = 2 + 5$	<input checked="" type="radio"/> True / False

2. Lola and Charlie are using expression cards to make true number sentences. Use pictures and words to show who is right.
- Lola picked  $4 + 8$ , and Charlie picked  $9 + 3$ . Lola says these expressions are equal, but Charlie disagrees. Who is right? Explain your thinking.

Lola is correct because  $4 + 8 = 12$  and  $9 + 3 = 12$ .



# Grade 1 Module 2 Topic D

---

## Varied Problems with Decompositions of Teen Numbers as 1 Ten and Some Ones

### Focus Standards:

- 1.OA.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.
- 1.OA.6 Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g.,  $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$ ); decomposing a number leading to a ten (e.g.,  $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$ ); using the relationship between addition and subtraction (e.g., knowing that  $8 + 4 = 12$ , one knows  $12 - 8 = 4$ ); and creating equivalent but easier or known sums (e.g., adding  $6 + 7$  by creating the known equivalent  $6 + 6 + 1 = 12 + 1 = 13$ ).
- 1.NBT.2ab Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
- 10 can be thought of as a bundle of ten ones—called a “ten.”
  - The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones.

### Instructional Days Recommended: 4

Topic D closes the module with students renaming ten as a unit: *a ten* (**1.NBT.2a**). This is the very first time students are introduced to this language of ten as a unit, so this is exciting! The unit of ten is the foundation for our whole number system wherein all units are composed of ten of the adjacent unit on the place value chart.

In Lesson 26, students revisit representations of 10 ones that they have worked with in the past. They rename their Rekenrek bracelet, the ten-frame, the fingers on two hands, and two 5-groups as 1 ten. They connect teen numbers to the unit form (e.g., 1 ten and 1 one, 1 ten and 2 ones), and represent the numbers with Hide Zero cards. They now analyze the digit 1 in the tens place as representing both 10 ones and 1 unit of ten, further setting the foundation for later work with place value in Module 4. Students use their very own Magic Counting Sticks (i.e., their fingers) to help them to compose 1 ten. By bundling 1 ten, students realize that some ones are left over which clarifies the meaning of the ones unit (**1.NBT.2b**).

In Lesson 27, students solve both abstract and contextualized *result-unknown* problems (**1.OA.1**). The lesson takes them through a progression from problems with teens decomposed or composed using 1 ten and some ones to problems wherein they find the hidden ten (e.g.,  $8 + 6$  or  $12 - 5$ ).

In Lesson 28, students solve familiar problems such as, “Maria had 8 snowballs on the ground and 5 in her arms. How many snowballs did Maria have?” As students write their solutions, they break apart an addend to make a ten with another addend and write two equations leading to the solution (see the bond and equations to the right). This movement forward in their ability to record the two steps allows them to own the structure of the ten they have been using for the entire module, on a new level (MP.7).

Topic D closes with Lesson 29, where students solve *add to with change unknown* and *take apart/put together with addend unknown* problems. As in Lesson 28, students write both equations leading to the solution as they take from the ten (see bond and equation to the top right).

*\*The sample homework responses contained in this manual are intended to provide insight into the skills expected of students and instructional strategies used in Eureka Math.*

# Lesson 26

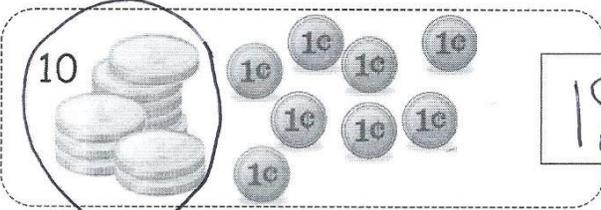
Objective: Identify 1 ten as a unit by renaming representations of 10.

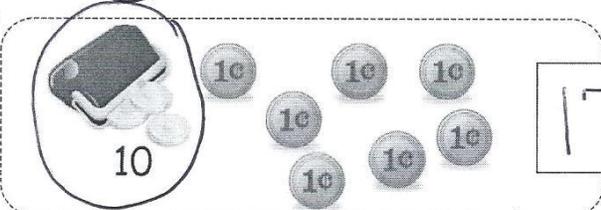
## Homework Key

1. Pile of 10 coins circled; 18; 1, 8
2. Purse of coins circled; 17; 7, 1
3. Circles drawn to show 18; 10,
4. Circles drawn to show 13; 1, 3; 1, 3
5. Circles drawn to show 12; 1, 2
6. Circles drawn to show 13; 1, 3
7. 5-group column, circles drawn to show 16; 1, 6
- 8; 1, 8 8. 5-group column, circles drawn to show 19; 9, 1

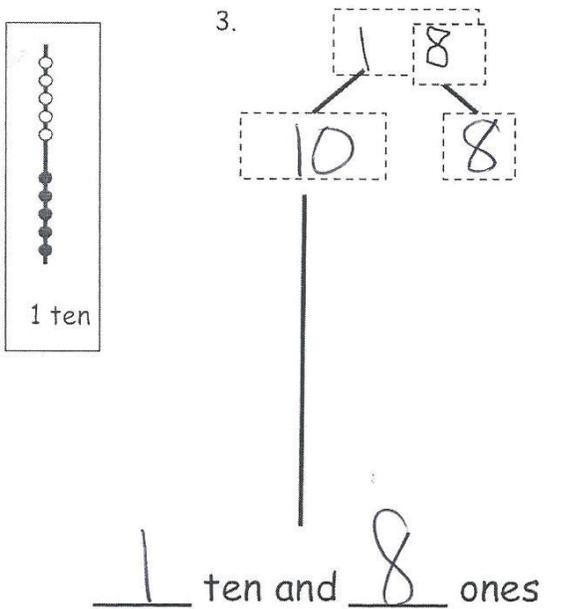
## Homework Samples

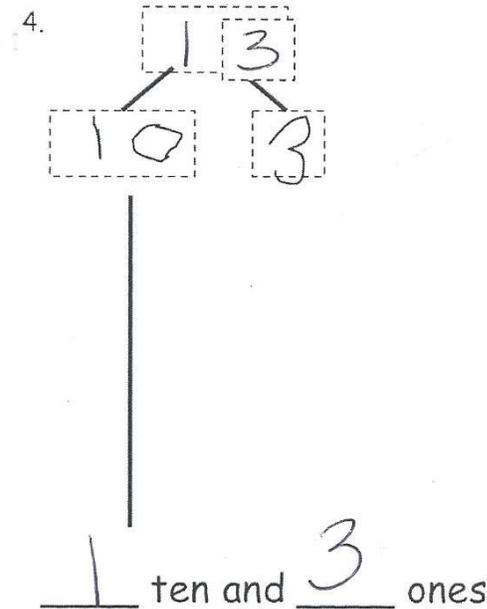
Circle ten. Write the number. How many tens and ones?

1.  is the same as 1 ten and 8 ones.

2.  is the same as 7 ones and 1 ten.

Use the Hide Zero pictures to draw the ten and ones shown on the cards.

3.  1 ten and 8 ones

4.  1 ten and 3 ones

## Lesson 27

Objective: Solve addition and subtraction problems decomposing and composing teen numbers as 1 ten and some ones.

### Homework Key

- 1, 3; 1, 3; s crossed off appropriately
- 0, 8; 0, 8
- 0, 9; 0, 9
- 1, 9; 1, 9; s crossed off appropriately
- 1, 8; 1, 8; s crossed off appropriately
- 0, 9; 0, 9

- Labeled drawing;  $8 + 9 = 17$ ; 1, 7; s crossed off appropriately
- Labeled drawing;  $14 - 8 = 6$ ; 0, 6
- Labeled drawing;  $6 + 14 = 20$ ; 2, 0

### Homework Sample

Solve the problems. Write the answers to show how many tens and ones. If there is only one ten, cross off the "s."

1.

$8 + 5 =$

13

1 tens and 3 ones

2.

$12 - 4 =$

08

0 tens and 8 ones

## Lesson 28

Objective: Solve addition problems using ten as a unit, and write two-step solutions.

### Homework Key

1. 1, 6;  $9 + 1 = 10$ ;  $10 + 6 = 16$

2. 1, 3;  $8 + 2 = 10$ ;  $10 + 3 = 13$

3. 17;  $9 + 1 = 10$ ;  $10 + 7 = 17$

4.  $8 + 7 = 15$ ;  $8 + 2 = 10$ ;  $10 + 5 = 15$

5.  $6 + 9 = 15$ ;  $9 + 1 = 10$ ;  $10 + 5 = 15$

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

7.  $5 + 7 = 12$ ;  $7 + 3 = 10$ ;  $10 + 2 = 12$

### Homework Samples

Solve the problems. Write your answers to show how many tens and ones.

$$9 + 3 = \boxed{1} \boxed{2}$$

$$\underline{9} + \underline{1} = \underline{10}$$

$$\underline{10} + \underline{2} = \underline{12}$$

1.  $9 + 7 = \boxed{1} \boxed{6}$

$$\underline{9} + \underline{1} = \underline{10}$$

$$\underline{10} + \underline{6} = \underline{16}$$

2.  $8 + 5 = \boxed{1} \boxed{3}$

$$\underline{8} + \underline{2} = \underline{10}$$

$$\underline{10} + \underline{3} = \underline{13}$$

Solve. Write the two number sentences for each step to show how you make a ten.

3. Boris has 9 board games on his shelf and 8 board games in his closet. How many board games does Boris have altogether?

$$\underline{9} + \underline{8} =$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

## Lesson 29

Objective: Solve subtraction problems using ten as a unit, and write two-step solutions.

### Homework Key

- 9; 10, 8, 2; 2, 7, 9
- 9; 10, 7, 3; 3, 6, 9
- 9; 10, 3, 7; 7, 2, 9; 9
- $18 - 9 = 9$ ;  $10 - 9 = 1$ ;  $1 + 8 = 9$ ; 9
- $13 - 6 = 7$ ;  $10 - 6 = 4$ ;  $4 + 3 = 7$ ; 7
- $14 - 7 = 7$ ;  $10 - 7 = 3$ ;  $3 + 4 = 7$ ; 7
- $15 - 9 = 6$ ;  $10 - 9 = 1$ ;  $1 + 5 = 6$ ; 6

### Homework Samples

Solve the problems. Write your answers to show how many **tens** and **ones**.

$$\begin{array}{r} \boxed{1} \boxed{2} - 5 = 7 \\ 10 - 5 = 5 \\ 5 + 2 = 7 \end{array}$$

1.  $\boxed{1} \boxed{7} - 8 = \underline{9}$

$$\begin{array}{r} 10 - 8 = 2 \\ 2 + 7 = 9 \end{array}$$

2.  $\boxed{1} \boxed{6} - 7 = \underline{9}$

$$\begin{array}{r} 10 - 7 = 3 \\ 3 + 6 = 9 \end{array}$$

Solve. Write the two number sentences for each step to show how you take from **ten**. Remember to put a box around your solution and write a statement.

3. Yvette counted 12 kids at the park. She counted 3 on the playground and the rest playing in the sand. How many kids did she count playing in the sand?

$$\boxed{12 - 3 = 9}$$

$$\begin{array}{r} 10 - 3 = 7 \\ 7 + 2 = 9 \end{array}$$