Kenmore-Town of Tonawanda UFSD

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

Grade 1 Module 6
Parent Handbook

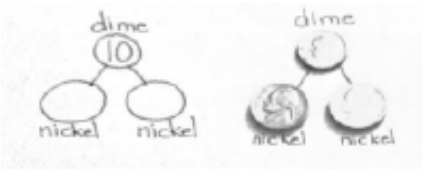
The materials contained within this packet have been taken from the Great Minds curriculum Eureka Math.

Eureka Math™ Tips for Parents

Grade 1 Module 6

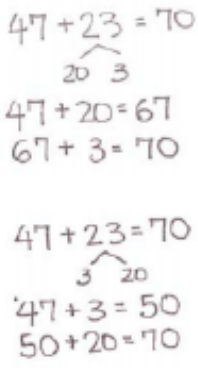
Place Value, Comparison, Addition and Subtraction to 100

In this final module of the school year, students synthesize their learning from all the other modules, working with the most challenging Grade 1 content. In the first several lessons, students identify and solve various types of word problems. Next, they extend their skills with tens and ones to numbers to 120, both counting and performing addition and subtraction. Finally, they are introduced to nickels and quarters, having already worked with dimes and pennies. The module concludes with fun fluency activities to celebrate their year of mathematical learning.



Number bonds with coins

Two different methods for two-digit addition:



What Came Before this Module:

In Module 5, students worked to sort, analyze, and compare both two- and three-dimensional shapes. They also learned how to combine shapes to create new, composite shapes. Finally, as in their work with number bonds and addition and subtraction, they examined the part-whole relationship through this new geometric lens.

Key Terms, Symbols, and Strategies in this Module:

Comparison Problem Type: In these word problems, students compare two quantities to find the part that makes them different from each other.
(See reverse for a sample problem)

< less than symbol
> greater than symbol
= equal to symbol

Penny	1 cent
Nickel	5 cents
Dime	10 cents
Quarter	25 cents

+ How you can help at home:

- Using loose change around the house, invite your student to count and compare the coins
- Continue to practice 10 more/10 less questions, e.g., "What is 10 less than 40?" "What is 10 more than 52?"
- Ask your student to compare and find the difference between two quantities, and note the strategy used

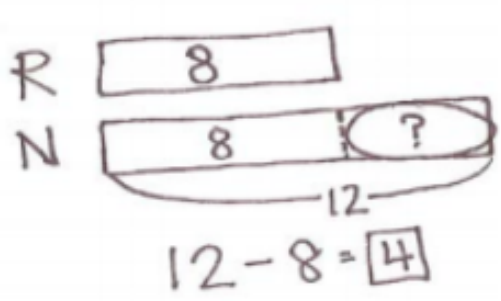
Key Common Core Standards:

- *Represent and solve problems involving addition and subtraction*
  - Use addition and subtraction within 20 to solve word problems
- *Extend the counting sequence*
  - Count to 120, starting at any number less than 120
- *Understand place value*
  - Understand that the two digits of a two-digit number represent amounts of tens and ones
  - Compare two two-digit numbers based on meanings of the tens and ones digits
- *Use place value understanding and properties of operations to add and subtract*
- *Tell and write time and money*

Prepared by Erin Schweng, Math Coach

The problem to be solved:
Rose wrote 8 letters. Nikil wrote 12 letters. How many more letters did Nikil write than Rose?

The Tape Diagram



Rose's "tape" shows the 8 letters she wrote. Nikil's shows 12 total, with the known amount of 8 marked off. Students learn to solve for the missing part, and to show their answer as a subtraction equation.

Spotlight on Math Strategies:

Tape Diagrams

Students will use this strategy to solve problems in this module of *A Story of Units.*

A Story of Units has several key mathematical strategies that will be used throughout a student's elementary years.

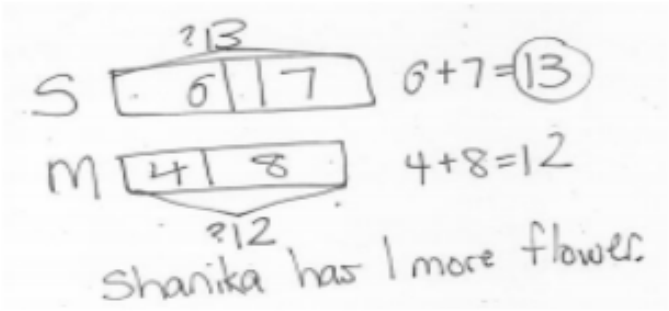
The tape diagram is a powerful model that students can use to solve various types of problems. At this point in first grade, we will introduce it as another way to conceptualize addition and subtraction word problems. Tape diagrams are especially powerful visual models for comparing two quantities, which students will do quite extensively in Module 6. These diagrams are also called "bar models" and consist of simple bar drawings that students make and adjust to fit a word problem. They then use the drawing to discuss and solve the problem.

As students move through the grades, tape diagrams will continue to be used and later will provide an essential bridge to algebra. Below is a sample word problem from Module 6 solved using a tape diagram to show the parts of the problem.

Sample Problem from Module 6:
(Example taken from Module 6, Lesson 7)

Shanika has 6 roses and 7 tulips in a vase. Maria has 4 roses and 8 tulips in a vase.

Who has more flowers? How many more flowers does she have?



Place Value, Comparison, Addition and Subtraction to 100

OVERVIEW

In this final module of the Grade 1 curriculum, students bring together their learning from Module 1 through Module 5 to learn the most challenging Grade 1 standards and celebrate their progress.

In Topic A, students grapple with comparative word problem types (**1.OA.1**). While students solved some comparative problem types during Module 3 and within the Application Problems in Module 5, this is their first opportunity to name these types of problems and learn to represent comparisons using tape diagrams with two tapes.

Students extend their understanding of and skill with tens and ones to numbers to 100 in Topic B (**1.NBT.2**). For example, they mentally find 10 more, 10 less, 1 more, and 1 less (**1.NBT.5**) and compare numbers using the symbols >, =, and < (**1.NBT.3**). They then count and write numbers to 120 (**1.NBT.1**) using both standard numerals and the unit form.

In Topics C and D, students again extend their learning from Module 4 to the numbers to 100 to add and subtract (**1.NBT.4**, **1.NBT.6**). They add pairs of two-digit numbers in which the ones digits sometimes have a sum greater than 10, recording their work using various methods based on place value (**1.NBT.4**). In Topic D, students focus on using drawings, numbers, and words to solve, highlighting the role of place value, the properties of addition, and related facts.

At the start of the second half of Module 6, students are introduced to nickels and quarters (**1.MD.3**), having already used pennies and dimes in the context of their work with numbers to 40 in Module 4. Students use their knowledge of tens and ones to explore decompositions of the values of coins. For example, they might represent 25 cents using 1 quarter, 25 pennies, 2 dimes and 1 nickel, or 1 dime and 15 pennies.

In Topic F, students really dig into MP.1 and MP.3. The topic includes the more challenging *compare with bigger or smaller unknown* word problem types, wherein *more* or *less* suggests the incorrect operation (**1.OA.1**), thus giving a context for more in-depth discussions and critiques. On the final day of this topic, students work with varied problem types, sharing and

explaining their strategies and reasoning. Peers ask each other questions and defend their choices. The End-of-Module Assessment follows Topic F.

The module and year close with Topic G, wherein students celebrate their year's worth of learning with fun fluency festivities that equip them with games to maintain their fluency during the summer months prior to Grade 2. To send home their year's work, the final day is devoted to creating a math folder illustrating their learning.

Terminology

New or Recently Introduced Terms

- Dime
- Nickel
- Penny
- Quarter

Familiar Terms and Symbols

- <, >, = (less than, greater than, equal to)

Suggested Tools and Representations

- 100-bead Rekenrek
- Tape diagram

Grade 1 Module 6 Topic A

Comparison Word Problems

Focus Standard:

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

Instructional Days Recommended: 2

Topic A of Module 6 opens with students exploring one of the most challenging problem types for their grade level, comparison word problems (see Table 2 below from *Counting and Cardinality and Operations and Algebraic Thinking Progressions* document, page 9) (**1.OA.1**). Students were informally introduced to the problem type in Module 3 as they analyzed data and compared measurements. During Module 5, students worked with comparison contexts through Application Problems. It is with this background that teachers can make informed choices during Module 6 to support students in recognizing and solving comparison word problems.

In Lesson 1, students work with *compare with difference unknown* problem types using double tape diagrams. They then carry their understanding of double tape diagrams into Lesson 2 to tackle *compare with bigger or smaller unknown* problem types. Throughout the module, students continue to practice these problem types as they solve Application Problems in the topics that follow.

Table 2: Addition and subtraction situations by grade level.

	Result Unknown	Change Unknown	Start Unknown
dd To	A bunnies sat on the grass. B more bunnies hopped there. How many bunnies are on the grass now? $A + B = \square$	A bunnies were sitting on the grass. Some more bunnies hopped there. Then there were C bunnies. How many bunnies hopped over to the first A bunnies? $A + \square = C$	Some bunnies were sitting on the grass. B more bunnies hopped there. Then there were C bunnies. How many bunnies were on the grass before? $\square + B = C$
ake om	C apples were on the table. I ate B apples. How many apples are on the table now? $C - B = \square$	C apples were on the table. I ate some apples. Then there were A apples. How many apples did I eat? $C - \square = A$	Some apples were on the table. I ate B apples. Then there were A apples. How many apples were on the table before? $\square - B = A$

	Total Unknown	Both Addends Unknown[1]	Addend Unknown[2]
ut gether ake part	A red apples and B green apples are on the table. How many apples are on the table? $A + B = \square$	Grandma has C flowers. How many can she put in her red vase and how many in her blue vase? $C = \square + \square$	C apples are on the table. A are red and the rest are green. How many apples are green? $A + \square = C$ $C - A = \square$

	Difference Unknown	Bigger Unknown	Smaller Unknown
ompare	*"How many more?" version.* Lucy has A apples. Julie has C apples. How many more apples does Julie have than Lucy? *"How many fewer?" version.* Lucy has A apples. Julie has C apples. How many fewer apples does Lucy have than Julie? $A + \square = C$ $C - A = \square$	*"More" version suggests operation.* Julie has B more apples than Lucy. Lucy has A apples. How many apples does Julie have? *"Fewer" version suggests wrong operation.* Lucy has B fewer apples than Julie. Lucy has A apples. How many apples does Julie have? $A + B = \square$	*"Fewer" version suggests operation.* Lucy has B fewer apples than Julie. Julie has C apples. How many apples does Lucy have? *"More" version suggests wrong operation.* Julie has B more apples than Lucy. Julie has C apples. How many apples does Lucy have? $C - B = \square$ $\square + B = C$

rker shading indicates the four Kindergarten problem subtypes. Grade 1 and 2 students work with all subtypes and variants. shaded (white) problems are the four difficult subtypes or variants that students should work with in Grade 1 but need not master il Grade 2. Adapted from CCSS, p. 88, which is based on *Mathematics Learning in Early Childhood: Paths Toward Excellence and uity*, National Research Council, 2009, pp. 32–33.

his can be used to show all decompositions of a given number, especially important for numbers within 10. Equations with totals n the left help children understand that = does not always mean "makes" or "results in" but always means "is the same number as." uch problems are not a problem subtype with one unknown, as is the Addend Unknown subtype to the right. These problems are a roductive variation with two unknowns that give experience with finding all of the decompositions of a number and reflecting on the atterns involved.

ither addend can be unknown; both variations should be included.

**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

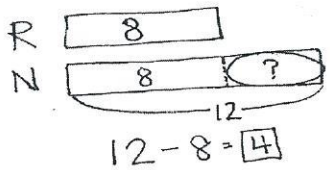
Objective: Solve *compare with difference unknown* problem types.

Homework Key

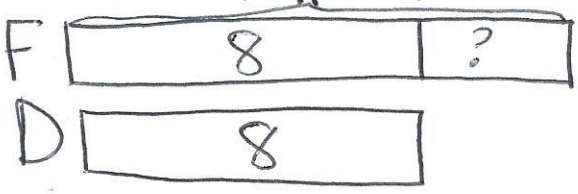
1. 3
2. 10
3. 6
4. 4

Homework Sample

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



1. Fran donated 11 of her old books to the library. Darnel donated 8 of his old books to the library. How many more books did Fran donate than Darnel?



11 - 8 = 3

Fran donated 3 more books to the library.

Lesson 2

Objective: Solve *compare with bigger or smaller unknown* problem types.

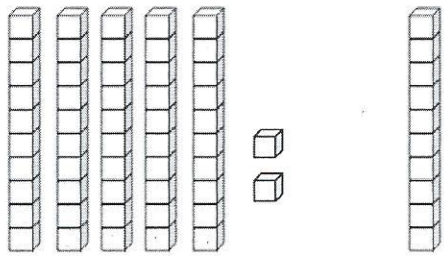
Homework Key

1. 5
2. 9
3. 11
4. 15
5. 10
6. 17

Homework Sample

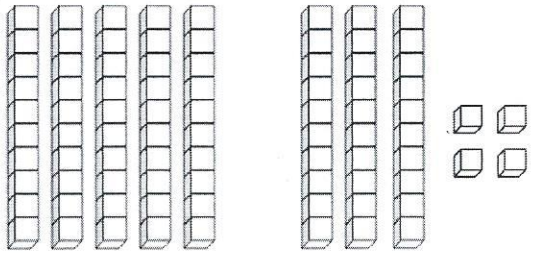
1. Solve using the pictures. Complete the number sentence to match.

a.



52 + 10 = 62

b.



50 + 34 = 84

Grade 1 Module 6 Topic B

Numbers to 120

Focus Standards:

1.NBT.1 Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

1.NBT.2 Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
a. 10 can be thought of as a bundle of ten ones—called a "ten."
c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones).

1.NBT.3 Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

1.NBT.5 Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used.

Instructional Days Recommended: 7

Topic B extends students' use of counting sequences and understanding of tens and ones to numbers up to and including 120.

In Lesson 3, students apply their understanding of tens and ones to two-digit numbers greater than 40. Students count by tens and then extra ones to efficiently count large groups of objects. They then use the place value chart to record quantities as tens and ones as well as by their traditional number (**1.NBT.2**).

In Lesson 4, students connect this understanding with its application to addition sentences. Students recognize that numbers such as 67 can be interpreted as 6 tens 7 ones and that the units can be combined to find the total: 60 + 7 = 67. This work of decomposing and composing 67 into its tens and ones supports the work students do in Topic C, as they decompose two-digit numbers before adding to another two-digit number.

Students continue to consider tens and ones in Lesson 5 when they identify 10 more, 10 less, 1 more, and 1 less than any two-digit number (**1.NT.5**). This work helps students attend to the parts within a two-digit number, a skill that is critical to adding two-digit numbers within 100.

Students recognize that when looking at a number such as 37, they focus on the tens place when adding or subtracting 10 and on the ones place when adding or subtracting 1. Students also explore numbers such as 89, where adding 1 more creates another ten.

During Lesson 6, students practice comparing numbers using the symbols >, =, and < (**1.NBT.3**). They compare numbers such as 65 and 75, as well as numbers in various unit form combinations such as 7 tens 5 ones, 5 ones 7 tens, and 6 tens 15 ones. Through these explorations, students consider ways that each number can be decomposed and recomposed. In Lesson 7, students work with the counting sequence to 120 (**1.NBT.1**). After counting from 78 to 120, students use Hide Zero cards to build numbers from 100 to 120. Their strong familiarity with counting from 0 to 20 and back is then related to the sequence from 100 to 120, helping students recognize that their prior knowledge can help them succeed at this new level.

Lesson 8 continues the use of the Hide Zero cards, as students use 5-group cards of 10 to write numbers within place value charts. Students represent 100 as 10 tens and then represent 101 as 10 tens and 1 one. This work with the unit form of numbers to 120 supports students' understanding of the written numerals 101 through 109, which are the most challenging to write (**1.NBT.1**).

Following students' work with the unit form of numbers to 120, students then represent a number of objects in Lesson 9, presented concretely and pictorially, with the written numeral (**1.NBT.1**).

Lesson 3

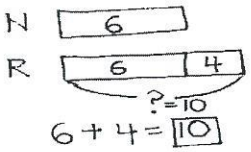
Objective: Use the place value chart to record and name tens and ones within a two-digit numbers up to 100.

Homework Key (Lesson 3)

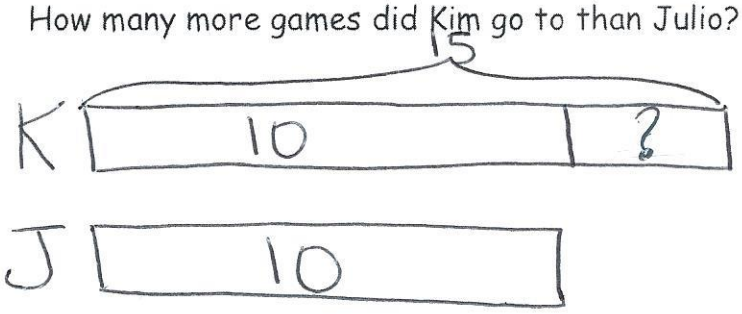
1. 5, 2; 5, 2
2. 9, 8; 98, 9, 8
3. 9, 7; 97
4. 5, 9; 59
5. 10, 0; 100
6. 8, 6; 86
7. 6, 7; 67
8. 7, 5; 75
9. a. 7, 0
   b. 7, 6
   c. 49
   d. 94
   e. 6, 5
   f. 6, 0
   g. 9, 0
   h. 100
   i. 83
   j. 80

Homework Sample

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



1. Kim went to 15 baseball games this summer. Julio went to 10 baseball games. How many more games did Kim go to than Julio?



10 + ? = 15
10 + 5 = 15

Kim went to 5 more baseball games.

Lesson 4

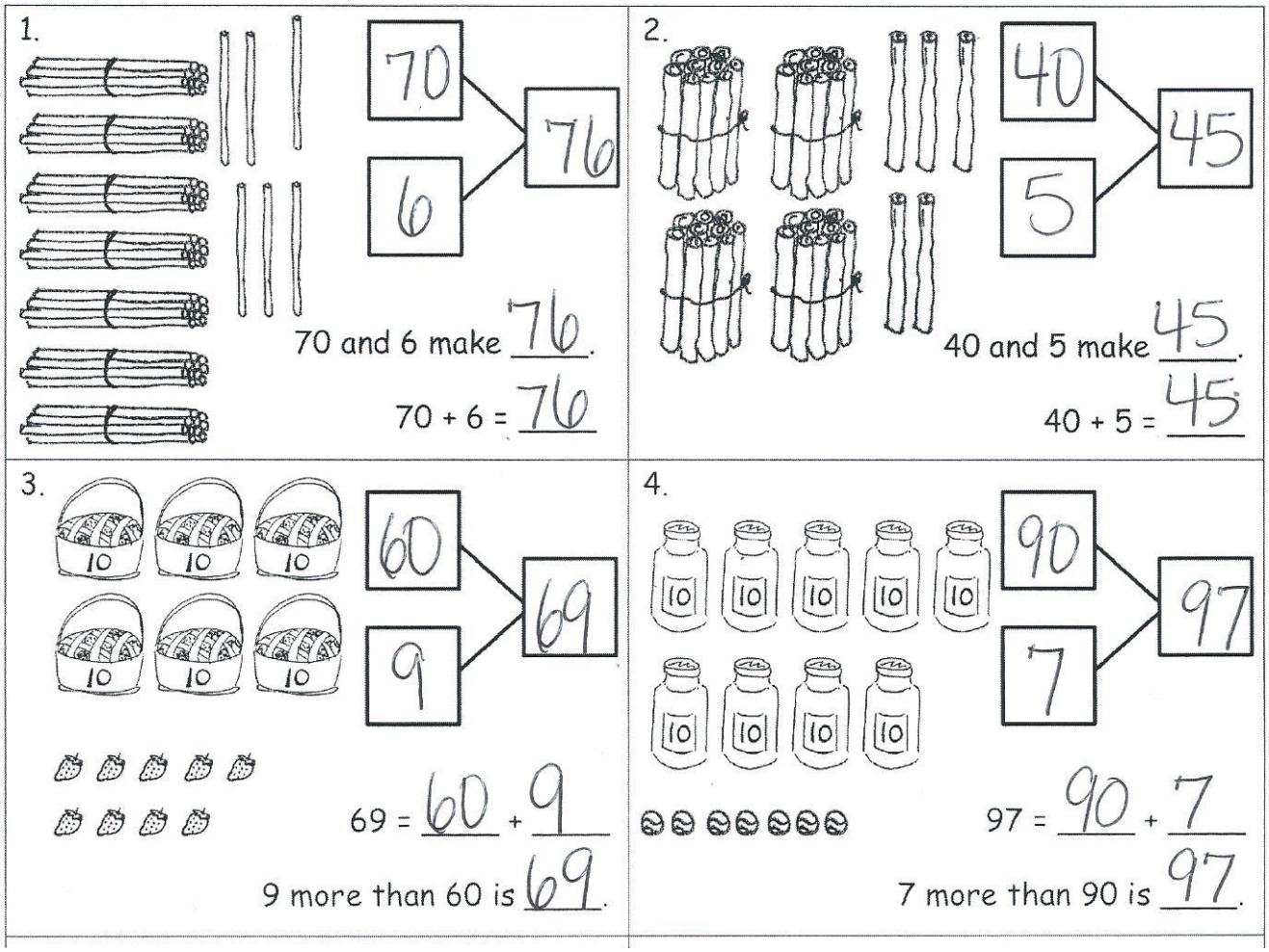
Objective: Write and interpret two-digit numbers to 100 as addition sentences that combine tens and ones.

Homework Key

1. 70, 6, 76; 76; 76
2. 40, 5, 45; 45; 45
3. 60, 9, 69; 60, 9; 69
4. 90, 7, 97; 90, 7; 97
5. 80, 4, 84; 80, 4, 84; 8, 4, 84
6. 50, 8, 58; 50, 8, 58; 5, 8, 58
7. 5, 6; 56, 50, 6; 6, 5, 56
8. 6, 8; 68, 60, 8; 8, 6, 68
9. 7, 5; 70, 5, 75; 7, 5, 75
10. 9; 90, 0, 90; 9, 0, 90
11. a. 86
    b. 50
    c. 5
    d. 84

Homework Samples

Count the objects, and fill in the number bond or place value chart. Complete the sentences to add the tens and ones.



Lesson 5

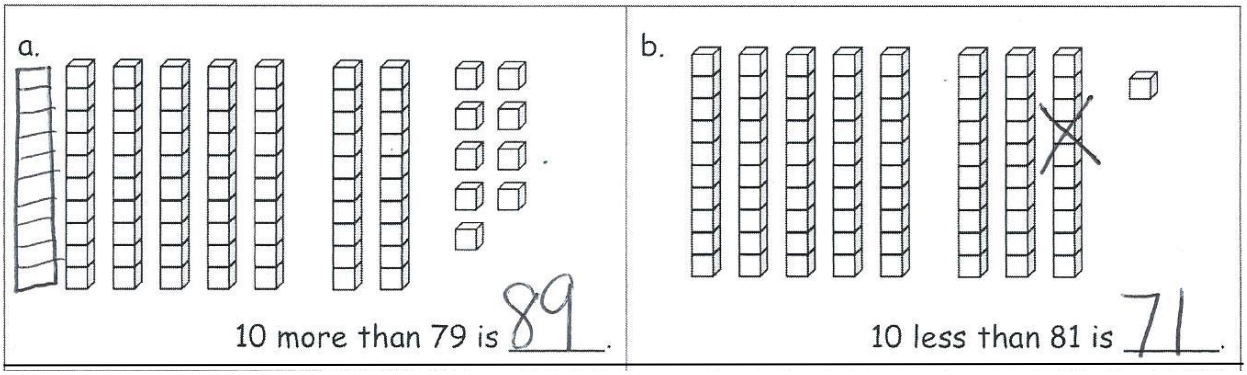
Objective: Identify 10 more, 10 less, 1 more, and 1 less than a two-digit number within 100.

Homework Key

1. a. 89; 1 ten-stick drawn
   b. 71; 1 ten-stick crossed off
   c. 80; 1 cube drawn
   d. 79; 1 cube crossed off
2. a. 85; 8, 5
   b. 76; 7, 5, $\xrightarrow{+1}$, 7, 6
   c. 78; 8, 8, $\xrightarrow{-10}$, 7, 8
   d. 87; 8, 8, $\xrightarrow{-1}$, 8, 7
3. a. 41
   b. 51
   c. 66
   d. 70
   e. 100
4. a. 70
   b. 80
   c. 87
   d. 99
   e. 100
5. a. 52
   b. 72
   c. 70
   d. 79
   e. 99
6. a. 40
   b. 50
   c. 74
   d. 81
   e. 90
7. a. 53
   b. 76
   c. 60
   d. 84
   e. 90
   f. 70
   g. 77
   h. 69
   i. 100
   j. 94; 74

Homework Sample

1. Solve. You may draw or cross off (x) to show your work.



Lesson 6

Objective: Use the symbols >, =, and < to compare quantities and numerals to 100.

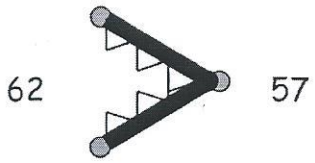
Homework Key

1. a. >
   b. <
   c. >
   d. =
   e. <
   f. <
   g. =
   h. <

2. a. Is greater than; 42 > 12
   b. Is equal to; 67 = 67
   c. Is less than; 37 < 73
   d. Is greater than; 34 > 24
   e. Is less than; 59 < 95

Homework Sample

1. Use the symbols to compare the numbers. Fill in the blank with <, >, or = to make the statement true.



62 (>) 57

62 is greater than 57.

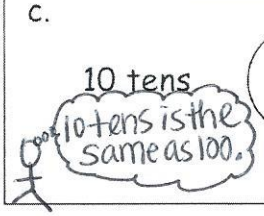
56 (<) 59

56 is less than 59.

a. 43 (>) 35

b. 60 (<) 86

c. 10 tens (>) 99



d. 5 tens 4 ones (=) 54

Lesson 7

Objective: Count and write numbers to 120. Use Hide Zero cards to relate numbers 0 to 20 to 100 to 120.

Homework Key (Lesson 7)

1. a. 72; 73; 75; 76; 77; 78
   b. 81; 83; 84; 86; 88; 89
   c. 92; 94; 95; 97; 98; 100
   d. 101; 103; 104; 106; 107; 109
   e. 112; 113; 115; 117; 118; 120
2. 100, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120
3. Sequence (b) circled; 96, 97, 98, 99, 100, 101
4. a. 115, 116, 117
   b. 117, 118, 119
   c. 103, 104, 105
   d. 90, 91, 92, 93

Homework Sample

1. Fill in the missing numbers in the chart up to 120.

a.	b.	c.	d.	e.
71	81	91	101	111
72	82	92	102	112
73	83	93	103	113
74	84	94	104	114
75	85	95	105	115
76	86	96	106	116
77	87	97	107	117
78	88	98	108	118
79	89	99	109	119
80	90	100	110	120

Lesson 8

Objective: Count to 120 in unit form using only tens and ones. Represent numbers to 120 as tens and ones on the place value chart.

Homework Key

1. a. 8, 1
   b. 9, 8
   c. 117
   d. 108
   e. 10, 4
   f. 11, 1
2. a. 92
   b. 84
   c. 113
   d. 109
   e. 101
   f. 116
3. a. 102
   b. 9 tens 5 ones
   c. 11 tens 4 ones
   d. 11 tens 0 ones
   e. 108
   f. 10 tens 0 ones
   g. 11 tens 8 ones

Homework Sample

1. Write the number as tens and ones in the place value chart, or use the place value chart to write the number.

a. 81

tens	ones
8	1

b. 98

tens	ones
9	8

c. 117

tens	ones
11	7

d. 108

tens	ones
10	8

Lesson 9

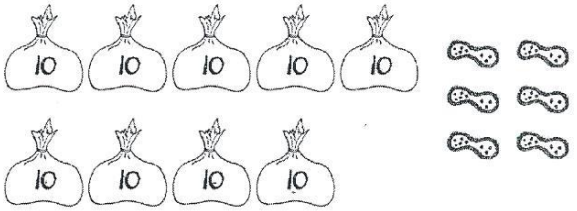
Objective: Represent up to 120 objects with a written numeral.

Homework Key

1. 9, 6; 96
2. 10, 6; 106
3. 11, 6; 116
4. 10, 9; 109
5. 12, 0; 120
6. 10, 7; 107
7. 11, 0; 110
8. 110; 11 quick tens drawn
9. 105; 10 quick tens and 5 ones drawn

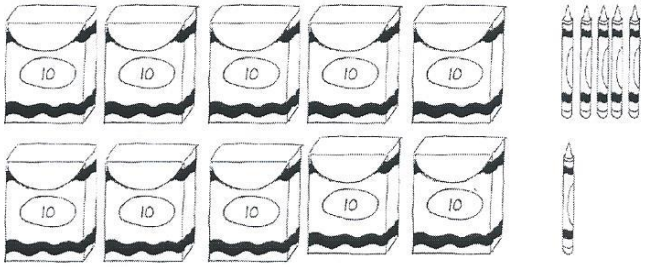
Homework Samples

Count the objects. Fill in the place value chart, and write the number on the line.

1. 

tens	ones
9	6

96

2. 

tens	ones
10	6

106

Grade 1 Module 6 Topic C

Addition to 100 Using Place Value Understanding

Focus Standards:

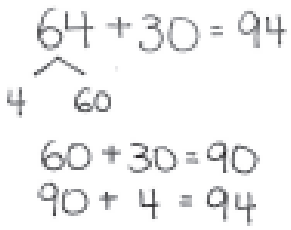
1.NBT.4	Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.
1.NBT.6	Subtract multiples of 10 in the range 10–90 from multiples of 10 in the range 10–90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Instructional Days Recommended: 8

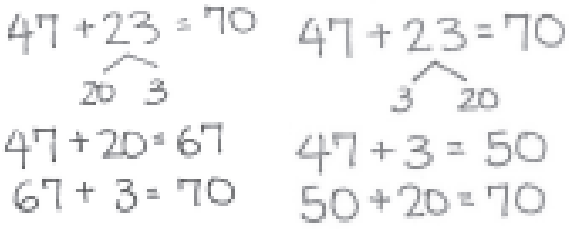
During Topic C, students apply all of their place value and Level 3 strategy knowledge to add pairs of two-digit numbers to sums within 100. To this point, students have only added pairs of two-digit numbers within 40. They now extend their skills and strategies to larger pairs, such as 36 + 57, using all of the same methods.

Lesson 10 focuses students on number work with tens as they add and subtract multiples of 10 from multiples of 10. Students see that 20 + 70 is the same as 2 tens + 7 tens and that 80 – 50 is the same as 8 tens – 5 tens (**1.NBT.4**, **1.NBT.6**).

Building from student work with multiples of 10, Lesson 11 scaffolds students to add a multiple of 10 to any two-digit number, such as 64 + 30 (**1.NBT.4**). While some students may initially apply their ability to mentally add 10 by counting on by tens (64, 74, 84, 94), students also decompose 64 into 60 and 4 to solve, as shown below.

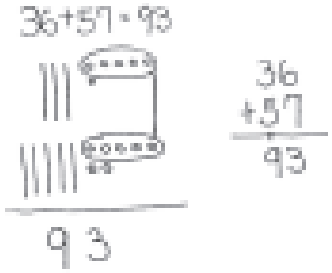


In Lesson 12, students add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10 (**1.NBT.4**). They continue using strategies developed in Module 4. For example, when adding 47 + 23, students may choose to decompose the second addend into 20 and 3. They then add 20 to 47, making 67, and then add the remaining ones. Other students may choose to add the ones to the first addend and then add on the remaining tens, as shown below.



Lessons 13 and 14 focus on the most challenging addition work of this grade level as students add a pair of two-digit numbers when the ones digits have a sum greater than 10, as shown below (**1.NBT.4**).

During Lesson 15, students see how they can align materials or drawings to more distinctly separate and add tens with tens and ones with ones, recording the total below the drawings. Students connect this work with their decomposition work from Lessons 10 and 11, as shown below.



Lesson 16 extends this work, having students add a pair of two-digit numbers, such as 36 + 57, recording the 13 as 1 ten 3 ones as a part of their written method for recording their process. During Lesson 17, students continue to strengthen their skills and strategies to solve double-digit addition problems (**1.NBT.4**).

**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 10

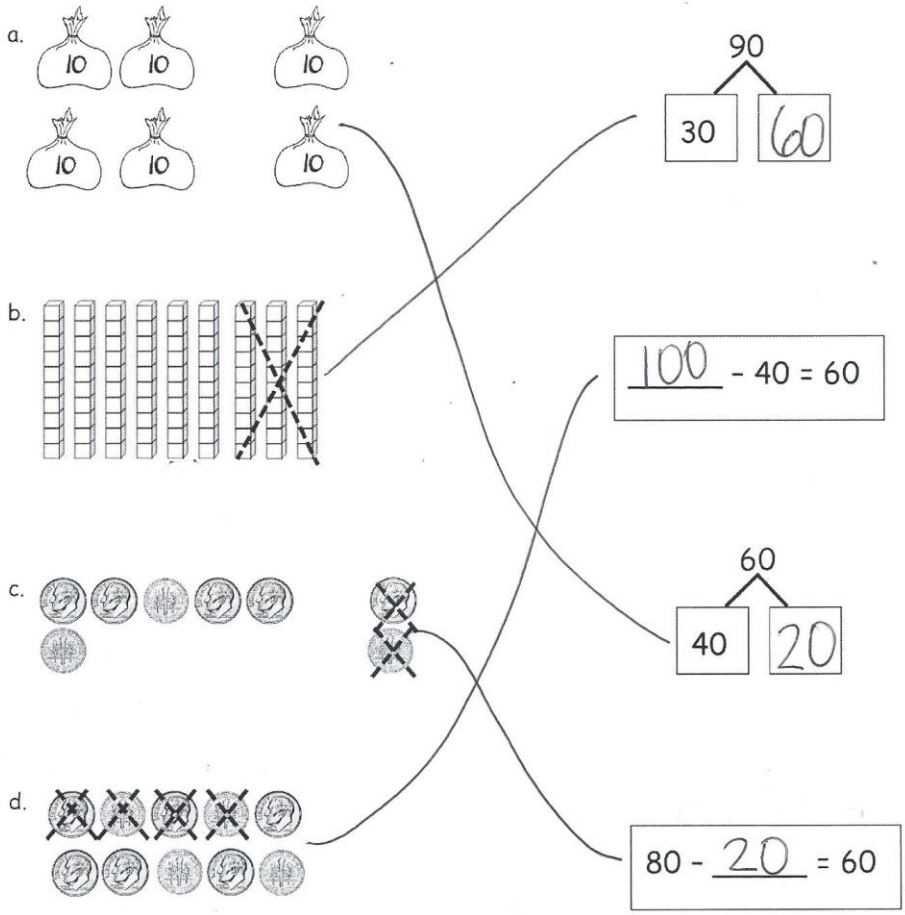
Objective: Add and subtract multiples of 10 from multiples of 10 to 100, including dimes.

Homework Key

1. a. Line drawn to number bond 60, 40, ___; 20
   b. Line drawn to number bond 90, 30, ___; 60
   c. Line drawn to number sentence 80 – ___ = 60; 20
   d. Line drawn to number sentence ___ – 40 = 60; 100
2. a. 60
   b. 70 – 20 = 50
   c. 70 + 30 = 100
   d. 60 – 40 = 20
3. a. 20
   b. 50
   c. 80
   d. 90
   e. 50
   f. 40
   g. 80
   h. 70
   i. 50

Homework Sample

1. Complete the number bond or number sentence, and draw a line to the matching picture.



Lesson 11

Objective: Add a multiple of 10 to any two-digit number within 100.

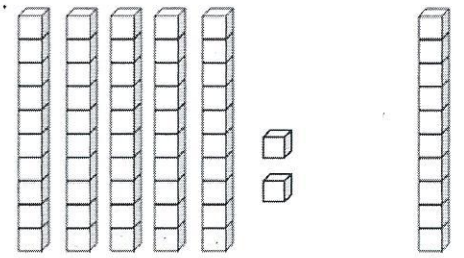
Homework Key

1. a. 52 + 10 = 62
   b. 50 + 34 = 84
   c. 26 + 30 = 56
   d. 30 + 48 = 78
2. a. 78; number bond drawn
   b. 84; number bond drawn
   c. 86; number bond drawn
   d. 87; number bond drawn
   e. 88; number bond drawn
   f. 95; number bond drawn
3. a. 92
   b. 98
   c. 50
   d. 47

Homework Sample

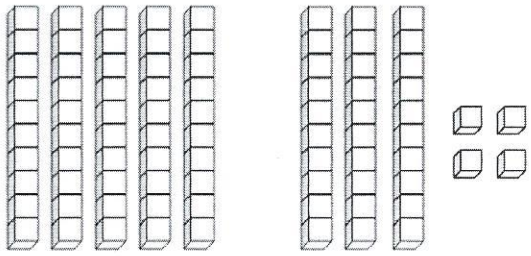
1. Solve using the pictures. Complete the number sentence to match.

a.



52 + 10 = 62

b.



50 + 34 = 84

Lesson 12

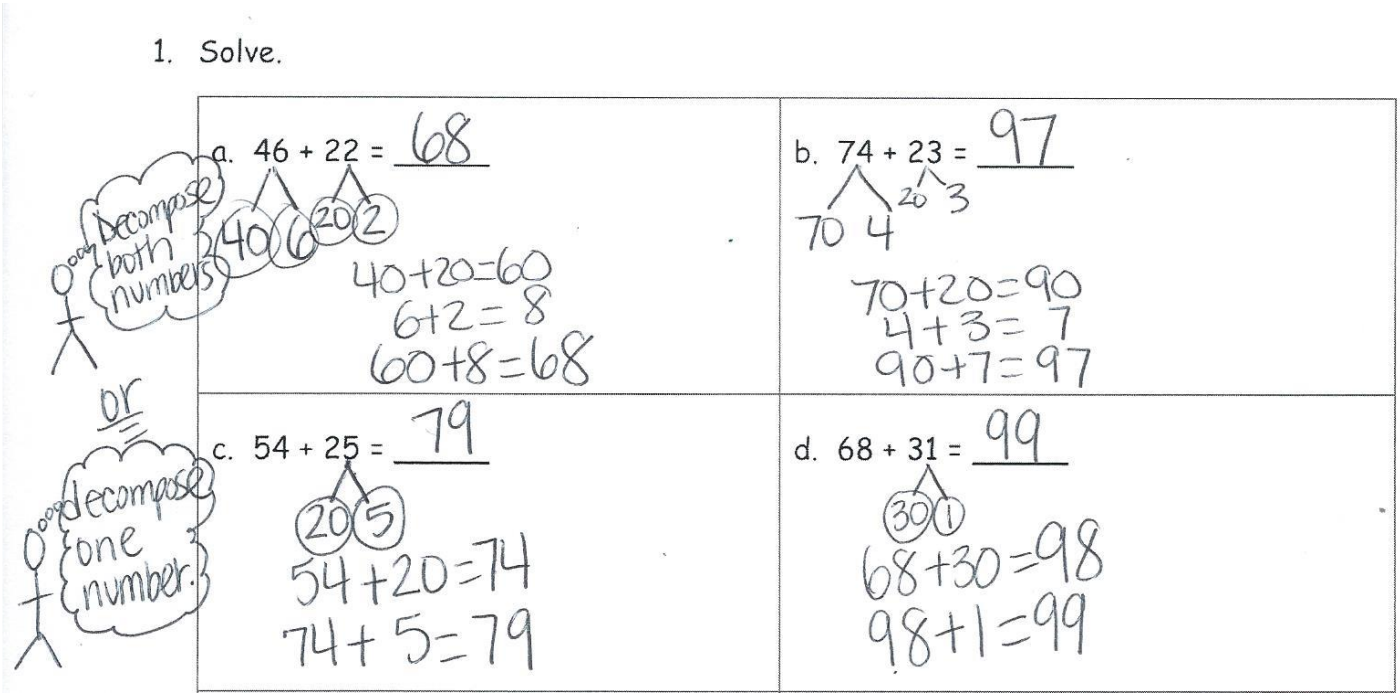
Objective: Add a pair of two-digit numbers when the ones digits have a sum less than or equal to 10.

Homework Key (Lesson 12)

1. a. 68
   b. 97
   c. 79
   d. 99
   e. 100
   f. 99
   g. 89
   h. 99

2. a. 99
   b. 78
   c. 98
   d. 89
   e. 79
   f. 88
   g. 99
   h. 100

Homework Sample



Lesson 13 and 14

Objective: Add a pair of two-digit numbers when the ones digits have a sum greater than 10 using decomposition.

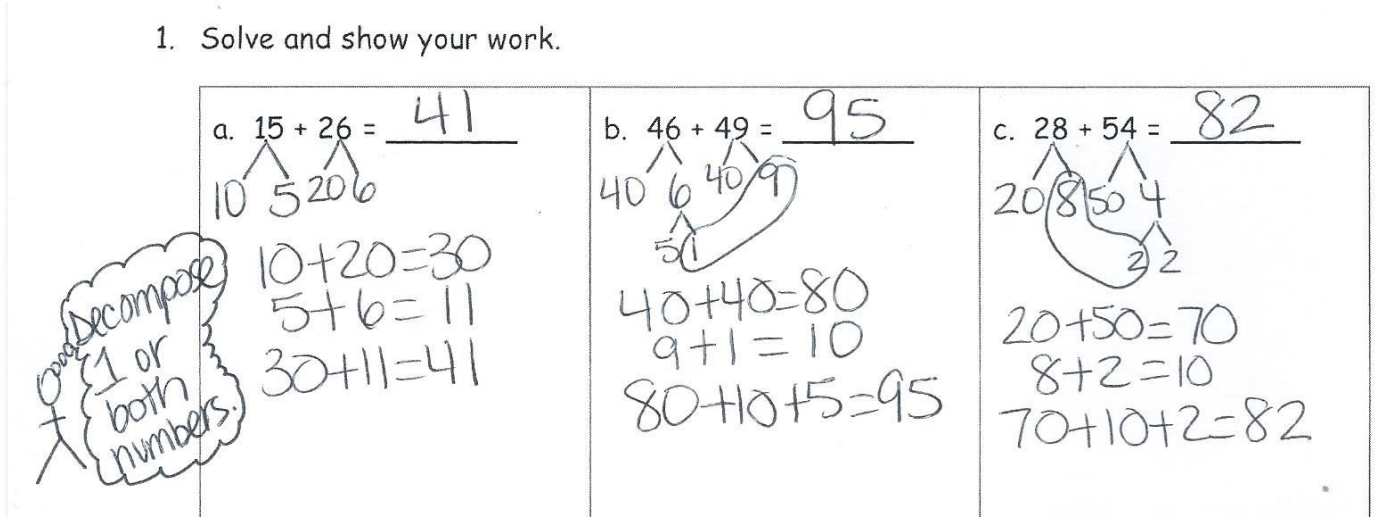
Homework Key (Lesson 13)

1.
   a. 41
   b. 95
   c. 82
   d. 82
   e. 92
   f. 88
   g. 92
   h. 93
   i. 91

2.
   a. 81
   b. 83
   c. 91
   d. 96
   e. 82
   f. 93
   g. 92
   h. 95
   i. 81

Homework Sample

1. Solve and show your work.



Lesson 14

Homework Key

1. a. 89
   b. 91
   c. 83
   d. 94
   e. 93
   f. 94
   g. 95
   h. 87

2. a. 80
   b. 91
   c. 100
   d. 84
   e. 92
   f. 94
   g. 88
   h. 96

Homework Sample

1. Solve and show your work.

a. 68 + 21 = 89

20 1

68+20=88
88+1=89

b. 59 + 32 = 91

31 1

59+1=60
60+31=91

c. 39 + 44 = 83

43 1

39+1=40
40+43=83

d. 58 + 36 = 94

2 34

58+2=60
60+34=94

Lesson 15

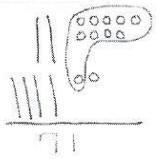
Objective: Add a pair of two-digit numbers when the ones digits have a sum greater than 10 with drawing. Record the total below.

Homework Key

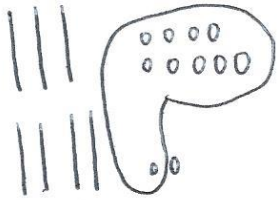
1.	a.	81	2.	a.	84
	b.	84		b.	90
	c.	79		c.	92
	d.	81		d.	92
	e.	96		e.	82
	f.	85		f.	96

Homework Sample

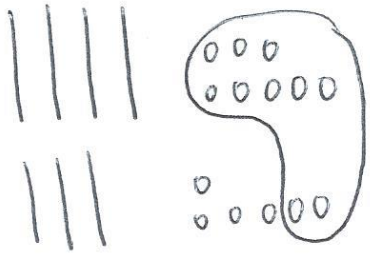
1. Solve using quick tens and ones drawings. Remember to line up your tens with tens and ones with ones. Write the total below your drawing.



a. 39 + 42 = 81



b. 48 + 36 = 84



Lesson 16 and 17

Objective: Add a pair of two-digit numbers when the ones digits have a sum greater than 10 with drawing. Record the new ten below.

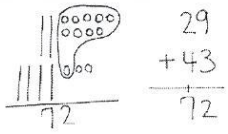
Homework Key (Lesson 16)

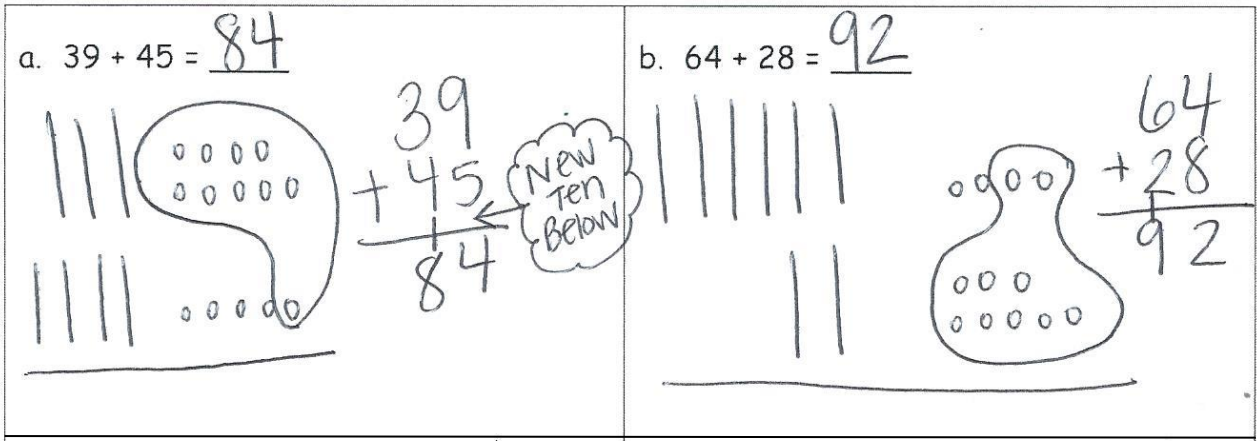
1. a. 84
   b. 92
   c. 85
   d. 80
   e. 86
   f. 98

2. a. 93
   b. 75
   c. 91
   d. 85
   e. 98
   f. 97

Homework Sample

1. Solve using quick tens and ones drawings. Remember to line up your drawings and rewrite the number sentence vertically.





Lesson 17

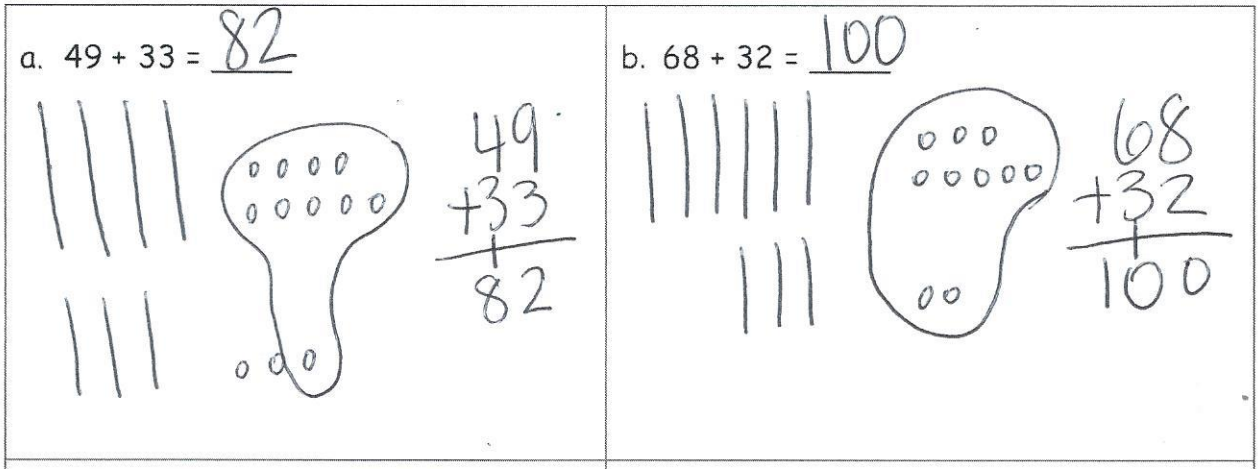
Homework Key

1. a. 82
   b. 100
   c. 79
   d. 94
   e. 95
   f. 97

2. a. 81
   b. 89
   c. 99
   d. 95
   e. 100
   f. 93

Homework Sample

1. Solve using quick tens and ones drawings. Remember to line up your tens and ones and rewrite the number sentence vertically.



Grade 1 Module 6 Topic D

Varied Place Value Strategies for Addition to 100

Focus Standard:

1.NBT.4 Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

Instructional Days Recommended: 2

During Topic D, students discuss and compare the various place value strategies they use when adding to 100 (**1.NBT.4**). Students have the opportunity to explain their thinking and better understand the strategies based on the examples and explanations of peers.

Lesson 18 has students adding a pair of two-digit numbers, such as 36 + 57, in more than one way, explaining the similarities and differences in the methods. Students recognize that they can achieve the same accurate sum through the varied strategies, as they decompose and recompose the numbers, attending to the tens and ones.

Students share their preferred strategies in Lesson 19, explaining the reason they choose to use a particular strategy for a particular set of addends. For instance, when adding 39 + 43, one student may prefer to use the make ten strategy, decomposing 43 into 1 and 42, because adding 40 + 42 is an easy problem for her. Another student may prefer vertically aligning the numbers to ensure that he is adding ones with ones and then tens with tens. Students discuss questions such as, “In which number bonds do you see an easier problem to solve? Is there another way to solve this problem? How are [the selected student’s] methods different from or the same as your partner’s? What is a compliment you would like to give [him or her]?”

**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 18

Objective: Add a pair of two-digit numbers with varied sums in the ones, and compare the results of different recording methods.

Homework Key

1. 76
2. 67
3. 82
4. 73
5. 85
6. 86

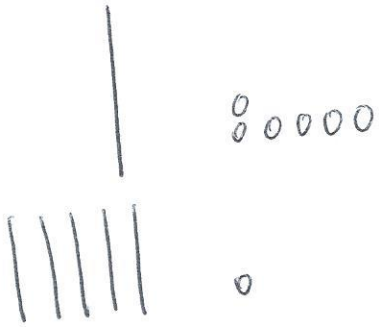
Homework Samples

Use any method you prefer to solve the problems below.

1. 61 + 15 = 76

61+10=71
71+5=76

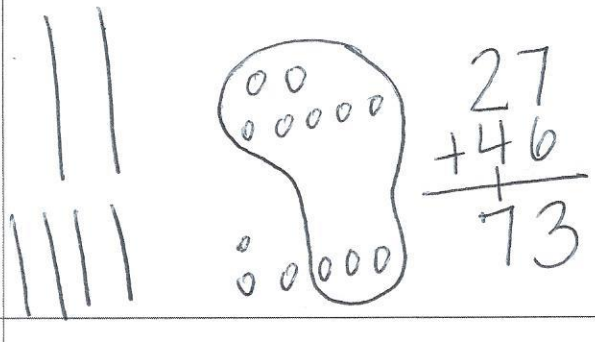
2. 16 + 51 = 67



3. 37 + 45 = 82

37
+45
1
82

4. 27 + 46 = 73



27
+46
1
73

Lesson 19

Objective: Solve and share strategies for adding two-digit numbers with varied sums.

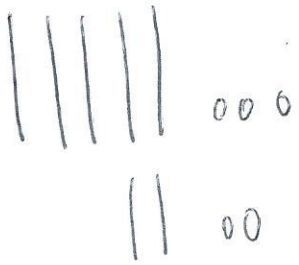
Homework Key (Lesson 17)

1.	75	7.	74
2.	75	8.	94
3.	90	9.	74
4.	92	10.	94
5.	90	11.	72
6.	100	12.	94

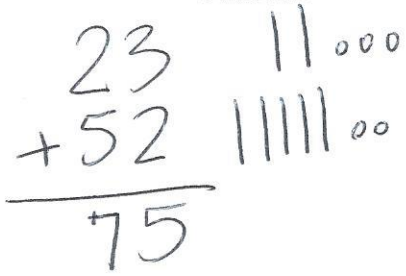
Homework Samples

Use the strategy you prefer to solve the problems below.

1. 53 + 22 = 75



2. 23 + 52 = 75



Grade 1 Module 6 Topic E

Varied Place Value Strategies for Addition to 100

Focus Standard:

1.MD.31 Tell and write time in hours and half-hours using analog and digital clocks. Recognize and identify coins, their names, and their value.

Instructional Days Recommended: 5

Through Topic E, students learn about the four most predominant U.S. coins in circulation: the penny, the nickel, the dime, and the quarter. Students identify and use the coins based on their image, name, or value (**1.MD.3**).

In Lesson 20, students are introduced to the nickel, which they then use alongside the familiar dime and penny. Students consider various ways to represent common values. For instance, students represent a value of 10 by using 1 ten (the dime) or 10 ones (pennies), as well as the well-known decomposition of 5 + 5 (2 nickels). Students use their background with number bonds to decompose the larger value into the various compositions.

Lesson 21 introduces students to the quarter, which can be the most challenging coin to learn. Students build on their understanding from Lesson 20, focusing specifically on the value of 25. They consider how many pennies they would need to have the same value as 1 quarter and then trade in 2 dimes and 1 nickel or 2 dimes and 5 pennies for a quarter. Again, students use their prior work with number bonds and place value charts to consider the various compositions.

During Lesson 22, students continue to work with all four coins. Various sequences are provided to best match the learning needs of the class. Finally, in Lesson 23, students count on from any coin to create various values.

To culminate the topic, students use dimes and pennies as representations of numbers to 120, connecting the prior knowledge students have developed throughout the module to their work in Topic E.

**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 20

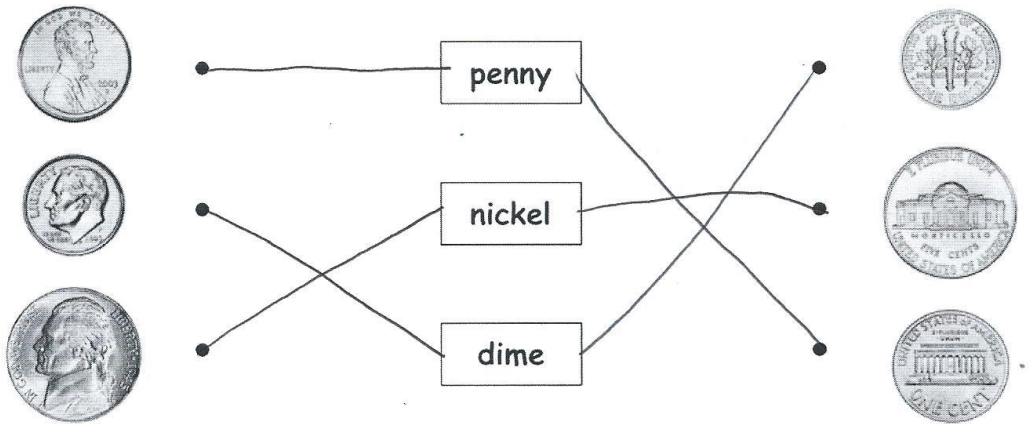
Objective: Identify pennies, nickels, and dimes by their image, name, or value. Decompose the value of nickels and dimes using pennies and nickels.

Homework Key

1. Coins appropriately matched
2. a. 2 pennies crossed off
   b. 7 pennies crossed off
3. 1 nickel drawn; 5 pennies drawn
4. a. 20; line drawn to 2 dimes
   b. 5; line drawn to 1 nickel
   c. 10; line drawn to 1 dime
   d. 1; line drawn to 1 penny

Homework Samples

1. Match.



2. Cross off some pennies so the remaining pennies show the value of the coin to their left.

a.

b.

Lesson 21

Objective: Identify quarters by their image, name, or value. Decompose the value of a quarter using pennies, nickels, and dimes.

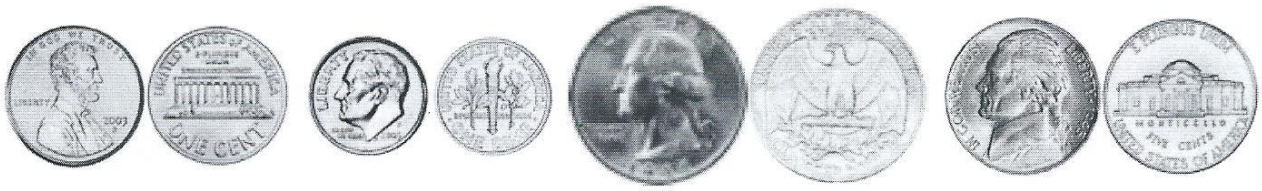
Homework Key

1. a. Penny
   b. Dime
   c. Quarter
   d. Nickel
2. a. 10
   b. 1
   c. 5
   d. 25
3. Answers will vary.
4. a. Answers will vary.
   b. Answers will vary.

Homework Samples

1. Use the word bank to label the coins.

dimes	nickels	pennies	quarters



a. pennies b. dimes c. quarter d. nickels

2. Write the value of each coin.
   a. The value of one dime is 10 cent(s).
   b. The value of one penny is 1 cent(s).
   c. The value of one nickel is 5 cent(s).
   d. The value of one quarter is 25 cent(s).

3. Your mom said she will give you 1 nickel or 1 quarter. Which would you take, and why?

A quarter, because 25 cents is more than 5 cents.

Lesson 22

Objective: Identify varied coins by their image, name, or value. Add one cent to the value of any coin.

Homework Key

1. a. 5, matched with nickels
   b. 10, matched with dimes
   c. 25, matched with quarters
   d. 1, matched with pennies
2. Answers will vary.
3. Answers will vary.

Homework Sample

1. Match the label to the correct coins, and write the value. There will be more than one match for each coin name.

a. nickel 5 cents

b. dime 10 cents

c. quarter 25 cents

d. penny 1 cent

Lesson 23

Objective: Count on using pennies from any single coin.

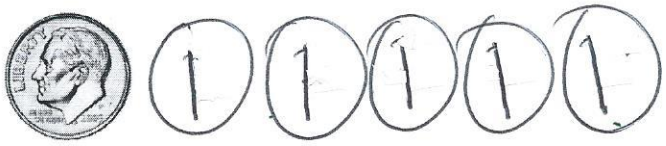
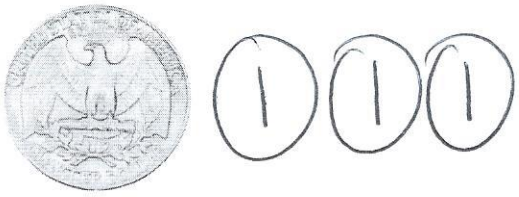
Homework Key

1. a. 5 pennies drawn
   b. 3 pennies drawn
   c. 7 pennies drawn
   d. 7 pennies drawn

2. a. 22 cents
   b. 15 cents
   c. 27 cents
   d. 31 cents
   e. 32 cents

Homework Sample

1. Add pennies to show the written amount.

a.	15 cents	
b.	28 cents	

Lesson 24

Objective: Use dimes and pennies as representations of numbers to 120.

Homework Key

1. a. 2, 1; 20 + 1 = 21
   b. 11, 0; 110 + 0 = 110
   c. 11, 3; 110 + 3 = 113
2. 11 dimes checked; 11, 0
3. a. 7 dimes and 9 pennies drawn; 7, 9
   b. 11 dimes and 8 pennies drawn; 11, 8

Homework Sample

1. Find the value of each set of coins. Complete the place value chart. Write an addition sentence to add the value of the dimes and the value of the pennies.

a.

tens	ones
2	1

20+1=21

b.

tens	ones
11	0

110+0=110

Grade 1 Module 6 Topic F

Varied Problem Types Within20

Focus Standard:

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

Instructional Days Recommended: 3

Topic F provides students the opportunity to focus on solving various problem types and to learn from their peers' strategies.

Lessons 25 and 26 focus on the most challenging Grade 1 problem types: *compare with bigger unknown* and *compare with smaller unknown* (**1.OA.1**). Students continue to strengthen their ability to recognize *compare* problem types and solve for unknowns in varied positions. They also work with problem types that suggest the incorrect operation, such as, "Shanika went down the slide 15 times. She went down 3 more times than Fran. How many times did Fran go down the slide?" While students do not need to master this problem type in Grade 1, exposure to these problems can support students' long-term success. During Lesson 26, students are provided more time to practice the various problem types and to learn to persevere in problem solving.

In Lesson 27, students practice all of the problem types they have encountered throughout the year. They discuss their methods for solving the problems and explain their work, including answering such questions as, "How does Student A's work help her solve the problem? How does Student B's work help him solve the problem? What compliment can we give Student A? What might Student A do to improve her work? What do you notice about your own work after looking at Student A's and Student B's work?"

**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 25 and 26

Objective: Solve *compare with bigger or smaller unknown* problem types.

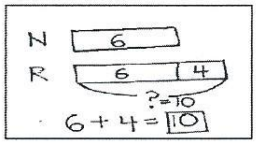
Homework Key (Lesson 25)

1. 10
2. 10
3. 14
4. 15
5. 6
6. 8

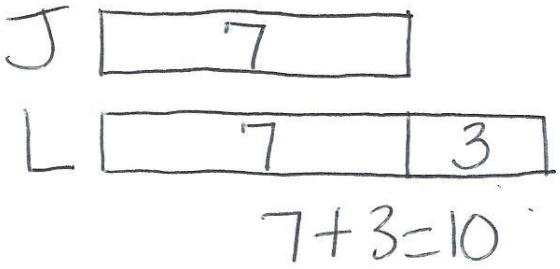
Homework Sample

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

Sample Tape Diagram



1. Julio listened to 7 songs on the radio. Lee listened to 3 more songs than Julio. How many songs did Lee listen to?



Lee listened to 10 songs.

Lesson 26

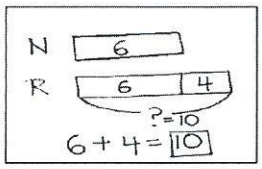
Homework Key

1. 7
2. 17
3. 6
4. 18
5. 11
6. 18

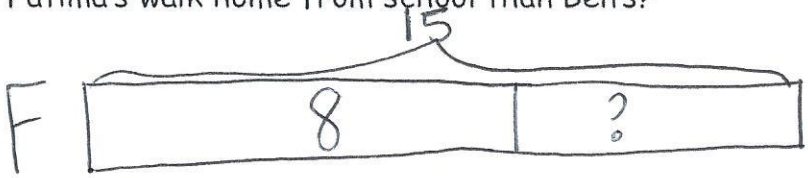
Homework Sample

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

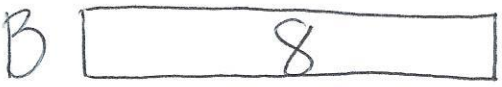
Sample tape diagram



1. Fatima walks 15 blocks home from school. Ben walks 8 blocks. How much longer is Fatima's walk home from school than Ben's?



15-8=7.



Fatima's walk is 7 more blocks than Ben's.

Lesson 27

Objective: Share and critique peer strategies for solving problems of varied types.

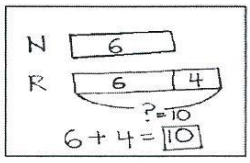
Homework Key

1. 4
2. 8
3. 7
4. 6
5. 8
6. 13

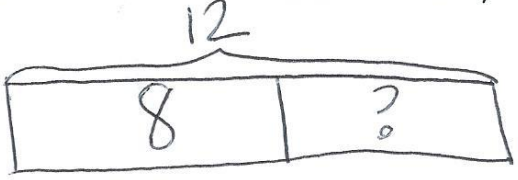
Homework Sample

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

Sample Tape Diagram



1. Eight students lined up to go to art. Some more lined up to go to music. Then, there were 12 students in line. How many students lined up to go to music?



8+?=12 or 12-8=?
8+4=12
Four students lined up to go to music.

Grade 1 Module 6 Topic G

Culminating Experiences

Focus Standard:

Topic G is a celebration of students' learning over the course of the year. Focus Standards are not applicable.

Instructional Days Recommended: 3

Topic G culminates not only Module 6, but also a full year of learning for Grade 1 students. It is a joyous celebration of the great progress of all students. During each lesson, students recognize how much they know now in comparison with the start of the year. They celebrate this learning by using their acquired skills and knowledge to enjoy entertaining games and activities with their peers.

During Lessons 28 and 29, students play games with cards and dice that celebrate their progress in fluently adding and subtracting within 10 and 20. All of the games are played with materials that students can find at home or bring home from school to encourage engaging summer practice.

To culminate the year, students create folder covers that can be used to bring home the math work from the year. The covers are designed to illustrate students' learning across the course of the year and to celebrate their individual accomplishments.

**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 28 and 29

Objective: Celebrate progress in fluency with adding and subtracting within 10 (and 20). Organize engaging summer practice.

Homework Key (Lesson 28)

1. All boxes checked
2. 92, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 120
3. 87, 67, 57, 47, 37, 27, 17, 7
4. Answers will vary.

Homework Sample

1. Teach a family member some of our counting activities. Check all the activities you do together.

   - ☐ Happy Count by ones.
   - ☐ Happy Count by tens.
   - ☐ Count by ones the Say Ten Way. Example: Ten one (11, 12, 13, etc.), Ten two, Ten three, etc.
   - ☐ Count by tens the Say Ten Way. First, start at 0; then, start at 7.
   - ☐ Movement counting—count while doing squats, arm rolls, jumping jacks, etc.

Lesson 29

Number Bond Dash

1. 0
2. 1
3. 2
4. 1
5. 0
6. 1
7. 2
8. 3
9. 2
10. 3
11. 4
12. 3
13. 4
14. 5
15. 6
16. 4
17. 6
18. 7
19. 6
20. 7
21. 10
22. 9
23. 8
24. 6
25. 8

Lesson 30

Objective: Create folder covers for work to be taken home illustrating the year's learning.

Culminating Activities

Answers will vary.