



**THIRD SPACE
LEARNING**

Math Intervention Pack

Subtracting whole numbers
within 1,000

Grade 3

How to use the resources

1. Title Slide

Use this slide to activate prior knowledge needed for lesson. Students should be encouraged to initially attempt the question presented independently.

2. Let's Learn

Use this slide to introduce the concept. Tutors should work with the student to explore the concept together, usually using diagrams to support understanding.

3. Follow Me + Your Turn

The tutor should work through the follow me slide, modeling the process and explaining their thinking out loud.

Students should use the your turn slide as an opportunity to work through a question similar to the follow me questions. They should apply the method modeled by the tutor in the follow me slide. Students should be encouraged to explain their thinking out loud.

4. You Do

Students should work through a range of questions that build in complexity.

Tutors can offer support but students should initially be encouraged to attempt these questions independently.

5. Go Further

Use this slide to allow students to apply their understanding to a more challenging question in an unfamiliar context.

6. Support for Slides

The support slide is used to support students during the lesson. In the tutor notes, there will be guidance as to when to use the support slide.

7. Check Your Understanding

Tutors should use this slide to assess the student's knowledge and whether or not they have mastered the concept within the lesson.

Standard

3.NBT.2 - Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.

Key Mathematical Ideas

1. Subtract whole numbers within 1,000.
2. Use the standard algorithm to subtract whole numbers.
3. Understand the relationship between the standard algorithm and base ten blocks.

Overview

Terminology

- **Algorithm:** A step-by-step procedure used to calculate an answer.
- **Subtract:** Take away a smaller number from a larger number
- **Difference:** The result of subtracting one number from another

Sentence Stems

- The difference between and is
- - =

Overview

Common Misconceptions

Common Misconceptions	Tutoring Strategies	Checks for Understanding
When students are subtracting using the standard algorithm, sometimes there will be a smaller digit on top of a larger digit in a place value column and students need to regroup from the next place value in order to subtract. Students will sometimes “subtract up” (subtract the smaller number from the larger number regardless of which one is on top) and therefore, make a mistake.	Be sure to continuously point out what we are subtracting. For example, “in the ones place, we need to subtract 4 from 1. Let’s imagine we are taking cookies from a cookie jar. Can we take 4 cookies if there is only one cookie in the jar?” Point out that since we can’t complete $1 - 4$, we will need to exchange a 10 for ten ones from the tens place.	What numbers are we subtracting in this place value? We don’t have enough to subtract here, so we’ll need to exchange or regroup from the next place value. How do we do that?

Title Slide

If stuck

- Walk students through solving the equation step by step

Answers

Kim is correct. Jerry did not exchange correctly when subtracting in the ones place.

Let's Learn

If stuck

- Start with a blank standard algorithm template and walk students through it step by step, showing each step as you complete it.

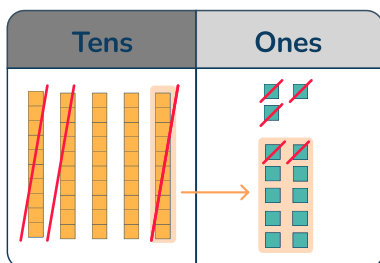
Questions

- Why do you think it makes the most sense to start in the ones place?
- How does the standard algorithm represent what is happening with the base ten blocks?

Watch out for

- Make sure students can make the connection between the standard algorithm and the base ten blocks.

Answers



	T	O
	4	1
	5	3
-	2	5
	2	8

- a) $13 \text{ ones} - 5 \text{ ones} = 8 \text{ ones}$
 b) $4 \text{ tens} - 2 \text{ tens} = 2 \text{ tens}$

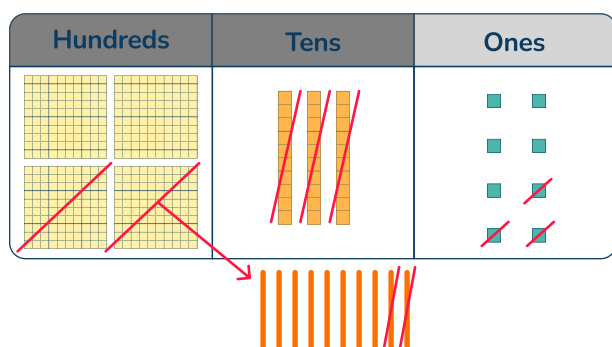
Follow Me

Modeling prompts

- Let's start in the ones place. We need to subtract 3 ones from 8 ones. We can write 5 in the answer row on the standard algorithm chart.
- On the place value chart, we can cross out 3 ones. This leaves us with 5 ones.
- Next, we need to subtract 3–5. Since we can't do that, we will exchange 1 hundred for 10 tens. To show this in the standard algorithm, we cross off the 4 in the hundreds place and write a 3 above it. This represents the 400 becoming a 300.
- Then we cross off the 3 in the tens place and add the hundred, or 10 tens, to it. The 3 tens become 13 tens. This represents 30 becoming 130.
- On the place value chart, we cross one 1 hundred block and add 10 ten rods in the tens column.
- Now we can subtract the tens. In the standard algorithm, we subtract the tens as $13 - 5 = 8$. This actually represents $130 - 50 = 80$. We write the 8 in the tens place in our answer. On the place value chart, we cross off 5 ten rods, leaving 8 remaining.
- Finally, we subtract the hundreds. $4 - 1 = 3$, which we can write in the hundreds place of our answer. This represents $400 - 100 = 300$.
- On the place value chart, we cross off 1 hundred block, leaving 2 remaining.

Answers

- a) 5 ones
 b) $13 \text{ tens} - 5 \text{ tens} = 8 \text{ tens}$
 c) $3 \text{ hundreds} - 1 \text{ hundred} = 2 \text{ hundreds}$



	H	T	O
	³ 4	¹ 3	8
-	1	5	3
	2	8	5

Your Turn

If stuck

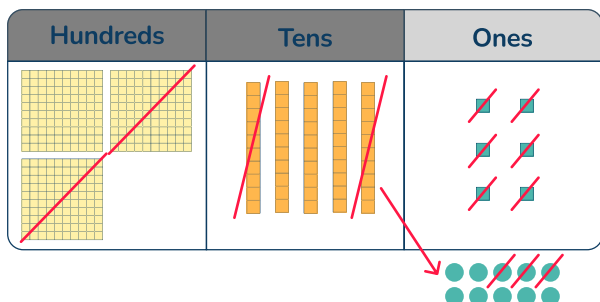
- Help students set up their numbers on the place value chart and complete the first step. Provide as much assistance as necessary through each step.

Questions

- Which strategy do you prefer: the base ten blocks on the place value chart or the standard algorithm? Why? Which strategy do you think is more practical for larger numbers?
- How are the place value chart and the standard algorithm similar?

Answers

- You need to exchange 1 ten for 10 ones in order to subtract the number in the ones place.



	H	T	O
	3	⁴ 4	¹ 6
-	2	1	9
	1	3	7

You Do

If stuck

- Walk students through the steps if needed.
- Allow students to draw base ten blocks.
- Use the “Let’s explore this more” slide to help students solve questions b and d with base ten blocks.

Questions

- How do you know when you need to exchange when solving a subtraction equation?

Watch out for

- Make sure students are exchanging when necessary. Many students will “subtract up” when they have a smaller number on top.

Answers

a

	⁵ 6	¹ 5	
–	2	8	
	3	7	

b

	⁷ 8	¹ 4	
–	5	7	
	2	7	

c

	6	⁴ 5	¹ 5
–	2	3	8
	4	1	7

d

	⁶ 7	¹ 0	8
–	3	5	6
	3	5	2

Go Further

If stuck

- Help students start off their thinking by looking in the tens place - ask them what number we could subtract from 2 to get 4... since we can't, they'll know we need to show exchanging.
- Help them through each step as needed.

Questions

- What strategy did you use to determine the missing digits?
- Does this problem require exchanging? How do you know?

Watch out for

- Make sure students realize they need to take exchanging into account here.

Answers

- | | | |
|--|--|--|
| <div style="display: flex; align-items: center;"><div style="margin-right: 5px;">5</div><div style="border: 1px solid black; padding: 2px 10px;">6</div><div style="margin-left: 5px; color: red;">1</div></div> | <div style="border: 1px solid black; padding: 2px 10px;">2</div> | <div style="border: 1px solid black; padding: 2px 10px;">9</div> |
| — | <div style="border: 1px solid black; padding: 2px 10px; color: red;">4</div> | <div style="border: 1px solid black; padding: 2px 10px; color: red;">8</div> |
| | <div style="border: 1px solid black; padding: 2px 10px;">1</div> | <div style="border: 1px solid black; padding: 2px 10px;">4</div> |
| | <div style="border: 1px solid black; padding: 2px 10px;">6</div> | |

Support for Slide(s)

This slide supports the You do slide, questions b and d

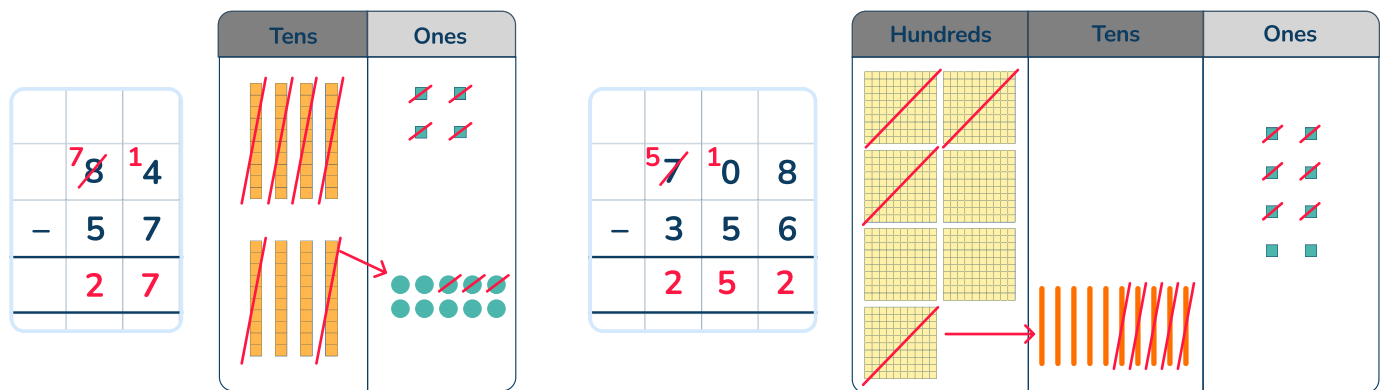
If stuck

- If students are struggling with the standard algorithm on the You do slide, allow them to use the base ten blocks on this page to help solve equations b and d.

Questions

- How can base ten blocks help us understand the standard algorithm for subtraction?

Answers



Check Your Understanding

Correct answers

- 448

Today you will learn about

Subtracting whole numbers within 1,000

Warm up question

Jerry and Kim are calculating $64 - 29$ using the column method.

Who is correct? Explain your answer.

Jerry

		T	O
		6	4
	–	2	9
		4	5

Kim

		T	O
		⁵ 6	¹ 4
	–	2	9
		3	5

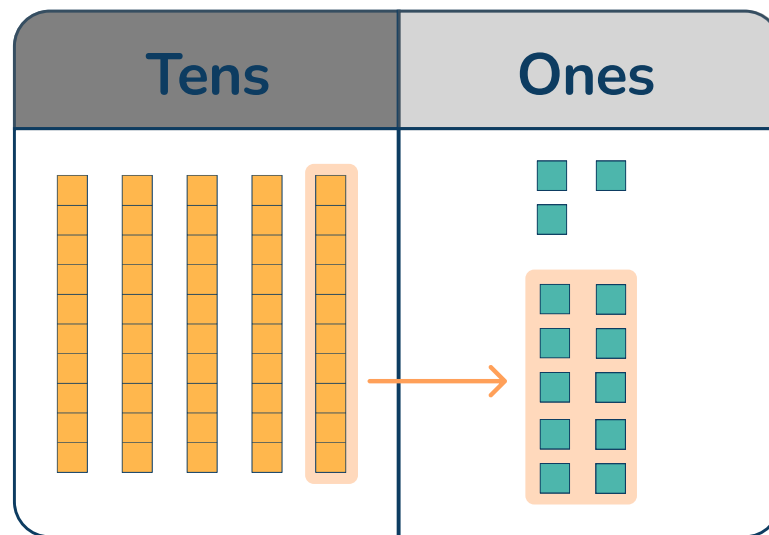
Let's learn

We can use the **standard algorithm** to solve subtraction equations.

Let's use the standard algorithm to solve $53 - 25$.

First, subtract the ones.

There are not enough ones to subtract 5, so we must **exchange** one ten for ten ones.



	T	O
	4	1
	5	3
-	2	5

a

ones - ones = ones
.....

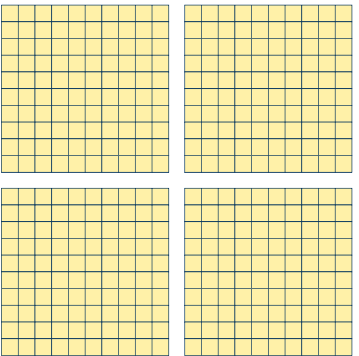
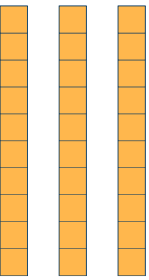
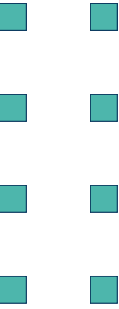
Then, we subtract the tens.

b

tens - tens = tens
.....

Follow me

Let's use the standard algorithm to solve $438 - 153$

Hundreds	Tens	Ones
		

a First, subtract the ones.

$8 \text{ ones} - 3 \text{ ones} = \dots\dots\dots \text{ ones}$

b Then, subtract the tens.

$\dots\dots\dots \text{ tens} - \dots\dots\dots \text{ tens} = \dots\dots\dots \text{ tens}$

We need to **exchange** 1 hundred for 10 tens.

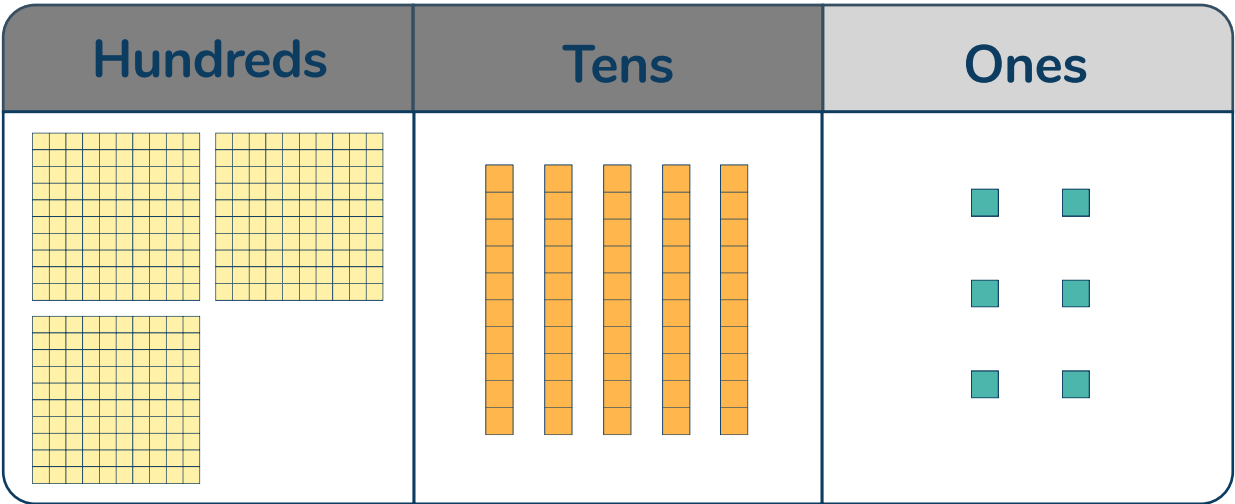
c Finally, subtract the hundreds.

$\dots\dots\dots \text{ hundreds} - \dots\dots\dots \text{ hundred} = \dots\dots\dots \text{ hundreds}$

	H	T	O
	4	3	8
-	1	5	3
<hr/>			
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Your turn

Use the standard algorithm to solve $356 - 219$

Hundreds	Tens	Ones
		

a

Start by subtracting the ones.

When do you need to **exchange**?

	H	T	O
-			

Solve each equation using the standard algorithm.

a

	6	5
−	2	8

b

	8	4
−	5	7

c

	6	5	5
−	2	3	8

d

	7	0	8
−	3	5	6

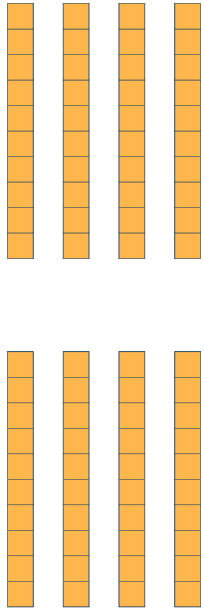
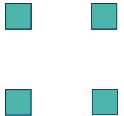
Go further

Find the missing digits.

$$\begin{array}{r} \begin{array}{|c|c|c|} \hline 6 & 2 & 9 \\ \hline \end{array} \\ - \begin{array}{|c|c|c|} \hline & & 3 \\ \hline \end{array} \\ \hline \begin{array}{|c|c|c|} \hline 1 & 4 & 6 \\ \hline \end{array} \end{array}$$

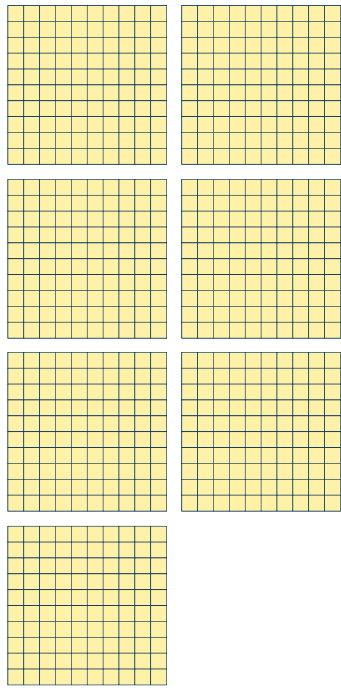
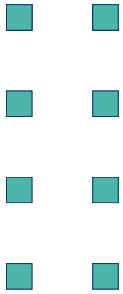
Let's look at these equations using base ten blocks.

	8	4
-	5	7
<hr/>		
<hr/>		

Tens	Ones
	

We need to **exchange** one ten for ten ones.

	7	0	8
-	3	5	6
<hr/>			
<hr/>			

Hundreds	Tens	Ones
		

We need to **exchange** one hundred for 10 tens.

Check your understanding

Solve $865 - 417$ using the standard algorithm.

Why do I need to try this question on my own first?

- To show your tutor what you understand
- To give you more practice
- To show your teacher how you are doing



Do you have a group of students who need a boost in math?

Each student could receive personalized lessons every week from our specialist one-on-one math tutors.




- ✓ Differentiated instruction for each student
- ✓ Aligned to your state's standards
- ✓ Scaffolded learning to close gaps

“We just had our first session and it went great! The kids really liked it and felt like they were learning! One even said he finally felt like math was making sense.”



Michelle Craig, Instructional Coach,
Sherwood Forest Elementary, Washington

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