

Explore Using Addition and Subtraction Strategies with Two-Digit Numbers

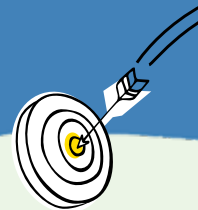
You know how to add and subtract two-digit numbers. Use what you know to try to solve the problem below.

Elizabeth has 35 toy cars. How can she put her toy cars on the top and bottom shelves of her bookcase? Show three ways.

Learning Target

- Explain why addition and subtraction strategies work, using place value and the properties of operations.

SMP 1, 2, 3, 4, 5, 6, 7



TRY IT



Math Toolkit

- connecting cubes
- base-ten blocks
- hundred charts
- bar models
- open number lines



DISCUSS IT

Ask your partner:
How did you get started?

Tell your partner:
I started by ...



CONNECT IT

1 LOOK BACK

What are three ways that Elizabeth can put her toy cars on the top and bottom shelves of the bookcase?

2 LOOK AHEAD

You can use different strategies to solve addition and subtraction problems. Think about this problem.

Gary has 50 marbles. What are some different ways he can put them all into two bags?

Complete the equations to show three different ways.

$$\dots\dots\dots + \dots\dots\dots = 50$$

$$50 - \dots\dots\dots = \dots\dots\dots$$

$$50 = \dots\dots\dots + \dots\dots\dots$$

3 REFLECT

Are there other ways Gary could put the marbles into the two bags? Explain.

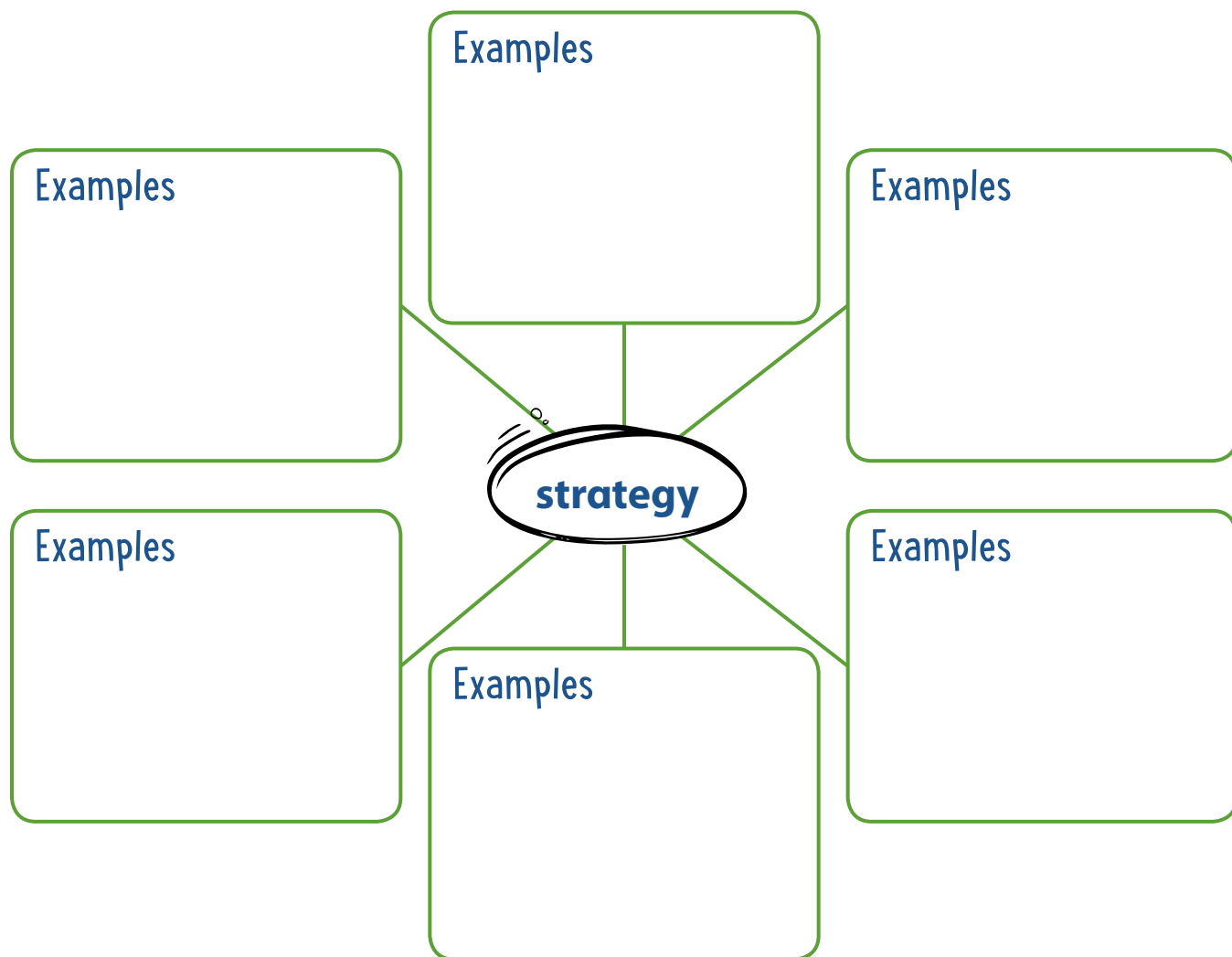
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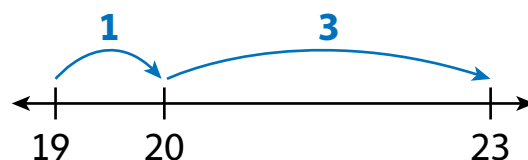


Prepare for Using Addition and Subtraction Strategies

- 1 Think about what you know about different ways to add and subtract. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.



- 2 Clark solves $? - 23 = 19$ by counting up on a number line. Did he use his strategy correctly? Explain.



- 3 Solve the problem. Show your work.

Diana has 42 dolls. How can she put her dolls on the top and bottom shelves of her bookcase? Show three ways.



Solution

.....

.....

- 4 Check your answer. Show your work.

Develop Strategies to Find a Missing Addend

Use what you know to try to solve the problem below.

At the fair 39 students wait in line for a ride. Then some more students join the line. Now there are 93 students in line. How many more students join the line?

TRY IT



Math Toolkit

- connecting cubes
- base-ten blocks
- hundred charts
- bar models
- open number lines



DISCUSS IT

Ask your partner:

Can you explain that again?

Tell your partner:

I am not sure how to find the answer because ...

Develop different ways to find a missing addend.

At the fair 39 students wait in line for a ride. Then some more students join the line. Now there are 93 students in line. How many more students join the line?

MODEL IT

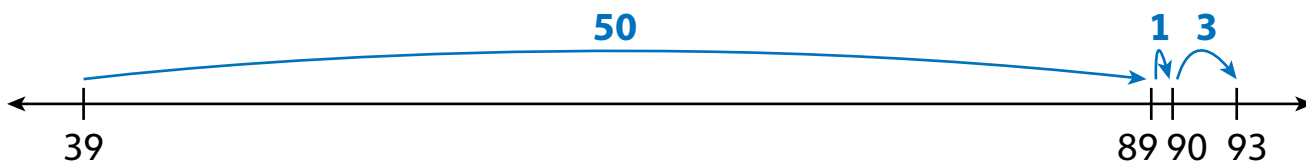
You can use an open number line.

Start at 39.

Add tens until you reach 89.

Next, **add 1** to reach 90.

Then **add 3** more ones to reach 93.



$$50 + 1 + 3 = ?$$

MODEL IT

You can add up to the next ten.

$$39 + 1 = 40$$

$$40 + 50 = 90$$

$$90 + 3 = 93$$

$$1 + 50 + 3 = ?$$

CONNECT IT

Now you will solve the problem from the previous page to help you understand strategies for adding two-digit numbers.

- 1 Look at the first **Model It** on the previous page.

What is $50 + 1 + 3$?

- 2 Look at the second **Model It** on the previous page.

What is $1 + 50 + 3$?

- 3 Why are your answers the same for problems 1 and 2?

- 4 Explain how you would find the missing addend in the equation below.

$$? + 47 = 83$$

- 5 **REFLECT**

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for finding a missing addend? Explain.

.....

.....

APPLY IT

Use what you just learned to solve these problems.

- 6 Ricardo has 55 stamps. He gets some new stamps. Now Ricardo has 82 stamps. How many stamps does he get? Show your work.

Solution

- 7 Solve the problem by going to the next ten.

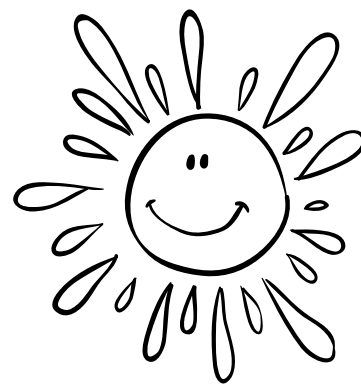
$$58 + ? = 95$$

Show your work.

Solution

- 8 Lee finds some seashells on Monday. He finds 31 seashells on Tuesday. Over the two days he finds 60 seashells. How many seashells does Lee find on Monday?

- (A) 23
- (B) 29
- (C) 90
- (D) 91



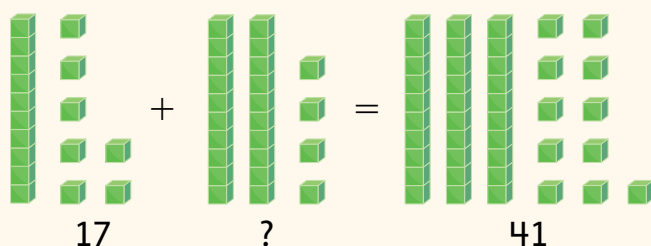
Practice Strategies to Find a Missing Addend

Study the Example showing how to use base-ten blocks to find a missing addend. Then solve problems 1–5.

EXAMPLE

Ms. Acosta's class reads 41 books in February and March. They read 17 of the books in February. How many books do they read in March?

Find $17 + ? = 41$.



$$17 + 24 = 41$$

Ms. Acosta's class reads 24 books in March.

Danny has \$26. His parents give him some money for his birthday. Then he has \$51. How much money do his parents give him?

- 1 Draw base-ten blocks for 26 in one color. Then use a different color to draw more base-ten blocks so that you have 51.

- 2 How many more blocks did you draw?

How much money do Danny's parents give him? \$

- 3 Chen hikes some miles during the first week of his vacation. During the second week of his vacation, he hikes 18 miles. He hikes 37 miles total during both weeks. How many miles does Chen hike during the first week? Show your work.

**Solution**

- 4 A bakery sells 48 muffins in the morning. Some of the muffins are blueberry and the rest of the muffins are cherry. Which equations show how many of each type of muffin the bakery could sell?
- Ⓐ $48 = 47 + 1$
- Ⓑ $30 + 18 = 48$
- Ⓒ $24 + 24 = 48$
- Ⓓ $48 + 12 = 60$
- Ⓔ $48 = 14 + 34$
- 5 Nirupa adds to the next ten to find $65 + 25$. Tell how she might find the sum. Show your work.

Develop Using Subtraction Strategies with Two-Digit Numbers

Use what you know to try to solve the problem below.

**After school 85 students go home.
Some of the students go home on a bus,
but 26 students do not go home on a bus.
How many students go home on a bus?**

TRY IT



Math Toolkit

- connecting cubes
- base-ten blocks
- hundred charts
- bar models
- open number lines



DISCUSS IT

Ask your partner:

Why did you choose that strategy?

Tell your partner:

The strategy I used to find the answer was . . .

Develop different ways to understand subtraction strategies with two-digit numbers.

After school 85 students go home.
Some of the students go home on a bus,
but 26 students do not go home on a bus.
How many students go home on a bus?

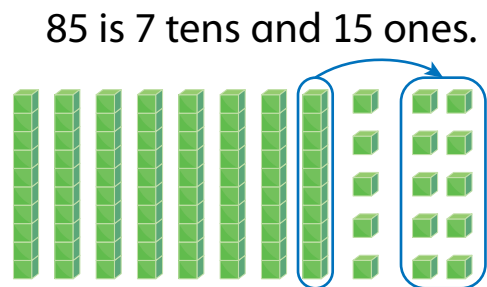
MODEL IT

You can regroup a ten first and then subtract.

Find $85 - ? = 26$.

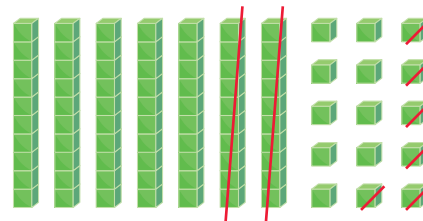
$85 - ? = 26$ is the same as $85 - 26 = ?$.

First make 10 ones with 1 ten in 85.



Then subtract.

$$\begin{array}{r} 7 \text{ tens and } 15 \text{ ones} \\ - 2 \text{ tens and } 6 \text{ ones} \\ \hline \end{array}$$



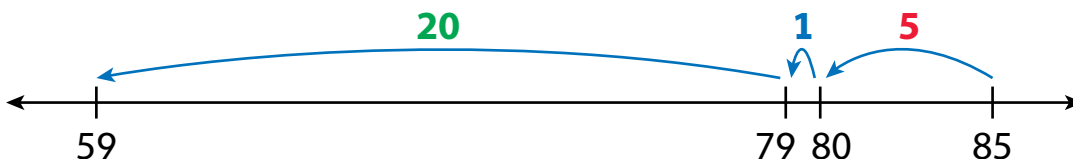
MODEL IT

You can use an open number line.

Subtract 26 from 85 to find how many students go home on a bus.

Start at 85. Subtract 5 to the next ten.

Next, subtract 1 more. Then subtract 20.



CONNECT IT

Now you will use the problem from the previous page to help you understand strategies to subtract two-digit numbers.

- 1 Look at the first **Model It**. What is 7 tens and 15 ones minus 2 tens and 6 ones?
- 2 Look at the second **Model It**.
What number did you land on?
- 3 Why are your answers the same for problems 1 and 2?
- 4 Explain how you can use addition to make sure your solution for $85 - ? = 26$ is correct.

5 REFLECT

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for subtracting two-digit numbers? Explain.

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APPLY IT

Use what you just learned to solve these problems.

- 6 There are 65 cherries in a bowl. Dan eats 12 cherries with his lunch. How many cherries are in the bowl now?

Use two different strategies to solve this problem. Show your work.



Solution

- 7 Look at how Kate solves a subtraction problem at the right. Is her answer correct? Explain how you can use addition to check her answer.

$$\begin{array}{r} 86 \\ - 58 \\ \hline 38 \end{array}$$

- 8 Sean has 14 fewer crayons than Keisha. Keisha has 64 crayons. How many crayons does Sean have?

- (A) 78 (B) 60
(C) 54 (D) 50

Practice Using Subtraction Strategies with Two-Digit Numbers

Study the Example showing one way to subtract two-digit numbers. Then solve problems 1–4.

EXAMPLE

75 people are at a baseball game. 28 of the people are adults. The rest are children. How many children are at the baseball game?

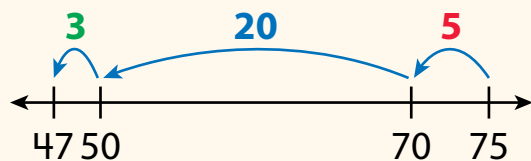
$$75 - 28 = ?$$

Count back.

$$75 - 5 = 70$$

$$70 - 20 = 50$$

$$50 - 3 = 47$$



So, 47 children are at the baseball game.



Dave scores 43 points in a game and Lily scores 28. How many more points does Dave score than Lily?

- 1 Use an open number line to solve the problem. Show your work.

Solution

- 2 Which equations can you use to check if this subtraction equation is correct?

$$72 - 24 = 48$$

- Ⓐ $72 + 24 = 96$
Ⓑ $48 + 48 = 96$
Ⓒ $48 + 24 = 72$
Ⓓ $72 - 48 = 24$
Ⓔ $24 + 48 = 72$
- 3 Show two different ways that you can use a number line to find $70 - 56$.



- 4 Which of the two number line strategies you used to solve problem 3 do you like best? Explain.

Refine Using Addition and Subtraction Strategies with Two-Digit Numbers

Complete the Example below. Then solve problems 1–3.

EXAMPLE

Two numbers have a sum of 80. What could the two numbers be? Write addition equations to show three possible pairs of numbers.

You can use any two numbers that have a sum of 80.

$$20 + 60 = 80$$

$$80 = 45 + 35$$

$$50 + 30 = 80$$

Solution

.....

APPLY IT

- 1 Show a related subtraction equation for each of the addition equations shown in the Example.

$$80 - \dots = \dots$$

$$80 - \dots = \dots$$

$$\dots = 80 - \dots$$

How are addition and subtraction related?



- 2 A store has 57 granola bars. Then some of the granola bars are sold. Now there are 29 granola bars left. How many granola bars are sold? Show your work.

Will you add or subtract to solve this problem?



Solution

- 3 Lisa sells 24 fewer tickets than Brad for the school's Fun Fair. Lisa sells 50 tickets. How many tickets does Brad sell?
- Ⓐ 74
- Ⓑ 64
- Ⓒ 26
- Ⓓ 16

If Lisa sells fewer tickets than Brad, who sells more tickets?

Tyler chose Ⓒ as the correct answer. How did Tyler get his answer?



Practice Using Addition and Subtraction Strategies

- 1 Carmen has 53 animal cards. David has 29 animal cards. How many fewer cards does David have than Carmen? Show your work.

Do you need to add or subtract to solve this problem?



Solution

- 2 For problem 1 above, find how many more animal cards Carmen has than David.

How are problems 1 and 2 alike?

Carmen has more animal cards than David.

What do you notice about your answers for problems 1 and 2? Explain.



- 3 Choose *Yes* or *No* to tell if you can use the equations to solve for ? in the problem below.

$$? - 23 = 61$$

	Yes	No
$61 - ? = 23$	(A)	(B)
$23 + 61 = ?$	(C)	(D)
$61 - 23 = ?$	(E)	(F)
$? - 61 = 23$	(G)	(H)

- 4 Of the 83 students on a field trip, 47 are girls. How many boys are on the field trip? Write an addition equation and a subtraction equation that can be used to find the solution.

- 5 During one month, Lily rides her bike 18 more miles than Raj. Lily rides her bike 50 miles. How many miles does Raj ride his bike?

- (A) 68
(B) 48
(C) 42
(D) 32

Cindy chose (A) as the correct answer.
How did Cindy get her answer?

How are the numbers in the equation related?



How are addition and subtraction related?

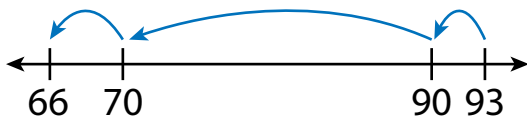
If Lily rides more miles than Raj, then who rides fewer miles?

Refine Using Addition and Subtraction Strategies with Two-Digit Numbers

APPLY IT

Solve the problems.

- 1 Dalila makes this model to solve a problem. What problem does she solve? Write an equation.



..... - =

- 2 A farmer has 76 horses. There are 27 horses inside the barn. The rest are outside. How many horses are outside?

Tell if you use the equation to solve the problem.

	Yes	No
$27 + ? = 76$	(A)	(B)
$76 = ? + 27$	(C)	(D)
$76 + 27 = ?$	(E)	(F)
$76 - 27 = ?$	(G)	(H)

- 3 Tim takes \$75 to the store to buy some clothes. When he leaves the store, he has \$19. How much does Tim spend at the store?

- (A) \$56 (B) \$66
(C) \$84 (D) \$94



- 4 Ahmed and Jenna pick up cans. Yesterday, Ahmed picked up 18 more cans than Jenna. Ahmed picked up 47 cans.

Part A How many cans did Jenna pick up?
Show your work.

Jenna picked up cans.

Part B Today Jenna picks up 51 cans. How many more cans does Jenna pick up today than yesterday?
Show your work.

Jenna picks up more cans today than yesterday.

5 MATH JOURNAL

Show one of the strategies used in Part A or Part B in problem 4 with a model or quick drawing.

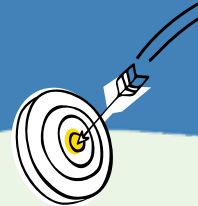


SELF CHECK Go back to the Unit 2 Opener and see what you can check off.

Explore Solving Word Problems with Two-Digit Numbers

You know how to solve word problems with one-digit numbers. Use what you know to try to solve the problem below.

Mr. Soto's students can trade 75 milk caps for school supplies. They have 49 milk caps. How many more do they need to get to 75?



Learning Target



- Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions.

SMP 1, 2, 3, 4, 5, 6, 8

TRY IT



Math Toolkit

- connecting cubes
- base-ten blocks 
- bar models
- hundred charts
- open number lines 



DISCUSS IT

Ask your partner:
How did you get started?

Tell your partner:
At first, I thought ...



CONNECT IT

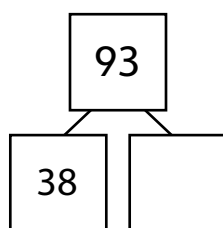
1 LOOK BACK

How many more milk caps does the class need?

2 LOOK AHEAD

Marta has 38 stickers. Tia gives her more stickers. Now Marta has 93 stickers. How many stickers does Tia give to Marta?

- a. You can use a model to help find how many stickers Tia gives Marta. Complete the model.



- b. You can also use equations to show how many stickers Tia gives Marta. Complete the equations.

$$38 + \dots = 93$$

$$93 - 38 = \dots$$

3 REFLECT

Explain how you find the number of stickers Tia starts with if she has 27 left now.


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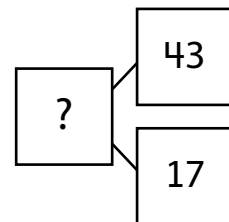
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Prepare for Solving Word Problems with Two-Digit Numbers

- 1 Think about what you know about word problems. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

What Is It?	What I Know About It	
 model		
Examples	Examples	Examples

- 2 Elena has 43 marbles. She gives 17 marbles to her friend. Does the model at the right help her find how many marbles she has left? Why or why not?



- 3 Solve the problem. Show your work.

Drew needs 55 bar codes to enter a contest. He has 32 bar codes. How many more bar codes does he need to get to 55?



Solution

- 4 Check your answer. Show your work.

Develop Ways to Model Word Problems

Read and try to solve the problem below.

Todd plays a game. The table shows his points.

Level 1	?
Level 2	16 points
Total	55 points

How many points does Todd get in Level 1?



TRY IT



Math Toolkit

- base-ten blocks
- number bonds
- bar models
- hundred charts
- open number lines



DISCUSS IT

Ask your partner:

Can you explain that again?

Tell your partner:

The strategy I used to find the answer was . . .

Explore different ways to understand modeling word problems.



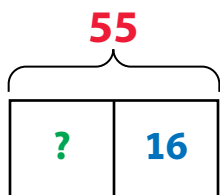
Todd plays a game. The table shows his points.

Level 1	?
Level 2	16 points
Total	55 points

How many points does Todd get in Level 1?

PICTURE IT

You can draw a bar model.



MODEL IT

You can use an addition equation.

$$\begin{array}{l} \text{Level 1} \\ \text{Score} \end{array} + \begin{array}{l} \text{Level 2} \\ \text{Score} \end{array} = \begin{array}{l} \text{Total} \\ \text{Score} \end{array}$$

$$? + 16 = 55$$

MODEL IT

You can use a subtraction equation.

$$\begin{array}{l} \text{Total} \\ \text{Score} \end{array} - \begin{array}{l} \text{Level 2} \\ \text{Score} \end{array} = \begin{array}{l} \text{Level 1} \\ \text{Score} \end{array}$$

$$55 - 16 = ?$$

CONNECT IT

Now you will use the problem from the previous page to help you understand how to model word problems.

- 1 Look at the second **Model It**. Write a different subtraction equation that you could use to solve the problem.

..... — =

- 2 Show how to solve the problem from the previous page on an open number line. Then write your answer.

←—————→

Solution

- 3 How did you make your number line in problem 2? What is another way to find the answer?

4 REFLECT

Look back at your **Try It**, strategies by classmates, and **Picture It** and **Model Its**. Which models or strategies do you like best for modeling a word problem? Explain.

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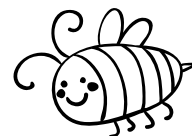
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APPLY IT

Use what you just learned to solve these problems.

- 5 Matt has 72 sports cards. Then he buys more cards. Now he has 90 cards. How many more cards does Matt buy? Show your work.



Solution

- 6 Neve has some flowers. Then she picks 18 more flowers. Now she has 43 flowers. How many flowers does Neve have at the start? Show your work.

Solution

- 7 Shari has a new camera. She takes 27 pictures on Monday. She takes 35 pictures on Tuesday. Which equations could you solve to find how many pictures Shari takes on the two days?

- (A) $? = 27 + 35$
- (B) $? = 35 - 27$
- (C) $? = 35 + 27$
- (D) $? - 35 = 27$
- (E) $35 - ? = 27$



Practice Ways to Model Word Problems

Study the Example showing how to use equations to solve word problems. Then solve problems 1–6.

EXAMPLE

Ted has some beads. Then he gets 18 more beads. Now Ted has 42 beads. How many beads does Ted have to begin with?

Use addition:

$$\text{start} + \text{change} = \text{total}$$

$$? + 18 = 42$$

$$? = 24$$

or

Use subtraction:

$$\text{total} - \text{change} = \text{start}$$

$$42 - 18 = ?$$

Ted has 24 beads to begin with.

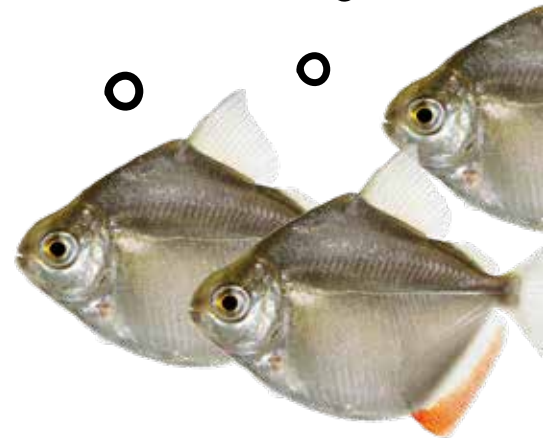
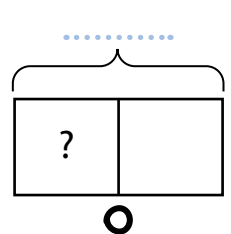
Mrs. Tate has some fish in her fish tank. She buys 25 more fish. Now there are 73 fish in the fish tank.

- 1 Complete the model and the equations to show how many fish are in the fish tank at the start.

$$? + \dots = \dots$$

$$\dots - \dots = ?$$

- 2 How many fish are in the fish tank at the start? Show your work.



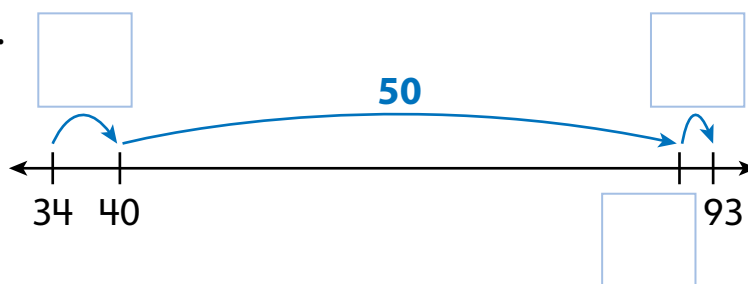
Solution

Mrs. Lopez drives a number of miles north. Then she drives 34 miles west. She drives 93 miles in all.

- 3 Complete the equations to show how many miles Mrs. Lopez drives north.

$$? + \dots = \dots \text{ and } \dots - \dots = ?$$

- 4 Complete the open number line. Then solve the problem. Show your work.



Mrs. Lopez drives miles north.

Stella has some cards. Then she makes 13 more cards. Now she has 41 cards.

- 5 How many cards does Stella start with? Show your work.

Solution

- 6 Write and solve a problem like problem 5. Use different numbers.

Develop More Ways to Model Word Problems

Read and try to solve the problem below.

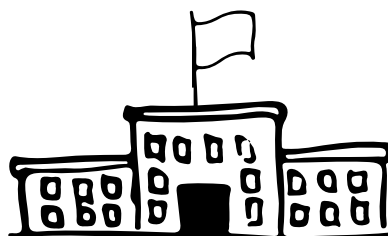
Some books are on a shelf. Students take 24 books from the shelf. Then there are 38 books on the shelf. How many books are on the shelf to begin with?

TRY IT



Math Toolkit

- base-ten blocks
- number bonds
- bar models
- hundred charts
- open number lines



DISCUSS IT

Ask your partner:

How did you choose that strategy?

Tell your partner:

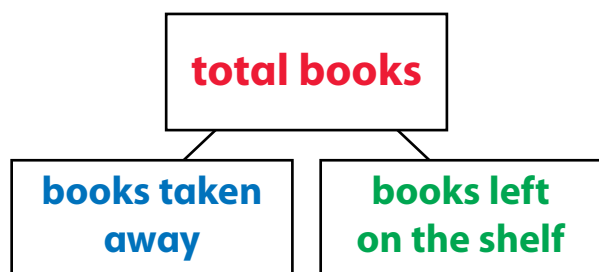
I disagree with this part because ...

Explore more ways to understand modeling word problems.

Some books are on a shelf. Students take 24 books from the shelf. Then there are 38 books on the shelf. How many books are on the shelf to begin with?

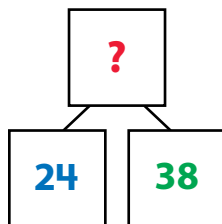
MODEL IT

You can show the problem with words.



MODEL IT

You can show the problem with numbers.



CONNECT IT

Now you will use the problem from the previous page to help you understand more ways to model and solve word problems.

- 1 Look at the second **Model It**. Write an addition equation and a subtraction equation for the problem.

..... = + - =

- 2 Write a different addition equation that you could use to solve the problem.

..... + =

- 3 What is the total number of books on the shelf to begin with? Show your work.

4 REFLECT

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for modeling word problems? Explain.

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APPLY IT

Use what you just learned to solve these problems.

- 5 Students help clean the park. At noon, 33 students go home. Now there are 48 students cleaning the park. How many students helped at the start? Show your work.

Solution

- 6 55 people are in a red train car. 29 people are in a blue train car. How many fewer people are in the blue train car than the red train car? Show your work.

Solution

- 7 First explain how to model the problem below using words. Then explain how to model it using numbers. Kevin picks some apples. He uses 24 of the apples to make pies. He has 19 apples left. How many apples does Kevin pick?



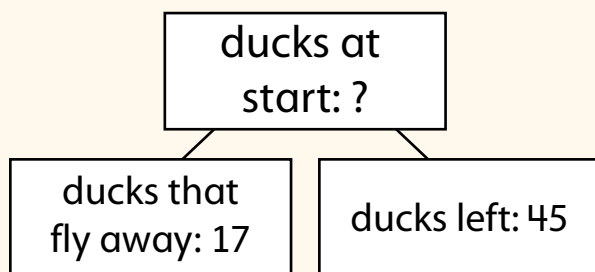
Practice More Ways to Model Word Problems

Study the Example showing how to model with words and numbers. Then solve problems 1–6.

EXAMPLE

There are some ducks in a pond. Then 17 ducks fly away. Now there are 45 ducks in the pond. How many ducks are in the pond at the start?

Model the problem with words or with numbers. Then write an equation.



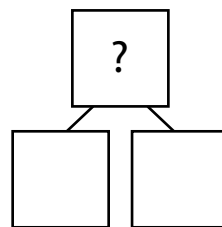
$$17 + 45 = 62$$

There are 62 ducks to begin with.



Rick has some grapes. Rick eats 15 of the grapes. Then he has 19 grapes left.

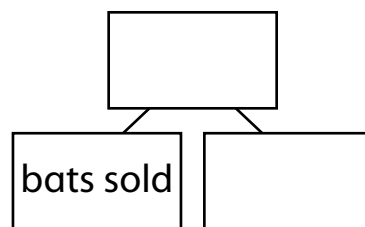
- 1 Complete the number bond at the right to model the problem.
- 2 How many grapes does Rick start with? Show your work.



Solution

A sports store sells baseball bats. In one week, 34 bats are sold. Then the store has 46 bats left. How many bats does the store have to begin with?

- 3 Model the problem with words. Complete the number bond at the right.
- 4 Solve the problem. Show your work.



Solution

There are 41 people waiting at a bus stop. Then 23 of them get on a bus. Now there are 39 people on the bus.

- 5 How many people are still waiting at the bus stop now? Show your work.

Solution

- 6 How many people were on the bus to begin with? Show your work.

Solution



Develop Ways to Solve Two-Step Word Problems

Read and try to solve the problem below.

Gabi collects 25 eggs. Her brother collects 13 eggs. Then they sell 18 eggs. How many eggs do they have now?



TRY IT



Math Toolkit

- base-ten blocks
- number bonds
- bar models
- hundred charts
- open number lines



DISCUSS IT

Ask your partner:

Do you agree with me? Why or why not?

Tell your partner:

At first, I thought ...

Explore different ways to understand how to solve two-step word problems.

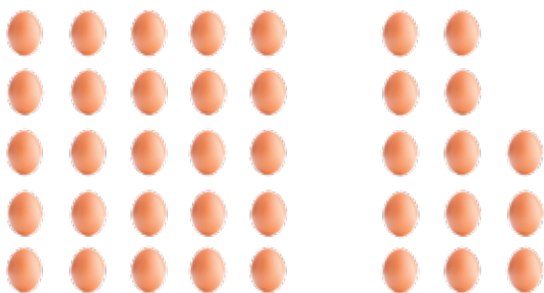
Gabi collects 25 eggs. Her brother collects 13 eggs. Then they sell 18 eggs. How many eggs do they have now?



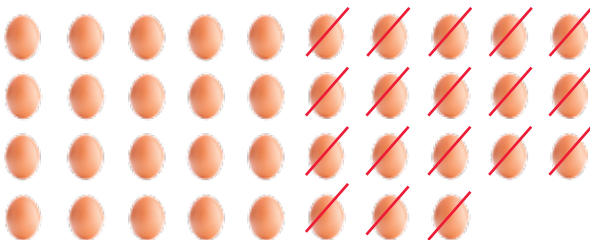
PICTURE IT

You can draw a picture of each step.

Step 1: 25 eggs + 13 eggs



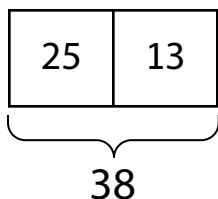
Step 2: 38 eggs — 18 eggs sold



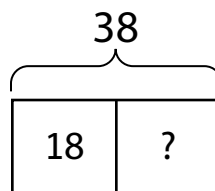
MODEL IT

You can make a model of each step.

Step 1:



Step 2:



CONNECT IT

Now you will use the problem from the previous page to help you understand how to solve two-step word problems using equations.

- 1 Look at **Picture It**. Write an equation for Step 1.

$$\dots\dots\dots + \dots\dots\dots = \dots\dots\dots$$

- 2 Look at **Model It**. Write an equation for Step 2.

$$\dots\dots\dots - \dots\dots\dots = \dots\dots\dots$$

- 3 How many eggs do Gabi and her brother have now? $\dots\dots\dots$

- 4 How can you tell if a problem needs two steps to solve?

5 REFLECT

Look back at your **Try It**, strategies by classmates, and **Picture It** and **Model It**. Which models or strategies do you like best for solving two-step word problems? Explain.

$\dots\dots\dots$

$\dots\dots\dots$

$\dots\dots\dots$

APPLY IT

Use what you just learned to solve these problems.

6 Finn has 57 markers. He gives 15 markers to his brother. Then he gets 22 new markers. How many markers does Finn have now? Show your work.

Finn has markers now.

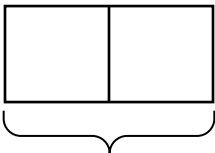
7 There are two bottles of juice that each hold 32 fluid ounces. Julia’s family drinks 48 fluid ounces of juice. How many fluid ounces are left? Complete the bar models.

There are fluid ounces of juice left.

8 Anton sells 65 tickets to the play. He sells 32 on Monday and 26 on Tuesday. Choose Yes or No to tell which equations can be used in a step to find how many tickets Anton sells on Wednesday.

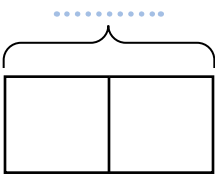
	Yes	No
$33 - 26 = 7$	(A)	(B)
$65 + 32 = 97$	(C)	(D)
$97 - 26 = 71$	(E)	(F)
$65 - 32 = 33$	(G)	(H)

Step 1:



.....

Step 2:



Practice Ways to Solve Two-Step Word Problems

Study the Example showing one way to solve a two-step word problem. Then solve problems 1–4.

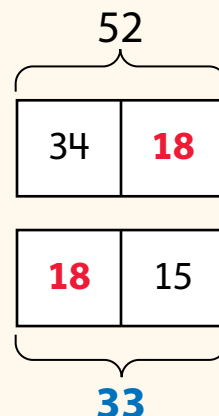
EXAMPLE

Mariel makes 52 fruit cups for field day. She hands out 34 fruit cups. Then she makes 15 more fruit cups. How many fruit cups does Mariel have now?

Step 1: 52 fruit cups – 34 fruit cups = **18** fruit cups

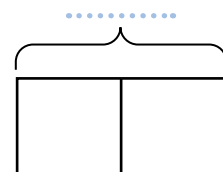
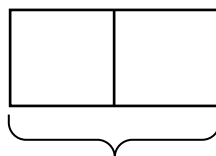
Step 2: **18** fruit cups + 15 fruit cups = **33** fruit cups

Mariel has 33 fruit cups now.



- 1** Gabe has 68 building blocks. He gets 27 more building blocks. Then he uses 73 building blocks to make a barn. How many building blocks does Gabe have left?

Show your work. Complete the bar models.



Gabe has building blocks left.

- 2 Amy finds 45 leaves. Nell finds 23 fewer leaves than Amy. How many leaves do they find in all? Complete the equations for each step.

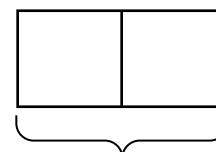
Step 1: $45 \dots\dots\dots 23 = \dots\dots\dots$

Step 2: $45 + \dots\dots\dots = \dots\dots\dots$

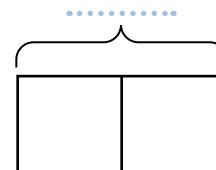
Amy and Nell have $\dots\dots\dots$ leaves in all.

- 3 There are 38 students on the bus. Then 16 more students get on the bus. At the first stop, 19 students get off the bus. How many students are on the bus now?

Complete the bar models. Show your work.



$\dots\dots\dots$



Solution $\dots\dots\dots$

- 4 Mr. King has 75 copies of the parent letter. He gives 27 letters to Ms. Ruiz for her class to take home. Then he gives 25 letters to Mr. Allen for his class. Are there enough letters left for the 25 children in Mrs. Park's class? Explain. Show your work.



Refine Solving Word Problems with Two-Digit Numbers

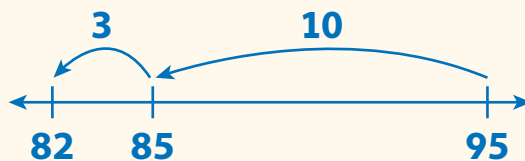
Complete the Example below. Then solve problems 1–3.

EXAMPLE

Keesha's math test score is 95. John's score is 13 points less than Keesha's score. What is John's score?

You can show your work on an open number line.

Keesha's score $- 13 =$ John's score $95 - 13 = ?$



Solution

APPLY IT

- There are 22 people on a train. More people get on at the next stop. Now there are 51 people on the train. How many people get on at the stop? Show your work.

Can you make a model to help you think about the problem?



Solution

- 2 47 small dogs and 33 big dogs win a red ribbon in the pet show. 28 dogs win a blue ribbon. How many more dogs win a red ribbon than a blue ribbon? Show your work.

How many dogs win a red ribbon?



..... more dogs win a red ribbon.

- 3 Liz makes 42 jumps with a jump rope. Tia makes 17 fewer jumps. How many jumps does Tia make?
- (A) 24
 - (B) 25
 - (C) 35
 - (D) 59

Which girl makes more jumps?

Ramin chose (B) as the correct answer. How did Ramin get his answer?



Practice Solving Word Problems with Two-Digit Numbers

- 1 Carlos sells 32 muffins at a bake sale. Jake sells 25 fewer muffins. How many muffins does Jake sell?

Choose *Yes* or *No* to tell if the equation can be used to solve the problem.

	Yes	No
$25 + ? = 32$	(A)	(B)
$25 + 32 = ?$	(C)	(D)
$32 - ? = 25$	(E)	(F)
$32 - 25 = ?$	(G)	(H)

Who sells more muffins?



- 2 Some beads are in a box. Anne uses 17 of them. Then there are 56 beads in the box. How many beads are in the box to begin with?

- (A) 79
- (B) 73
- (C) 39
- (D) 29

Can you draw a model to help you think about the problem?

Dave chose (C) as the correct answer. How did Dave get his answer?

- 3 The table shows how many roses of each color a store has for sale.

Red roses	65
Yellow roses	43
White roses	?

There are 26 fewer white roses than yellow roses. How many red and white roses does the store have in all? Show your work.

Solution

- 4 The store has 43 yellow roses. Chen buys some yellow roses. Then the store has 29 yellow roses left. How many yellow roses does Chen buy?

- (A) 12
- (B) 14
- (C) 36
- (D) 72

- 5 There are 23 solid shirts and 18 striped shirts on a rack. How many shirts are on the rack?

- (A) 5
- (B) 15
- (C) 41
- (D) 43

Can you write an addition equation?
Can you write a subtraction equation?



What do you know?
What are you trying to find out?

Do you add or subtract to solve the problem?

Refine Solving Word Problems with Two-Digit Numbers

Solve the problems.

- 1 Ty reads 47 pages of a book. Meg reads 56 pages. How many more pages does Meg read than Ty? Which equations can you use to solve this problem?

- Ⓐ $56 + ? = 47$
- Ⓑ $47 + ? = 56$
- Ⓒ $56 = 47 + ?$
- Ⓓ $56 - ? = 47$

- 2 A beagle weighs 26 pounds. A pug weighs 8 pounds less than the beagle. How many pounds does the pug weigh?

- Ⓐ 34
- Ⓑ 20
- Ⓒ 18
- Ⓓ 13

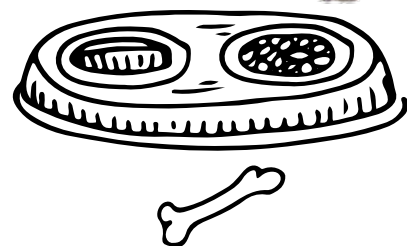
- 3 Sara has 52 pens. She puts them into two cups. Complete each equation to show some of the ways Sara could put all of her pens into the two cups.

$$\dots + \dots = 52$$

$$\dots + \dots = 52$$

$$\dots + \dots = 52$$

$$\dots + \dots = 52$$



- 4 There are 64 balls and 58 bats in the gym. How many more balls are there than bats?

Can the equation be used to solve the problem?

	Yes	No
$58 + ? = 64$	(A)	(B)
$64 - 58 = ?$	(C)	(D)
$64 + 58 = ?$	(E)	(F)
$64 - ? = 58$	(G)	(H)

- 5 There are 100 people in line for the roller coaster. 42 people get on the roller coaster. Then 30 more people get into the line. How many people are in line now?

- (A) 12
(B) 28
(C) 72
(D) 88

6 MATH JOURNAL

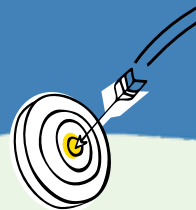
Write a word problem using the numbers 23 and 59. Then solve your problem.



SELF CHECK Go back to the Unit 2 Opener and see what you can check off.

Explore Mental Addition and Subtraction

You know how to compare three-digit numbers. Now you will learn to skip-count and add and subtract in your head with three-digit numbers. Use what you know to try to solve the problem below.



Learning Targets

- Count within 1000; skip-count by 5s, 10s, and 100s.
- Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

SMP 1, 2, 3, 4, 5, 6, 7, 8

Amy is counting the pencils at the school store by fives. She has counted 45 so far. What are the next 6 numbers Amy says?

TRY IT



Math Toolkit

- connecting cubes
- hundred charts
- open number lines



DISCUSS IT

Ask your partner:
Can you explain that again?

Tell your partner: At first, I thought ...

CONNECT IT

1 LOOK BACK

What are the next 6 numbers Amy says?

..... / / / / /

2 LOOK AHEAD

You can skip-count by other numbers, too. You can skip count forward and you can skip-count backward.

- a.** This pattern shows skip-counting forward by tens.
The tens digit changes each time.

Write the missing numbers.

130, 140, 150, / /

- b.** This pattern shows skip-counting backward by hundreds. The hundreds digit changes each time.

Write the missing numbers.

700, 600, 500, / /

3 REFLECT

What would be the next number in the skip-counting backward by hundreds pattern above? How do you know?

.....


.....

.....

Prepare for Mental Addition and Subtraction

- 1 Think about what you know about skip-counting. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

In My Own Words	My Illustrations
Examples	Non-Examples



- 2 Carmen is trying to skip-count by fives. She counts 5, 15, 25, 35, 45, 55, and so on. Explain Carmen's mistake.

- 3 Solve the problem. Show your work.

Remy is counting the notebooks at the school store by tens. He has counted 120 so far. What are the next 5 numbers Remy says?

Solution

- 4 Check your answer. Show your work.



Develop Skip-Counting by Fives, Tens, and Hundreds

Read and try to solve the problem below.

Luis is skip-counting by tens. He starts at 235. What are the next 6 numbers Luis writes?

235 ? ? ? ? ? ?

TRY IT



Math Toolkit

- base-ten blocks
- 200 number charts
- hundreds place-value charts
- open number lines



DISCUSS IT

Ask your partner:

Why did you choose that strategy?

Tell your partner:

The strategy I used to find the answer was ...

Explore different ways to understand skip-counting by fives, tens, and hundreds.

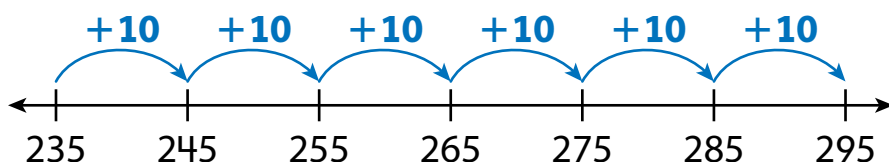
Luis is skip-counting by tens. He starts at 235.

What are the next 6 numbers Luis writes?

MODEL IT

You can use an open number line.

Start at 235. Skip-count by tens.



MODEL IT

You can use a number chart.

Circle **235**.

Then count 10 numbers to the right of 235. When you reach the end of a row, go to the next row. Circle the number where you stop counting.

Continue skip-counting by tens **5** more times.

201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300

CONNECT IT

Now you will use the problem from the previous page to help you understand how to skip-count.

- 1 Look back at the **Model Its** on the previous page. Complete these equations.

$235 + 10 = \dots\dots\dots$

$245 + 10 = \dots\dots\dots$

$255 + 10 = \dots\dots\dots$

$265 + 10 = \dots\dots\dots$

- 2 Which digits stayed the same? Which changed?

- 3 Write the missing numbers to show how to skip-count from 235 by fives instead of tens.

240, 245, 250, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$

- 4 Write the missing numbers to skip-count by hundreds.

335, 435, 535, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$

- 5 REFLECT

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for skip-counting? Explain.

$\dots\dots\dots$

$\dots\dots\dots$

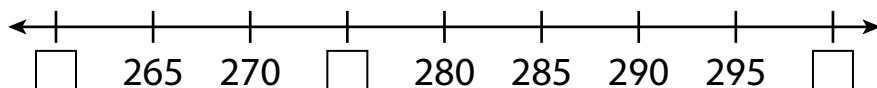
$\dots\dots\dots$

APPLY IT

Use what you just learned to solve these problems.

- 6 Complete the forward and backward skip-counting patterns.
- a. 821, 831, 841, , ,
- b. 349, 449, 549, , ,
- c. 920, 915, 910, , ,
- d. 783, 773, , , 743, ,
- 7 Sadie says when she starts skip-counting forward by tens from 590, both the tens digit and the hundreds digit change. Is Sadie correct? Explain.

- 8 Which numbers go in the squares on this number line?



- (A) 255
- (B) 260
- (C) 275
- (D) 296
- (E) 300

Practice Skip-Counting by Fives, Tens, and Hundreds

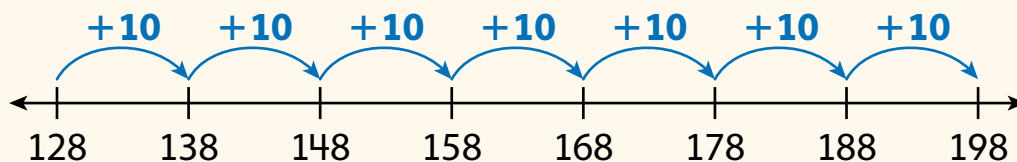
Study the Example showing one way to use skip-counting by tens. Then solve problems 1–5.

EXAMPLE

Skip-count by tens from 128. What are the next 7 numbers?

You can use a number line to skip-count by tens.

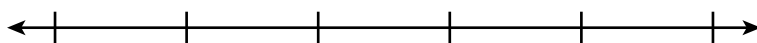
Start at 128. Count by tens.



The next 7 numbers are 138, 148, 158, 168, 178, 188, and 198.

Skip-count by fives from 140. What are the next 5 numbers?

1 Use the open number line to solve the problem.



2 What are the next 5 numbers?

- 3 Jamal uses this number chart to skip-count by tens. Shade the next 3 numbers.

61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

- 4 Complete the skip-counting patterns.

a. 460, 560, 660, , ,

b. 310, 305, 300, , ,

- 5 Does each group of numbers show skip-counting by fives, either forward or backward? Choose *Yes* or *No*.

	Yes	No
105, 110, 115, 120, 125, 130	(A)	(B)
355, 365, 375, 385, 395, 405	(C)	(D)
915, 925, 935, 945, 955, 965	(E)	(F)
285, 280, 275, 270, 265, 260	(G)	(H)

Develop Adding and Subtracting 10 and 100

Read and try to solve the problem below.

A class has 432 sheets of paper. They get 100 more for an art project. How many sheets of paper do they have now?

TRY IT



Math Toolkit

- connecting cubes
- base-ten blocks
- hundreds place-value mats
- open number lines
- three-digit number cards



DISCUSS IT

Ask your partner:

Do you agree with me? Why or why not?

Tell your partner:

I disagree with this part because ...

Explore different ways to understand adding and subtracting 10 and 100.

A class has 432 sheets of paper. They get 100 more for an art project. How many sheets of paper do they have now?

PICTURE IT

You can draw a picture to show the number of sheets of paper.

432 is **4 hundreds** and 32 more.



Adding 100 makes **5 hundreds** and 32 more.



MODEL IT

You can use facts you know.

432 and 100 more is **4**32 + **1**00.

You know **4** + **1** = 5.

So, you know **4** hundreds + **1** hundred = 5 hundreds.



CONNECT IT

Now you will use the problem from the previous page to help you understand how to add and subtract 10 and 100.

1 Look at **Model It** on the previous page. How is adding hundreds like adding ones?

2 How many sheets of paper does the class have now?

.....

3 Look at your answer for problem 1. How would adding and subtracting tens be like adding and subtracting ones?

4 REFLECT

Look back at your **Try It**, strategies by classmates, and **Picture It** and **Model It**. Which models or strategies do you like best for adding or subtracting 10 and 100? Explain.

.....

.....

.....

APPLY IT

Use what you just learned to solve these problems.

- 5 A store has 893 granola bars. It sells 100 bars. How many granola bars does the store have now?
Show your work.



Solution

- 6 Add or subtract 10 or 100.

a. $539 + 10 =$

$704 + 100 =$

$699 + 10 =$

b. $675 - 100 =$

$226 - 100 =$

$491 - 10 =$

- 7 What is $288 - 10$?

- Ⓐ 188
- Ⓑ 278
- Ⓒ 287
- Ⓓ 298

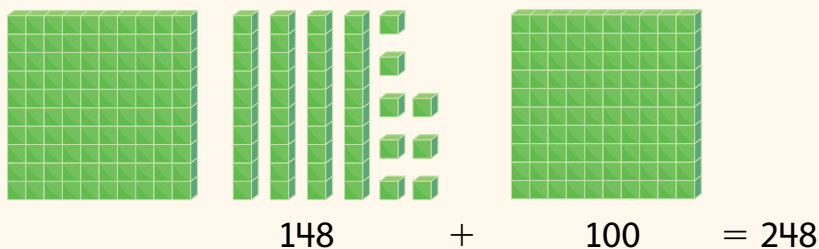
Practice Adding and Subtracting 10 and 100

Study the Example showing one way to add 100. Then solve problems 1–6.

EXAMPLE

The park service has planted 148 trees. They will plant 100 more trees by the end of the week. How many trees will they have planted in all?

You can use base-ten blocks. Then skip-count by hundreds.



100 more than 148 is 248.

So, 248 trees will be planted in all.

Tim scores 318 points in a game. He plays another level and scores 10 more points. How many points does Tim score in all?

1 Draw base-ten blocks for 318 in one color. Then use a different color to draw more base-ten blocks to show how many points Tim scores in all.

2 How many points does Tim score in all?

- 3 Kevin has 452 stamps in his collection. Then he gives his sister 100 stamps. How many stamps does Kevin have now?

Solve the problem above. Then explain the strategy that you used. Show your work.



Solution.....

- 4 What is $873 + 100$?

(A) 773
(B) 874
(C) 883
(D) 973

- 5 What is $547 - 10$?

(A) 557
(B) 537
(C) 527
(D) 447

- 6 What is $10 + 865$?

(A) 765
(B) 855
(C) 875
(D) 965



Refine Using Mental Addition and Subtraction

Complete the Example below. Then solve problems 1–3.

EXAMPLE

Cecilia is skip-counting by tens from 58.

What are the next 6 numbers she says?

You can use a number chart to skip-count by tens.
Each row has 10 numbers.

Circle 58. Then go down one row to skip-count by ten.

Continue down the row to skip-count by tens 6 times.

51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

Solution

APPLY IT

- 1 Lily is skip-counting by fives from 100. What are the next 6 numbers she says?

What patterns do you know when skip-counting?



- 2 Pablo has 342 space cards. Then he buys 100 more cards. How many space cards does Pablo have now? Show your work.

Will Pablo have more or fewer space cards now?



Solution

- 3 What is $426 - 100$?
- Ⓐ 526
 - Ⓑ 416
 - Ⓒ 326
 - Ⓓ 226

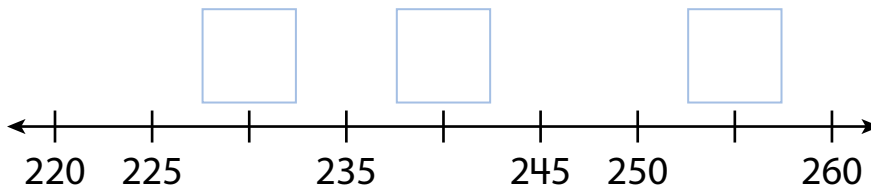
Which digit changes when you subtract 100 from a number?

Michael chose Ⓑ as his answer. How did Michael get his answer?



Practice Using Mental Addition and Subtraction

- 1 You are skip-counting backward on this number line. What number are you skip-counting by? Write the missing numbers. Explain how you found your answers.



How do the digits in the numbers change?



- 2 Greg uses this number chart to skip-count by tens from 314. Shade the next 6 numbers.

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380

How do numbers change when you skip-count by tens?

- 3 What is $863 - 10$?
- Ⓐ 763
 - Ⓑ 853
 - Ⓒ 873
 - Ⓓ 963
- 4 Sasha and her family drive 171 miles on the first day of their vacation. After the second day of their vacation, they have driven 271 miles. How many miles do Sasha and her family drive on the second day?

Solution

- 5 Liam has 358 buttons. He uses some of them for an art project. Now Liam has 258 buttons left. How many buttons does Liam use for the art project?
- Ⓐ 10
 - Ⓑ 50
 - Ⓒ 100
 - Ⓓ 200

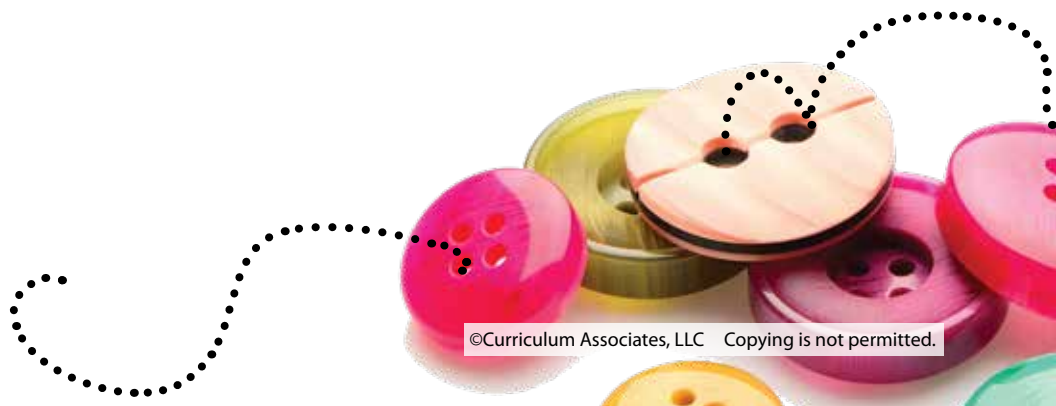
Pam chose Ⓐ as the answer. How did Pam get her answer?

Which digit changes when you subtract 10 from a number?



What is the same about the numbers?
What is different?

Would you add or subtract to solve this problem?



Refine Using Mental Addition and Subtraction

APPLY IT

Solve the problems.

- 1 Teresa has a box of raisins. She eats 10 of them. Now there are 190 raisins in the box. How many raisins were in the box at the start?

Ⓐ 90
Ⓑ 180
Ⓒ 200
Ⓓ 290

- 2 Carlos counts aloud and says these numbers. What number is Carlos skip-counting by?

284, 384, 484, 584, 684, 784, 884

Ⓐ twos
Ⓑ fives
Ⓒ tens
Ⓓ hundreds

- 3 Which sets of numbers show skip-counting forward or backward by fives?

Ⓐ 590, 595, 600, 605, 610, 615
Ⓑ 845, 855, 865, 875, 885, 895
Ⓒ 80, 75, 70, 65, 60, 55
Ⓓ 390, 395, 400, 405, 410, 415
Ⓔ 455, 555, 655, 755, 855, 955



- 4 Ellen counts 349 stickers. Joseph counts 100 more stickers than Ellen.

How many stickers does Joseph count? Explain how you know.

- 5 Which shows skip-counting by tens?

- Ⓐ 210, 310, 410, 510, 610, 710
- Ⓑ 829, 839, 849, 859, 869, 879
- Ⓒ 440, 445, 450, 455, 460, 465
- Ⓓ 320, 430, 540, 650, 760, 870

- 6 What is $998 - 100$?

7 MATH JOURNAL

Explain how skip-counting forward by tens and adding tens are alike.



SELF CHECK Go back to the Unit 3 Opener and see what you can check off.

Explore Using Addition and Subtraction Strategies with Three-Digit Numbers

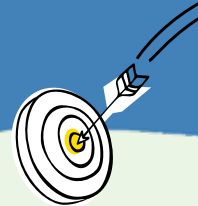
You know how to add and subtract three-digit numbers. Use what you know to try to solve the problem below.

Ms. Mendez's class has 243 storybooks. Then the class gets some new storybooks. Now the class has 372 storybooks. How many new storybooks does Ms. Mendez's class get?

Learning Target

- Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds.

SMP 1, 2, 3, 4, 5, 6, 7



TRY IT



Math Toolkit

- base-ten blocks
- hundreds place-value mats
- number charts
- open number lines



DISCUSS IT

Ask your partner:
How did you get started?

Tell your partner:
I started by ...

CONNECT IT

1 LOOK BACK

How many new storybooks does Ms. Mendez's class get?

Solution

2 LOOK AHEAD

Mr. Lumell's class gets 300 new storybooks. How many more new storybooks does Mr. Lumell's class get than Ms. Mendez's class?

a. Write an equation that you could use to solve

the problem.

b. How many hundreds, tens, and ones will be subtracted from 300?

..... hundred tens ones

c. How many more new storybooks does Mr. Lumell's

class get than Ms. Mendez's class?

3 REFLECT

How could you count up to find $300 - 129$?

.....

.....

.....

.....



Prepare for Using Strategies to Add and Subtract Three-Digit Numbers

- 1 Think about what you know about adding and subtracting. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

The diagram consists of a central oval with the text "add and subtract" inside. Five lines radiate from this central oval to five rectangular boxes arranged around it. Each box has the word "Examples" written in blue at the top left. The boxes are intended for students to write their own examples of addition and subtraction strategies.

- 2 Shen has 200 pennies. Diana has 137 pennies. Write addition and subtraction equations that can be solved to find how many more pennies Shen has than Diana.

..... + = - =

- 3 Solve the problem. Show your work.

Lakeview Elementary School has 238 coloring books. Then the school gets some new coloring books. Now the school has 357 coloring books. How many new coloring books does the school get?

Solution

- 4 Check your answer. Show your work.



Develop Using Addition Strategies with Three-Digit Numbers

Read and try to solve the problem below.

Janelle has 263 pennies and 137 nickels in her piggy bank. How many pennies and nickels in all does she have in her piggy bank?

TRY IT



Math Toolkit

- connecting cubes
- base-ten blocks
- hundreds place-value mats
- number charts
- open number lines



DISCUSS IT

Ask your partner:

Why did you choose that strategy?

Tell your partner:

The strategy I used to find the answer was . . .



Explore different ways to understand addition strategies with three-digit numbers.

Janelle has 263 pennies and 137 nickels in her piggy bank. How many pennies and nickels in all does she have in her piggy bank?

MODEL IT

You can use a place-value chart.

Write the numbers in the chart.

Regroup ones and tens.

Add hundreds, add tens, add ones. →

Regroup 10 ones as 1 ten. →

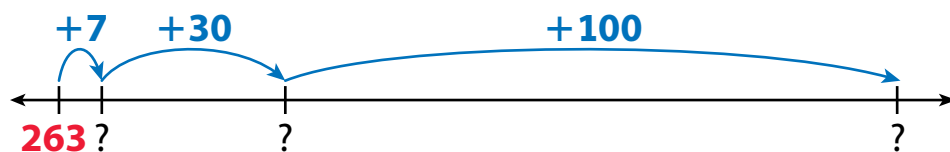
Regroup 10 tens as 1 hundred. →

	Hundreds	Tens	Ones
	2	6	3
+	1	3	7
	3	9	10
	3	10	0
	?	?	?

MODEL IT

You can use an open number line.

Start at **263**. Add the ones, tens, and hundreds in **137**.



$$263 + 137 = ?$$

CONNECT IT

Now you will use the problem from the previous page to help you understand how to use addition strategies with three-digit numbers.



- 1 Look at the first **Model It** on the previous page.

How many hundreds, tens, and ones should be in the last row of the place-value chart?

..... hundreds tens ones

- 2 What number does the last row show?

- 3 Look at the second **Model It** on the previous page.

What is $263 + 7$?

What is $270 + 30$?

What is $300 + 100$?

- 4 Janelle has pennies and nickels in all.

- 5 **REFLECT**

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for adding three-digit numbers? Explain.

.....

.....

.....

APPLY IT

Use what you just learned to solve these problems.

- 6 Grace has 412 pictures on her phone. Lennie has 251 pictures on his phone. How many more pictures does Lennie need to have the same number as Grace? Show your work.



Solution

- 7 What is $524 + 278$? Show your work.

Solution

- 8 Which addition problems could you use to find $481 + 295$?
- (A) $600 + 170 + 6$ (B) $700 + 17 + 6$
(C) $600 + 70 + 6$ (D) 6 ones + 7 tens + 6 hundreds
(E) $6 + 70 + 700$ (F) 6 hundreds + 17 tens + 6 ones

Practice Addition Strategies with Three-Digit Numbers

Study the Example showing one way to add three-digit numbers. Then solve problems 1–6.

EXAMPLE

At Elm School, 176 students are in the first grade, and 139 students are in the second grade. How many students are in both grades?

Find $176 + 139$.

You can break apart the addends.

$$\begin{array}{r}
 176 \rightarrow 100 + 70 + 6 \\
 + 139 \rightarrow 100 + 30 + 9 \\
 \hline
 200 + 100 + 15 = 300 + 15 = 315
 \end{array}$$

So, there are 315 students in both grades.

**Luis saves \$285. Then he saves \$152 more.
How much money does Luis save?**

- 1 Break apart the numbers. Find the total.

$$\begin{array}{r}
 285 \rightarrow 200 + \boxed{} + \boxed{} \\
 + 152 \rightarrow 100 + \boxed{} + \boxed{} \\
 \hline
 \boxed{} + 130 + \boxed{}
 \end{array}$$

- 2 $130 = \dots\dots\dots$ hundred + $\dots\dots\dots$ tens

- 3 How much money does Luis save? \$ $\dots\dots\dots$



- 4 On Monday, Kim's family starts driving on their vacation. On Tuesday, they drive 258 miles. Kim's family drives 484 miles during both days. How many miles do they drive on Monday? Show your work.

Solution

- 5 Use two different ways to solve this equation.
Show your work.

$$247 + ? = 673$$

Solution

- 6 What is $518 + 384$?
- (A) 902 (B) 892 (C) 872 (D) 802

Develop Using Subtraction Strategies with Three-Digit Numbers

Read and try to solve the problem below.

A class has 500 tickets to sell for the Fun Fair. Some tickets are sold during the first week. After the first week, the class has 278 tickets left. How many tickets does the class sell during the first week?



TRY IT



Math Toolkit

- connecting cubes
- base-ten blocks
- hundreds place-value mats
- number charts
- open number lines



DISCUSS IT

Ask your partner:

Do you agree with me? Why or why not?

Tell your partner:

I disagree with this part because ...

Explore different ways to understand subtraction strategies for three-digit numbers.

A class has 500 tickets to sell for the Fun Fair. Some tickets are sold during the first week. After the first week, the class has 278 tickets left. How many tickets does the class sell during the first week?

MODEL IT

You can subtract hundreds, tens, and ones.

Think: $278 = 200 + 70 + 8$

$$\begin{array}{r} 500 \\ - 200 \\ \hline 300 \\ - 70 \\ \hline 230 \\ - 8 \\ \hline ? \end{array}$$

MODEL IT

You can use addition to subtract.

$500 - ? = 278$ is the same as $278 + ? = 500$.

Start with 278 and add 200 to get to 478.

Then add 20 to get to 498.

Then add 2 to get to 500.

$$200 + 20 + 2 = ?$$



CONNECT IT

Now you will use the problem from the previous page to help you understand how to use subtraction strategies for three-digit numbers.

- 1 Look at the first **Model It** on the previous page.
How many hundreds, tens, and ones were subtracted from 500?

..... hundreds tens ones

- 2 What is the difference after subtracting $230 - 8$?

.....

- 3 Look at the second **Model It** on the previous page.

What is $200 + 20 + 2$?

- 4 Why are your answers the same for problems 2 and 3?

5 REFLECT

Look back at your **Try It**, strategies by classmates, and **Model Its**. Which models or strategies do you like best for subtracting three-digit numbers? Explain.

.....

.....

.....

APPLY IT

Use what you just learned to solve these problems.

- 6 There are 700 seats. There are people sitting in 463 seats. The rest of the seats are empty. How many seats are empty?

Use two different strategies to solve this problem.
Show your work.

Solution

- 7 What is the unknown number in this equation?
 $? - 524 = 257$

- 8 Solve the subtraction problem.
Then explain how you would use
addition to check your answer.

$$\begin{array}{r} 809 \\ - 395 \\ \hline \end{array}$$

Practice Using Subtraction Strategies with Three-Digit Numbers

Study the Example showing one way to subtract three-digit numbers. Then solve problems 1–5.

EXAMPLE

Grant School has 408 students. 146 of the students play an instrument. The rest of the students do not play an instrument. How many students do not play an instrument?

Find $408 - 146$.

Look at the tens: 0 tens $<$ 4 tens.

Regroup a hundred in 408 as 10 tens.

$$\begin{array}{r} 408 \rightarrow 300 + 100 + 8 \\ - 146 \rightarrow 100 + 40 + 6 \\ \hline 200 + 60 + 2 = 262 \end{array}$$

So, 262 students do not play an instrument.



Max scores 372 points in a computer game. Abby scores 481 points in the same game. How many fewer points does Max score than Abby?

- 1** Find $481 - 372$. First regroup 1 ten as 10 ones in 481. Then subtract.

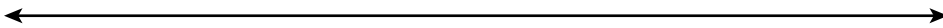
$$\begin{array}{r} 481 \rightarrow 400 + \boxed{} + \boxed{} \\ - 372 \rightarrow 300 + \boxed{} + \boxed{} \\ \hline \boxed{} + 0 + \boxed{} \end{array}$$

- 2** How many fewer points does Max score than Abby?

- 3 Which equations could you use to check if this subtraction equation is correct?

$$473 - 187 = 286$$

- Ⓐ $286 + 187 = 473$
Ⓑ $286 + 286 = 572$
Ⓒ $187 + 286 = 473$
Ⓓ $473 - 286 = 187$
Ⓔ $473 + 286 = 759$
Ⓕ $759 - 286 = 473$
- 4 Show two different ways that you could use a number line to find $604 - 398$.



- 5 What is $800 - 426$?

- Ⓐ 484
Ⓑ 474
Ⓒ 384
Ⓓ 374

Refine Using Addition and Subtraction Strategies with Three-Digit Numbers

Complete the Example below. Then solve problems 1–3.

EXAMPLE

Two numbers have a sum of 300. What could the two numbers be? Write addition equations to show three possible pairs of numbers.

You can use any two numbers that have a sum of 300.

$$100 + 200 = 300$$

$$300 = 150 + 150$$

$$124 + 176 = 300$$

Solution

.....

APPLY IT

- 1 Tina has 250 shapes. Some are triangles, and the rest are circles. How many of each shape could Tina have? Complete three different equations to show the number of each shape Tina could have.

$$250 - \dots = \dots$$

$$250 - \dots = \dots$$

$$\dots = 250 - \dots$$

Solution

.....

How are the missing numbers in each equation related to 250?



- 2 A store has 328 bags of peanuts and 519 bags of walnuts for sale. How many bags of peanuts and walnuts does the store have in all? Show your work.

What are some strategies you could use to solve this problem?



Solution

- 3 Devon builds a toy car with 436 pieces. Gus builds a toy car with 219 fewer pieces than Devon. How many pieces does Gus use?
- Ⓐ 217
 - Ⓑ 227
 - Ⓒ 645
 - Ⓓ 655

If Gus's car has fewer pieces than Devon's car, whose car has more pieces?

Nadia chose Ⓑ as an answer. How did Nadia get her answer?

Practice Addition and Subtraction Strategies with Three-Digit Numbers

- 1 Tammy has 400 stamps. She has 225 more stamps than Dave has. How many stamps does Dave have?
- Solve the problem using addition. Then solve the problem using subtraction. Show your work.

Will your answer be the same whether you use addition or subtraction to solve the problem?



Solution

- 2 Tell if you can use the equations to solve the problem below. Choose *Yes* or *No* for each equation.
- $? - 382 = 417$

How are the numbers in each equation related?

	Yes	No
$417 - ? = 382$	(A)	(B)
$382 + 417 = ?$	(C)	(D)
$417 - 382 = ?$	(E)	(F)
$417 + 382 = ?$	(G)	(H)

- 3 Kevin and Caitlin solve the same subtraction problem. How can you use addition to check their answers?

Kevin	Caitlin
$\begin{array}{r} 700 \\ - 354 \\ \hline 446 \end{array}$	$\begin{array}{r} 700 \\ - 354 \\ \hline 346 \end{array}$

- 4 In problem 3, whose answer is correct? Whose answer is incorrect? How do you know?

- 5 A flower store has 355 roses. There are 180 white roses. The rest are red. Which equations could you use to find how many roses are red?

- | | |
|-------------------|-------------------|
| Ⓐ $355 - ? = 180$ | Ⓑ $180 + 355 = ?$ |
| Ⓒ $? + 180 = 355$ | Ⓓ $? - 355 = 180$ |
| Ⓔ $355 - 180 = ?$ | Ⓕ $180 + ? = 355$ |

Darius chose Ⓑ as the answer. How did Darius get his answer?

What addition problems can you solve to check these answers?



Could both answers be correct?

Is there more than one answer for this problem?

Refine Using Addition and Subtraction Strategies with Three-Digit Numbers

APPLY IT

Solve the problems.

- 1 Mrs. Cruz takes some money to the store. She spends \$235 on a small TV. When she leaves the store, she has \$457. How much money does Mrs. Cruz take to the store?

(A) \$212 (B) \$222 (C) \$682 (D) \$692

- 2 There are 250 adults watching a parade. The rest of the people watching are children. There are 569 people watching the parade in all. How many children are watching the parade?

Choose *Yes* or *No* to tell if each equation could be used to solve the problem.

	Yes	No
$250 + ? = 569$	(A)	(B)
$250 + 569 = ?$	(C)	(D)
$569 = ? + 250$	(E)	(F)
$569 - 250 = ?$	(G)	(H)

- 3 Juan solves this subtraction problem. Explain how Juan could use addition to find out if his subtraction is correct.

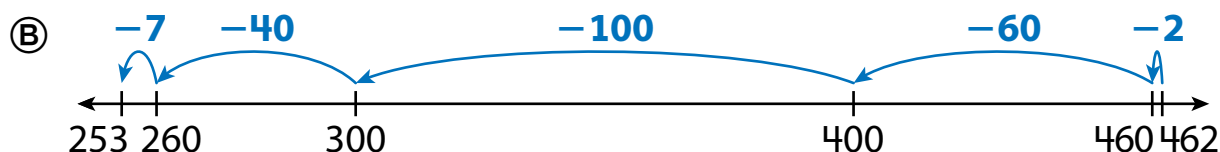
$$\begin{array}{r} 900 \\ - 289 \\ \hline 601 \end{array}$$



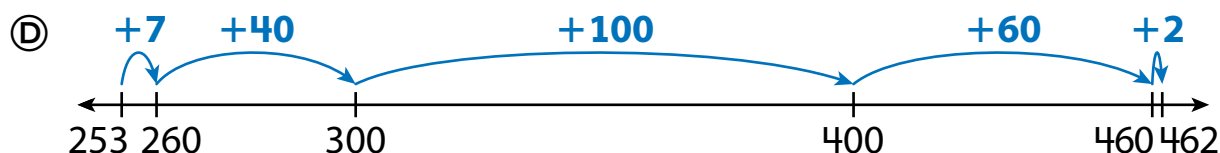
- 4 Debbie has 253 buttons in a jar. Then she puts more buttons in the jar. Now she has 462 buttons in the jar. How many more buttons does Debbie put in the jar?

Which could you use to solve this problem?

(A) $253 + 462 = ?$



(C) $253 + ? = 462$



(E) $? = 462 - 253$

(F) $? = 253 + 462$

- 5 In problem 4, Marcus chose (A) as the answer. How did Marcus get his answer?

6 MATH JOURNAL

Choose any number between 701 and 799. Tell how you could subtract your number from 900.



SELF CHECK Go back to the Unit 3 Opener and see what you can check off.