Parent Packet

HAUPPAUGE MATH DEPARTMENT

CCLS

Grade 1

MODULE 6

http://www.hauppauge.k12.ny.us/math

2014 – 2015 School Year

Grade 1 Module 6

Place Value, Comparison, Addition and Subtraction to 100

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. As the module opens, students grapple with comparative word problem types. Next, they extend their understanding of and skill with tens and ones to numbers to 100. Students also extend their learning from Module 4 to the numbers to 100 to add and subtract. At the start of the second half of Module 6, students are introduced to nickels and quarters, 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. The module concludes with fun fluency festivities to celebrate a year's worth of learning.

Topic A

Comparison Word Problems

Topic A of Module 6 opens with students exploring one of the most challenging problem types for their grade level, comparison word problems (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.

Topic B

Numbers to 120

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, 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). Through 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 will be doing later 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). In Lesson 7, students work with the counting sequence to 120 (1.NBT.1). Starting at 78, students use Hide Zero cards to build each number. 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).

Topic C

Addition to 100 Using Place Value Understanding

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 to the right. 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 to the right. 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, using the same number bond work as Lesson 8, as shown to the right (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 9 and 10, as shown to the right. Lesson 16 extends the work of Lesson 11, 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 (1.NBT.4).

Topic D

Varied Place Value Strategies for Addition to 100

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]?"

Topic E

Coins and Their Values

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, and/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. And, 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 been developing throughout the module to the work they have been doing in Topic E.

Topic F

Varied Problem Types Within 20

Topic F provides students the opportunity to focus on solving various problem types and 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. Students then practice all of the problem types they have encountered throughout the year in Lesson 27. They discuss their methods for solving the problems and explain their work, including 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?"

Topic G

Culminating Experiences

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 bring or find at home to encourage engaging summer practice.

Grade 1 • Module 6

Place Value, Comparison, Addition and Subtraction of Numbers 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. While students have solved some comparative problem types during Module 3 and within the Application Problems in Module 5, this will be 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. For example, they mentally find 10 more, 10 less, 1 more, and 1 less and compare numbers using the symbols >, =, and < . They then count and write numbers to 120 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. 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. 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, 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 problem solving and reasoning along with critiquing the reasoning of others. The topic includes the more challenging *compare with bigger or smaller unknown* word problem types wherein *more* or *less* suggest the incorrect operation, 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. The final day is devoted to creating a math folder illustrating their learning in which to send home their year's work.

Terminology

New or Recently Introduced Terms

Comparison problem type

Dime

Nickel

Penny

Quarter

Familiar Terms and Symbols

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

Suggested Tools and Representations

100-bead Rekenrek

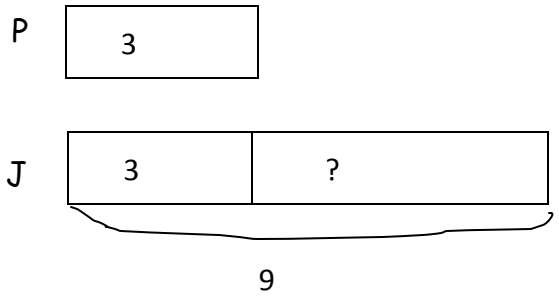
Tape diagram

Lesson 1

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

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.

Peter has 3 goats living on his farm. Julio has 9 goats living on his farm. How many more goats does Julio have than Peter?



9 - 3 = 6

or

3 + 6 = 9

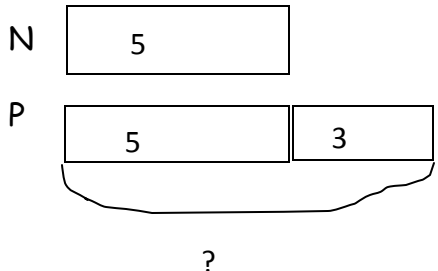
Julio has 6 more goats than Peter.

Lesson 2

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

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

Nikil baked 5 pies for the contest. Peter baked 3 more pies than Nikil. How many pies did Peter bake for the contest?



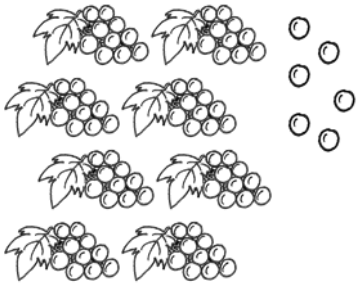
5 + 3 = 8

Peter baked 8 pies for the contest.

Lesson 3

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

Write the tens and ones. Complete the statement



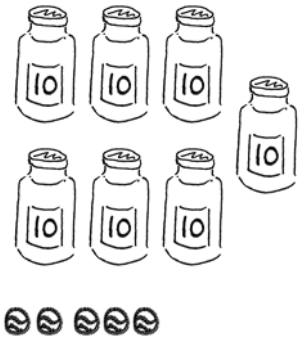
tens	ones
8	6

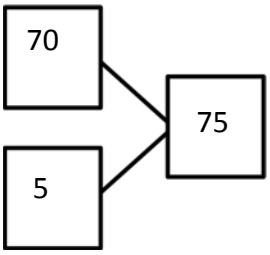
_86___ = _8___ **tens** __6__ **ones**

Lesson 4

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

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





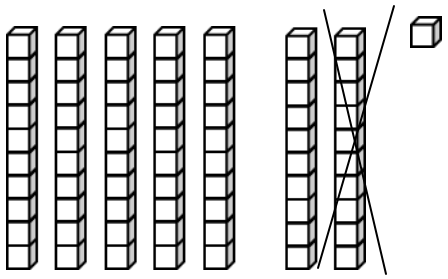
75 = _70___ + _5___

5 more than 70 is _75___.

Lesson 5

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

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



10 less than 71 is _61____.

Lesson 6

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

Underline the correct words to make the sentence true. Use >, <, or = and numbers to write a true statement.

36 | is greater than / <u>is less than</u> / is equal to | 6 tens 3 ones

____36_____ < ____63_____

Lesson 7

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

Circle the sequence that is incorrect. Rewrite it correctly on the line.

107, 108, 109, 110, 120	99, 100, 101, 102, 103

___107, 108, 109, 110, 111_____

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.

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

74

tens	ones
7	4

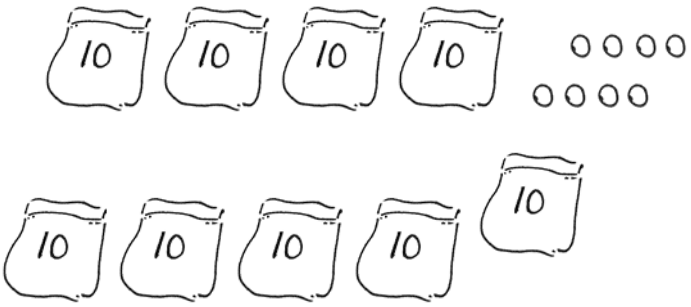
__109_

tens	ones
10	9

Lesson 9

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

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



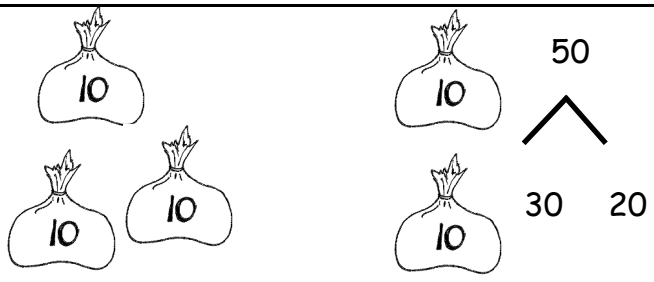
tens	ones
9	8

98

Lesson 10:

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

1.



__3__ **tens** + _2___ **tens** = _5_ **tens**

30 + 20 =__50_____

Lesson 11:

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

Solve.

47 + 40 = __87____

7 40

40 + 40 = 80

80 + 7 = 87

Lesson 12:

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

Solve.

59 + 41 = __100___

1 40

59 + 1 = 60

60 + 40 = 100

57 + 22 = __79___

20 2

57 + 20 = 77

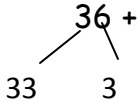
77 + 2 = 79

Lesson 13:

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

Solve and show your work.

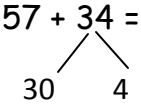
36 + 47 = __83_____



47 + 3 = 50

50 + 33 = 83

57 + 34 = 91



57 + 30 = 87

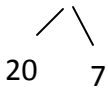
87 + 4 = 91

Lesson 14:

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

Solve and show your work.

48 + 27 = __75_



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48 + 20 = 68

68 + 7 = 75

48 + 22 = _70__

48 + 2 = 50

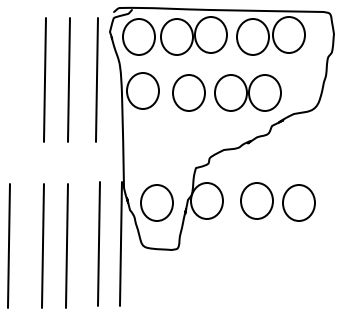
50 + 20 = 70

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.

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

39 + 54 = __93__



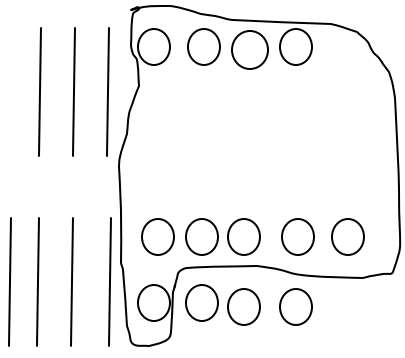
93

Lesson 16:

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.

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

34 + 49 = _83___



83

34

\+ 49

1

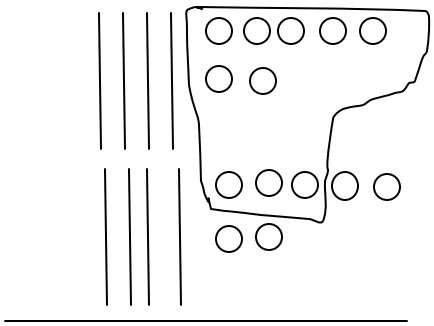
8 3

Lesson 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.

Solve using quick tens and ones drawings. Remember to line up your tens and ones and re-write the number sentence vertically.

47 + 47 = _94___



9 4

$$\begin{array}{r} 47 \\ +\ 47 \\ \hline {\scriptstyle 1} \\ 94 \end{array}$$

Lesson 18:

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

Use any method you prefer to solve the problems below.

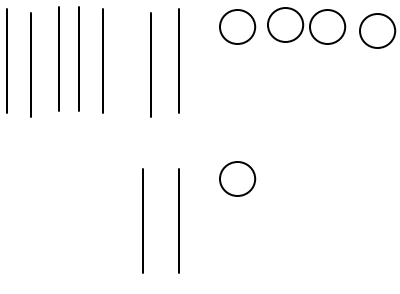
79 + 21 = _100____

1 20

79 + 1 = 80

80 + 20 = 100

74 + 21 = __95___



9 5

$$\begin{array}{r} 74 \\ +\ 21 \\ \hline 95 \end{array}$$

Lesson 19:

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

Use the strategy you prefer to solve the problems below.

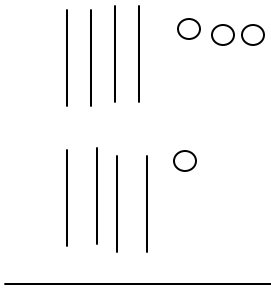
52 + 48 = _100____

8 40

52 + 8 = 60

60 + 40 = 100

43 + 41 = _84____



8 4

43

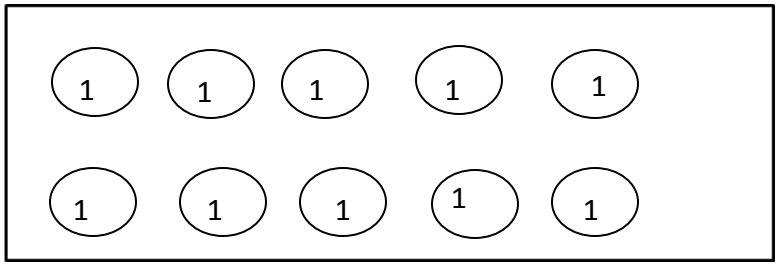
\+ 41

8 4

Lesson 20:

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

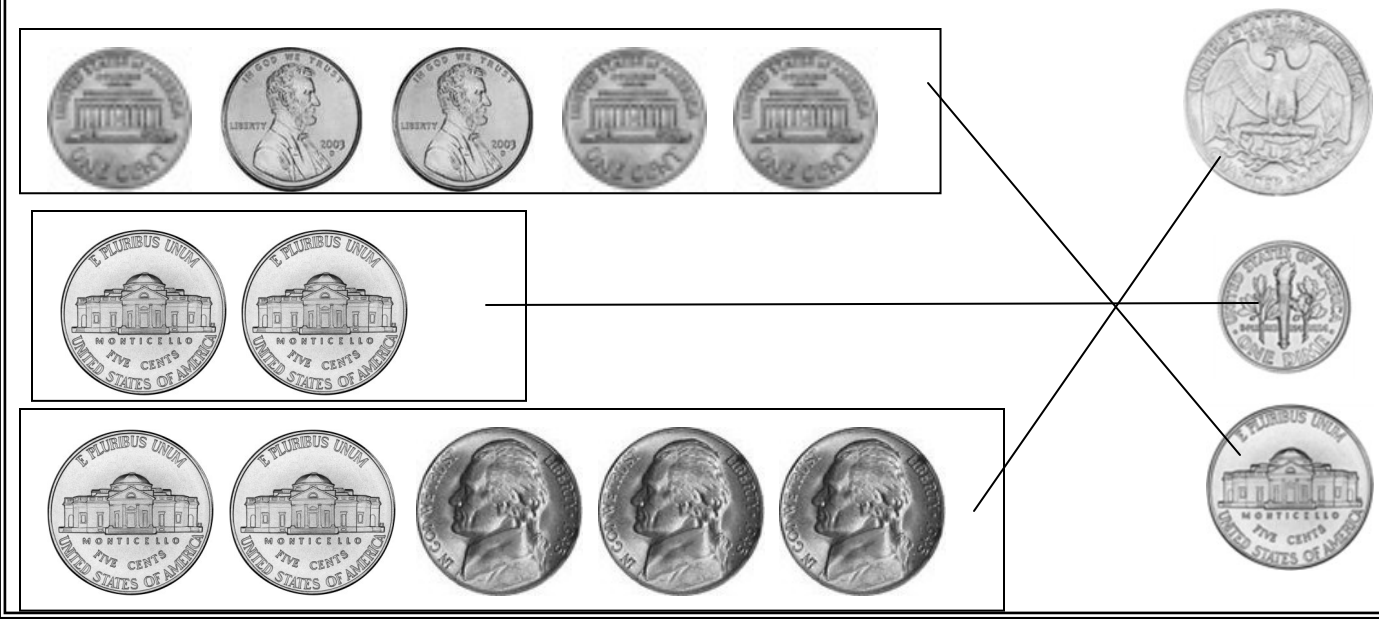
Draw pennies to show the value of the coin.



Lesson 21:

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

Match the coin combinations to the coin with the same value



Lesson 22:

Objective: Identify varied coins by their image, name, or value.

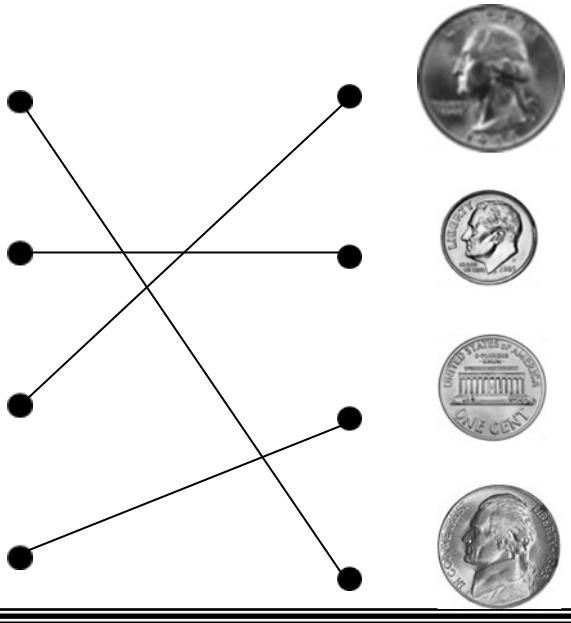
Solve. Match each statement to the coin that shows the value of the answer.

a. 5 pennies = ___5__ cents

b. 6 cents + 4 cents = ___10__ cents

c. 1 quarter = _25____ cents

d. 6 cents – 5 cents = __1___ cent



Lesson 23:

Objective: Count on using pennies from any single coin. Add pennies to show the written amount.

8 cents		1 1 1
30 cents		1 1 1 1 1
10 cents	 	1 1 1 1
18 cents	   	1 1 1 1 1

Lesson 24:

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

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

tens	ones
3	2

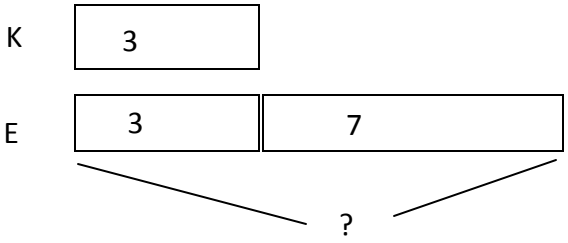
30 + 2 = 32

Lesson 25:

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

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.

Kiana wrote 3 poems. She wrote 7 fewer than her sister Emi. How many poems did Emi write?



3 + 7 = 10

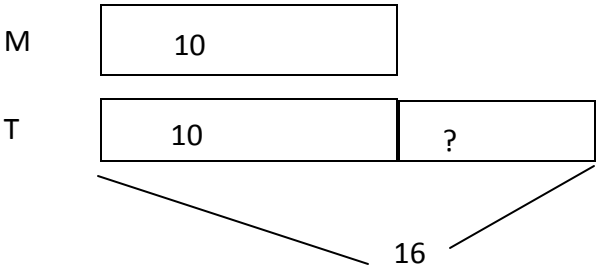
Emi wrote 10 poems.

Lesson 26:

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

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.

Tony is reading a book with 16 pages. Maria is reading a book that has 10 pages. How much longer is Tony's book than Maria's book?



10 + 6 = 16

16 − 6 = 10

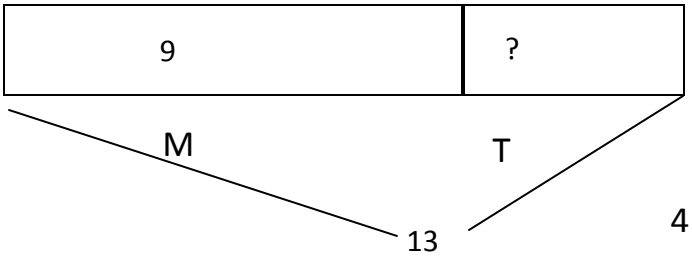
Tony's book is 6 pages longer than Maria's.

Lesson 27:

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

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.

Nine letters came in the mail on Monday. Some more letters were delivered on Tuesday. Then there were 13 letters. How many letters were delivered on Tuesday?



9 + 4 = 13

13 − 4 = 9

4 letters were delivered on Tuesday.

Lesson 28:

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

Write the numbers from 91 to 120:

91	92	93	94	95	96	97	98	99	100

101	102	103	104	105	106	107	108	109	110

111	112	113	114	115	116	117	118	119	120

Technology Resources

www.k-5mathteachingresources.com -This site provides an extensive collection of free resources, math games, and hands-on math activities aligned with the Common Core State Standards for Mathematics.

www.parccgames.com – fun games to help kids master the common core standards.

http://www.mathplayground.com –common core educational math games and videos.

www.learnzillion.com – math video tutorials.

www.ixl.com – practice common core interactive math skills practice.

www.mathnook.com –common core interactive math skill practice/ games, worksheets and tutorials.

www.adaptedmind.com – common core interactive practice, video lessons and worksheets

www.brainpop.com – animated tutorials of curriculum content that engages students. Can use a limited free version or buy a subscription.