

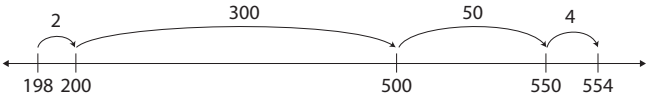
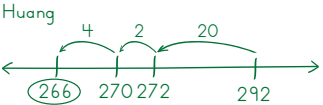
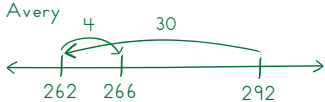
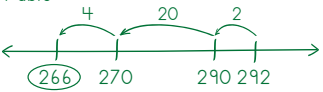
Multidigit Addition & Subtraction

In this unit, your student will:

- Continue to practice addition and subtraction
- Round multidigit numbers and estimate their sums and differences
- Add and subtract 2- and 3-digit numbers using algorithms and other methods



Your student will practice these skills by solving problems such as these:

PROBLEM	COMMENTS									
<table><tr><th>Numbers to Add</th><th>Rounded to the Nearest Ten</th><th>Estimated Sum</th></tr><tr><td>ex 237 + 349</td><td>240 + 350</td><td>$\begin{array}{r} 240 \\ + 350 \\ \hline 590 \end{array}$</td></tr><tr><td colspan="3">The sum of 237 and 349 is about equal to <u>590</u>.</td></tr></table>	Numbers to Add	Rounded to the Nearest Ten	Estimated Sum	ex 237 + 349	240 + 350	$\begin{array}{r} 240 \\ + 350 \\ \hline 590 \end{array}$	The sum of 237 and 349 is about equal to <u>590</u> .			Rounding helps students estimate. It also encourages students to focus on the place values of the digits, which contributes to their fluency for adding and subtracting multidigit numbers.
Numbers to Add	Rounded to the Nearest Ten	Estimated Sum								
ex 237 + 349	240 + 350	$\begin{array}{r} 240 \\ + 350 \\ \hline 590 \end{array}$								
The sum of 237 and 349 is about equal to <u>590</u> .										
<p style="text-align: center;">356 + 198</p> 	For a problem like 356 + 198, a student might start with 198 and add 2 to get to 200. Then they could add 300 to get to 500, then add 50 to get to 550, and finally add the remaining 4.									
<p style="text-align: center;">292 - 26</p> <p>Huang</p>  <p>Avery</p>  <p>Pablo</p> 	<p>This example shows several students' strategies for subtracting 26 from 292.</p> <p>Huang started by subtracting a friendly number, 20, then subtracted the remaining amount in parts.</p> <p>Pablo started by subtracting to get to a friendly number, 290, then subtracted the remaining amount in parts.</p> <p>Avery used a compensation strategy. She subtracted 30 from 292 to get to 262, but then added 4 back on because she was actually subtracting 26.</p>									
<table><tr><th></th><th>Standard Algorithm</th><th>Different Strategy</th></tr><tr><td>265 - 178 =</td><td>$\begin{array}{r} 265 \\ - 178 \\ \hline 87 \end{array}$</td><td>267 - 180 = 87</td></tr></table>		Standard Algorithm	Different Strategy	265 - 178 =	$\begin{array}{r} 265 \\ - 178 \\ \hline 87 \end{array}$	267 - 180 = 87	After using a variety of strategies for adding and subtracting multidigit numbers, students learn and practice the standard algorithm. At times, they will still be asked to use another strategy as well.			
	Standard Algorithm	Different Strategy								
265 - 178 =	$\begin{array}{r} 265 \\ - 178 \\ \hline 87 \end{array}$	267 - 180 = 87								

For additional support, you can use the Math Vocabulary Cards app at apps.mathlearningcenter.org.

Frequently Asked Questions About Unit 3

Q: Why aren't students taught the standard algorithm for adding and subtracting greater numbers right away? Why do they use number lines and other methods instead?

A: The standard algorithms are reliable, efficient, and elegant methods for adding and subtracting multidigit numbers. They work every time, no matter what pair of numbers you're adding or subtracting, as long as they are performed correctly. Problems arise when students:

- Attempt to use the algorithms without having first become proficient with the basic addition and subtraction facts
- Don't understand why the algorithms work
- Forget the steps
- Can carry out the steps, yet are unable to use their estimation skills to judge whether their final answer is reasonable

Using models and other methods helps students see why different strategies, including the standard algorithm, work. This understanding, along with proficiency of basic facts and a good sense of place value, ensures that students carry out the algorithms accurately and with understanding. It also helps students consider whether another approach might be efficient and facilitates mental computation.

Q: Why do some problems say not to find exact sums or differences?

A: These questions are meant to help students use their estimation and mental calculation skills. It's important for students to understand when they need to go to the trouble of making exact calculations and when they can answer a question based on an estimate. These questions also promote mental computation. For example, students might round the numbers in the problem and then add them mentally.

Q: How can I support my student's learning at home?

A: There are many ways to support your student during this unit. Consider some of these activities:

- Visit mathathome.mathlearningcenter.org and work through some or all of the activities in Grade 3: Set 3 together. These activities complement the learning that takes place during Unit 3 and provide fun ways to engage children in mathematical thinking. This set also includes digital versions of familiar games that your student will learn or has learned at school, such as Loops & Groups, Round Ball Tens, and Round & Add Tens.
- Invite your student to help with grocery shopping. Have them round the prices of several items and give you an estimated total.
- Visit apps.mathlearningcenter.org and invite your student to explore the Number Pieces app. Students use physical base ten number pieces to model addition and subtraction in class.
- You might like to read a book with your student, such as *Sherlock Bones and the Addition & Subtraction Adventure* by Jonny Marx and illustrated by John Bigwood.