

Unit 2 Review

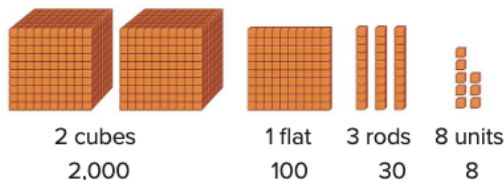
Use Place Value to Fluently Add and Subtract Within 1,000

2-1: Represent 4-digit numbers

You can use a place-value chart.

thousands	hundreds	tens	ones
2	1	3	8

You can use base-ten blocks.



You can read and write the number in different forms.

standard form 2,138

expanded form $2,000 + 100 + 30 + 8$

word form two thousand, one hundred thirty-eight

Math is... Generalizations

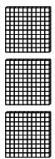
4-digit numbers have thousands, hundreds, tens, and ones.

How is representing 4-digit numbers the same as representing 3-digit numbers?

Additional Practice:

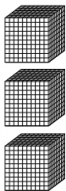
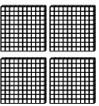
Fill in the number represented by the base-ten blocks. Write the number in expanded and word form.

1.

thousands	hundreds	tens	ones
			

thousands	hundreds	tens	ones

2.

thousands	hundreds	tens	ones
			

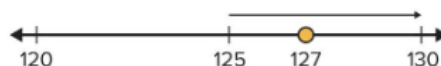
thousands	hundreds	tens	ones

2-2: Round Multi-Digit Numbers

► **One Way** Use a number line to round.

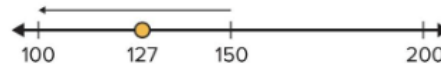
Round to the nearest 10.

127 is to the right of the halfway point. It rounds to 130.



Round to the nearest 100.

127 is to the left of the halfway point. It rounds to 100.



► **Another Way** Use place value to round.

Round to the nearest 10.

If the digit in the ones place is 5 or greater, round up.

127
↓
130

Round to the nearest 100.

If the digit in the tens place is less than 5, round down.

127
↓
100

You can round to make a number easier to work with when an exact number is not needed.

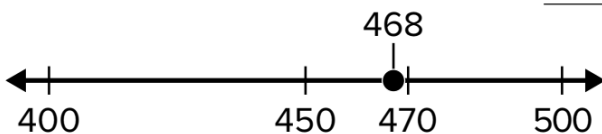
Math is... **Choosing Tools**

Why is a number line helpful for rounding?

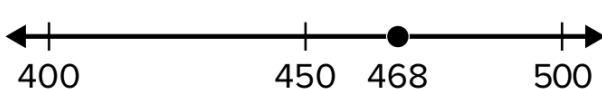
Additional Practice:

Use place value to round.

1. Round 468 to the nearest ten. _____



2. Round 468 to the nearest hundred. _____



Use place value to round.

3. Round 47 to the nearest ten. _____

4. Round 23 to the nearest ten. _____

5. Round 634 to the nearest hundred. _____

6. Round 219 to the nearest hundred. _____

2-3: Estimate Sums and Differences

► **One Way** Round the numbers to estimate the difference.

$$576 - 122 = ?$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ 580 - 120 = 460 \end{array}$$

$$576 - 122 = ?$$

$$\begin{array}{c} \downarrow \quad \downarrow \\ 600 - 100 = 500 \end{array}$$

You can use rounding or compatible numbers to **estimate** an answer when you do not need an exact sum or difference.

Additional Practice:

Estimate the difference. Show your work.

1. $298 - 207 = ?$

2. $? = 496 - 104$

Estimate the sum. Show your work.

3. $? = 416 + 147$

4. $274 + 516 = ?$

2-4: Use Addition Properties to Add

► **One Way** You can group addends in any way and the sum will be the same.

$$\begin{array}{c} 27 + 53 + 40 \\ \swarrow \quad \searrow \\ 80 + 40 = 120 \end{array}$$

$$\begin{array}{c} 27 + 53 + 40 \\ \quad \swarrow \quad \searrow \\ 27 + 93 = 120 \end{array}$$

Add 53 and 40 first.

► **Another Way** You can switch the order of the addends and the sum will be the same.

$$27 + 53 + 40 = 120$$

$$40 + 27 + 53 = 120$$

Billy won 120 tickets.

Additional Practice:

Complete using properties of addition.

1. $315 + 435 = 435 + \underline{\hspace{2cm}}$
2. $273 + 28 + \underline{\hspace{2cm}} = 56 + 28 + 273$
3. $\underline{\hspace{2cm}} + 23 + 12 = 12 + \underline{\hspace{2cm}} + 72$
4. $100 + \underline{\hspace{2cm}} + 23 = 23 + 407 + \underline{\hspace{2cm}}$

Show one way to group the addends to solve. Solve

5. $145 + 13 + 387 = \underline{\hspace{2cm}}$

6. $125 + 228 + 72 = \underline{\hspace{2cm}}$

2-5: Addition Patterns

When you add **even numbers** and **odd numbers**, there are patterns in the sums.

When you add two even numbers, the sum is even.

$$246 + 100 = 346$$

$$432 + 224 = 656$$

$$318 + 480 = 798$$

When you add two odd numbers, the sum is even.

$$547 + 155 = 702$$

$$325 + 631 = 956$$

$$421 + 273 = 694$$

When you add an even number and an odd number, the sum is odd.

$$272 + 723 = 995$$

$$546 + 231 = 777$$

$$647 + 244 = 891$$

Math is... Generalizations

Why is it true that the sum of two odd numbers is always even?

You can use addition patterns to help you determine a sum, or to check your work, when you add 3-digit numbers.

Additional Practice:

Find and check the sum. Match to the correct statement.

- | | |
|------------------------------------|--------------------|
| 1. $75 + 11 = \underline{\quad}$ | even = even + even |
| 2. $64 + 14 = \underline{\quad}$ | |
| 3. $29 + 29 = \underline{\quad}$ | even = odd + odd |
| 4. $42 + 38 = \underline{\quad}$ | |
| 5. $221 + 314 = \underline{\quad}$ | odd + even = odd |
| 6. $44 + 17 = \underline{\quad}$ | |
| 7. $23 + 14 = \underline{\quad}$ | even + odd = odd |
| 8. $302 + 101 = \underline{\quad}$ | |

2-6: Use Partial Sums to Add

You can **decompose**, or break apart, the addends by place value to find partial sums. Then, add the partial sums to find the sum.

► **One Way** You can write the addends in a row.

$$367 + 145 = ?$$

$$300 + 100 = 400$$

$$60 + 40 = 100$$

$$7 + 5 = 12$$

$$400 + 100 + 12 = 512$$

► **Another Way** You can stack the addends.

367	367	
+ 145	+ 145	
-----	400	partial sums
300 + 100	100	
60 + 40	+ 12	
7 + 5	-----	
	512	

Additional Practice:

Break apart each addend. Then add to find the sum.

1. $324 + 135 = \underline{\hspace{2cm}}$

Stack the addends to find the sum. Show your work.

2.
$$\begin{array}{r} 163 \\ + 225 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 456 \\ + 322 \\ \hline \end{array}$$

2-7: Decompose to Subtract

Example:

$$353 - 121 = \underline{\hspace{2cm}}$$

$$300 - 100 = 200$$

$$50 - 20 = 30$$

$$3 - 1 = 2$$

$$200 + 30 + 2 = 232$$

Additional Practice:

Decompose by place value to subtract

$$352 - 122 =$$

$$253 - 132 =$$

$$475 - 233 =$$

$$383 - 282 =$$

2-8: Adjusting Numbers

Adjust Addition Equations

$$224 + 109 = ?$$

$$\begin{array}{cc} \boxed{-1} & \boxed{+1} \\ \downarrow & \downarrow \end{array}$$

$$223 + 110 = 333$$

Subtract from one addend and add that amount to the other.

Adjust Subtraction Equations

$$333 - 212 = ?$$

$$\begin{array}{cc} \boxed{-2} & \boxed{-2} \\ \downarrow & \downarrow \end{array}$$

$$331 - 210 = 121$$

Subtract or add the same amount to both numbers.

Additional Practice:

$$477 - 98 = \underline{\hspace{2cm}}$$

$$367 + 124 = \underline{\hspace{2cm}}$$

$$154 - 46 = \underline{\hspace{2cm}}$$

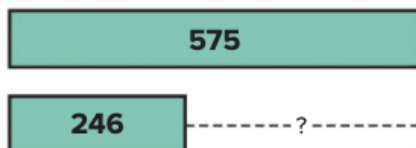
$$541 + 208 = \underline{\hspace{2cm}}$$

$$243 - 134 = \underline{\hspace{2cm}}$$

$$224 + 271 = \underline{\hspace{2cm}}$$

2-9: Use Addition to Subtract

You can represent the problem with a **bar diagram**.



You can write a subtraction equation with an unknown difference.

$$575 - 246 = ?$$

$$575 - 246 = \mathbf{329}$$

You can write an addition equation with an unknown addend.

$$246 + ? = 575$$

$$246 + \mathbf{329} = 575$$

Addition and subtraction are related. You can rewrite a subtraction equation as an addition equation with an unknown addend.

Math is... Relationships

How can using an unknown addend equation be helpful when you subtract?

We can use related addition with an unknown and a number line to help us add up.

Additional Practice:

$$329 - 167 = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



$$843 - 685 = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$



2-10: Fluently Add Within 1,000

Partial Sums You can decompose each addend by place value and add the place values to find partial sums. Then add the partial sums to find the total.

$722 + 169 = ?$		722
$700 + 100 = 800$	$700 + 100$	$+ 169$
$20 + 60 = 80$	$20 + 60$	800
$2 + 9 = 11$	$2 + 9$	80
$800 + 80 + 11 = 891$		$+ 11$
		891

Adjust Addends You can adjust the addends to numbers that are easier to work with. Subtract from one addend and add that amount to the other addend.

$722 + 169 = ?$	
-1	$+1$
$\downarrow$	$\downarrow$
$721 + 170 = 891$	

You can use any addition strategy to find the sum. You can decide which addition strategy is most efficient for you.

Additional Practice:

Use a strategy to find each sum. Show your work.

3. $312 + 524$

4. $706 + 183$

5. $422 + 228$

6. $293 + 681$

2-11: Fluently Subtract within 1,000

Adjust Numbers

You can adjust the numbers to numbers that are easier to work with. Subtract from or add the same amount to both numbers.

$$\begin{array}{r} 543 - 134 = ? \\ \begin{array}{cc} \boxed{+6} & \boxed{+6} \\ \downarrow & \downarrow \end{array} \\ 549 - 140 = 409 \end{array}$$

Decompose by Place Value to Subtract

$$378 - 123 = \underline{\hspace{2cm}}$$

$$300 - 100 = 200$$

$$70 - 20 = 50$$

$$8 - 3 = 5$$

$$200 + 50 + 5 = 255$$

Related Addition Equation

You can write an addition equation with an unknown addend to find the difference.

$$543 - 134 = ?$$

$$134 + ? = 543$$

$$543 - 134 = \mathbf{409}$$

$$134 + \mathbf{409} = 543$$

You can use any subtraction strategy to find the difference. You can decide which subtraction strategy is most efficient for you.

Additional Practice:

Use a strategy to find the difference. Show your work.

1. $253 - 125 = ?$ _____

3. $456 - 375 = ?$ _____

2. $867 - 342 = ?$ _____

4. $598 - 364 = ?$ _____

2-12: Solve Two-Step Word Problems

Step 1 Determine how many points Lea has earned. total points earned ----- <i>a</i> ----- <table border="1" style="margin: 10px auto; width: 150px;"> <tr> <td style="text-align: center; width: 50px;">235</td> <td style="text-align: center; width: 50px;">112</td> </tr> </table> $235 + 112 = a$ $235 + 112 = \mathbf{347}$ Lea has 347 points.	235	112	Step 2 Determine how many more points Lea needs. points needed <table border="1" style="margin: 10px auto; width: 150px;"> <tr> <td style="text-align: center; width: 50px;">347</td> <td style="text-align: center; width: 50px;">----- <i>b</i> -----</td> </tr> </table> <table border="1" style="margin: 10px auto; width: 150px;"> <tr> <td style="text-align: center;">475</td> </tr> </table> $475 - 347 = b$ $475 - 347 = \mathbf{128}$ Lea needs 128 more points.	347	----- <i>b</i> -----	475
235	112					
347	----- <i>b</i> -----					
475						

You can use a letter to represent the unknown.

You can represent each step in a two-step problem using an equation with a letter for the unknown.

Additional Practice:

Solve. Show your work.

1. Lola walked Monday, Tuesday, and Wednesday for a total of 270 minutes. She walked 112 minutes on Monday and 86 minutes on Tuesday. How long did she walk Wednesday?

2. Liam drove 462 miles Friday. He drove 21 more miles on Saturday than he did on Friday. How many total miles did Liam drive those two days? _____

