CITYTUTORX Third Grade Math Lesson Materials

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CITYTUTORE **G3 Unit 2**:

Using Place Value to Add, Subtract, and Round

G3 U2 Lesson 1

Use place value to model three-digit numbers (word form, place value form, expanded form)



G3 U2 Lesson 1 - Students will use place value to model three-digit numbers (word form, place value form, expanded form)

Warm Welcome (Slide 1): Tutor choice

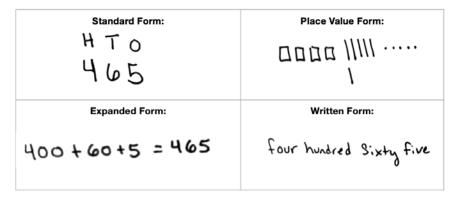
Frame the Learning/Connect to Prior Learning (Slide 2): Today we will use what we know about place and value to model three digit numbers in word form, place value form and expanded form. You learned a lot about three-digit numbers in 2nd grade and the place and value of the digits.

Let's Review (Slide 3): For example in the number 728 there are seven hundreds, two tens, and eight ones. I know because the location of the digit tells me the value. Then I also know that the value of the 2 in 728 is 20. Because the two is in the tens place there are two tens or 20.

Let's Talk (Slide 4): So before we begin to model three-digit numbers in different forms, I want to have a discussion. What are some ways that 357 and 375 are the same and different? Possible Student Answers, Key points

- In the number 357 there are 3 hundreds, 5 tens and 7 ones. In the number 375 there are the same number of hundreds.
- Both numbers have the same digits but they are in different places.
- Because the digits are in different places, the value of the numbers is different.

Let's Think (Slide 5): Those are great ideas. Now that we have fired up our brains to think about three-digit numbers, let's think about the different ways we could model three-digit numbers. Let's look at the number 465.



I want to begin by making sure I understand the place of each digit. I can do this by labeling the place of each digit. Next I can <u>model</u> the number with ones, tens and hundreds, in other words I can represent the place and value of each digit. I will draw 4 hundred flats to represent 4 hundred, then I can draw 6 tens sticks to represent 6 tens. Finally I can draw 5 ones or five. That is one way to model a three-digit number.

Another way to represent a three-digit number is through <u>expanded form</u>. Expanded form is a when we add the value of each digit. Let's look at the number 465 again. We just modeled the number. We thought about the value of each place. How many hundreds did we draw? 4 hundreds or 400 in all. How many tens did we draw? 6 tens or 60 in all. How many ones did we draw? 5 ones or simply 5 .Now I can add the value of each place together to represent the whole number. 400 + 60 + 5 = 465. I could also write 5 + 400 + 60 = 465.

Finally we can represent three-digit numbers in <u>written form</u>. We can write out the words that spell each number. When we do this we want to make sure we write the numbers we say them. Let's look at 465 one more time. When I say the number 465, four hundred sixty five, I notice that I say how many hundreds and then the number 65.

Let's Try it (Slides 6-7): Now let's try this together. We will practice modeling numbers with models in place value form, in expanded form and in written form together, step by step.

WARM WELCOME

(Tutors should adjust this slide for individual opening routine)



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Today we will use place value to model three-digit numbers (word form, place value form, expanded form)



Place and Value

637

Hundreds	Tens	Ones
7	2	8

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Let's Talk:

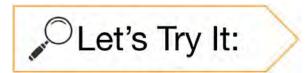
What are some ways that 357 and 375 are the same and different?

Let's represent this number several ways.

465

Standard Form:	Place Value Form:
Expanded Form:	Written Form:

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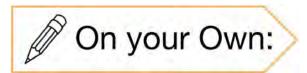
CLet's Think:

et's	Try It: > Name;	1	
-1	Model the number 249 in plac	se value förm. (Use hundreide	tions and press in model
		Course and a	
	Hundreds	Teris	Ones
2	Write the number 349 in expansion	nded form	
4	Write the number 249 in writte	in of land have	
17	Turne one finaling a stationer		
	What is the value of the 6 in th	te number 7607	
5.	Write the following numbers is	expanded form	
	0) 109		
	6) 510		
	c) 634		

Let's practice modeling three-digit numbers, together!

g) 800 + 10 h) Nine hundred sixty four 7. Write the number modeled in the pla				
Hundreds	Tens	ones		
Written form				
Expanded form Standard form				
 Juan had 7 baskets of apples with or baskets with ten peaches in each basket. 				

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Now it's time to practice modeling three-digit numbers on your own!

Written form	the number 791		2. Represent Written form	the number 800		
			Standard form	Standard form		
Modeled in place v	alue form		Modeled in place	value form		
Hundreds	Tens	Ones	Hundreds	Tens	Ones	
Expanded form		Expanded form				
Modeled in place v	alue form		Modeled in place	value form		
Hundreds	Tens	Ones	Hundreds	Tens	Ones	

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G3 U2 Lesson 1 - Let's Try It

1. Model the number 249 in place value form. (Use hundreds, tens and ones to model)

Hundreds	Tens	Ones

2. Write the number 249 in expanded form

3. Write the number 249 in written or word form.

4. What is the value of the 6 in the number 768?

5. Write the following numbers in expanded form:

a)	109
b)	510
c)	634
d)	897

6. Write each number in standard form.

e) Three hundred five _____

- f) 600 + 50 + 2
- g) 800 + 10
- h) Nine hundred sixty four _____

7. Write the number modeled in the place value chart

Hundreds	Tens	ones
		0000
Written form		
Expanded form		
Standard form		

8. Juan had 7 baskets of apples with one hundred apples in each basket. He also had 6 baskets with ten peaches in each basket. How many pieces of fruit did Juan have? Represent your answer with a model and in standard form in the space below.

Name:		G3 U2 Lesson 1 - Independent Work			
1. Represent the number 791		2. Represent the number 800 + 70 + 5			
Written form:			Written form:		
Expanded form:		Standard form:			
Modeled in place v			Modeled in place	e value form:	
Hundreds	Tens	Ones	Hundreds	Tens	Ones
3. Represent the nu	ımber three hun	dred seventy	4. Represent the r	number 907	
Standard form:			Written form:		
Expanded form:			Expanded form:		
Modeled in place v	value form:		Modeled in place	e value form:	
Hundreds	Tens	Ones	Hundreds	Tens	Ones

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Name:	Answer	Ken	
		Ó	

1. Model the number 249 in place value form. (Use hundreds, tens and ones to model)

Hundreds	Tens	Ones
	1111	****

2. Write the number 249 in expanded form

200 + 40 + 9 = 249

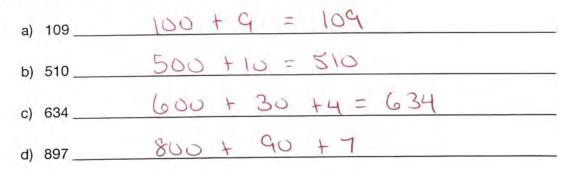
3. Write the number 249 in written or word form.

Two hundred Forty nine

4. What is the value of the 6 in the number 768?

60

5. Write the following numbers in expanded form:



6. Write each number in standard form.

7. Write the number modeled in the place value chart

Hundreds	Tens	ones		
		00000		
8	4	5		
Written form <u>Eight hundred</u>	Forty Fix	12		
Expanded form800 + 40 + 5				
Standard form &4 S				

8. Juan had 7 baskets of apples with one hundred apples in each basket. He also had 6 baskets with ten peaches in each basket. How many pieces of fruit did Juan have? Represent your answer with a model and in standard form in the space below.

000000	11111X
7 hundred apples	le tenspeaches
700 t	40 = 760
Juan had 76	o Pieces of Fruit.

1. Represent the number 791 Written form Seven hundred n net one Expanded form 700 + 90 + 1 = 791			2. Represen Written form $\underline{\mathcal{E}}$	it the number 80	
			Standard form <u>875</u>		
Modeled in place	value form		Modeled in place	value form	
Hundreds	Tens	Ones	Hundreds	Tens	Ones
	7111			11111	3107 -
		e hundred seventy	4. Represent the		rad Server
Standard form _	t the number three 370 300 + 7		4. Represent the Written form Expanded form _	ine hund	
Standard form	370		Written form <u></u>	900 + 7	
Standard form _	370		Written form Expanded form _	900 + 7	

G3 U2 Lesson 2

Students will use place value to compare three-digit numbers



Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to help us compare three-digit numbers. What do you think about when I say compare? Possible Student Answers, Key Points:

- Compare means to see how things are similar and different
- Compare means to find whether something is more or less

Those are great ideas. In life, we compare a lot of things like who is taller or shorter than someone else, we also compare amounts like who has more M&Ms than the other person. In math, we will often compare number amounts. We will use what we know about the place and the value of digits to help us determine if numbers are greater, less than or equal to another number.

Let's Talk (Slide 4): Before we explore today's lesson, let's look at the digits 6, 7 and 8. What is the largest number we could make with these digits? What is the smallest number we could make with these digits? Possible Student Answers, Key Points:

- 876
- 8 is the largest number so it should go in the greatest place. Then 7 is the next largest number, it should go in the next largest place.

Let's Talk (Slide 5): Exactly. Now how would this number change if we switched the order of the digits to 678? Let's compare 876 to 678. Now the smallest digit is in the largest place. So this number is much smaller than 876! The 8 in the hundreds place made the number much larger because there were more hundreds. When we switched the digits and put the smallest digit in the hundreds place, the number was smaller or less than the first number. Nice job! Today, we will continue to use the place and value of the digits to help us compare three-digit numbers.

Let's Think (Slide 6): When we are asked to compare three-digit numbers, we are being asked if a number is greater, less than or equal in amount to another number. Let me show you what I mean. Let's look at this question: (*read the symbols with the meaning of each symbol*) "Use the symbols <, > or = to fill in the blank below; 567___321" Let's think... when we compare two numbers, we are trying to find if the first number is greater, less than or equal to the other number.

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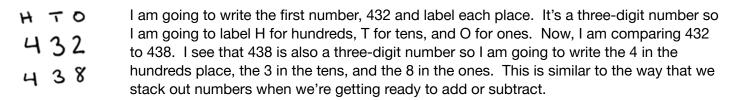
~a a a 11.

I can use what I know about place value to help me compare. I need to begin in the greatest place. The hundreds place is the largest place. In the first number I see a 5 in the hundreds place. This number has 5 hundreds (*draw 5 hundreds*). There are also 6 tens (*draw 6 tens*) and 7 ones (*draw 7 ones*). In the next number there is a 3 in the hundreds place. This number has 3 hundreds. There are also 2 tens and 1 one.

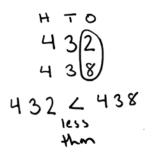
When we compare, we look at the greatest place first. I see that I am comparing a three-digit number to another three-digit number, so I am going to look in the hundreds place first. 567 has 5 hundreds and 321 only has 3 hundreds. So, I know that 5 hundreds is greater than 3 hundreds. So 567 is greater than 321.

To complete the number sentence I will need to read from left to right, the same way we always read and write. I will need to use the greater than sign. The greater than sign opens towards the greater number.

Let's Think (Slide 7): Let's try another one. We want to compare 432 to 438. We talked about comparing numbers by starting with the greatest place to find out if 432 is greater, less than or equal to 438. In the last question, we drew out the model for each number to see the amount visually. Now, I want to show you another strategy that you can use to help you compare numbers. Let's try comparing by stacking the numbers to help us compare the value of each place.



So I see there are 4 hundreds in 432 and 4 hundreds in 438. They have the same number of hundreds so I need to check the next greatest place to be sure, I'll go right next door to the tens place. Both numbers have 3 tens. I still have one more place to check. There are 2 ones in 432 and 8 ones in 438. So, 438 has more ones, or 432 has less ones.



Because both numbers have the same amount in the hundreds and tens place but 438 has more ones, 438 is the greater number. But, we know that when we're comparing we have to read from left to right to complete the number sentence. Let's try it, "432 is _____ than 438". We found out that 438 is the greater number because it has more ones. But we want to compare 432 to 438. So, 432 is less than 438. That sounds better. Because I know that 438 is greater that means 432 is smaller or less than 438.

Let's Try it (Slides 8): Let's practice comparing three-digit numbers together. Remember, when we compare numbers, we think about the place and the value of each digit. We begin in the greatest place value until we know if the numbers are greater, less than or the same as the other.

WARM WELCOME

(Tutors should adjust this slide for individual opening routine)



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Students will use place value to compare three-digit numbers



What does it mean to compare?

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_et's Talk:

What is the largest number we could make using the digits 6, 7 and 8?



Now, switch the order of the digits to 678

Compare 876 to 678

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Let's Think:

Use the symbols <, > or = to fill in the blank below.



- Label the place and value of the digits.
- Compare starting in the greatest place
- Read from left to right to compare.
- Write the meaning of the symbol and the symbol to compare

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Use the symbols <, > or = to fill in the blank below.

432 438

- Label the place and value of the digits.
- Compare starting in the greatest place
- Read from left to right to compare.
- Write the meaning of the symbol and the symbol to compare

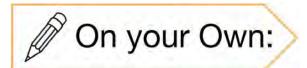
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G3 L2.2			
CLet's Try It:	Name:		
Compare each se sentence.	t of three-digit numbe	rs. Use >,< or = to com	plete each number
1. 654 () 604	2. 102 112	3. 221 () 212	4. 745 755
5. 404 504	6. 678 678	7. 199 919	8. 736 720

Let's practice comparing three-digit numbers, together!

G3 L2.2				
10. Circle the number that is the greatest.				
789; 798; 7	e 9			
103,130,1	00			
11. Order the follo	wing numbers from least	to greatest.		
407; 387; 37	78: 487			
401,001,0	0, 101			
12. Fill in the blank	k to make the following st	atements true.		
A. 100 + 10 +	5 >			
B > 347				
C. 999 =				
D. 567 <	_			
E<90 + 800 + 4				
	Tania were selling Girl Sco			
boxes of cookies ea	ch person sold. Who sold t	he least amount of cookie	s?	
	Troop Member	Boxes of cookies sold	1	
	Josie	756	1	
	Jules	567		
	Tania	657		
			-	

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Now it's time to practice comparing three-digit numbers on your own!

 Compare the following numbers using <,> or =. 	 Compare the following numbers using <,> or =.
456 546	20+200+4 400+2+20
 Order the following number from least to greatest. 609; 569; 596; 617 	4. Complete the following number sentences to make them true. A. 894 > B < 472 C = D. 303 >

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Compare each set of three-digit numbers. Use >,< or = to complete each number sentence.

1.	2.	3.	4.
654 () 604	102 () 112	221 () 212	745 🔵 755
			\bigcirc

5. Explain in words how place value can help to compare numbers.

6. Circle the number that is the greatest: 789, 798, 768

7 . Order the following numbers from least to greatest: 407, 387, 378, 487

least _____ greatest

8. Fill in the blank to make the following statements true.

- A. 100 + 10 + 5 > _____
- B. _____ > 347
- C. 999 = _____
- D. 567 < _____

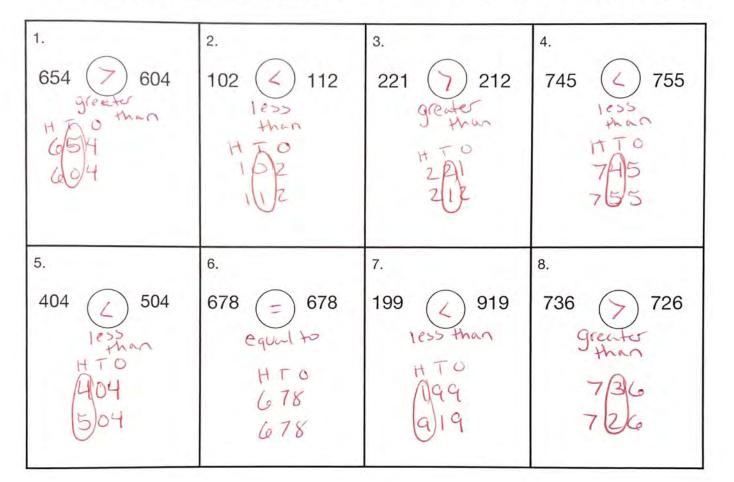
9. Josie, Jules and Tania were selling Girl Scout cookies. The table to the right shows how many boxes of cookies each person sold. Who sold the least amount of cookies?

Troop Member	Boxes of Cookies Sold
Josie	756
Jules	567
Tania	657

Name:

1. Compare the following numbers using <, > or =	2. Compare the following numbers using <, > or
456 546	20 + 200 + 4 400 + 2 + 20
3. Order the following number from least to greatest.	4. Complete the following number sentences to make them true.
609; 569; 596; 617	A. 894 > B < 472 C =
	D. 303 >





Compare each set of three-digit numbers. Use >,< or = to complete each number sentence.

9. Explain in words how place value can help to compare numbers.

I can begin in the largest place. The greatest number in the largest place will have the greatest value. - P they are the sine, I can look at the next greatest place, until I find which number is greatest, smallest of equal to.

10. Circle the number that is the greatest.

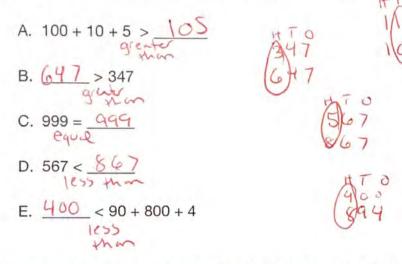
789: 798: 768

11. Order the following numbers from least to greatest.

407; 387; 378; 487

378, 387, 407, 487

12. Fill in the blank to make the following statements true.



13. Josie, Jules and Tania were selling Girl Scout cookies. The table below shows how many boxes of cookies each person sold. Who sold the least amount of cookies?

3 8 3 78

	Troop Member	Boxes of cookies sold
	Josie	756
(Jules	567
	Tania	657

H	TO
17	56
5	67
6	57

Jules Sold the least amount of workies

Name:

1. Compare the following numbers using $<,>$ or =. 456 $<$ 546 H 10 Ics> 456 H mm 546	2. Compare the following numbers using <,> or =. 20 + 200 + 4 (2) 400 + 2 + 20 724 Iess 724 Har
3. Order the following number from least to greatest. 609; 569; 596; 617 11 T 0 609 509 509 509 509 509 509 509 5	4. Complete the following number sentences to make them true. A. $894 > 880$ grant them B. $400 < 472$ 128 = 128 D. $303 > 300$ 128 9744 C. $128 = 128$ 128 128 128 128

G3 U2 Lesson 3

Students will use place value to add twodigit numbers (standard algorithm with PV language)



G3 U2 Lesson 3 - Students will use place value to add two-digit numbers

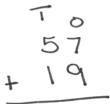
Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to add two-digit numbers. We have been using place value to help us model and compare numbers. Today we will use place value to help us combine or add numbers.

Let's Talk (Slide 3): Before we dive into today's learning. Let's think, how could place value help us to add 57 + 19 =___? Possible Student Answers, Key Points:

- We can look at the ones place to help us combine ones with ones.
- We know we have to combine tens with tens.
- When we have ten or more ones, we must regroup or carry our new ten to the tens place.

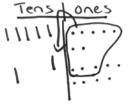
Let's Think (Slide 4): What great ideas! When we add or combine numbers, we must use place value to help us. Let's think about how we can add 57 + 19 using place value.



I want to begin by labeling the place of each digit. This will help me to make sure I am adding my ones with my ones and my tens with my tens.

I can also model both addends to help me combine the ones with the ones and tens with the tens. So, I know that 57 has 5 tens and 7 ones so I am going to draw a place value chart with tens and ones and put 5 tens in the tens column and 7 ones in the ones column. I am adding 19 to 57. How many tens does 19 have? One! And how many ones does 19 have? 9! So, I need to add 1 tens and 9 ones to each column. Notice how I made sure to keep my ones with ones and tens with tens. This model is the exact same as the digits, there are 5 tens with 1 ten (*point to written out digits*) and 7 ones added with 9 ones (*point to digits*), this is just another way to show how we are using place value to help us add.

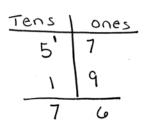
Now, when I add, I always start in the smallest place. These are two-digit numbers so I'm going to begin in my ones place. This is very important because if there are more than ten ones I MUST REGROUP! So see what 9 ones and 7 ones make. I have 1,2,3,...16 ones.



Wow, 16 ones! That is way too many for the ones place. I know that tens must go in the tens place. Each time I have ten or more ones, I must regroup which means that I take 10 single ones and turn them into a group of ten! Count with me 1,2,3..10! I found ten ones, I must regroup! (*Circle the ten ones and regroup the ten single ones into one ten in the tens place*.)

۱ 7

I must keep the remaining ones in the ones place. So that is 6 ones. Finally I can add up ALL of my tens. 1,2,3,...7! We modeled how to add 57 + 19 and found the total or sum is 76. When I was adding 57 to 19, I had to regroup. When I added 7 ones with 9 ones, I got 16 ones and that is too many ones! So I had to take 10 ones and regroup them into 1 group of ten (*point to model as you're retelling*).

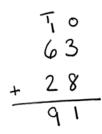


Let's see if we can use place value to add when there are only digits! Just like I did with my place value drawings, I will line up my ones with my ones and my tens with my tens.

Now, just like when we added our place value pictures, we will begin by adding in the ones place...7 + 9 is 16! I know that 16 is the same as 1 ten and 6 ones. So, just like I regrouped in my picture, I will carry the ten into the tens place. So I have 6 ones total. Now I can add up ALL of my tens. 1 + 5 is 6 and 6 + 1 more is 7.

Let's Think (Slide 5): Let's try another one. The first thing I'm going to do to make sure I am combining my ones with my ones and tens with my tens is to label ones and tens. Now I can begin adding in my one's place. Remind me, why do I want to begin adding in the ones place? Possible Student Answers, Key Points:

- If there are more than ten ones, you need to turn the ten single ones into a ten and carry the ten into the tens place.
- You always have to start adding in the smallest place!



That's right, I always start in the smallest place in case I need to regroup. So, 3 + 8 is 11. I know 11 has more than ten single ones. So I must regroup. Watch me carry the ten into the tens place. I have one single one left in my one's place. I will make sure I write that in the answer space in the one's place. Now I can add ALL of my tens. 1 + 6 is 7 and 2 more is 9. So 63 + 28 is 91.

Let's Try it (Slides 7): Let's practice using place value to help us add two-digit numbers. We're going to work on this page together step by step. As we are working we must remember to begin in the one's place and anytime we have more than ten ones... we MUST regroup!

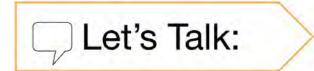
WARM WELCOME

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Today we will use place value to add two-digit numbers.



How could place value help us to add $57 + 19 = __?$

Let's Think:

57 + 19 =



63 + 28 = ____

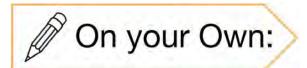
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6				~
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A.	Let 2	пу	11.	1
				1

G3 L2.3		
Let's Try It:	Name:	
Solve. Use place value to com	plete the following number sentence	85
1. 45 + 19 =	2. 55 + 25 =	3. 67 + 32 =
4. 29 + 49 =	5. 42 + 27 =	6. t8 + 72 = :>
7. 89 + 10 =	8. 64 + 27 =	9. 56 + 38 =

Let's practice adding two-digit numbers, together!

	re were 54 doves sitting on an Onk tree. 26 robins flew to the Oak tree to sit r many birds are on the Oak tree?
	d grade was visiting the Zoo. They saw 67 tigers and 28 lons. How many civils did thind grade see at the Zoo?
year	uel had a posi to read 67 pages of his book in two days. On the first day he 14 pages. On the second day he read 39 more pages. a. How many pages did Miguel read?
-	 Did Miguel reach his goal?
13. Haw d	b you know when to regroup, when adding?



Now it's time to practice adding two-digit numbers on your own!

Name:	G3 L2.3 Independent Work
1. Solve. 59 + 33 =	2. Solve. 28 + 62 =
3. Solve. 37 + 65 =	4. Solve. 39 + 11 =

Solve. Use place value to complete the following number sentences

1. 45 + 19 =	2. 55 + 25 =	3. 67 + 32 =
4. 29 + 49 =	5. 42 + 27 =	6. 18 + 72 =
7. 89 + 10 =	8. 64 + 27 =	9. 56 + 38 =

Name: _____

10. There were 54 doves sitting on an Oak tree. 26 robins flew to the Oak tree to sit. How many birds are on the Oak tree?

11. Third grade was visiting the Zoo. They saw 67 tigers and 28 lions. How many large cats did third graders see at the Zoo?

12. Miguel had a goal to read 87 pages of his book in two days. On the first day he read 48 pages. On the second day he read 39 more pages.

- a. How many pages did Miguel read?
- b. Did Miguel reach his goal?
- 13. How do you know when to regroup, when adding?

1. Solve.		2. Solve.	
	59 + 33 =	28 + 62 =	
3. Solve.		4. Solve.	
	37 + 65 =	39 + 11 =	

1. $45 + 19 = 64$ 10 45 45 19 64	2. $55 + 25 = 80$ 10 55 + 25 80	3. $67 + 32 = 99$ T = 0 67 + 32 99
4. $29 + 49 = \frac{78}{78}$ 70 29 49 $+\frac{49}{78}$	5. $42 + 27 = 69 T 0 H 2 + 27 69$	6. $18 + 72 = 90$ T 0 18 72 90
7. $89 + 10 = 99 TO 89 + 10 99$	8. $64 + 27 = 91$ TO 64 + 27 91	9. $56 + 38 = 94$, To 56 + 38 9. 4

Solve. Use place value to complete the following number sentences

10. There were 54 doves sitting on an Oak tree. 26 robins flew to the Oak tree to sit. How many birds are on the Oak tree?

There are 80 birds on the oak Tree. + 8 043

11. Third grade was visiting the Zoo. They saw 67 tigers and 28 lions. How many large cats did 10 third graders see at the Zoo? 67 28 Third gruders Saw 95 large cats. 12. Miguel had a goal to read 87 pages of his book in two days. On the first day he read 48 pages. On the second day he read 39 more pages. 0 a. How many pages did Miguel read? 8 Miguel read 87 pages. b. Did Miguel reach his goal?

He did reach his qual

13. How do you know when to regroup, when adding?

there are more than ten ones in the ones place you have to turn ten single ones into a ten a carry it to the tens plue.

G3 U2 Lesson 3 - On Your Own

Name: _____

1. Solve. 59 + 33 = 92	2. Solve. 28 + 62 = <u>90</u>
TO 59 33 92	10 28 62 90
3. Solve. $37 + 65 = 102$ 102 45 102	4. Solve. $39 + 11 = 50$ 50 139 +11 50

G3 U2 Lesson 4

Students will use place value to add three-digit numbers (standard algorithm with PV language)



G3 U2 Lesson 4 - Students will use place value to add three-digit numbers

Warm Welcome (Slide 1): Tutor choice

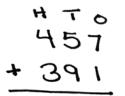
Frame the Learning/Connect to Prior Learning (Slide 2): Today we will use what we know about place value to add three-digit numbers. Now that we are adding three-digit numbers that means we have to use all that we know about the place value.

Let's Review (Slide 3-4): T You all have been working with two and three-digit numbers for a long time now! You became experts in three-digit numbers in second grade. Today, it's going to be important to remember that 10 ones make 1 ten. And, that 10 tens make one hundred. This will help us to add three digit numbers. Say it with me...10 ones make a ten! 10 tens make a hundred!

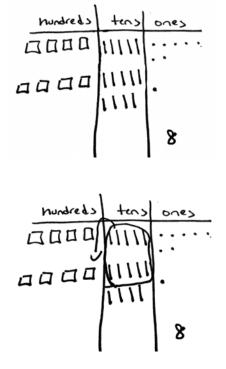
Let's Talk (Slide 5): Before we dive into today's learning. Let's think, how could place value help us to add 457 + 391? Possible Student Answers, Key Points:

- We can look at the ones place to help us combine ones with ones.
- We know we have to combine tens with tens.
- We also have to combine hundreds with hundreds.
- When we have ten or more ones, we must regroup or carry our new ten to the tens place.
- When we have ten or more tens, we must regroup or carry our new hundred to the hundreds place.

Let's Think (Slide 6): What great ideas! When we add or combine numbers, we must use place value to help us. Let's think about how we can add 457 + 391 using place value.

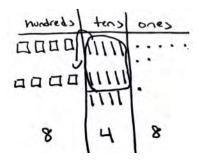


We know that place value is important so let's start by labeling the place of each digit. This will help me to make sure I am adding my ones with my ones and my tens with my tens and my hundreds with my hundreds. So I will label my ones place with an O, my tens place with T and my hundreds with an H.



I can also model both addends to help me show how place value can help me add the ones with the ones and tens with the tens and hundreds with hundreds. I know that I am adding 457 with 391. I can model 4 hundreds in the hundreds place, 5 tens in the tens place and 7 ones in the ones place. Then I need to add 391. How many hundreds should I model? 3! THow many tens? 9! How many ones? 1! Now when I add I'm going to begin in the smallest place. I am adding three-digit numbers so I will begin in the ones place. This is very important because if there are more than ten ones, I MUST REGROUP! So I have 1,2,3,...8 ones (model counting up all of the ones.).

Next I will move over to the tens place. Remember if I have more than ten tens, I MUST REGROUP! Let's count our tens...14! That is way too many for the tens place. I know that ten tens makes a hundred, and hundreds must go in the hundreds place! Each time I have ten or more tens, I must regroup and carry the hundred to the hundreds place. Count with me 1,2,3..10! I found ten tens, I must regroup! Circle the ten tens and regroup the ten tens into one hundred in the hundreds place. I must keep the remaining tens in the tens place. So that is 4 tens.

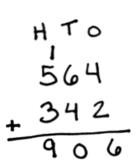


Finally I can add up ALL of my hundreds. 1,2,3,...8! We modeled how to add 457 + 391 and found the total or sum is 848.

We can also use place value to add when there are only digits! To make sure I am using place value to add, I can label my hundreds place with an H, my tens place a T and ones place with an O.

Next, I will line up my ones with my ones, my tens with my tens and hundreds with hundreds. We will begin by adding in the ones place. 7 + 1 is 8! So I have 8 ones total. Now I can add up my tens. 5 + 9 is 14. I know that 14 tens is the same as 10 tens and 4 more tens. I must regroup by carrying the 10 tens into the hundreds place. So I have 4 tens left in my tens place. Finally I can add ALL of my hundreds. 1 + 4 is 5. 5 + 3 is 8. DO you see how we were able to use place value to help us add three-digit numbers?

Let's Think (Slide 7): Let's try another one. Read the number sentence with me, 564 + 342. The first thing I'm going to do to make sure I am combining ones with ones, tens with tens and hundreds with hundreds is to label ones, tens and hundreds. So, let's start in the smallest place, the ones. Let's add.



So, 4 + 2 is 6.

Now I can add the tens. 6 + 4 is 10. I can't have ten or more in the tens place, so I must regroup. Watch me carry the hundred into the hundreds place. I have zero tens left in the tens place. I will write in zero in the answer space.

Now I can add ALL of my hundreds. 1 + 5 is 6 and 3 more is 9. So 564 + 342 = 906.

Let's Try it (Slides 9): Let's practice using place value to help us add three-digit numbers. We're going to work on this page, together step by step. As we are working we must remember to begin in the ones place and anytime we have more than ten ones... or ten tens... we MUST regroup!

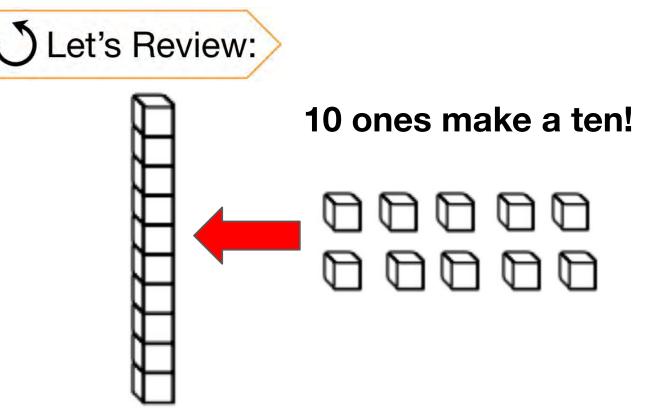
WARM WELCOME

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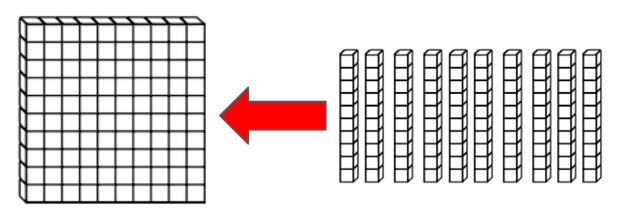
Today we will use place value to add three-digit numbers



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10 tens make a hundred!





How could place value help us to add 457 + 391?

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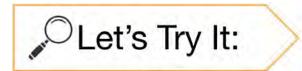
Let's Think:

457 + 391 = ____



564 + 342 =

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Let's practice adding three-digit numbers, together!

truit for her fruit pie. She bought 537 bluebernes and 263 nany pieces of fruit did Eliae buy?		Name:	et's Try It:
Wa were sharing their tokets they won at the fair. Taylor won on 109 lokets and Mis won 68 tokets. How many tokets ther?	a. 678 + 321 =	2. 555 + 254 =	Solve. Use place value to com 1. 435 + 191 =
to raise money for their field trgTheir goal was to sell 400 uring the first week they sold 399 beas of popcom. During ay sold 107 begs of popcom. sigs at popciam did third grade sell?	6. 168 + 752 =	5. 142 + 279 =	4. 299 + 491 =
de reach their goal? If not how mosey more bags do they			
n to regroup; when adding?	9. 561 + 382 =	8. 643 + 257 =	⁷ . 898 + 102 =
n ti	9. 561 + 382 =	8. 643 + 257 =	7. 898 + 102 =



Now it's time to practice adding three-digit numbers on your own!

1. Solve. 569 + 330 =	2. Solve. 289 + 612 =
3. Solve. 372 + 265 =	4. Solve. 399 + 111 =

Solve. Use place value to complete the following number sentences

1. 435 + 191 =	2. 555 + 254 =	3. 678 + 321 =
4. 299 + 491 =	5. 142 + 279 =	6. 168 + 752 =
7. 898 + 102 =	8. 643 + 257 =	9. 561 + 382 =

Name: _____

10. Elise needed to buy fruit for her fruit pie. She bought 637 blueberries and 263 strawberries. How many pieces of fruit did Elise buy?

11. Taylor, Jayden and Mia were sharing their tickets they won at the fair. Taylor won 36 tickets. Jayden won 109 tickets and Mia won 68 tickets. How many tickets did they win all together?

1. Solve.		2. Solve.	
	569 + 330 =		289 + 612 =
3. Solve.		4. Solve.	
3. Solve.	372 + 265 =	4. Solve.	399 + 111 =
3. Solve.	372 + 265 =	4. Solve.	399 + 111 =
3. Solve.	372 + 265 =	4. Solve.	399 + 111 =
3. Solve.	372 + 265 =	4. Solve.	399 + 111 =
3. Solve.	372 + 265 =	4. Solve.	399 + 111 =
3. Solve.	372 + 265 =	4. Solve.	399 + 111 =

Third grade needed to raise money for their field trip. Their goal was to sell 408 bags of popcorn. During the first week they sold 299 bags of popcorn. During the second week they sold 107 bags of popcorn.

- a. How many bags of popcorn did third grade sell?
- b. Did third grade reach their goal? If not, how many more bags do they need?

1. $435 + 191 = 626$ H T O H 35 I 9 I + Ce 2 6	2. $555 + 254 = 809$ H T O 5 5 5 2 5 4 + 8 0 9	3. $678 + 321 = 999$ H T O 678 + 321 999
4. $299 + 491 = 790$ H T 0 299 + 491 + 491 + 790	5. $142 + 279 = 421$ 470 142 +279 421	6. $168 + 752 = 920$ 168 + 752 = 920 168 + 752 = 920 168 + 752 = 920 168 + 752 = 920 168 + 752 = 920
7. $898 + 102 = 1020$ H T 0 898 + 102 1000	8. $643 + 257 = 900$ H T 0 G 4 3 + 257 900	9. $561 + 382 = 843$ H T O 5 G I + 3 8 2 + 8 4 3

Solve. Use place value to complete the following number sentences

10. Elise needed to buy fruit for her fruit pie. She bought 637 blueberries and 263 strawberries. How many pieces of fruit did Elise buy?

(900) Pieces of RIU. +. Elise bought

11. Taylor, Jayden and Mia were sharing their tickets they won at the fair. Taylor won 36 tickets. Jayden won 109 tickets and Mia won 68 tickets. How many tickets did they win all together?

Won 213 all together. + 36

- 12. Third grade needed to raise money for their field trip. Their goal was to sell 408 bags of popcorn. During the first week they sold 299 bags of popcorn. During the second week they sold 107 bags of popcorn.
 - a. How many bags of popcorn did third grade sell?

They sold yole bags of poplorn.

b. Did third grade reach their goal? If not, how many more bags do they need?

No, Thy need 2 more bays of popular to reach their goat of 408.

13. How do you know when to regroup when adding?

my time there are more than 10 ones you must Euroup a ten into the tens place. Any time there are ten, tens in the tens place, you must regroup one hundred to the hundreds place.

0

107

Name:

2. Solve. 289 + 612 = 901 1. Solve. 569 + 330 = <u>899</u> $H_1 T_0$ 289 HTO 569 + 901 + 330 899 3. Solve. 372 + 265 = <u>637</u> 4. Solve. 399 + 111 = 510 HTO HTO 399 372 265 637 + 1 1 1

G3 U2 Lesson 5

Students will use place value to subtract two-digit numbers (standard algorithm with PV language)



G3 U2 Lesson 5- Students will use place value to subtract two-digit numbers

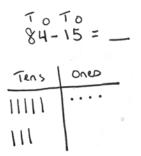
Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to subtract two-digit numbers. We will continue to think about the relationship between ones, tens and hundreds to help us subtract or take amounts away from a whole amount. Instead of combining or adding numbers to find a whole amount or total, we will be going the opposite direction. We will be taking numbers away from a whole.

Let's Talk (Slide 4): Before we dive into today's learning. Let's think about the following problem. Jayda has 2 eggs to make pancakes. But, she needs 6 eggs for the recipe. What could Jayda do? Possible student answers, key points:

- She should borrow some from a friend
- She could ask her neighbor if they have any
- She could go to the store and buy some more
- She should not give up on the pancakes, she should find a way to get some more eggs

Let's Think (Slide 5): I heard some fantastic ideas. The main thing is that Jayda should not give up. In life when you do not have enough of something to complete a project, we do not just give up on our ideas, we find a way to borrow or get enough. Sometimes we even borrow from a friend or neighbor. I want us to really think about that today as we dive into subtraction.



Let me show you what I mean. Let's solve the subtraction problem 84 - 15. It is so important that I take ones away from ones and tens away from tens. So, I will label each place to make sure I am keeping track of the values of each place. I see in the first number I have 8 tens and 4 ones.

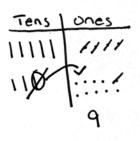
Watch as I model 8 tens in the tens place and 4 ones in the ones place. I need to subtract or take away one ten and five ones. Because I am taking that amount away, I will not model that amount. I will simply take it away.

Tens	0ne0 1111	
11111		
111		

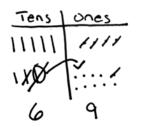
Just like in addition we will begin in the smallest place. In the number 84 the smallest place is the ones place. I am subtracting 15, in the ones place I am taking away 5 ones. Let's try that. We can cross out each one as we count. Count with me...1,2,3,4–uh oh! I don't have enough to take all 5 ones away.

Tens	ones
110	$\tilde{1}$

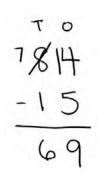
Remember Jayda borrowed eggs from a friend when she didn't have enough. We can also look at the tens place and break apart one ten into ten single ones. Watch me, I can take a ten from the tens place. I can break it back into ten single ones in the ones place. Then we will have enough ones to subtract.



Now I have 14 ones, I have enough to cross out 5. I will cross them out to show they are taken away. 1,2,3,4,5. Now I can count how many ones are left. Count with me...1,2,3,...9. So, we have 9 left in the ones place.



Now we can subtract in the tens place. There are now seven tens in the tens place. I have to subtract one ten. I will cross out one ten to show I took it away. Now I have six tens left in the tens place. So, 84 - 15 = 69.



Let's try to solve the same problem but this time with digits! In order to make sure I am taking ones away from ones and tens away from tens, I will stack my numbers by place.

I still need to start in the ones place and subtract ones from ones. So, 4 minus 5, I do not have enough! I do not have enough ones to subtract. I will look at my tens place, cross out one ten and break it apart in the ones place. Now, I can read it as 14 minus, or take away, 5. So, 14 - 5 is 9.

Finally I will look at the tens place and subtract. I don't have even tens take away three tens is 6 tens. So 84 - 15 = 69.

Let's Try it (Slides 6-7): Now let's work on subtracting two - digit numbers, together. We are going to work on this page, together step by step. Remember, anytime you do not have enough ones in the ones place to subtract, Go to the tens place, unpack one ten into ten single ones in the ones place!

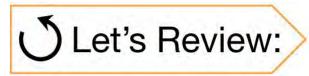
WARM WELCOME

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Today we will use place value to subtract two-digit numbers



Subtraction!

take-away

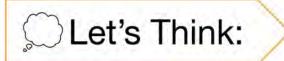
minus

whole - part = part

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Let's Talk:

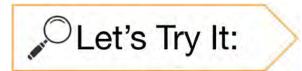
Jayda has 2 eggs to make pancakes. But, she needs 6 eggs for the recipe. What could Jayda do?



84 - 15 =

Tens	Ones

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PL	03 L2.5 Cut's Try It: Solve. Use place value understanding to complete the following number sentences			
	1. 28 - 19 =	2. 44 - 38 =	3. 50 - 25 =	
	4. 72 - 15 =	5. 27 - 16 =	6. 91 - 36 =	
	7. 87 - 49 =	8. 75 - 44 =	9. 62 - 46 =	

Let's practice subtracting two-digit numbers, together!

	iled 97 water balloons (or her birthday party. So far her friends have used ter balloons. How many water balloons are left at Dya's birthday party?
	had 81 problems for homework. So far she has completed 39 problems, nany more homework problems does Jitaella need to complete?
borrow 8.	n was solving the problem 65 - 38 = He said he does not need to I from the tens place. He can simply subtract 65 - 30 = 15 then fake away What answer will Daylon get?
b.	How is this stralegy semiar to borrowing from the tens place?



Now it's time to practice subtracting two-digit numbers on your own!

Name: G3 L2.5 Independent Work	
1. Solve. 81 - 29 =	2. Solve. 43 - 34 =
3. Solve. 60 - 49 =	4. Solve, 55 - 38 =

Name: _____

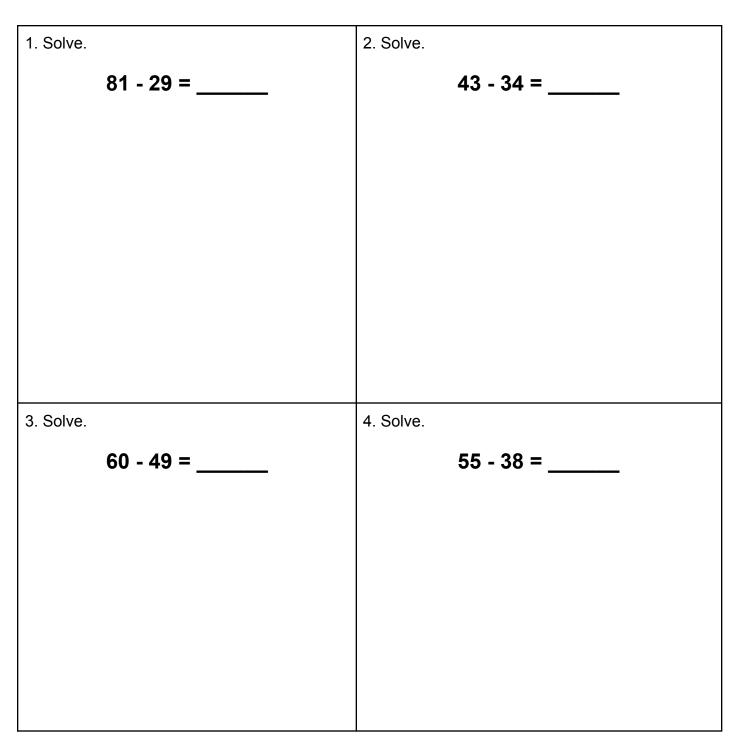
Solve. Use place value understanding to complete the following number sentences

1. 28 - 19 =	2. 44 - 38 =	3. 50 - 25 =
4. 72 - 15 =	5. 27 - 16 =	6. 91 - 36 =
7 07 40	0 75 44	0 00 10
7. 87 - 49 =	8. 75 - 44 =	9. 62 - 46 =

10. Dya filled 97 water balloons for her birthday party. So far her friends have used 59 water balloons. How many water balloons are left at Dya's birthday party?

11. Jiselle had 81 problems for homework. So far she has completed 39 problems. How many more homework problems does Jiselle need to complete?

- 12. Daylon was solving the problem 65 38 =_____. He said he does not need to borrow from the tens place. He can simply subtract 65 30 = 35 then take away 8.
 - a. What answer will Daylon get?
 - b. How is this strategy similar to borrowing from the tens place?



1. $28 - 19 = 09$ T 0 218 - 19 09	2. $44 - 38 = 66$ 3 414 -38 06	3. $50 - 25 = 25$ 4 500 -25 25
4. $72 - 15 = 57$ 76° 712 -15 57	5. $27 - 16 = 1$ 7 - 16 11	6. $91 - 36 = 55$ 78° 911 -36 55
7. $87 - 49 = 38$ 7° 817 -49 38	8. $75 - 44 = (31)$ 75 -44 31	9. $62 - 46 = 00$ 42 -46 16

Solve. Use place value understanding to complete the following number sentences

10. Dya filled 97 water balloons for her birthday party. So far her friends have used 59 water balloons. How many water balloons are left at Dya's birthday party?

are 38 halloons left. There

11. Jiselle had 81 problems for homework. So far she has completed 39 problems. How many more homework problems does Jiselle need to complete?

Jiselle needs to complete 42 more problems

- 12. Daylon was solving the problem 65 38 =____. He said he does not need to borrow from the tens place. He can simply subtract 65 30 = 35 then take away 8.
 - a. What answer will Daylon get?

you got 27.

b. How is this strategy similar to borrowing from the tens place?

Dayton Still Subtracted all of the tens and ones from 65. He also had to use a strategy to take 8 from 35. He could have used place value to subtract and then borroued a ten the also could have counted back.

59

38

39

1. Solve. 81 - 29 = <u>60</u> 2. Solve. 43 - 34 = _____ TO 7 3413 81 - 29 52 34 3. Solve. 60 - 49 = 10^{-49} 4. Solve. 55 - 38 = (17) TO 4 15 - 49 11 -38 17

G3 U2 Lesson 6

Students will use place value to subtract three-digit numbers (standard algorithm with PV language)



G3 U2 Lesson 6 - Students will use place value to subtract three-digit numbers

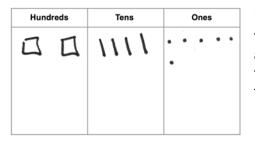
Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3 & 4): Today we will use what we know about place value to subtract three-digit numbers. We will continue to think about the relationship between ones, tens and hundreds to help us subtract or take amounts away from a whole amount. Yesterday, we practiced borrowing from the tens place when we do not have enough ones to subtract. Today, we will think about the hundreds place as well as the tens and ones place.

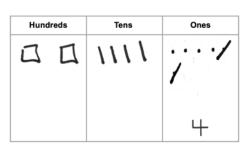
Let's Talk (Slide 5): Before we dive into today's learning. Let's look at this math work from another student named jared. Jared solved the problem 74 - 28. Let's take a moment and discuss what he did well and what he can fix in his math work. Possible student answers, key points:

- He lined up his ones with the ones and tens with the tens.
- He knew to subtract because seven take away two is five.
- In the ones place he subtracted four from eight. He should have realized he did not have enough ones to subtract eight ones. He should go back and borrow a ten from the tens place. Then he would have enough ones in the ones place to subtract.

Let's Think (Slide 6): Exactly! Yesterday we were very careful to notice when we had enough to subtract and when we did not! Anytime we do not have enough, we can borrow from the place next door. Let me show you what I mean by subtracting three-digit numbers, today.

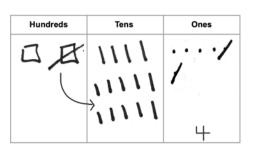


Let's solve the subtraction problem 246 - 172. It is so important that I take ones away from ones and tens away from tens AND hundreds away from hundreds. I will begin by modeling each digit in the whole. In the whole I have 2 hundreds, 4 tens and 6 ones. I need to subtract or take away 1 hundred, 7 tens and 2 ones.

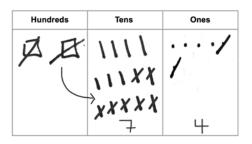


Because I am taking that amount away, I will not model that amount. I will simply take it away.

Just like in addition we will begin in the smallest place, in the number 276 - 172 that is the ones place. In the ones place there are 6 ones and we want to take away 2. Do we have enough to take away 2? Yes!



Now I will subtract in the tens place. There are four tens and I need to take away seven tens. Well, four is smaller than seven. I don't have enough tens to subtract. And, if we don't have enough, we can borrow from the hundreds place because one hundred is the same as 10 tens! Watch me, I'm going to cross out one hundred to regroup it into 10 tens. Now we have enough tens to subtract.



Now I have 14 tens, I need to subtract seven tens. I will cross them out to show they are taken away. 1,2,3,...7. Now I can count how many tens are left. 1,2,3,...7. I have 7 left in the tens place.

Now I can subtract in the hundreds place. There is now one hundred in the hundreds place. I have to subtract one hundred. I will cross out one hundred to show I took it away. Now I have 0 hundreds left in the hundreds place. So, 246 - 172 = 74.

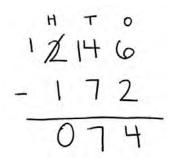
Let's try again, this time with digits! In order to make sure I am taking ones away from ones, tens away from tens and hundreds from hundreds, I will stack my numbers by place and lavel.

We need to begin in the ones place and subtract ones from ones, 6 minus 4 is 2.

Now I can move to the tens place. Four minus seven... Uh oh! I do not have enough to subtract! I will look at my hundreds place, cross out one hundred and break it apart in the tens place. Now, I can read it as 14 minus or take away 7. 14 - 7 is 7 (*Model subtraction strategy as needed*).

Finally I will look at the hundreds place and subtract. 1 hundred take away 1 hundred is 0. So, 246-172 = 74.

Let's Try it (Slides 8): Now let's work on subtracting three-digit numbers together. We are going to work on this page, together step by step. Remember, anytime you do not have enough ones or tens in the ones one tens place to subtract, Go to the next place and borrow.



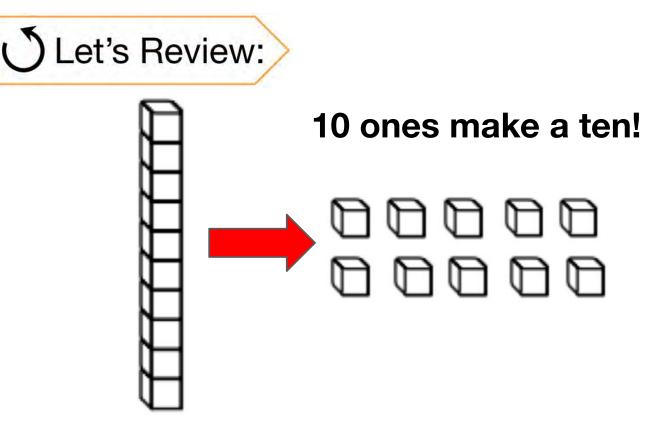
WARM WELCOME

(Tutors should adjust this slide for individual opening routine)

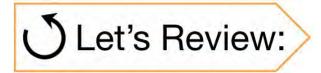


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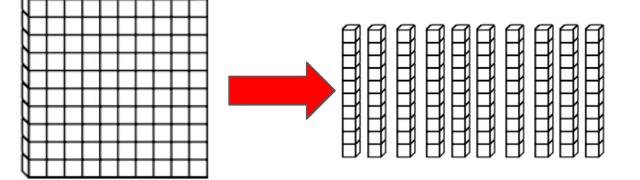
Today we will use place value to subtract three-digit numbers



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10 tens make a hundred!

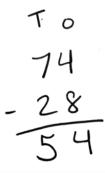


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Jared solved the problem 74 - 28. Jared's work is below. What did Jared do well? What does he need to fix to have an accurate

answer?



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246 - 172 =

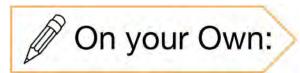
Hundreds	Tens	Ones

Let's Try It:	Name:	
Solve. Use place value un	derstanding to complete the following n	umber sentences
1. 258 - 167 =	2. 213 - 209 =	3. 654 - 456 =
4. 919- 732 =	5. 873-594 =	6. 735 - 365 =
7. 177 - 159 =	8. 751 - 444 =	9, 628 - 469 =

Let's practice subtracting three-digit numbers, together!

	10. Miguel bought 308 belloons for his repbew's birthday party. 198 balloons
	posped on the way to the party. How many balloons are left for the party?
	 There were 854 dogs at the dog park. 486 dogs left to eat their dinner. How many dogs are left at the dog park?
1	12 Joshua was serving subtraction problems for homework. He solved the problem below.
	457
	<u>- 288</u> 7 69
ls J	cafua's work correct or incorrect? Please explain your reasoning:
-	

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Now it's time to practice subtracting two-digit numbers on your own!

Name:	G3 L2.6 Independent Work
1. Solve. 871 - 290 =	2. Solve. 734-436 =
3. Solve. 578- 369 =	4. Solve. 208- 97 =

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Solve. Use place value understanding to complete the following number sentences

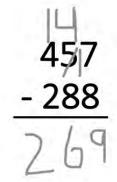
1. 258 - 167 =	2. 213 - 209 =	3. 654 - 456 =
4. 919-732 =	5. 873-594 =	6. 735 - 365 =
7. 177 - 159 =	8. 751 - 444 =	9. 628 - 469 =

Name: _____

10. Miguel bought 308 balloons for his nephew's birthday party. 198 balloons popped on the way to the party. How many balloons are left for the party?

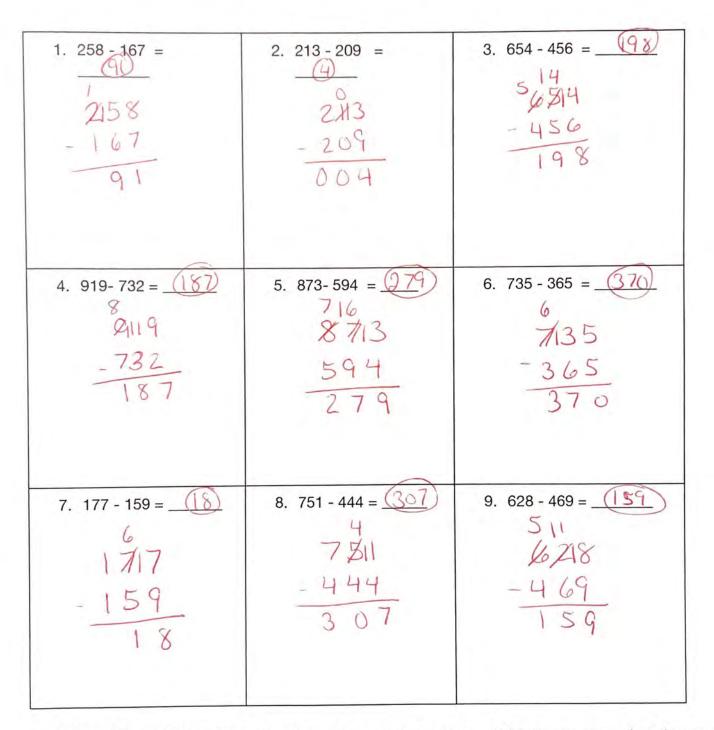
11. There were 854 dogs at the dog park. 466 dogs left to eat their dinner. How many dogs are left at the dog park?

12. Joshua was solving subtraction problems for homework. He solved the problem below.



Is Joshua's work correct or incorrect? Please explain your reasoning.

1. Solve.	2. Solve.
871 - 290 =	734- 436 =
3. Solve.	4. Solve.
578- 369 =	208- 97 =

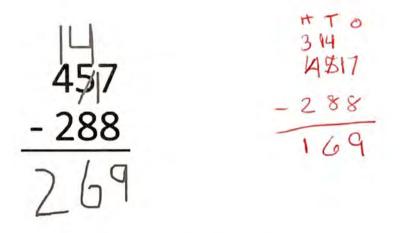


Solve. Use place value understanding to complete the following number sentences

10. Miguel bought 308 balloons for his nephew's birthday party. 198 balloons popped on the way to the party. How many balloons are left for the party?

808 There are 110 balloons for the party - 198 11. There were 854 dogs at the dog park. 466 dogs left to eat their dinner. How many dogs are 1854 left at the dog park? 466 There are 388 days left.

12. Joshua was solving subtraction problems for homework. He solved the problem below.



Is Joshua's work correct or incorrect? Please explain your reasoning.

Joshua's work is incorrect. When he needed hundred to make ten tens in the tens place he did

not cross it with and take one away. Instead He add a hundred to the problem.

Name: _____

1. Solve. $871 - 290 = 581$	2. Solve. 734-436 = (298)
7	612
8171	7814
-290	-436
581	298
3. Solve. 578- 369 = 209 5718 -369 209	4. Solve. 208- 97 = (11) 7 = 0 $2_{10} = 8$ -97 1 = 11

G3 U2 Lesson 7

Students will use place value to subtract three-digit numbers with zeros (standard algorithm with PV language)



G3 U2 Lesson 7- Students will use place value to subtract three-digit numbers with zeros

Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to subtract three-digit numbers with zeros!

Let's Talk (Slide 3): Let's talk about zeros. What does zero mean? And, let's add to that, what does it mean when we have zero when we're subtracting? Possible Student Answers, Key Points:

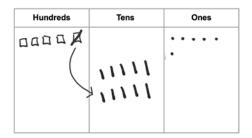
- Zero means nothing!
- If we take everything away, we have zero left. For example, 5 take away 5 is zero.
- If we take away zero, it doesn't change anything. For example 5 take away zero is 5.

Great job! Zero is a special number because it means NOTHING. Today we're going to subtract numbers that have zero in them. Sometimes, it'll be taking away zero. Sometimes it'll be taking everything away. And sometimes we'll have zero and we'll be asked to take something away from it. Today when we see a zero, I want us to slow down and really think about what the zero means based on where it is in our subtraction equation.

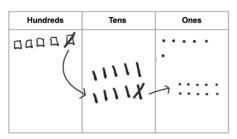
Let's Think (Slide 4): Let's work together to solve 506 - 148! I already see a zero, get ready!

Hundreds	Tens	Ones

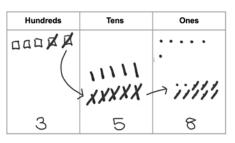
Let's begin by modeling the whole, 506. So I have 5 hundreds in the hundreds place and 0 tens in the tens place, hm how can I model that? Let's think.. 0 really means nothing. So If there are zero tens that means there are no tens there. I can leave it blank. Then I have 6 ones in the ones place.



We will begin in the smallest place, the ones place. In the ones place there are 6 ones. I am meant to take away 8 ones. I know I don't have enough! I also see that I can't borrow from the tens place because there are zero or no tens.I remember there are ten ones in each ten. There are also ten tens in each hundred. I;m going to go borrow from the hundreds place. I know that one hundred is the same as ten tens. So, if I borrow one hundred I can put those ten tens in the tens place.



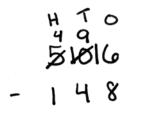
Now I have ten tens in the tens place but still not enough to subtract in the ones place! Well I know that when I do not have enough to subtract I can borrow from the next place. Now I have ten tens in the tens place I can borrow from the tens place to have enough ones in the ones place! So I will cross out one ten and place ten single ones in the ones place. NOW I can begin subtracting.



Now I have 16 ones, take 8 away that equals 8 (model crossing out 8 ones on the place value chart). In the tens place I have 9 tens take away 5 tens, that is 4 tens. In the hundreds place there are 4 hundreds, take 1 away that is 3 hundreds. So 506- 148 = 358.

8

Let's take a look at what subtracting zeros looks like with just digits. As always, we make sure we line up ones with ones, tens with tens and hundreds with hundreds. Now Just like with the model, I don't have enough ones to subtract in the ones place. I also can't borrow from the tens place. I have to first borrow a hundred and place ten tens in the tens place.



I still am not ready to subtract in the ones place because I still don't have enough. I'm going to borrow one of the tens from the tens place. (Cross out the 10 in the tens place and write 9 above the tens place.) Now I have 9 tens in the tens place and 16 ones in the ones place.



Now I am ready to subtract! And when I subtract, I get the same answer, 358.

Let's Try it (Slides 5-6): Now let's work on subtracting three-digit numbers with zeros. We are going to work on this page, together step by step. Remember, anytime you do not have enough ones or tens, go to the next place and borrow.

WARM WELCOME

(Tutors should adjust this slide for individual opening routine)



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Today we will use place value to subtract three-digit numbers with zeros



What does **zero** mean?

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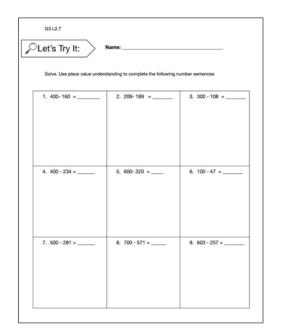
506 - 148 =

Hundreds	Tens	Ones

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Let's practice subtracting three-digit numbers with zeros, together!

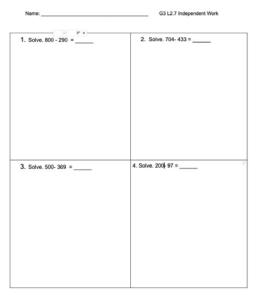


10 70	a sets in the askest coditation. Third code used 000 costs
	0 seats in the school auditorium. Third grade used 326 seats needs the rest of the seats. How many seats does second grad
	hool auditorium?
	00 in her bank account. She withdrew \$458 to buy a new bicycl ney does Alayah have left in her bank account now?

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Now it's time to practice subtracting three-digit numbers with zeros on your own!



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Name: _____

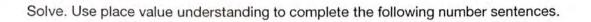
Solve. Use place value understanding to complete the following number sentences.

1. 400- 160 =	2. 209-189 =	3. 300 - 108 =
4. 400 - 234 =	5. 600- 320 =	6. 100 - 47 =
7. 500 - 281 =	8. 700 - 571 =	9. 603 - 257 =

10. There were 700 seats in the school auditorium. Third grade used 326 seats. Second grade needs the rest of the seats. How many seats does second grade need in the school auditorium?

11. Alayah has \$900 in her bank account. She withdrew \$458 to buy a new bicycle. How much money does Alayah have left in her bank account now?

1. Solve.		2. Solve.	
	800 - 290 =		704- 433 =
3. Solve.		4. Solve.	
	500- 369 =		200- 97 =
			200 01



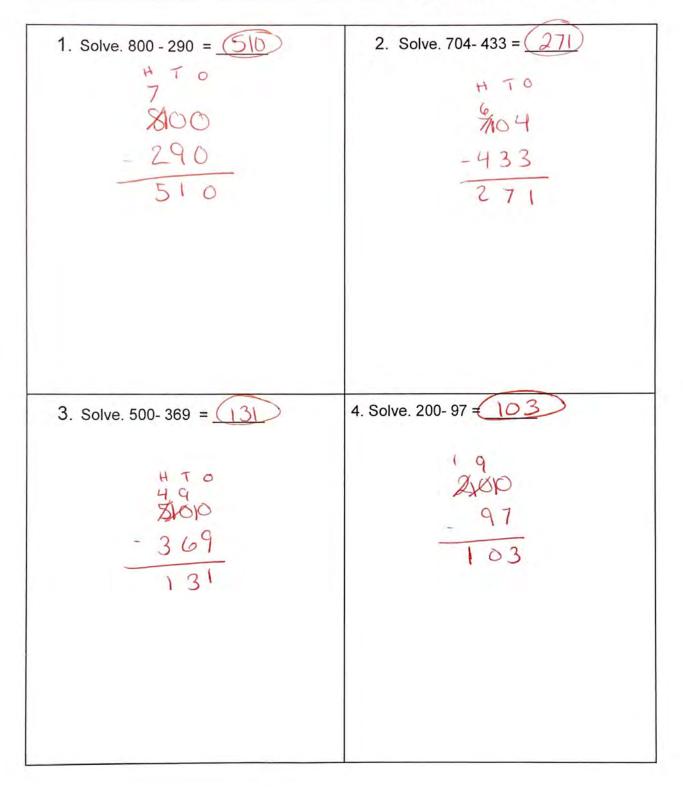
1. 400-160 = 240 $H T 0$ 3 400 -160 240	2. 209-189 = 20 $i^{H} \tau 0$ 209 -189 20	3. $300 - 108 = 192$ 29 300 108 192
4. $400 - 234 = 166$ 3.9 4.1010 -2.34 1.66	5. $600-320 = 280$ 4500 -320 280	6. $100 - 47 = 54$ H T 0 0 9 HOD - 47 5 3
7. $500 - 281 = 219$ 49 500 -281 219	8. $700 - 571 = 129$ $5, \overline{6}^{\circ}$ 7100 -571 129	9. $603 - 257 = $ 5 q 6/013 -257 346

10. There were 700 seats in the school auditorium. Third grade used 326 seats. Second grade needs the rest of the seats. How many seats does second grade need in the school $\frac{1}{2}$ $\frac{1}{2}$ auditorium?

374 Seat needs

11. Alayah has \$900 in her bank account. She withdrew \$458 to buy a new bicycle. How much money does Alayah have left in her bank account now?

layah has \$442 left in her bank accon 458



G3 U2 Lesson 8

Students will round to the nearest hundred (0-999)



G3 U2 Lesson 8 - Students will round to the nearest hundred (0-999)

Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to round numbers to the nearest 100. Let's begin by playing a quick game. We are going to stand in a circle and count by 100s. This is a listening game. You have to be ready with the next 100. I'll start.

• Start at 300, students should continue with 400, 500, etc. Allow the students to go past 900. They might get stuck. Tell them that 1000 is a hundred because it is the same as ten hundreds.

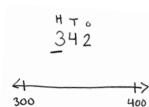
All of those numbers are hundreds. Today we will be looking for the nearest hundred that is closest to a number.

Let's Talk (Slide 4): Before we dive in, let's talk about number lines. If I gave you a number line with the endpoints of 300 and 400. Then I asked you to place the following cards on the number line, where would you put them and why? Possible Student Answers, Key Points:

- The cards should go in order from least to greatest beginning with 325; 359; 363 and 387 because number lines go in order and 300 was the left endpoint and 400 was the right endpoint.
- 325 was much closer to 300 than 387 because 325 is only 25 away from 300 and 387 is 87 away from 300, etc

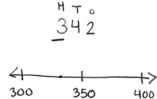
Let's Think (Slide 5): Today, we are going to use number lines to help us round numbers to the nearest hundred. When I am asked to round a number to the nearest hundred, I am being asked to find the closest hundred...either 100, 200, 300...all the way up to 1,000! Let me show you what I mean.

Let's look at this problem, it says "Round the number 342 to the nearest hundred." Well earlier we counted by hundreds. So we are looking for the hundred that is closest to 342. So that could be 100, 200, 300, 400, etc! I notice there are three hundreds in the hundreds place, then some tens and some ones.



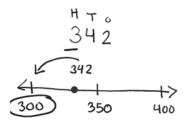
Because I am rounding to the nearest hundred, I will underline the 3 in the hundreds place and label each place like we've been doing in this unit. So I know that 342 is a number between 300 and 400. I can show that on a number line to help us.

At the beginning of our number line is 300, so I can write that at the beginning and 400 is at the end of the number line, so I can write that at the end of the number line. Remember, when we are rounding we are looking for the hundred that 342 is closest too.



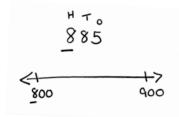
When we're rounding, the halfway point is really important because it will help us determine which hundred 342 is closest too. We know that half of one hundred is fifty. So, 350 is halfway between 300 and 400.

I can mark 350 on the number line to help me round because if a number is less than halfway then it is closer to the smaller hundred. If the number I am rounding is on the halfway mark or higher, then it is closer to the larger hundred.

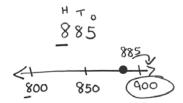


Finally I am ready to place 342 on the number line. I am looking for the nearest hundred. So the tens place will help me know where it goes on the number line. In this number I have 3 hundreds and 4 tens. So, 4 tens will go right before the halfway mark of 5 tens or 350. Now I can see that 342 is closer to 300 than 400. So 342 rounded to the nearest hundred is 300.

Let's Think (Slide 6): Let's look at another problem. It says, round 885 to the nearest hundred. Because I am rounding a three-digit number to the nearest hundred, I need to underline the 8 in the hundreds place. Let's begin by using the hundreds place. So, 885 is between 800 and...the next hundred. If I'm stuck, I can count by hundreds 800, 900 ... yes, the next hundred would be 900!



My number line will start at 800 and end at 900 since 885 is between those two hundreds. I will also write in the halfway point because that will help me determine if 885 is closer to 800 or 900. What is halfway between 800 and 900? 50 is half of 100 so 850 would be halfway between 800 and 900.



Now we can write in our halfway mark to help us decide if 885 is closer to 800 or 900. Now, Let's look at our tens place because that will tell us where on the number line to write 885. I see 8 tens. 8 tens will be after 850 on the number line because 8 tens is three more tens than 850. Now I see 885 is much closer to 900 than 800. So, 885 rounded to the nearest hundred is 900.

Let's Try it (Slides 7-8): Now let's work on rounding three-digit numbers to the nearest hundred. We are going to work on this page together step-by-step. Remember, if the number is below the halfway point, we round down! If the number is ON the halfway point or above it, we round up to the next hundred

WARM WELCOME

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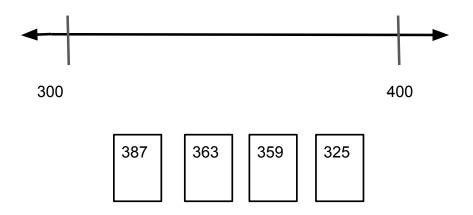
Today we will round to the nearest hundred



Let's count by 100s!

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Let's Talk:



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Round the number 342 to the nearest hundred.



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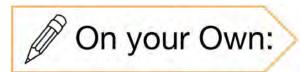
Let's Think:

Round the number 885 to the nearest hundred.



's Try It:	Let's practice rounding to the ne hundred, together!
63 12.8	- 03128
CLet's Try It: Name:	 An alrpaine they about 462 miles from Orlicago to Washington DC. <u>About how</u> many miles did the plane travel?
Round the following number to the nearest hundred.	 I am thinking of a secret number. When rounded to the nearest hundred the enswer is 300. What is the enablest number that rounds to 300 when rounded to
1. 672 2. 894	The meanest hundlood,
	 Kaii was roundrig there-stigt numbers to the nearest hundred in class. She rounded the number 545 to 600 because it was close to the halfway point. Explain why Kaii is incorrect.
3. 350 4. 255	
5. 129 6. 943	
	10. Ende all of the number's their sound to 400 when rounding to the research hundred
	-for 300 461 300 (340 - 350 - 601

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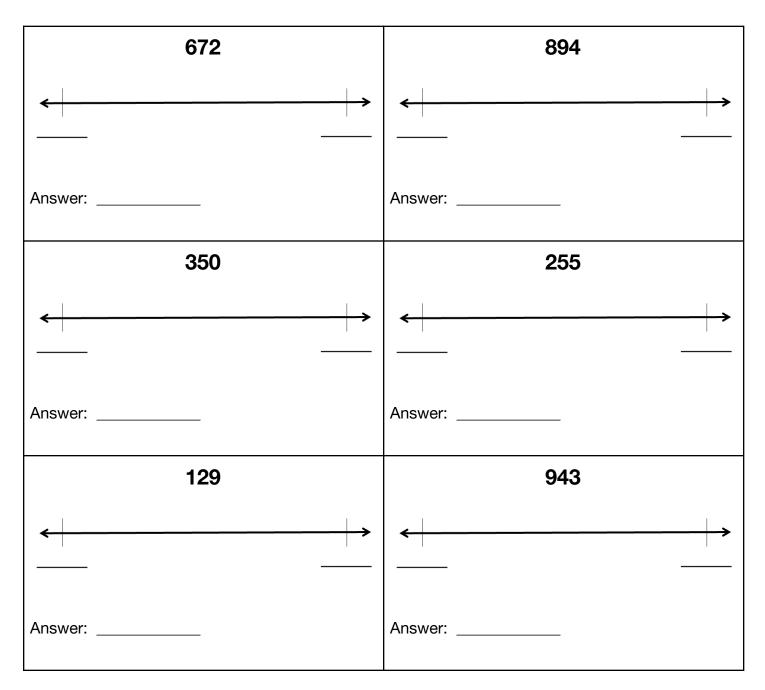
Now it's time to practice rounding numbers to the nearest hundred on your own!

Name:	G3 L2.8 Independent Work
1. Round 405 to the nearest hundred	2. Round 250 to the nearest hundred
3. Round 910 to the nearest hundred	4. Round 634 to the nearest hundred
- 1	

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Name: _____

Round the following number to the nearest hundred.



Circle all of the numbers that round to 400 when rounding to the nearest hundred.

423	502	451	398	349	352	401

An airplane flew about 462 miles from Chicago to Washington DC. **About** how many miles did the plane travel?

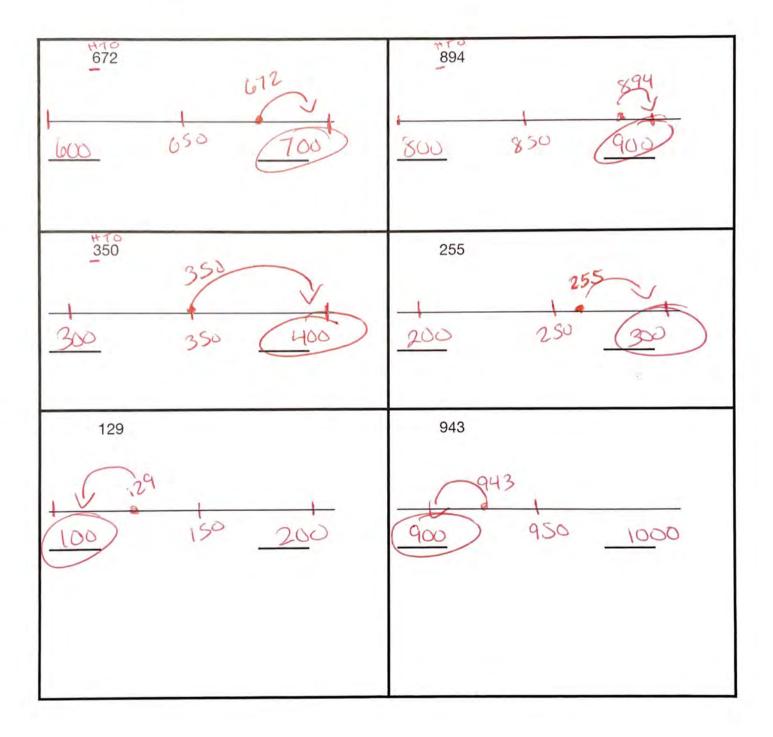
I am thinking of a secret number. When rounded to the nearest hundred the answer is 300. What is the smallest number that rounds to 300 when rounded to the nearest hundred.

Kali was rounding three-digit numbers to the nearest hundred in class. She rounded the number 545 to 600 because it was close to the halfway point. Explain why Kali is incorrect.

1. Round 195 to the nearest hundred.	2. Round 612 to the nearest hundred.
← →	<→
Answer:	Answer:
3. Round 905 to the nearest hundred.	4. Round 534 to the nearest hundred.
< ├ · · · · · · · · · · · · · · · · · · ·	<
Answer:	Answer:

Select all of the numbers that round to 100 when rounding to the nearest hundred.

- □ 152
- 0 71
- □ 129
- □ 150
- 50
- 29
- 🗌 199



Round the following number to the nearest hundred.

7. An airplane flew about 462 miles from Chicago to Washington DC. About how many miles did the plane travel?

400 400 500 Soo miles

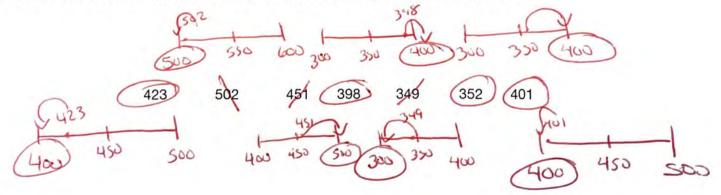
8. I am thinking of a secret number. When rounded to the nearest hundred the answer is 300. What is the smallest number that rounds to 300 when rounded to the nearest hundred.

350 400 The Smallest number

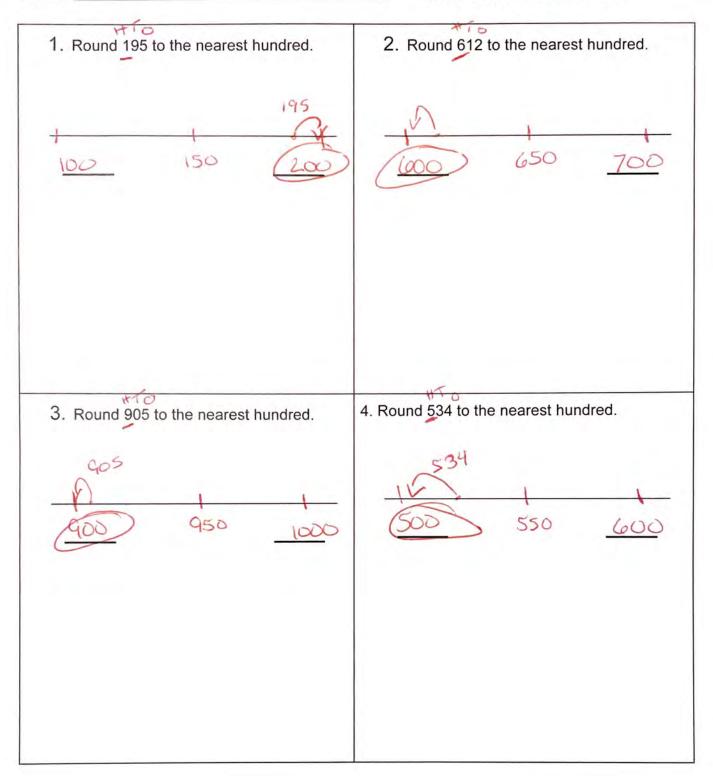
9. Kali was rounding three-digit numbers to the nearest hundred in class. She rounded the number 545 to 600 because it was close to the halfway point. Explain why Kali is incorrect.

550 600 to 500 than 600 because there are CLOSEC in the tens place. 550 is exactly between 500 and 600. Any number less than half way Idul be closer to the lower hundred

10. Circle all of the numbers that round to 400 when rounding to the nearest hundred.



Name:



G3 U2 Lesson 9

Students will round to the nearest ten (0-99)



G3 U2 Lesson 9 - Students will round to the nearest ten (0-99)

Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to round numbers to the nearest ten. Let's begin by playing a quick game. We are going to stand in a circle and count by 10s. This is a listening game. You have to be ready with the next 10. I'll start.

- Start with 10, students should continue with 20, 30, etc. Allow the students to go past 90. They might get stuck. That is ok, tell them that 100 is a ten because it is the same as ten tens.
- If time allows, play again starting at 90 and past 100

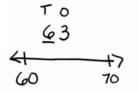
All of those numbers are tens. Today we will be rounding to the nearest ten.

Let's Talk (Slide 4): Yesterday, we rounded numbers to the nearest hundred. Today we will round two-digit numbers to the nearest ten. How do you think rounding to the nearest ten might be similar to rounding to the nearest hundred? Possible Student Answers, Key Points:

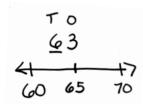
- We could use a number line to find the nearest tens a number is in between.
- A halfway mark could help us, but it will be 5 not 50.
- We are still looking for a ten that is nearest to another number.
- We will be looking for the closest tens and not hundreds.
- The halfway mark will be half of ten and not half of one hundred.

Let's Think (Slide 5): Those are all great ideas! We are going to use number lines to help us round numbers to the nearest 10, today! When I am asked to round a number, I am being asked to find another number that is close to the number I am rounding. Let me show you what I mean.

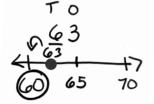
Let's look at this problem, it's asking me to round the number 63 to the nearest ten. Well earlier we counted by tens. So we are looking for the ten that is closest to 63. So that could be 10, 20, 30, 40, etc! In the number 63, I notice there are six tens in the tens place, then some ones.



I am going to underline the 6 in the tens place to help me focus on finding the nearest ten. So I know that 63 is a number between 60 and the next ten is 70. I can show that on a number line to help us. Remember, when we are rounding to the nearest ten, we are looking for the ten that 63 is closest to.

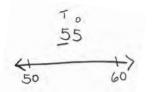


Just like yesterday, the halfway point is important! If we mark halfway, that will help us determine which ten 63 is closest too. The halfway mark helps me round because if a number is less than halfway then it is closer to the smaller ten. If the number I am rounding is on the halfway mark or higher, then it is closer to the larger ten. Half of ten is five. So, halfway in between sixty and seventy is sixty five. I can mark sixty five on the number line to help me round.

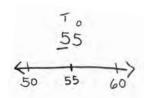


Finally I am ready to place 63 on the number line. I am looking for the nearest ten. So, the ones place will help me know where it goes on the number line. In this number I have three ones. Three ones will go right before the halfway mark of five ones. Now I can see that 63 is closer to 60 than 70. So 63 rounded to the nearest ten is 60.

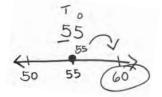
Let's look at another problem. Let's round 55 to the nearest ten. I am rounding a two-digit number to the nearest ten.



I'm going to labl my number line with 50 and 60 because 55 is between those two tens. I will also write in the halfway point because that will help me determine if 55 is closer to 50 or 60. What is halfway between 50 and 60? 55!



Exactly. Now we can write in our halfway mark to help us decide if 55 is closer to 50 or 60. Look at this, I notice that our halfway mark is the same as the number we are rounding to the nearest ten.



When a number is exactly halfway, we round to the next ten. So, 55 rounded to the nearest ten is 60.

Let's Try it (Slides 7): Now let's work on rounding two-digit numbers to the nearest ten. We are going to work on this page, together step by step. Remember, using a number line and the halfway point will help us to round!

WARM WELCOME

(Tutors should adjust this slide for individual opening routine)



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Today we will round to the nearest ten



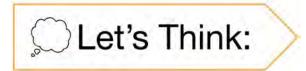
Count by 10s!

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Let's Talk:

How might rounding to the nearest ten be similar to rounding to the nearest hundred?

How might rounding to the nearest ten be different than rounding to the nearest hundred?



Let's round the number 63 to the nearest ten.



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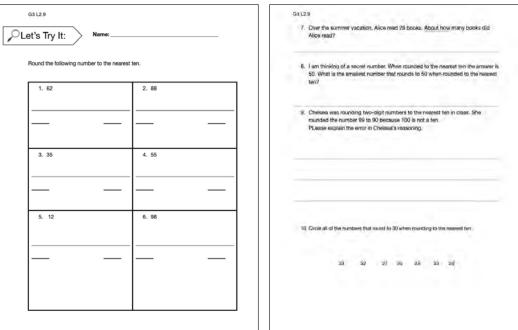
Let's Think:

Round 55 to the nearest ten.

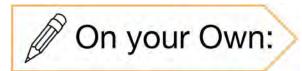


0	200.00		
^O Let's	Try	It:	\rangle

Let's practice rounding to the nearest ten, together!



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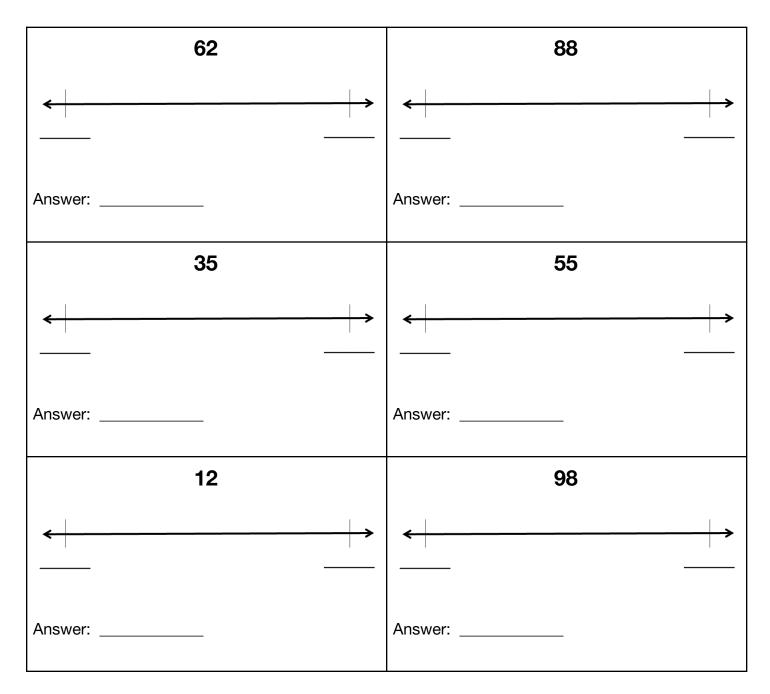
Now it's time to practice rounding numbers to the nearest ten on your own!

 Round 45 to the nearest hundred 	2. Round 51 to the nearest hundred
3. Round 91 to the nearest hundred	4. Round 68[to the nearest hundred

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Name: _____

Round the following number to the nearest ten.



Circle all of the numbers that round to 30 when rounding to the nearest ten.

23 32 27 35 25 33 24

Over the summer vacation, Alice read 28 books. About how many books did Alice read?

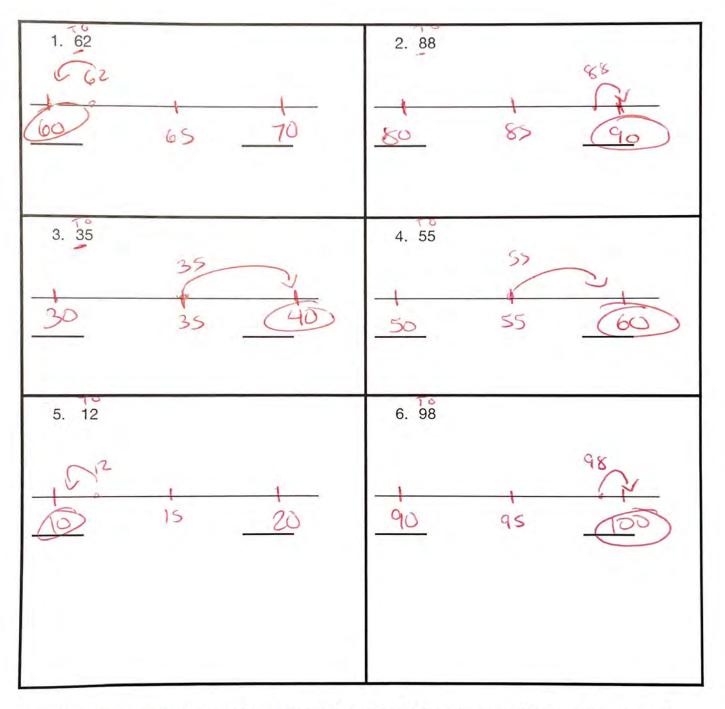
I am thinking of a secret number. When rounded to the nearest ten the answer is 50. What is the smallest number that rounds to 50 when rounded to the nearest ten?

Chelsea was rounding two-digit numbers to the nearest ten in class. She rounded the number 99 to 90 because 100 is not a ten. Please explain the error in Chelsea's reasoning.

1. Round 45 to the nearest ten.	2. Round 51 to the nearest ten.
<	<
Answer:	Answer:
3. Round 91 to the nearest ten.	4. Round 68 to the nearest ten.
<	<
Answer:	Answer:

Select all of the numbers that round to 70 when rounding to the nearest ten.

- □ 77
- □ 66
- 0 71
- □ 79
- 🗌 17
- 62
- □ 69



Round the following number to the nearest ten.

7. Over the summer vacation, Alice read 28 books. About how many books did Alice read?

121

Alice read about 30 books 20

Name: _

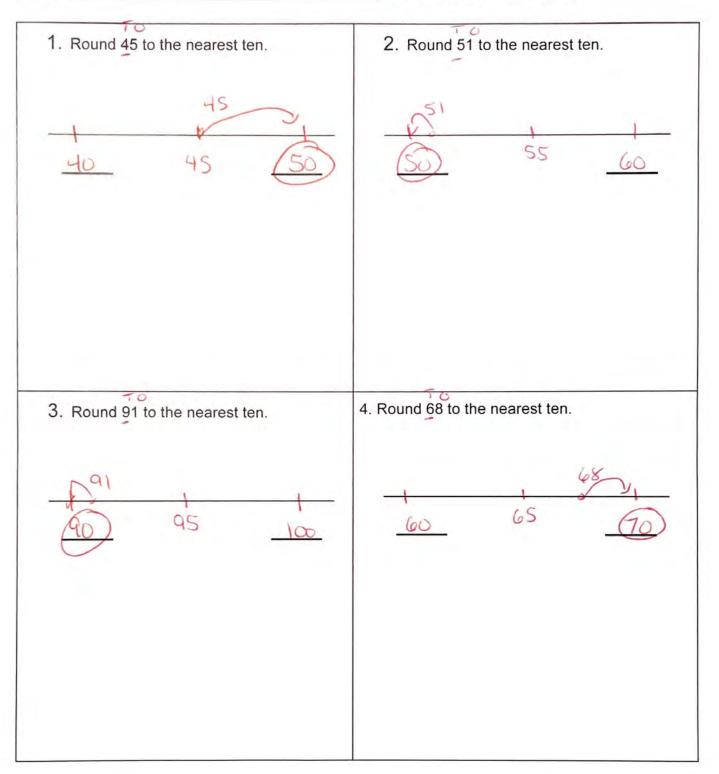
8. I am thinking of a secret number. When rounded to the nearest ten the answer is 50. What is the smallest number that rounds to 50 when rounded to the nearest ten?

60 55 the smallest number that rounds Chelsea was rounding two-digit numbers to the nearest ten in class. She rounded the number 9. 99 to 90 because 100 is not a ten. 99 PLease explain the error in Chelsea's reasoning. 95 100 90 be 100. 100 is hecu 10 the 0051.11 Should as 100. the Same

10. Circle all of the numbers that round to 30 when rounding to the nearest ten.

40 35 35 30 27 32 25 30 25 30 25 25 20 20

-



G3 U2 Lesson 10

Students will round to the nearest ten (0-999)



G3 U2 Lesson 10- Students will round to the nearest ten (0-999)

Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to round two-digit AND three-digit numbers to the nearest ten. Let's begin by playing a quick game. We are going to stand in a circle and count by 10s. This is a listening game. You have to be ready with the next 10. I'll start.

• Start at 190, students should continue with 200, 210, etc. Allow the students to go across hundreds. This is the most challenging day of rounding for students so spend extra time practicing tens today.

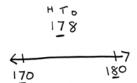
Nice work, all of those numbers are tens. Today we will be looking for the nearest ten to another number.

Let's Talk (Slide 4): Yesterday, we rounded two-digit numbers to the nearest ten. Today we will round two-digit and three-digit numbers to the nearest ten. Before we get started let's take a look at another student's work. Zayvion was practicing rounding numbers to the nearest ten. He was rounding 96 to the nearest ten. He answered 95. Why is Zayvion incorrect? Possible Student Answers, Key Points:

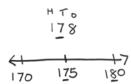
- Ninety five is not a ten because it ends in a five. Ninety five is halfway between ninety and one hundred.
- Ninety six is closer to 100 than ninety. .
- One hundred is also a ten, it is the same as 10 tens.

Let's Think (Slide 5): Those are all great ideas! When we round numbers to the nearest ten, it is really important that we think about the value of our hundreds place to help us. Today, we are going to use number lines to help us round numbers to the nearest 10! When I am asked to round a number, I am being asked to find another number that is close to the number I am rounding. Let me show you what I mean.

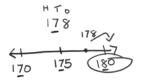
Let's look at this problem, it says round the number 178 to the nearest ten. Now, this is tricky because we are rounding a three-digit number to the nearest ten, not hundred. That means that we are looking for the ten that is closest to 178. So that could be 160,170, 180 etc! In the number 178, I notice there are seven tens in the tens place and then some ones.



I am going to underline the 7 in the tens place to remind myself that I am rounding to the nearest ten, not hundred. So I know that 178 is a number between 170 and 180. I can show that on a number line to help us.

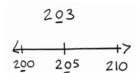


We've been working on rounding for two days now so we know that the halfway mark is really important! So, since we're rounding to the nearest ten, half of ten is five. So, halfway between 170 and 180 is 175. Let's mark 175 on the number line to help us round.

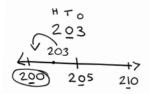


Finally we're reading to place 178 on the number line. The ones place will help me know where it goes on the number line. In this number I have eight ones. 8 ones will go after the halfway mark of 5 ones. Now I can see that 175 is closer to 180 than 170. So, 178 rounded to the nearest ten is 180.

Let's Think (Slide 6): Let's look at another problem. We want to round 203 to the nearest ten. Let's make sure we underline the tens place to keep track of our tens. This is interesting, 203 has zero tens, so 200 is one of the tens 203 is in between.



Now I have to make sure I dont add the next hundred, I am looking for the next ten! That is 210. Now, let's write the halfway point. What's the halfway point between 200 and 210? 205! Exactly. Now we can write in our halfway mark to help us decide if 203 is closer to 200 or 210.



Finally I can write 203 on the number in line a little bit in front of the halfway mark. So, I see that 203 is closer to 200 than 210. Our answer is 200.

Did you see how I had to pay very special attention to the tens place when finding the nearest tens? When we are rounding to the nearest tens place with three-digit numbers, we have to stop and think about the value of the tens place before taking the next step.

Let's Try it (Slides 7): Now let's work on rounding two-digit and three-digit numbers to the nearest ten. We are going to work on this page together. Remember, pay special attention to the tens place especially when you're rounding three-digit numbers to the nearest ten.

WARM WELCOME

(Tutors should adjust this slide for individual opening routine)



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Today we will round three-digit numbers to the nearest ten



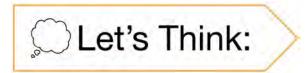
Count by 10s!

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Let's Talk:

Zayvion was rounding numbers to the nearest ten. He rounded 96 to 95.

Why is Zayvion incorrect?



Round the number 178 to the nearest ten.

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CLet's Think:

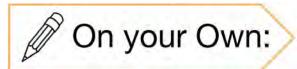
Round 203 to the nearest ten.



Let's practice rounding three-digit numbers to the nearest ten, together!

et's Try It: Nam		 A local ice cream stand usually sells about 697 ice creams a day in the summer Rounding to the nearest ten, about how many ice cream cones do they sell a day?
Round the following number to	2. 104	 I am thinking of a secret number. When rounded to the nearest hundred the answer is 200. When rounded to the nearest the answer is 250. What number could I be thinking of?
_		 Sani has 194 gummy bears. She said she has about 200 gummy bears. Did San round to the nearest ten or hundred.
3. 355	4. 215	
5. 129	6. 943	10. Circle all of the numbers that round to 190 when rounding to the nearest ten.
		184 185 201 196 191 198 187 1

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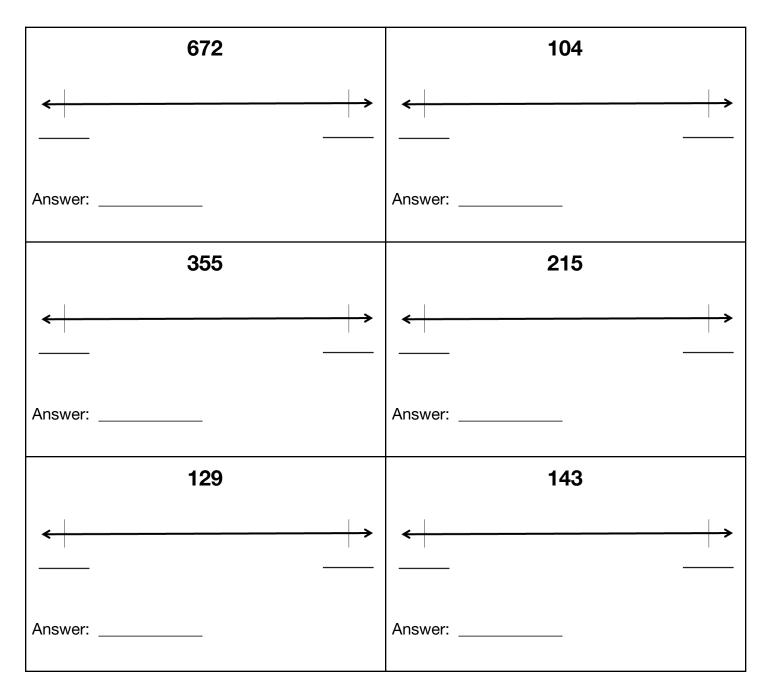
Now it's time to practice rounding three-digit numbers to the nearest ten on your own!

1. Round 195 to the nearest ten.	2. Round 612 to the nearest ten.
3. Round 905 to the nearest ten.	4. Round 534[to the nearest ten.

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Name: _____

Round the following number to the nearest ten.



Circle all of the numbers that round to 190 when rounding to the nearest ten.

184 185 201 195 191 198 187

A local ice cream stand usually sells about 697 ice creams a day in the summer. Rounding to the nearest ten, about how many ice cream cones do they sell a day?

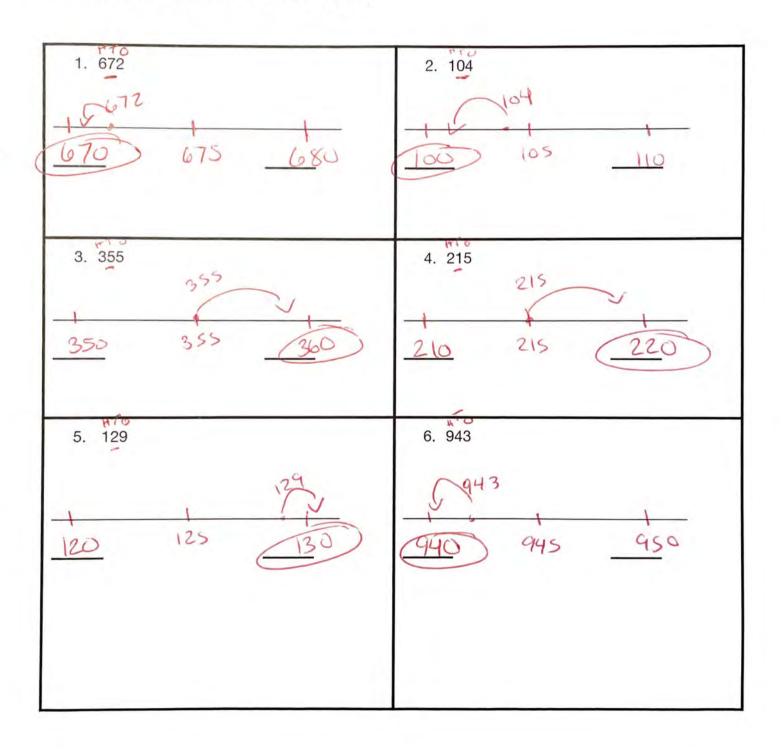
I am thinking of a secret number. When rounded to the nearest hundred the answer is 200. When rounded to the nearest ten the answer is 250. What number could I be thinking of?

Sani has 194 gummy bears. She said she has about 200 gummy bears. Did Sani round to the nearest ten or hundred? How do you know?

1. Round 195 to the nearest ten.	2. Round 612 to the nearest ten.
← → → → → → → → → → → → → → → → → → → →	<
Answer:	Answer:
3. Round 905 to the nearest ten.	4. Round 534 to the nearest ten.
<	<
Answer:	Answer:

Select all of the numbers that round to 120 when rounding to the nearest ten.

- □ 123
- □ 105
- □ 115
- □ 127
- 🗌 112
- □ 114
- □ 122



Round the following number to the nearest ten.

7. A local ice cream stand usually sells about 697 ice creams a day in the summer. Rounding to the nearest ten, about how many ice cream cones do they sell a day?

HTO

Too ice cream comes abu

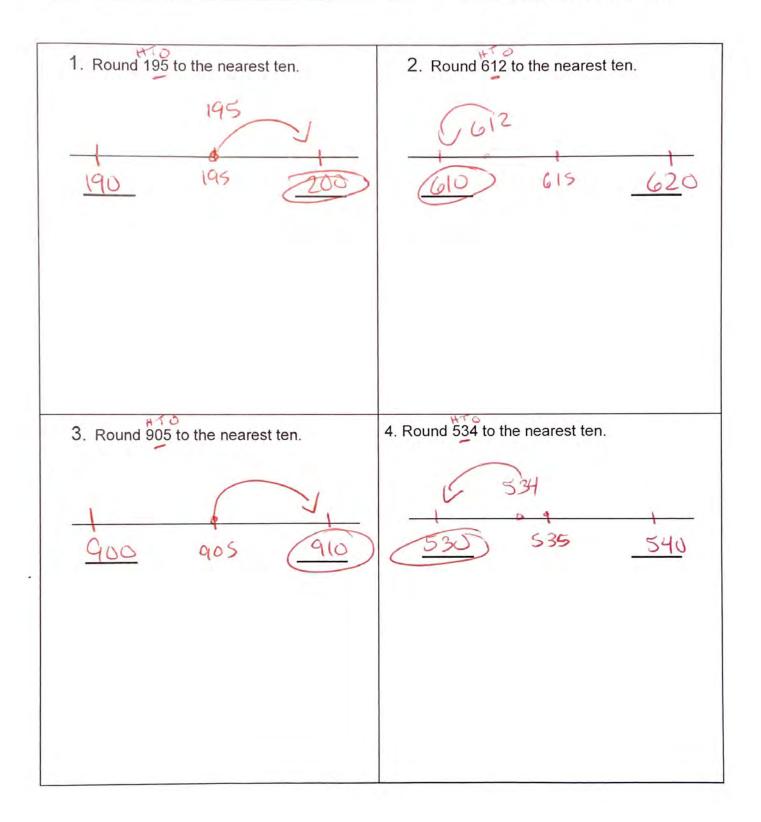
8. I am thinking of a secret number. When rounded to the nearest hundred the answer is 200. When rounded to the nearest the answer is 250. What number could I be thinking of?

e answer could be 246.

9. Sani has 194 gummy bears. She said she has about 200 gummy bears. Did Sani round to the nearest ten or hundred.

rounded to the nearest hundred. If she rounded nearest ten, her answer would have 190.

10. Circle all of the numbers that round to 190 when rounding to the nearest ten. :85 *TO TKS



G3 U2 Lesson 11

Students will estimate sums by rounding and apply them to solving word problems



G3 U2 Lesson 11- Students will estimate sums by rounding and apply to solving word problems

Warm Welcome (Slide 1): Tutor choice

Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to estimate sums by rounding. That means we can use rounding to help us add. An estimation is a close guess. When you estimate you are getting *about* the right answer or *close* to the right answer. So, today we will use what we have learned about rounding to the nearest tens and hundreds as we add.

Let's Talk (Slide 4): We've been practicing A LOT of rounding. How could rounding help us in real life? Possible Student Answers, Key Points:

- It can help us if we're buying something and we want to know about how much something costs
- It can help us check if our answer is right
- If we are at the grocery store, we can make a guess for how much something will cost

Let's Think (Slide 5): Exactly, in life estimating is sometimes very helpful. Often we will not get out a pen and paper, we will try to get close to the exact amount like in the grocery store or even cooking something. We do have to think carefully about how we are rounding. Today we will solve word problems where we are estimating sums. We will need to pay careful attention to what place we are rounding too. Let me show you what I mean.

This says, "Let's estimate the sum of 268 + 132 by rounding to the greatest place value." I see the word *estimate*, which means to round. For example if there are 268 blue crayons and 132 red crayons and we want to say *about* how many crayons there are, we can round and then add to get an estimate.

Now, whenever we estimate sums, we want to make sure we round before adding, in other words round 268 and then round 132 and then add them together to get our estimate. This question is asking us to round to the greatest place value. Well, what is the greatest place in a three-digit number? The hundreds place! Right, we should be estimating or rounding to the nearest hundreds place.

$$H T 0$$

268 -> 300
+ 132 -> 100

Let's begin by lining up and stacking the two numbers that we're adding. Then, let's think about the first addend, 268. We want to round 268 to the nearest hundred and we know it's between 200 and 300, so is 268 closer to 200 or 300? 300! That's right! When we round 268 to the nearest hundred, it's 300. Now, let's think about the second addend, 132. We know that 132 is between 100 and 200. If we round it to the nearest hundred, does it round down to 100 or up to 200? 100! That's right, 132 rounded to the nearest hundred is 100!

Note: If students still need to round using number lines, they should! If they have gotten fluent with rounding, they can do it in their head.

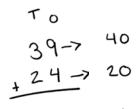
$$\begin{array}{c} 1 & 1 & 0 \\ 268 \rightarrow 300 \\ + & 132 \rightarrow + 100 \\ \hline 400 & 400 \end{array}$$

So, 268 is *about* 300 and 132 is *about* 100, so 268 and 132 is *about* 400. So our estimate, or close guess is 400.

But, we can also find the EXACT answer. Let's solve the exact sum to double check my estimate (*invite students to solve on whiteboards/paper*). Wow, we got the exact same answer. In this case it means that rounding to the nearest hundred was a close estimate!

Let's Think (Slide 6): Let's look at another example together. This says, "On Friday, there were 39 students in the cafeteria eating school lunch and 24 students eating lunch from home. Rounding to the nearest ten, *about* how many students were eating in the cafeteria in all?"

Well, we know that whenever we solve a story problem, it is important that I stop and take time to understand what we just read. We just read that some students were eating lunches from school and some students were eating lunches from home. It is our job to figure out **about** how many students were in the cafeteria in all, that means we'll count the students who ate school lunch AND the students who brought lunch from home. The word **about** in a story problem is a signal to estimate or round. In order to solve this problem, we need to estimate to find the sum.



So just like in the first problem, let's stack the addends by place value to make sure we're combining hundreds with hundreds, tens with tens and ones with ones. Then, let's round each addend to the nearest ten. Don't forget if we need to use number lines to round, that's fine!

So, what is 39 rounded to the nearest ten? 40! And, what is 24 rounded to the nearest ten? 20! So there were about 40 students eating school lunch and about

20 students eating lunch from home. Well, 40 and 20 is 60, so that means there were about 60 students in the cafeteria. Let's also solve to find the *exact* amount of students in the cafeteria (*invite students to solve on whiteboards/paper*).

Nice work, when we added the exact amount, we got 63. And, when we rounded for an estimate we got 60. Both answers are pretty close to one another!

Let's Try it (Slides 7): Now let's work on estimating sums by rounding, together. We are going to work on this page, together step by step. Remember, using a number line and the halfway point can help us to round!

WARM WELCOME

(Tutors should adjust this slide for individual opening routine)



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Today we will estimate sums by rounding and apply to solving word problems.



"estimate"

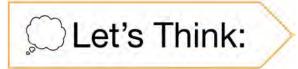
"about"

"round"

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Let's Talk:

When can rounding be helpful in real life?



Let's estimate the sum of 268 + 132 by rounding to the greatest place value.

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Let's Think:

On Friday, there were 39 students in the cafeteria eating school lunch and 24 students eating lunch from home. Rounding to the nearest ten, about how how many students were eating in the cafeteria in all?

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			1

Let's practice estimating sums by rounding, together!

G3 L2.11	G3 L2 11
Estimate the sum by rounding to the nearest hundred. I. 547 + 355 =	 Kori needed 347 chocolate chips and 551 white chocolate chips for her cookie recipe. Rounded to the greatest place value, about how many chips does Kori need to complete her recipe?
2. 289 + 605 =	6. The chart below shows the distance the track team raced at the last track meet. Runner 1 15 miles Runner 2 38 miles
	Runner 3 45 miles
Estimate the sum by rounding to the nearest ten. 3. 547 + 355 =	Rounded to the nearest ten, how many miles did the track team run in all?
4. 280 + 605 =	 Jenni and Oscar were having a paper airplane competition. Jenni threw her paper airplane 324 meters. Oscar threw his paper airplane 487 meters. Rounded to the nearest ten, about how many meters did Jenni and Oscar throw theri paper airplanes in ail?
	I

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Now it's time to practice estimating sums by rounding on your own!

Name:	G3 L2.11 Independent Work
1. Rounded to the greatest place value: solve 725 + 252 =	2. Third grade was creating paintings for the art show. One homeroom created 37 paintings. The other homeroom created 38 paintings. Rounded to the nearest ten about how many paintings did third grade create for the art show?
3. A family was hiking through a state park. They hiked 769 meters on the blue trail and 103 meters on the yellow trail. Rounded to the greatest place value, about how many miles did the family hike>	4. Jocelyn was determined to become an experienced gular player. She practiced 65 hours on Tuesday. 72 hours on Wedensday and 86 hours on Thursday. Rounded to the nearest ten, about how many hours did Jocelyn practice this week?

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Estimate the sum by rounding to the nearest **hundred**.

1. 547 + 355 = _____

2. 289 + 605 =_____

Estimate the sum by rounding to the nearest **ten**.

4. 289 + 605 =_____

3. 547 + 355 = _____

Kori needed 347 chocolate chips and 551 white chocolate chips for her cookie recipe. Rounded to the greatest place value, about how many chips does Kori need to complete her recipe?

The chart below shows the distance the track team raced at the last track meet.

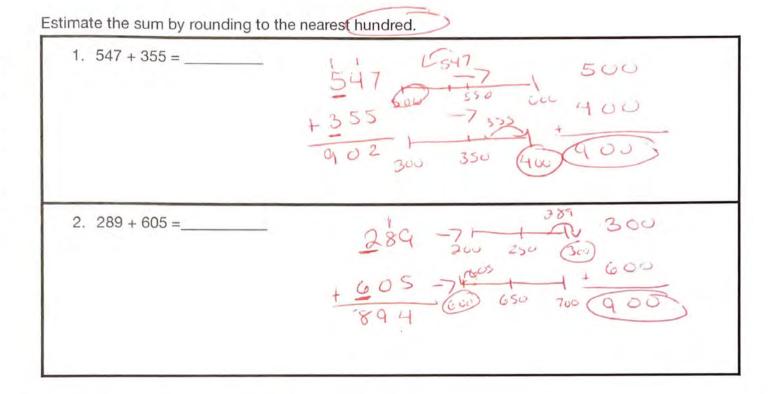
Runner 1	15 miles
Runner 2	38 miles
Runner 3	45 miles

Rounded to the nearest ten, how many miles did the track team run in all?

Jenni and Oscar were having a paper airplane competition. Jenni threw her paper airplane 324 meters. Oscar threw his paper airplane 487 meters. Rounded to the nearest ten, about how many meters did Jenni and Oscar throw theri paper airplanes in all?

1. Rounded to the greatest place value: solve 725 + 252 =	2. Third grade was creating paintings for the art show. One homeroom created 37 paintings. The other homeroom created 98 paintings. Rounded to the nearest ten about how many paintings did third grade create for the art show?
3. A family was hiking through a state park. They hiked 769 meters on the blue trail and 103 meters on the yellow trail. Rounded to the greatest place value, about how many miles did the family hike>	4. Jocelyn was determined to become an experienced guitar player. She practiced 65 hours on Tuesday, 72 hours on Wednesday and 86 hours on Thursday. Rounded to the nearest ten, about how many hours did Jocelyn practice this week?





Estimate	the	sum	by	rounding	to	the	nearest	ten.
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3. 547 + 355 =	547-540 545 550 + 355-7 - 540 545 (550) + 355-7 - 355 902 350 355 360 910
4. 289 + 605 =	289-71 285 290 290 605-71 605 610 + 610 894 600 605 610 900

5. Kori needed 347 chocolate chips and 551 white chocolate chips for her cookie recipe. Rounded to the greatest place value, about how many chips does Kori need to complete her recipe?

< abit 900 300 400 350 600

6. The chart below shows the distance the track team raced at the last track meet.

-		1	7 15-7	20
	Runner 1	15 miles	38-7 10 15 38 20	40
	Runner 2	38 miles	45-7 3" 3245 (1)	50
	Runner 3	45 miles	40 45 50 -	110

Rounded to the nearest ten, how many miles did the track team run in all?

The track team ran about 110 miles.

7. Jenni and Oscar were having a paper airplane competition. Jenni threw her paper airplane 324 meters. Oscar threw his paper airplane 487 meters. Rounded to the nearest ten, about how many meters did Jenni and Oscar throw theri paper airplanes in all?

810 threw their airplunes pl about 485 490 480

Name:

G3 U2 Lesson 11 - On Your Own

2. Third grade was creating paintings for 1. Rounded to the greatest place value: the art show. One homeroom created 37 solve 725 + 252 = paintings. The other homeroom created 98 paintings. Rounded to the nearest ten about how many paintings did third 100 grade create for the art show? O 400 40 00 40 grade cren 140 paintings 4. Jocelyn was determined to become an A family was hiking through a state park. experienced guitar player. She practiced 65 They hiked 769 meters on the blue trail and 103 meters on the yellow trail. hours on Tuesday, 72 hours on Wednesday Rounded to the greatest place value, and 86 hours on Thursday. Rounded to the nearest ten, about how many hours did about how many miles did the family Jocelyn practice this week? hike> 00 XCO 0 100 150 200 0 900 0 85 Jocelyn practiced about 230 hours this week. The family hixed about 900 miles.

G3 U2 Lesson 12

Students will estimate differences by rounding and apply them to solving word problem



G3 U2 Lesson 12- Students will estimate differences by rounding and apply to solving word problems

Warm Welcome (Slide 1): Tutor choice

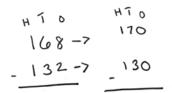
Frame the Learning/Connect to Prior Learning (Slide 3): Today we will use what we know about place value to estimate differences by rounding. That means we can use rounding to help us subtract. An estimation is a close guess. When you estimate you are getting about the right answer or close to the right answer. So, today we will use what we have learned about rounding to the nearest tens and hundreds as we subtract.

Let's Talk (Slide 4): Janelle went grocery shopping to buy ingredients for dinner. She took \$200 to the store with her. She spent \$103. Janelle needed to make sure she knew how much change to receive but she didn't have a pen and paper. How could Janelle solve her problem? Possible Student Answers, Key Points

- She could round to the nearest tens place or hundreds place to see how much she spent.
- She could round to the nearest hundred and subtract. Then she could take three extra dollars away to find the exact amount.
- She had 200 and she spent about 100 so she should get about 100 back in change.

Let's Think (Slide 5): Exactly! Janelle can make a close guess to help her figure out how much money she should get back. In life estimating is sometimes very helpful especially when measuring or purchasing enough of something. Just like we did yesterday, today we'll use rounding to help us but instead of adding, we'll be subtracting.

This problem says, "Estimate to find the difference of 168 - 132 by rounding to the nearest ten." I see the word ESTIMATE, which means to round. This problem is asking us to round to the nearest tens. Whenever we estimate differences, we want to make sure we round before subtracting.

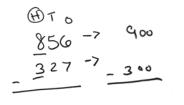


Let's start by stacking our two numbers. So, we want to know about how much 168 minus 132 is. Let's start with the whole amount, 168. Remember, we're rounding to the nearest ten. So, 168 is between 160 and 170. It's closer to 170 so it's *about* 170. And, 132 is between 130 and 140. What is 132 rounded to the nearest ten? 130! Right. So, 132 is *about* 130.

Remember, if we need to use a number line to help us subtract, we should draw it out and make the halfway point!

Now, these rounded numbers are easy to work with! So 170 -130 is 40. So, 168 - 132 is *about* 40. Let's work together to find the *exact* answer (*invite students to subtract on whiteboards/paper*). When we subtract using our algorithm, we get 36. And, 36 is close to 40 so our estimate was close!

Let's Think (Slide 6): Let's try another problem. Read it with me, "There were 856 seats in the movie theater. Third grade went to see The Little Mermaid and used 327 seats. Rounded to the greatest place value, about how many seats were unused in the movie theater?"



So, we want to find an estimate, or close guess, of how many seats will not be used by third grade in the movie theater. So just like in the first problem, let's stack the numbers by place value. Then let's round each number to the nearest hundred because the problem said the greatest place value. So, 856 is between 800 and 900, and which hundred does it round to? 900! And, 327 is between 300 and 400. And, which hundred does it round to? 300!

So, there were *about* 900 seats and third graders used *about* 300 of the seats. That means that there are *about* 600 seats that are unused. Let's also subtract to find the exact amount of unused seats. When we find the exact amount, it's 529 unused seats.

Let's Try it (Slides 7): Now let's work on estimating differences by rounding, together. We are going to work on this page, together step by step. Remember, using a number line and the halfway point will help us to round!

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Today we will estimate differences by rounding and apply to solving word problems.

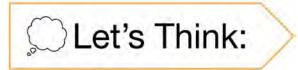


estimate/ about/ round

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Let's Talk:

Janelle went grocery shopping to buy ingredients for dinner. She took \$200 to the store with her. She spent \$ 103. Janelle needed to make sure she knew how much change to receive but she didn't have a pen and paper. How could Janelle solve her problem?



Estimate to find the difference of 168 - 132 by rounding to the nearest ten.

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Let's Think:

There were 856 seats in a movie theater. Third grade went to see the The Little Mermaid and used 327 seats. Rounded to the greatest place value, about how many seats were unused in the movie theater?



Let's practice estimating differences by rounding, together!

et's Try It: Name:	 Jamail waited to read 670 pages of his book by the end of the week. By Wednesday ine read 341 pages. Rounded to the respect ten , about how man pages does Jamai need to read.
1 987 - 555	6. The chart below shows the distance the track team raced at the last track inc Runner 1 15 miles Runner 2 38 miles
Estimatis (ins. sum by recarding to the reserved (see.	Runner 3 45 miles
1. 1677 - 555 ∞	 Alice and Chalses were making hut loop rackless is at class. Chalses are 800 hv toppe and Alice used 338 hut topps. Advit how many more hut loops do Cheses
4. 480 - 3105 =	Hyon, Alice, nounded to the greatest place value

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Now it's time to practice estimating differences by rounding on your own!

Rinunded to the greatest place value: solve 725 - 252 =	 Third and fourth grade were willing popolon for a fundament. Third grade sold 88 bags of popcers. Fundament of 82 bags in popcers, fundament bags of popcers in 6 minor to bags of popcers and third grade sall than fourth grade?
 There were 891 students in the gym. 405 students' left the gym. Rounded to the nearest time. Jobu How many students were left in the gym? 	 Pierre worked on his homework. He wante to complete 167 story problems. He complete 48 shorp roblems. How many more problems dates Pierre treed to complete to meet his grow?

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Estimate the difference by rounding to the nearest hundred.

1. 867 - 555 = _____

2. 489 - 305 =_____

Estimate the difference by rounding to the nearest ten.

3. 867 - 555 = _____

4. 489 - 305 =_____

Jamal wanted to read 679 pages of his book by the end of the week. By Wednesday he read 341 pages. Rounded to the nearest ten , about how many pages does Jamal need to read.

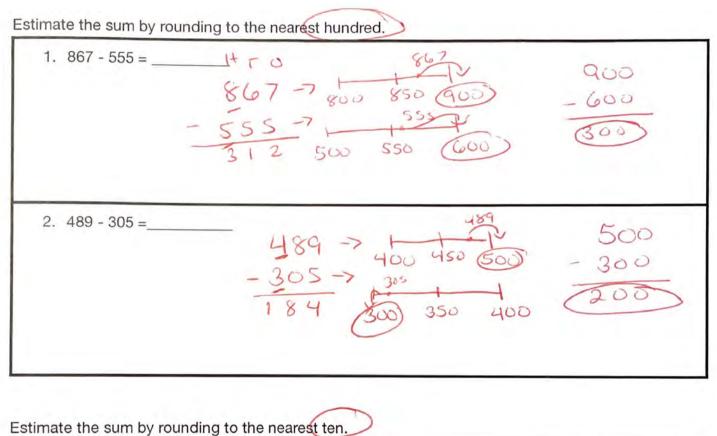
The chart below shows the distance the track team raced at the last track meet.

Runner 1	15 miles
Runner 2	38 miles
Runner 3	45 miles

Rounded to the nearest ten, how many more miles did runner 3 run than runner 1?

Alice and Chelsea were making fruit loop necklaces in art class. Chelsea use 690 fruit loops and Alice used 239 fruit loops. About how many more fruit loops did Chelsea use than Alice, rounded to the greatest place value.

1. Rounded to the greatest place value: solve 725 - 252 =	2. Third and fourth grade were selling popcorn for a fundraiser. Third grade sold 98 bags of popcorn. Fourth grade sold 53 bags of poopcon. Rounded to the nearest ten, about how many more bags of popcorn did third grade sell than fourth grade?
3. There were 891 students in the gym. 405 students left the gym. Rounded to the nearest ten, about how many students were left in the gym?	4. Pierre worked on his homework. He wanted to complete 167 story problems. He completed 84 story problems. How many more problems does Pierre need to complete to meet his goal?



867 3. 867 - 555 = _____ 860 865 870 870 - 555-> 560 555 550 489-7 480 485 (490 - 305-7 1 305 (490 300 305 (310 4. 489 - 305 =_____ 490 310 180 5. Jamal wanted to read 679 pages of his book by the end of the week. By Wednesday he read 341 pages. Rounded to the nearest ten , about how many pages does Jamal need to read.

Jamel needs to read about Dag 61 675 670 345

6. The chart below shows the distance the track team raced at the last track meet.

Runner	r 1	15 miles	45-	7	45	50 50
Runner	r 2	38 miles	-15	10	15	24-20
Runne	r 3	45 miles		10	15	20 30

44

Rounded to the nearest ten, how many more miles did runner 3 run than runner 1?

Runner 3 ran about 30 more miles.

7. Alice and Chelsea were making fruit loop necklaces in art class. Chelsea use 690 fruit loops and Alice used 239 fruit loops. About how many more fruit loops did Chelsea use than Alice, rounded to the greatest place value.

Pruit 100ps helsen use 100 650 700 DC 500 350 300

161

Name:

G3 U2 Lesson 12 - On Your Own

2. Third and fourth grade were selling 1. Rounded to the greatest place value: solve 725 - 252 = popcorn for a fundraiser. Third grade sold 98 bags of popcorn. Fourth grade sold 53 bags of poopcon. Rounded to the 00 nearest ten, about how many more bags of popcorn did third grade sell than fourth grade? 100 95 50 \$5 50 Third grade sold about 50 more bags. 4. Pierre worked on his homework. He wanted 3. There were 891 students in the gym. 405 to complete 167 story problems. He completed students left the gym. Rounded to the 84 story problems. How many more problems nearest ten, about how many students does Pierre need to complete to meet his goal? were left in the gym? 891 900 890 167 895 405 400 Pierre needs to complete WILL 180 0 83 more problems in the qu