Discover!
Math

3A

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Discover! MATH

Subtraction Within 100

By the end of this lesson, you will be able to:

- subtract within 100 using strategies and algorithms based on place value and properties of operations

Lesson Review

If you need to review addition strategies, please go to the lesson titled "Addition Within 1,000."

Academic Vocabulary

Read the following vocabulary word and definition. Look through the lesson. Can you find the vocabulary word? Underline the vocabulary word in your lesson and write the page number where you found the word on the blank here.

- **subtract:** to take one number away from another number (page _____)

Materials Needed

base 10 blocks, scratch paper

IN THE REAL WORLD

Grocery Store

You are in a grocery store, and you have 73 cents in your pocket. When you go to check out, you find a candy bar you want to buy that is 51 cents. Use base 10 blocks or counters to figure out how much money you will have left after you buy the candy bar. Write your answer on the line: ....

In this lesson, you will learn more strategies to solve equations like this.

Grocery Store

EXPLORE

You are about to draw a picture of the Great Wall of China with your crayons. The Great Wall of China is very long. This is going to be a huge picture! The bad news is, your dog discovered your crayons and used some of them to make his own drawings! You started with 64 crayons in the box. When you lift up your dog's bed, you find nine crayons on the floor. How many crayons remain in the box?

Show your work in the box below.

Is there another strategy you could have used to solve this problem? Could you have counted backward, used addition to help, or counted up?

....

You decide to use your problem to start a business. You want to sell your dog's drawings at your next lemonade stand, but you need a name! What would you name this unique business idea?

....

READ

Subtracting

In Lessons 3 and 4, you learned strategies for adding. In this lesson, you will learn three strategies for subtracting. **Subtracting** is taking one number away from another number. You will need to use subtraction strategies in your business to figure out how much your materials cost and how much money you are making.

Think Addition Strategy

The think addition strategy helps you flip the subtraction equation into an addition problem to make it easier to solve. Look at this example: 45 − 25. To use the strategy, ask yourself the question, "What can I add to 25 to make 45?" You know that 25 + 20 = 45. So, 45 − 25 = 20. That makes this problem easy to solve.

Your pesky dog is at it again, taking your crayons! Your box of crayons had 64 in it. Now, you find 24 crayons on the floor near your dog's bed. Use the think addition strategy to write the question you would ask yourself.

....

How many crayons remain in the box? ....

Your dog had 24 of your crayons, then lost 12. How many crayons does your dog have left? ....

PRACTICE

Think Addition Strategy

Solve the following subtraction problems using the think addition strategy.

1. 76 − 52 = ...

2. 85 − 63 = ...

3. 34 − 21 = ...

READ

Break Apart Strategy

You might recognize the name of this strategy from Lesson 3. You used it when adding! Luckily, it is pretty similar to use when subtracting. Break apart the numbers by place value to make the subtraction easier. Look at this example: 32 − 11.

Look in the tens place of both numbers in the equation. Write both digits in the tens place. ____ ____

Turn it into a subtraction problem: 30 − 10. That is an easy problem to solve! You know the answer is 20.

Now, look at the ones place. Write both digits in the ones place. ____ ____

That's an easy subtraction problem. Can you use mental math to solve 2 − 1? That's easy, 1.

Put it all together. If 30 − 10 = 20 and 2 − 1 = 1, then 32 − 11 = ____. (Hint: add both place value answers together: 20 + 1.)

IN THE REAL WORLD

Bus Passengers
A bus driver is taking 57 passengers home from the grocery store. He drops 10 passengers off at stop A, 15 passengers off at stop B, and 10 passengers off at stop C.

Use the break apart strategy as well as skip counting to count backward to find how many passengers are still on the bus.

How many passengers are left on the bus? ....….

Did you skip count backward by fives or tens?

PRACTICE

Break Apart Strategy

Use the break apart strategy to solve the following equations

1. 65 − 23 = ____
2. 87 − 45 = ____
3. 54 − 32 = ____
4. 77 − 22 = ____
5. Great news, two of your dog's drawings sold immediately! You made $97. One drawing sold for $45. What was the sale price of the other drawing? Use the break apart strategy to solve. Show your work below.

READ

Borrowing Strategy

The last strategy you are going to learn is borrowing. It's not the same as how your dog is borrowing crayons from you! It is similar to the regrouping strategy you learned in Lessons 3 and 4. This strategy is helpful when one of the numbers in your equation is bigger than the number from which you are subtracting. Look at this example: 64 − 27.

You cannot take away 7 from 4. Instead, you are going to regroup. To regroup, borrow a 10 from the tens place. Do you see how the example crosses out the 6 in the tens place, then changes it to 5? You are going to borrow 10 from 60, leaving 50 left.

tens	ones
5 6	4
− 2	7

borrow

Then, you will add the 10 you borrowed to the 4 in the ones place, to make 14. Now, you have a subtraction problem that you can solve: 14 − 7.

tens	ones
5 6	14 4
− 2	7

borrow

Finish solving the problem below. If you need help to visualize borrowing, use base 10 blocks to practice borrowing from the tens place.

tens	ones
5 6	14 4
− 2	7
	7

borrow

PRACTICE   Borrowing Strategy

	tens	ones
	7	5
−	1	9

	tens	ones
	6	4
−	3	7

PRACTICE

Subtraction

Solve the following subtraction problems. Write the strategy you used on the line next to the equation. Use an extra piece of paper to show your work.

1. 89 − 76 = ...   strategy: ....

2. 93 − 67 = ...   strategy: ....

3. 54 − 23 = ...   strategy: ....

Use one of the strategies you learned to solve the word problems.

Answer the problem and write the strategy you used.

4. Gavin has 54 blocks in his building set. He used 27 in a tower. How many blocks does he have left?

....   strategy: ....

5. Darius had 36 shirts in his drawer. His mom took out 15 shirts that were too small. How many shirts fit him now?

....   strategy: ....

6. A bus driver had 87 passengers. He dropped 34 off at a grocery store. How many passengers remain on the bus?

....   strategy: ....

REVIEW

In this lesson, you learned:

· You can use a variety of strategies to solve subtraction equations.

· You can reverse subtraction equations into addition equations to solve them.

Think About It

Which subtraction strategy was easiest for you to use? Did you use counters or base 10 blocks to help you? How does borrowing help you figure out subtraction equations?

SKILL BUILDER

Number Operations in Base 10

Solve each subtraction equation. Then, write it as an addition equation.

1. $45 - 10 =$ .... addition: ....

2. $67 - 25 =$ .... addition: ....

3. $89 - 43 =$ .... addition: ....

4. $34 - 12 =$ .... addition: ....

5. $72 - 31 =$ .... addition: ....

Operations and Algebraic Thinking

Use the strategies you learned to solve the problems.

6. There are 100 seats in the auditorium for the class play. There are 25 students in the class. There are 34 parents signed up to attend. How many seats will be left in the auditorium?

....

7. There are 34 chicken nuggets. You and two friends, Jacob and Caleb, want to share them. Jacob takes 13 chicken nuggets. You take 10. How many are left for Caleb?

....

8. A grocery store is taking inventory. They have 33 soup cans on the shelf. The workers add 34 more cans to the shelf. Then, Sam buys 20 cans of soup. How many are left?

....

Good news! You were able to buy a brand new box of crayons. This box has so many fun colors. Plus, it's much bigger. The new box has 98 crayons in it. The chart below shows the number of crayons in each color.

Blue	29
Yellow	12
Green	24
Orange	26
Red	7

1. Your neighbor is so excited about your new box of crayons. She wants to borrow all the blue crayons. How many crayons will you have left after she borrows them?

....

2. Now that your neighbor borrowed the blue, her sister needs the red crayons for a project. How many crayons do you have left after your neighbor borrows the blue and her sister borrows the red?

....

3. Your neighbor and her sister returned your crayons. Your instructor asks if they can borrow the orange and green ones to make a poster. How many crayons do you have left?

....

PLAY

It's time to take inventory. How many forks, spoons, and knives do you have in your kitchen drawers?

Create a chart on construction paper. Inventory the utensils in the drawer. Now, ask a friend to remove a handful of forks. Use your chart to figure out how many forks your friend took. Write an equation to show how many forks were taken.

....

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