Eureka Math™ Homework Helper

2015–2016

Grade 2
Module 3
Lessons 1–21

G2-M3-Lesson 1

1. Fill in the missing part.

   a.   3 ones + __7__ ones = 10 ones

   b. $3 + $__7__$ = 10$

   c.   3 tens + __7__ tens = 1 hundred

   d. $30 + $__70__$ = 100$

   > I know 3 facts that can help me solve all these problems:
   > $3 + 7 = 10$
   > 10 ones = 1 ten
   > 10 tens = 1 hundred

2. Rewrite in order from largest to smallest units.

   4 tens   Largest _____**2 hundreds**_____

   2 hundreds   _____**4 tens**_____

   9 ones   Smallest _____**9 ones**_____

   > I know that 2 hundreds equal 200, 4 tens equal 40, and 9 ones equal 9.

3. Count each group. What is the total number of sticks in each group?

   Bundles of 100   Bundles of 10   Ones
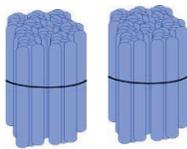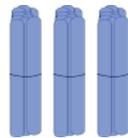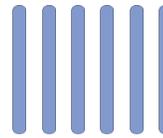
   __200__   __30__   __6__

   What is the total number of sticks? __236__

4. Draw and solve.

Moses has 100 stickers. Jared has 80 stickers. Jared wants to have the same number of stickers as Moses. How many more stickers does Jared need?

> I can start at 80 and count on by 10's until I reach 100.

Jared needs __20__ more stickers

> I can draw bundles of 10 to help me keep count: 90, 100.

> I counted 2 more tens. That's 20.

G2-M3-Lesson 2

1. These are bundles with 10 sticks in each.

    a.   How many tens are there? __11__

    b.   How many hundreds? __1__

    c.   How many sticks in all? __110__
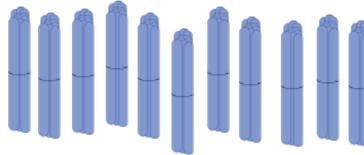
    > I count 11 tens. I know that 10 tens equal
    > 1 hundred. I can skip-count by tens to see
    > that there are 110 sticks in all.

2. Dean did some counting. Look at his work. Explain why you think Dean counted this way.

    $$128, 129, 130, 140, 150, 160, 170, 180, 181, 182, 183$$

    > Benchmark numbers allow us to skip-count, which is faster
    > than counting by ones. So Dean counted by ones to get to
    > the closest benchmark number, 130. Then, he skip-counted
    > by tens up to 180. Next, he counted by ones to reach 183.

3. Show a way to count from 76 to 140 using tens and ones. Explain why you chose to count this way.

    76, 77, 78, 79, 80, 90, 100, 110, 120, 130, 140

    > I counted by ones to get to the
    > nearest benchmark number after
    > 76, which is 80. Then it was easy
    > to skip-count by tens up to 140.

G2-M3-Lesson 3

1. Fill in the blanks to reach the benchmark numbers.

> I count by ones to reach 70. I count by tens to reach 100. I count by hundreds to reach 400, and then I count by tens to get to 420.

66, __67__, __68__, __69__, 70, __80__, __90__, 100, **200**, **300**, 400, **410**, 420

> Benchmark numbers make it quicker and easier to count to large numbers!

2. These are ones, tens, and hundreds. How many sticks are there in all?

> I know that the order of these drawn units doesn't matter, but it's easiest to start with the highest value, the hundreds.

> This shows 2 hundreds, 3 tens, and 2 ones. I can count like this: 100, 200, 210, 220, 230, 231, 232. So there are 232 sticks in all.

There are **232** sticks in all.

3. Show a way to count from 457 to 700 using ones, tens, and hundreds.
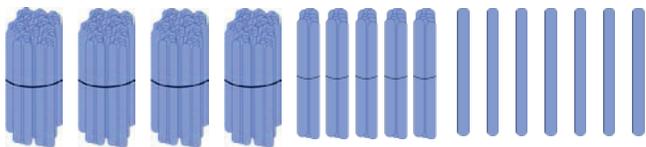
457

> I count three more ones to get to the benchmark number, 460. From there I can count by tens up to 500. Then, I count on by hundreds to reach 700.

> I can draw bundles to show my count or just write the numbers.

458, 459, 460, 470, 480, 490, 500, 600, 700

G2-M3-Lesson 4

1. Pilar used the place value chart to count bundles. How many sticks does she have in all?

Hundreds	Tens	Ones
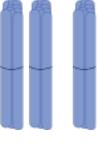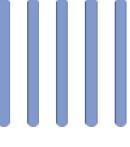
Pilar has __**135**__ sticks.

> I see 1 hundred, 3 tens, and 5 ones. I count the units like this, 100, 110, 120, 130, 131, 132, 133, 134, 135. I can also count in unit form like this, 1 hundred 3 tens 5 ones.

2. These are tens. If you put them together, which unit will you make?

> I can skip-count by ten to see that 10 tens equal 1 hundred.
> 10, 20, 30, 40, 50, 60, 70, 80, 90, 100.
> I can bundle it to show 100.

    a. one   b. hundred   c. thousand   d. ten

3. Imagine 467 on the place value chart. How many ones, tens, and hundreds are in each place?

    7   **6**   **4**
    ones   tens   hundreds

> I have to pay attention to the order of the units! On the place value chart, the order would be 4 hundreds first, then 6 tens, and then 7 ones.

4. Show a way to count from 160 to 530 using tens and hundreds. Circle at least one benchmark number.

    160, 170, 180, 190, 200, 300, 400, 500, 510, 520, 530

> I skip-count by tens to reach 200. After that, I can count on by hundreds. At 500, I count by tens to reach 530.

G2-M3-Lesson 5

1. What is the value of the 5 in

8	5	9

?   **50**

800

50

9
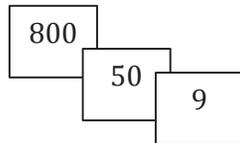
> I can picture how this number looks when shown with Hide Zero cards. The digit 5 is in the tens place. I know the value of 5 tens is 50.

2. Make a number bond to show the hundreds, tens, and ones in the number. Then, write the number in unit form.

718

7 hundreds 1 ten 8 ones

718

700   **10**   **8**
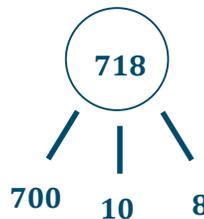
> The number bond and unit form both help me see the value of each digit.

3. Draw a line to match unit form with number form.

a.   4 hundreds 1 ten =   41

b.   4 tens 1 one =   410

c.   4 hundreds 1 one =   401

> I can visualize the numbers on the place value chart to help me match the unit form to number form.

G2-M3-Lesson 6

1. Match the numerals with the number names.
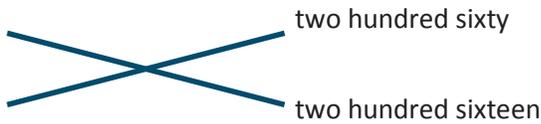
   a. 216   two hundred sixty
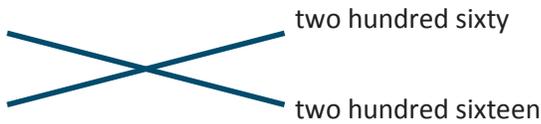
   b. 260   two hundred sixteen

   > I have to think about the value of each digit. 216 has 2 hundreds 1 ten 6 ones, and that's two hundred sixteen. 260 has 2 hundreds 6 tens, and that's two hundred sixty.

2. Write the answer in number form.

   a. $1 + 1 + 1 + 10 + 10 + 100 + 100 + 100 + 100 =$ __**423**__

   b. __**187**__ $= 7 + 100 + 80$

   c. __**320**__ $= 300 + 20$

   > This addition problem tells the total value of each unit. The expanded form is not in order. I have to be careful when writing the number to put it in order from largest to smallest unit.

   > When I add the total value of each unit, I get $3 + 20 + 400$. That's the same as $400 + 20 + 3$ because I know I can write the units in any order, and the total stays the same. So, the answer is 423.

3. Write each number in expanded form.

   a. $26 =$ __**20 + 6**__

   > Writing the numbers as addition sentences with the parts representing the total value of each unit helps me see the value of each place.

   b. $720 =$ __**700 + 20**__

   c. $403 =$ __**400 + 3**__

   > When there is a zero for one of the units, I do not write the 0 in the expanded form.

EUREKA MATH™ | Lesson 6:   Write base ten numbers in expanded form.   **7**

G2-M3-Lesson 7

1. These are bundles of hundreds, tens, and ones. Write the standard form, expanded form, and word form for each number shown.
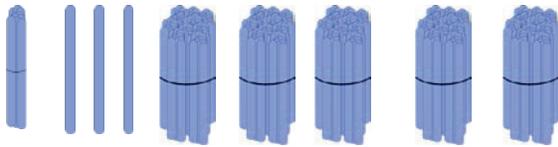
> The order of the units doesn't change the total, so the number in standard form is 513.

    a.   Standard Form   **513**

    b.   Expanded Form   **$500 + 10 + 3$**

    c.   Word Form   ***Five hundred thirteen***

> The digit 6 is in the tens place. I know the value of 6 tens is 60.

2. What is the unit value of the 6 in 261?   **60**

> All the numbers use the digits 1 and 4 but in different places. Using what I know about place value helps me solve.

3. Write $141, 114, 411,$ in order from greatest to least.

    411   **141**   **114**

> Hundreds are the biggest unit, so a number with 4 hundreds is bigger than a number with 1 hundred.

> 141 comes next because it has more tens in the tens place than 114.

> I can also think of it like this: 141 has 14 tens, but 114 has only 11 tens.

G2-M3-Lesson 8

1. Write the total value of the money.

> Counting to find the value of $1, $10, and $100 bills is just like counting ones, tens, and hundreds!

$100	$100	$10	$1	$1
$100	$10	$10	$1	$1

$334

> I count, starting with the largest unit,
> 100, 200, 300, 310, 320, 330, 331, 332, 333, 334.

> I can use what I know about expanded form to work with money. $400 + $10 + $5 = $415.

2. Fill in the bills with $100, $10, or $1 to show the amount.

$100	**$100**	**$100**	**$100**	**$10**
$1	**$1**	**$1**	**$1**	**$1**

$415

3. Draw and solve.

Jill has 5 ten-dollar bills and 3 one-dollar bills. Ben has 2 fewer ten-dollar bills and 1 fewer one-dollar bill than Jill. What is the value of Ben's money?

$10	$10	$10	$10	$10
$1	$1	$1		

Ben has $32.

> I can draw Jill's bills and then cross off to show Ben's money. Then, I count what is left, 10, 20, 30, 31, 32. Ben has $32.

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Lesson 8: Count to find the total value of $1, $10, and $100 bills up to $1,000.

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G2-M3-Lesson 9

1. Show one way to count from $67 to $317.

   67, 77, 87, 97, 107, 117, 217, 317

> Counting money is just like counting with numerals, so I can leave off the dollar signs and just skip-count by tens to get to 117. Then, I skip-count by hundreds to get to 317.

2. Use each number line to show a different way to count from $280 to $523.
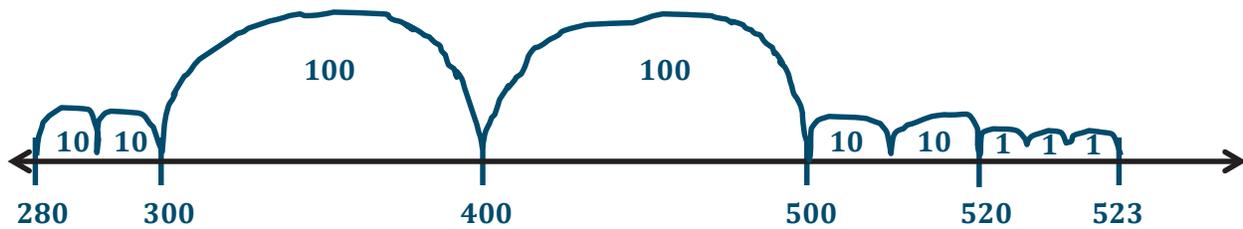
> I can count on 2 tens, which gets me to 300. Then, I count on 2 hundreds to get to 500. Next, I count on 2 more tens to reach 520. From there, I count on 3 ones to get to 523.
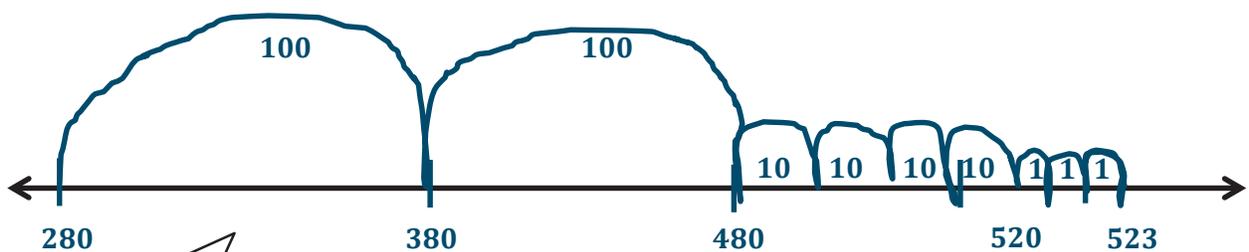
> Or, I could count on by hundreds first to get to 480 and then count on 4 tens to get to 520. And, I need to add 3 ones to reach 523.

> No matter which way I count, my jumps on the number line show the size of the unit I'm counting by. So, a jump of 100 is bigger than a jump of 10, and a jump of 1 is the smallest.

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Lesson 9: Count from $10 to $1,000 on the place value chart and the empty number line.

10

G2-M3-Lesson 10

How many $10 bills are equal to $500?

I skip-count by hundreds up to 500 because I know 10 tens are in 1 hundred.
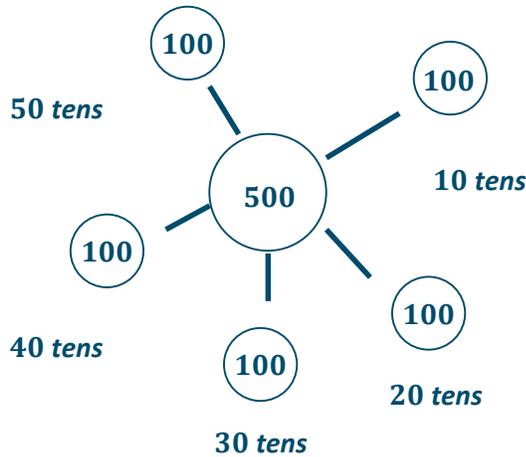
I draw a number bond to help me keep track of the count.

50 *tens*

10 *tens*

40 *tens*

20 *tens*

30 *tens*

Now, I count the tens to find the answer, 10 tens, 20 tens, 30 tens, 40 tens, 50 tens.

50 *ten-dollar bills are equal to* $500.

Or, I can draw a number line and skip-count by hundreds up to 500. I write 10 tens inside each hop, and then I count how many tens there are in all.

There are 10, 20, 30, 40, 50 tens in all.

10 *tens*   10 *tens*   10 *tens*   10 *tens*   10 *tens*

0   100   200   300   400   500
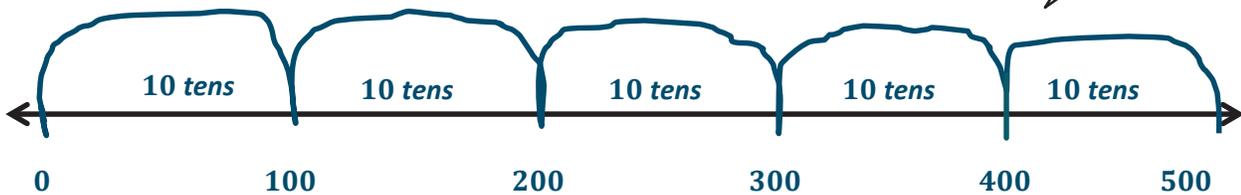
G2-M3-Lesson 11

Students use place value disks to model the value of each digit in a given number. A template has been provided to help students complete the homework assignment.

Model the following numbers for your parent using the fewest disks possible. Whisper the numbers in standard form and unit form.

a. 12

(10) (1) (1)

> I could show 12 ones disks, but to use the fewest disks, I show 1 ten and 2 ones.

> In standard form, I say 12. In unit form, I say 1 ten 2 ones.

b. 123

(100) (10) (10) (1) (1) (1)
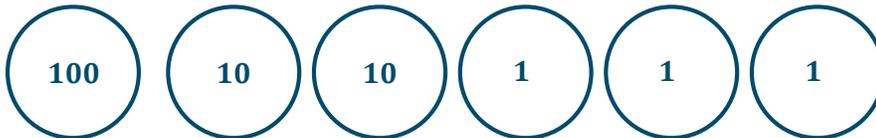
> In standard form, I say 123. In unit form, I say 1 hundred 2 tens 3 ones.

> I could show 12 tens disks and 3 ones disks, but to use the fewest disks, I show 1 hundred, 2 tens, and 3 ones.

c. 103

(100) (1) (1) (1)

> In standard form, I say 103. In unit form, I say 1 hundred 3 ones.

> In standard form, I say 330. In unit form, I say 3 hundreds 3 tens.

d. 330

(100) (100) (100) (10) (10) (10)

G2-M3-Lesson 12

Students complete this chart as they work with place value disks.

Count from 582 to 700 using place value disks. Change for a larger unit when necessary.

When you counted from 582 to 700:

Did you make a larger unit at…	Yes, I changed to make:	No, I need _____
1. 590?	(1 ten) 1 hundred	___ ones. ___ tens.
2. 600?	1 ten (1 hundred)	___ ones. ___ tens.
3. 618?	1 ten 1 hundred	**2** ones. ___ tens.
4. 640?	(1 ten) 1 hundred	___ ones. ___ tens.
5. 652?	1 ten 1 hundred	**8** ones. ___ tens.
6. 700?	1 ten (1 hundred)	___ ones. ___ tens.

> When I add 8 ones to 582, I make the next ten. Now I'm at 590.

> Counting on from 590, when I add 10 more ones, I make a ten, which also means I make a new hundred, 600.

> I need to add 2 more ones to make a new ten and reach 620.

> I make a new ten when I reach 630, and again when I reach 640.

> I need to add 8 more ones to make a new ten and reach 660.

> Counting on from 690, when I add 10 more ones, I make a ten, which also means I make a new hundred, 700.

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G2-M3-Lesson 13

Draw place value disks to show the numbers.
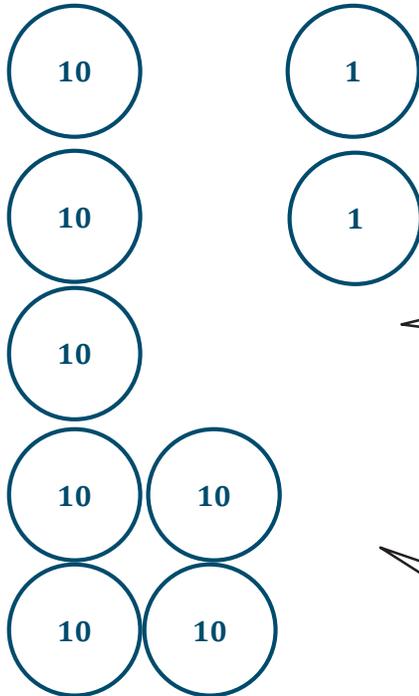
Drawing place value disks helps me see the value of each digit. I can see that the digit 7 equals 70, and the digit 2 is just 2 ones.

a. 72

(10) (10) (10) (10) (10) (10) (10)   (1) (1)

I draw the disks like a ten-frame, starting from the top down in each place. I fill a column of 5 and then start from the bottom up to build toward the other five for 6, 7, 8, or 9. This makes it easy to see when I make a new unit.

It's easy to see that if I add 8 more ones, I'll make a new unit of ten. If I add 3 more tens, I'll make a new unit of 1 hundred.

b. 303

(100) (100) (100)   (1) (1) (1)
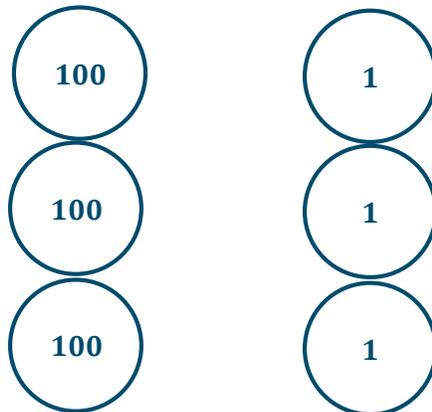
When I say the number in unit form, 3 hundreds 3 ones, and I draw place value disks, I understand the value of each 3.

G2-M3-Lesson 14

1. Whisper-talk the numbers and words as you fill in the blanks.

I know 18 is 1 ten 8 ones. I can exchange 1 ten for 10 ones and have 10 ones and 8 ones, which is 18 ones.

    a.   18 = _____ hundreds __**1**__ tens __**8**__ ones

         18 = __**18**__ ones

I can say 315 is 3 hundreds 1 ten 5 ones. Since I know 1 ten 5 ones is the same as 15 ones, I can also say 315 is 3 hundreds 15 ones.

    b.   315 = __**3**__ hundreds __**1**__ tens __**5**__ ones

         315 = __**3**__ hundreds __**15**__ ones

    c.   419 = __**4**__ hundreds __**1**__ tens __**9**__ ones

         419 = __**41**__ tens __**9**__ ones

I know 10 tens make 100, so there are 40 tens in 400. Then, I add the other ten, so there are 41 tens. The ones stay the same.

    d.   570 = __**5**__ hundreds __**7**__ tens

         570 = __**57**__ tens

Problem (c) helps me solve this one. I know 40 tens are in 400, so 50 tens are in 500. 50 tens plus 7 tens equals 57 tens!

2. Write down how you can skip-count by ten from 420 to 310. You might use place value disks, number lines, bundles, or numbers.

$$420, 410, 400, 390, 380, 370, 360, 350, 340, 330, 320, 310$$

Easy! I can just count back by ten!

EUREKA MATH | Lesson 14:   Model numbers with more than 9 ones or 9 tens; write in expanded, unit, standard, and word forms.   **15**

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G2-M3-Lesson 15

Students follow the steps of the Read, Draw, Write (RDW) process to solve word problems: Read the problem; draw and label a model of the information given; write an equation to solve; write a statement of the answer to the question.

Pencils come in boxes of 10.

a. How many boxes should Kadyn buy if he needs 136 pencils?

13 boxes
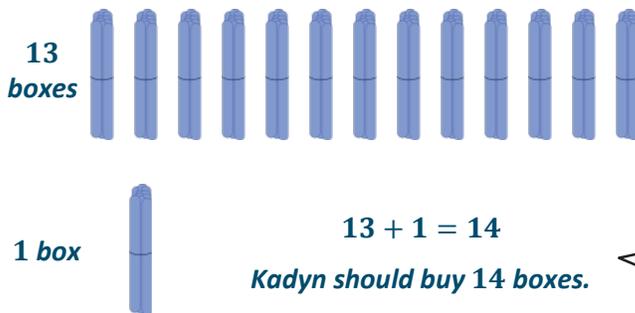
Since there are 10 pencils in each box, I can skip-count by ten. I can draw bundles of ten to represent the boxes as I count to 130.

1 box

$$13 + 1 = 14$$

Kadyn should buy 14 boxes.

I need to draw another box because Kadyn needs 6 more than 130.

Or, I could use what I've learned about unit form. There are 13 tens 6 ones in 136, so I need 13 boxes to have 130 pencils, plus 1 more box for the extra 6 pencils.

b. How many pencils will Kadyn have left over after he gets what he needs out of the boxes?

$$10 - 6 = 4$$

Kadyn will have 4 pencils left over.

Kadyn will use all 130 pencils from the first 13 boxes. Then, he'll need to take 6 pencils out of the last box of ten. That means 4 pencils will be left over.

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Lesson 15: Explore a situation with more than 9 groups of ten.

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c.   How many more pencils does he need to have 200?

**140**, **150**, **160**, **70**, **180**, **190**, **200**

Kadyn needs **60** *more pencils.*

> I have to be careful and pay attention to what the question is asking. In the first part of this problem, I was solving for *boxes*. This time, the unit I'm solving for is *pencils*! I can skip-count by ten from 140 to 200. So, 150, 160, 170, 180, 190, 200. That is 6 tens, or 60.

G2-M3-Lesson 16

Drawing the numbers with disks on the place value chart makes it easy to compare them.

1. Draw the following numbers using place value disks on the place value charts. Answer the questions below.

   a.   132   b. 312   c. 213

   d.   Order the numbers from least to greatest: **132** , **213** , **312**

Hundreds are the biggest unit here, and 312 has more hundreds than the other numbers. 132 is the smallest number because it only has 1 hundred.

You could also compare all the tens in each number. 132 has 13 tens, 213 has 21 tens, and 312 has 31 tens.

$300 + 60 + 5 = 365$. 365 is less than 635 because it only has 3 hundreds. 635 has 6 hundreds. I could also think of it as 36 tens is less than 63 tens.

2. Circle *less than* or *greater than*. Whisper the complete sentence.

   a. $300 + 60 + 5$ is ⟨less than⟩ / greater than 635.

   b.   4 tens and 2 ones is less than / ⟨greater than⟩ 24.

In this problem, tens are the greatest unit. 4 tens and 2 ones equals 42. 42 is greater than 24 because it has 4 tens, and 24 only has 2 tens. I could also think of it as 40 is greater than 20.

3. Write >, <, or =. Whisper the complete number sentences as you work.

a. 419 < 491

> Place value helps me compare the numbers, especially when the digits are all the same. Both numbers have 4 hundreds, so I'm careful to notice which digit is in the tens place. 1 ten is less than 9 tens, so 419 is less than 491.

b. 908 < nine hundred eighty

980

> When the problems are written in word form or unit form, I just rewrite them in standard form. Then, it's easy to see the digits in their places. 908 is less than 980. The hundreds are the same, but 0 tens is less than 8 tens.

c. 4 tens 2 ones = $30 + 12$

42

> 4 tens 2 ones equals 42, and $30 + 12 = 42$. That's easy! 42 equals 42.

d. $36 - 10$ > 2 tens 5 ones

25

> $36 - 10 = 26$. 2 tens 5 ones equals 25. 26 is greater than 25.

G2-M3-Lesson 17

> I have to read carefully! In Part (a), the ones are first, and the tens come after, but when placed on the place value chart, the hundreds come first.

> When I whisper count as I draw, I see that I am comparing 112 and 115. 112 is less than 115.

1. Whisper count as you show the numbers with place value disks. Circle >, <, or =.

   a. Draw 12 ones and 1 hundred.
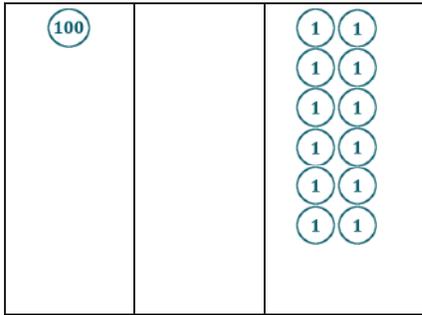
   b. Draw 11 tens and 5 ones.

2. Write <, >, or =.

   > I rewrite this problem in standard form, and I'm careful to look at the order of the units. $40 + 9 + 600 = 649$, and 9 ones 64 tens = 649. They are equal!
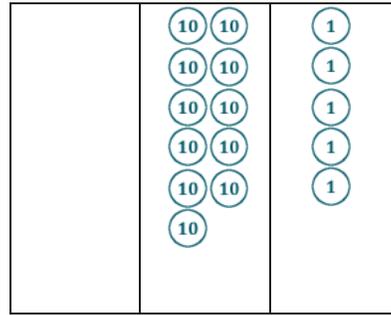
   a. $40 + 9 + 600$ $=$ 9 ones 64 tens

      649   **649**

   > I already know 52 has to be less because there are no hundreds in 52. 65 tens − 13 tens equals 52 tens, which is 520.

   b. 65 tens − 13 tens $>$ 52

   > I know 27 ones is the same as 2 tens 7 ones, so 3 hundreds 2 tens 7 ones is 327. I know 84 tens is 840. Comparing the hundreds, I know that 327 is less than 840.

   c. 3 hundreds 27 ones $<$ 84 tens

EUREKA MATH™ | Lesson 17: Compare two three-digit numbers using <, >, and = when there are more than 9 ones or 9 tens. **20**

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G2-M3-Lesson 18

> I could draw these numbers in many different ways, but I want to be efficient. Drawing this way also makes it really easy to compare the numbers.

1. Draw the following values on the place value charts as you think best.

   a. 123
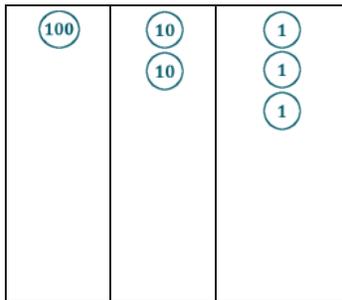
   b. 321
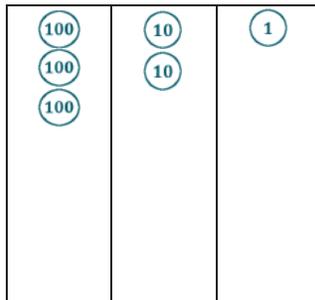
   c. 231
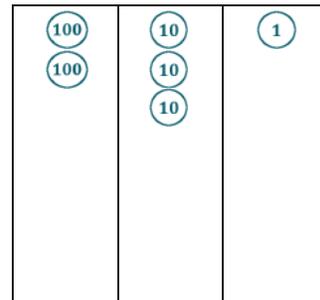
   d. Order the numbers from least to greatest: __123__ , __231__ , __231__

   > I can see that 123 has the fewest hundreds, so it is the smallest number. 321 has the most hundreds, so that means it's the biggest number. And 231 is in between.

2. Order the following from least to greatest in standard form.

   three hundred seventy   317   30 tens 7 ones   __307__ , __317__ , __370__

   370   **307**

   > Writing the numbers in standard form helps me see the value. I see that I am comparing 370, 317, and 307.

   > Since the hundreds are the same, I compare the tens.

   > Careful! This time, the order is from greatest to least.

3. Order the following from greatest to least in standard form.

   4 ones 6 hundreds   46 tens + 10 tens   640   __640__ , __604__ , __560__

   604   **56 tens**

G2-M3-Lesson 19

1. Fill in the chart. Whisper the complete sentence: "____ more/less than ____ is ____."

I can whisper the complete number sentence as I complete the chart.
100 more than 242 is 342.
100 less than 242 is 142.
10 more than 242 is 252.
10 less than 242 is 232.
1 more than 242 is 243.
1 less than 242 is 241.

	242	153
100 more	**342**	**253**
100 less	**142**	**53**
10 more	**252**	**163**
10 less	**232**	**143**
1 more	**243**	**154**
1 less	**241**	**152**

2. Fill in the blanks. Whisper the complete sentence.

   a. 1 more than 456 is __457__.

   1 more than 6 is 7, so 1 more than 456 is 457.

   b. __100__ more than 180 is 280.

   The hundreds place is now 100 more.

   c. 10 less than __635__ is 625.

   10 less than what number is 625? The number I am looking for is 10 more than 625, so it must be 635.

EUREKA MATH™

Lesson 19: Model and use language to tell about 1 more and 1 less, 10 more and 10 less, and 100 more and 100 less.

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G2-M3-Lesson 20

1. Fill in the blanks. Whisper the complete sentence.

1 less than 240 is __239__ .

> 1 less than 40 is 39, so 1 less than 240 is 239.
>
> 10 more than 94 is 104, so 10 more than 194 is 204.

10 more than 194 is __204__ .

> I can look to see what changed. 239 changed to 240. 240 is 1 more than 239.
>
> 497 changed to 507. 507 is 10 more than 497.

__1__ more than 239 is 240.

__10__ more than 497 is 507.

10 more than __292__ is 302.

> I can think 10 more than what number is 302? So the number I am looking for is 10 less than 302. That's 292.

2. Whisper the numbers as you count.

> I can count by 1's, 10's. and 100's.

a. Count by 1's from 396 to 402.

$396, 397, 398, 399, 400, 401, 402$

b. Count by 10's from 396 to 456.

$396, 406, 416, 426, 436, 446, 456$

c. Count by 100's from 396 to 996.

$396, 496, 596, 696, 796, 896, 996$

EUREKA MATH | Lesson 20:   Model 1 more and 1 less, 10 more and 10 less, and 100 more and 100   **23**
less when changing the hundreds place.

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G2-M3-Lesson 21

1. Find the pattern. Fill in the blanks.

   a. 497, 498, __**499**__ , __**500**__ , __**501**__

   > 498 is 1 more than 497, so I am counting up by ones. I know 1 more than 99 is 100, so 1 more than 499 is 500.

   b. 571, 581, __**591**__ , __**601**__ , __**611**__

   > 581 is 10 more than 571, so I am counting up by tens. I know 10 more than 90 is 100, so 10 more than 591 is 601.

   c. 133, 123, __**113**__ , __**103**__ , __**93**__

   > 123 is 10 less than 133, so I am counting down by tens. I know 10 less than 100 is 90, so 10 less than 103 is 93.

2. Fill in the chart.

   > I can count 1 more or 1 less as I move across the chart. 1 more than 345 is 346. 1 less than 366 is 365. Once I know the pattern, it is easy to complete the chart.

   > This puzzle has a pattern! It is like a hundreds chart. I can count 10 more when I move down the chart. 10 more than 348 is 358.

345 → 346	**347**	348	**349**
356	**357**	**358**	
364	**365** ← 366	**367**	368	**369**
376	377		